

New Revenue and Cost-Savings through Operationalizing Sustainable Community Plans within Small Municipalities in Ontario

by

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Author's Declaration

"I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public."

Abstract

This thesis explores the cost-saving potential of market-based instruments (MBIs) and other cost-savings mechanisms for small Ontario municipalities looking to operationalize their sustainable community plans. Market-based instruments are policy tools that encourage behavioral change through financial incentives or disincentives such as water pricing, anti-idling by-laws and user-pay garbage disposal (Clarke & MacDonald, 2012). Small Municipalities refer to all areas with municipal responsibilities, such as local administrations, with an urban core population of 10,000 to 100,000 inhabitants.

Small municipalities are using sustainable community plans (SCPs) as a way to determine necessary areas of change. While 265 communities across Ontario are reaping the benefits of their sustainable community plans, small municipalities have been slow in operationalizing their plans due to limited financial capabilities. As a potential response to these limited financial capabilities, three research questions were developed:

RQ1: Which market-based instruments or other cost-saving initiatives are related to sustainable community plan operationalization, and are generating cost-savings (and/or new revenue) in small municipalities?

RQ2: What is the business case for operationalizing SCPs in small municipalities?

RQ3: What are the sustainable community budgeting implications and local government policy implications of this study? Including, what new contributions does this study provide for literature?

A multi-case study analysis using key informant interviews was used to research the use of market-based instruments and other cost-saving initiatives as a means of operationalizing small municipalities SCPs within five case communities: Halton Hills, Huron County, Frontenac County, King Township and Huntsville. The research was conducted in partnership with Lura Consulting; Lura is a sustainable consulting agency that specializes in formulating sustainable community plans. Face-to-face interviews with key sustainability personnel were conducted to record the usage of cost-saving or new revenue initiatives.

The results of the study describe 22 of the 45 most common market-based instruments and other cost-saving initiatives that are being utilized within the case communities as a means of operationalizing SCPs. Of the total most commonly used cost-saving initiatives, 67 of the 105 initiatives have been directly or indirectly implemented within the case communities. These results further validate the inclusion of market-based instruments as a means of revenue generating or cost-savings.

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Chapter 1: Introduction

Introduction to the Thesis

Sustainable development is a term that is becoming increasingly popular since it was first introduced in 1987 as an objective for governments and corporations alike (Portney & Berry, 2010). While there are countless examples of sustainable development practiced in both the public and private sector, local municipalities have realized an increased role is necessary to achieve this ideal (Robinson & Gore, 2005). For Example, in Canada local municipalities have some jurisdiction over 52% of Greenhouse Gas (GHG) emissions¹ (Robinson & Gore, 2005; Tozer, 2013). With this jurisdiction comes the opportunity to become an important player in the movement towards sustainable development as the path to GHG reduction overlays the path towards sustainable development. Local governments can pioneer new approaches to sustainable development, thereby effectively implementing behavioural change while efficiently creating lasting sustainable change as well (Bulkeley & Betsill, 2005; Robinson & Gore, 2005; Roseland, 2000).

Local governments use sustainable community plans (SCPs) as a way to determine the necessary areas of change. They identify the sustainable vision, goals and targets for the community (Clarke, 2012; Pitt & Randolph, 2009). The use of SCPs has been increasing in recent years as current statistics state that 1252 municipalities of the near 4000 Canadian municipalities have some form of sustainability plan (roughly 25%) (University of Alberta, 2014). While the formulation of SCPs appears to be growing within Canada, receiving the necessary buy-in from the local community can be a huge challenge of its own. There are a number of examples where shifting from the formulation stage to the implementation stage has been an even greater obstacle (Hendrickson, Lindberg, Connelly, & Roseland, 2011; Pitt & Randolph, 2009). The use of market-based instruments and other cost-saving initiatives might be the key to implementing SCPs (Rae, 2007).

Market-based instruments are policy tools that encourage behavioral change through financial incentives or disincentives² (Clarke & MacDonald, 2012; Hockenstein, Stavins, & Whitehead, 1997; Rae, 2007; Stavins, 2001). By using these financial incentives, policy makers can motivate agents to manage natural resources or environmental assets (Rae, 2007). As well, these policy tools can also

¹ See page 14 for breakdown of areas of jurisdiction

² See page 28 for examples of market-based instruments

be used to generate cost-savings, which makes the social and environmental instruments attractive for economically cautious communities (Henderson & Norris, 2008).

Other cost-saving mechanisms refer to cost-saving initiatives that exist within an organization's internal operations. Approximately half of the responsibility of an SCP falls within municipal government jurisdiction (Clarke, 2012), So initiatives can also be used within a municipality's own internal operation thereby reducing operational energy, water and waste, resulting in cost-savings.

Market-based instruments occupy a central position in environmental economics (Gayer & Horowitz, 2006). However, the author has identified a research gap concerning how effective market-based instruments and other initiatives have been concerning the cost-saving potential in small municipalities. Although there are examples of MBI's effective performance for large municipalities in generating cost-savings (due to resource and funding capabilities) (Gayer & Horowitz, 2006), there is little research of their potential for small municipalities. This thesis explores the cost-saving potential of market-based instruments and other cost-savings mechanisms for small Ontario municipalities looking to operationalize their sustainable community plans.

Problem Statement

Many communities across Ontario are reaping the benefits of their sustainable community plans (Tomalty et al., 2007). However, the development of SCPs in small municipalities has been slow due to the lack of financial capabilities and benefits of SCPs (Pitt & Randolph, 2009). These obstacles are hindering municipalities in Ontario of reaching their full sustainable potential (Alexander & Tomalty, 2002). Currently, the research on revenue-generating aspects in SCPs is sparse. The author has found little evidence of SCPs cost-saving potential, specifically through the implementation of market-based instruments and other cost-saving mechanisms. Since these instruments and initiatives can have significant municipality cost savings and positive environmental impact (Elkington, 1994; Gayer & Horowitz, 2006), one could argue that implementing cost-saving MBI's within small municipal sustainable community plans would be effective and beneficial for municipal budgeting.

Small municipalities hesitate to invest in sustainable projects with potentially long payback periods due to their financial structure and lack of understanding (Robinson & Gore, 2005; Tozer, 2013). By increasing awareness of potential cost-savings, municipalities may take interest and prioritize the dialogue to consider investing in more sustainability actions. This market-based instruments

research will benefit small communities when considering their unique sustainability issues (Tomalty et al., 2007).

Purpose and Research Questions

This study will aim to identify the full cost-saving effectiveness of using market-based instruments and other cost-saving initiatives in a sustainable community plan for small municipalities within the Province of Ontario. In researching the potential cost-savings, this study will further validate the inclusion of market-based instruments and other cost-saving initiatives as part of implementing sustainable community plans, given their potential cost-saving capability. The research questions guiding the study are as follows:

RQ1: Which market-based instruments or other cost-saving initiatives are related to sustainable community plan operationalization, and are generating cost-savings (and/or new revenue) in small municipalities?

RQ2: What is the business case for operationalizing SCPs in small municipalities?

RQ3: What are the sustainable community budgeting implications and local government policy implications of this study? Including, what new contributions does this study provide for literature?

Philosophical Worldview

The philosophical worldview used in this study follows the pragmatic worldview approach to qualitative research. The pragmatic worldview focuses on real-world practices and the consequences of these actions rather than focusing on antecedent conditions (Creswell, 2014). By emphasizing the research problem as oppose to focusing on the methods, the researcher was able to use different methodological approaches available to fully understand the research issue at hand (Creswell, 2014).

Objectives

This research study aims to illuminate the cost-saving benefits of SCP implementation in part through the use of market-based instruments. If market-based instruments can result in cost-savings for small municipalities, it would be an incentive for small municipalities to implement their own sustainable community plan. As a component of this objective, a State of Knowledge report has been presented to the funding party Sustainable Prosperity to add to their SCPs work and be disseminated to communities.

Thesis Layout

This thesis consists of six chapters. After the introduction chapter, the literature review chapter presents a brief overview of: sustainable development and municipalities, the business case for implementing sustainable community plans, market-based instruments, and classifying municipalities. The third chapter reports on the thesis methodology, including the purpose and research questions, as well as data collection and analysis. The fourth chapter reports and interprets the results of key informant interviews. The fifth chapter offers a discussion of findings and finally the conclusion summarizes the thesis paper and suggests areas for future research.

Chapter 2: Literature Review

Sustainable Development and the Role of Local Government

The 1987 Brundtland Report *Our Common Future* drew the attention of governments and worldwide publics to the idea of *sustainable development* (Roseland, 2000). This term was defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). The term was popularized and legitimized by the World Commission on Environment and Development (WCED). And, the global audience has seen sustainable development as a solution to urgent environmental and social problems since then (Parkinson & Roseland, 2002; Roseland, 2000).

In 1992, the United Nations Conference held in Rio de Janeiro (also known as the Earth Summit) agreed with the ambitious goals and measurement outlined in the Brundtland Report but it became obvious by 1997 at Earth Summit +5 that the strong international commitments made to sustainable development would not be met (Roseland, 2000). The global community is still adopting its failing “business-as-usual” approach to global governance and development 25 years later (Roseland, 2000).

Considering how different the mainstream view of sustainability is today, compared to how it was regarded 25 years ago, it is surprising to see the failed commitments. When the new report, *Our Common Future*, was first introduced, environmental problems were regarded as “minor, technical, solvable, and politically uncontentious.” They were considered “byproducts of economic growth and social progress” (Roseland, 2000 p.77). Now governments across the globe and from every side of the political spectrum acknowledge that environmental problems are indeed very serious, and may not be rectified at all without significant social and economic change (Roseland, 2000).

The failure to address a global sustainable commitment does not mean that sustainable development is not working in other levels of government. The Brundtland Report placed a great deal of emphasis on how cities and municipal governments can achieve sustainability success (Portney & Berry, 2010; WCED, 1987). The report drew attention to how cities can be a means to address sustainable development and how significant changes can occur at the municipal level. The report identified cities as a key area in Chapter 9, *The Urban Challenge*, by identifying where sustainable development practices could be applied and focused on the integration of economic,

social and environmental concerns, together with global and local issues (Bulkeley & Betsill, 2005; WCED, 1987). Municipalities can provide enormous opportunities to address sustainable challenges. They have the capability to manage their own services and resources in a sustainable way, which, combined with the efforts of other municipalities can equate to a significant outcome (Roseland, 2000).

The role that municipalities can adopt was further reinforced in 1992 at the Earth Summit, with the call for all local authorities in partnership with stakeholders and their communities to produce Local Agenda 21 (LA21) (Bulkeley & Betsill, 2005; Clarke & Erfan, 2007). Local Agenda 21 was an unexpected yet important outcome of the Earth Summit, which has precipitated extensive action for sustainable development at the municipal level and the prominent role claimed by local government (Bulkeley & Betsill, 2005; Selman, 1998). LA21 has since become an entrenched mechanism for promoting sustainable development strategies at the municipal level (Selman, 1998).

Canadian municipalities have demonstrated significant progress in their sustainable involvement. Although, they are not necessarily the only agencies in charge of development, local governments are the only locally elected, accountable bodies responsible for local sustainable improvements (Roseland, 2000). For example, in Canada, local municipalities have some jurisdiction over 52% of GHG emissions (Robinson & Gore, 2005; Tozer, 2013). This jurisdiction comes from the municipal governments' use of fuels and electricity in all its operations and methane gas emissions from landfills, as well as greening activities and urban forestry. Municipal governments also have indirect control of institutions and enterprises that may not be operated directly by the municipal government but over which the municipality has indirect control over: directorships, funding, shared facilities etc. Influence over emissions comes from activities that are at least partially controlled or influenced by municipal governments laws, taxes, or regulation (Robinson & Gore, 2005). Generally speaking, in Canada, municipalities:

- Exert at least partial control over land use through zoning and official plan documents
- Issue building permits and development approvals
- Control parking supply and prices
- Are responsible for roads and public transit
- Oversee parks and recreation services

- Play a regulatory and management role in power and gas utilities (Federation of Canadian Municipalities, 2005)

By careful management of each of these sectors, municipalities can address both energy usage and take action to reduce emissions (Robinson & Gore, 2005). This responsibility makes local governments critical players in the movements aiming to pioneer new approaches to sustainable development and community management. Without municipal buy-in, sustainable development cannot be implemented effectively (Bulkeley & Betsill, 2005; Robinson & Gore, 2005; Roseland, 2000).

The sustainable development role of local governing bodies focuses on two key areas (Parkinson & Roseland, 2002). First, a municipality advances its sustainability in its own practices by aligning its own operations, programs and services with their own sustainable vision. Secondly, municipalities will work with other community representatives to mobilize their citizens and organizations to meet the sustainability challenges to ensure changes occur in a just and democratic manner (Parkinson & Roseland, 2002). These two areas take into account the three imperatives reconciled within sustainable development.

1. The ecological imperative to live within global biophysical carrying capacity and maintain biodiversity.
2. The social imperative to ensure the development of democratic systems of governance to effectively propagate and sustain the values that people wish to live by; and
3. The economic imperatives to ensure that basic needs are met worldwide (Dale et al., 2008 p.269).

When considering these three imperatives within an small, Ontario municipality context, local governments strive to develop all three imperatives simultaneously in order to effectively develop sustainable decision-making processes (Dale et al., 2008).

While there is no *right* approach to increase long-term sustainability, the most common way of addressing these areas is to implement a sustainable community plan (SCP) or a sustainability framework (AMO, 2008). The SCP call for cooperation from multiple dimensions of local government including urban planning, economic development and civic engagement and require cities to change many of their existing plans and policies from land-use and zoning to sustainable investing and policy change (Zeemering, 2009). The responsibility of SCP implementation can also be aligned with partner organizations such as large companies, universities, hospitals, school boards or provincial government departments (Clarke, 2012; Clarke & MacDonald, 2012). The

combined efforts of municipal government and its partners encourage community-wide implementation and achieve community-wide results (Clarke, 2012). To increase the participation, the SCPs can also be designed as a cross-sector social partnership (CSSP) at the local level. As most environmental and social problems are too large for one community or organization to address on their own, some parties find that joining a social partnership is far more beneficial than attempting to implement their own plan (Clarke, 2014).

Research shows that there have been many benefits to a well-executed SCP within a Canadian context including climate change mitigation, community energy planning, increased livability and improved air quality (Pitt & Randolph, 2009; Tozer, 2013). Unfortunately, in Canada, it seems that only a minority of communities have advanced SCPs and municipalities with populations less than 10 000 seem to invest little in sustainability (Parkinson & Roseland, 2002). Due to the lack of data regarding sustainable community plans in Canada, more research is necessary to fully understand the current level of municipal sustainable development commitment and which areas of sustainability offer the most progress.

Sustainable Development in a Canadian Context

In 1988, Canada was at the forefront of addressing atmospheric change and the effects of Greenhouse gas emissions (GHG). The Toronto Conference on the *Changing Atmosphere* hosted 46 countries (Robinson & Gore, 2005). Conference leaders and policy experts came together to agree on the first voluntary targets for reducing GHG emissions; 20% below 1988 levels by 2005 (Robinson & Gore, 2005). For the most part, these targets were never met, and the international community continues to disagree on the new ratifications (the Kyoto Protocol, the Copenhagen Accord, etc.), which in turn resulted in the increase of global emissions not significant reductions. Domestically, it is now recognized that the intergovernmental debate on emissions reduction will continue well into the future, meaning, and the international community will not see significant reductions as the result of an international agreement but rather local efforts (Robinson & Gore, 2005).

As early as 1988, a handful of Canadian municipalities have embraced the challenge of climate change and have developed their own responses. This is a fitting, yet often overlooked, approach as Canadian municipalities have some form of jurisdiction over 52% of the nation's carbon emissions (Robinson & Gore, 2005; Tozer, 2013). These few initiatives have inspired more communities to create initiatives of their own, further encouraged by organizations such as the Federation of Canadian Municipalities and C40 Cities: Climate Leadership Group. While there has been progress

in developing regional initiatives, many communities have limited their progress to the most basic of projects, primarily due to the lack of financial dexterity for project commitment or lack of understanding as to the know-how of sustainable development implementation (Roseland & Henderson, 1998). Communities who move beyond basic projects do so by implementing a sustainable community plan (Clarke & MacDonald, 2012).

The Case for Canadian Municipal Sustainability

A successful business case must be individually tailored to the unique situation and specific circumstances of each community (Vandenburghs, 1992). The truth of this statement is no different for Canadian municipalities. “A typical North American municipality with a population of 100 000 inhabitants exports: 100 000 tons of garbage and 40 000 tons of human waste each year. Developed municipalities such as these produce most of the world’s solid and liquid wastes, consume most of the world’s fossil fuels, emit the majority of ozone depleting compounds and toxic gases and give economic incentive to the clearing of the world’s forests and agricultural lands” (Roseland, 2000 p.2).

Canadian municipalities are most certainly not an oddity within this statistic because most Canadian cities annually produce a combined 20 tons of carbon dioxide per capita, placing them among the top three or four nations in terms of per capita contribution to potential climate change (Roseland, 2000). There is enormous potential within Canadian municipalities to solve the environmental challenges of today through sustainable development. In 2008, the financial crash caused 80 million jobs to evaporate globally. It is now apparent that the solution to this economic crisis can also be the answer to our ecological concerns. Planning for long-term sustainable development and community management at a community level can solve environmental, social and economic issues and result in additional revenue (Zokaei, 2013; Roseland, 2000; Vandenburghs, 1992).

Sustainable Community Plans in Canada

What is a Sustainable Community Plan (SCP)?

A sustainable community plan (SCP) identifies the sustainable vision, goals and targets for the community. They cover regional initiatives regulating carbon emissions but also explore other sustainable development practices such as smart growth and sustainable resource use. A SCP is developed through public consultation and typically provides an overview of existing conditions as well as future objectives. These future objectives are most commonly benchmarked via short-term plans (one to five years), medium-term plans (five to 25 years), and long-term plans (over 25 years) (Clarke & Erfan, 2007; Pitt & Randolph, 2009).

A SCP typically integrates key areas of municipal concern from a variety of sectors where municipalities have, at the very least, partial control. The most common categories of evaluation sectors related to a SCP include:

Table 1 - Common Categories Found Within a Sustainable Community Plan

Topic in Plan	Percentage of Plans with the Topic
Transportation	97.5%
Water	97.4%
Waste	91.6%
Air	90.3%
Energy	89.5%
Land Use	89.2%
Climate Change	83.8%
Food Security	80.6%
Local Economy	78%
Ecological Diversity	74.3%
Civic Engagement	73%
Social Infrastructure	71.4%
Housing	65.8%
Employment	57.6%
Safety (Crime)	57.6%
Financial Security	40.7%

(Clarke, Huang, Roseland, & Chen, 2014)

While most SCPs touch on all of these categories: transportation, water quality and waste management appear to be the most common areas of focus. Different development measures are commonly present in a SCP including: comprehensive development, economic development, social development, and housing development (Clarke et al., 2014; Parkinson & Roseland, 2002).

Sectors are monitored and manipulated through the use of: zoning and land use planning documents, issue building permits, building codes and development approvals (Pitt & Randolph, 2009; Robinson & Gore, 2005). A SCP requires input from a variety of professionals including municipal policy makers, who set local standards and requirements. Municipal planners play an important role in sustainable development as land use, transportation and infrastructure are all areas a planner can control (Pitt & Randolph, 2009). City councilors play an important part of sustainable development because the municipal government is seen as the most approachable level of government. Thus, public opinion regarding sustainability tends to fall within their area of concern (Pitt & Randolph, 2009). This participation approach is the most common among local

governments. However, a number of communities are adopting a partnership approach with local corporations through the use of a cross-sector social partnership (Clarke, 2014).

Different Types of Sustainable Community Plans

There are many different ways to build a SCP and many common ways of formatting them.

A few examples of SCPs are as follows:

- Integrated Community Sustainability Plans (ICSPs),
- Long-Range Sustainability Plans
- Local Agenda 21 plans
- Official Plan/Official Community Plan
- Sustainability Plan/Municipal Sustainability Plan
- Local Action Plans (greenhouse gas reduction plans, etc.)

(Clarke, 2014; Clarke & MacDonald, 2012; University of Alberta, 2014)

How Active are Canadian Municipalities at Creating SCPs

While sustainable development is still a relatively new term, some Canadian municipalities have been involved in the sustainable development movement quite early on. Some Canadian municipal programs have recorded emission reductions and developed sustainability plans as early as the late 1980's (Clarke, 2012; Robinson & Gore, 2005) though admittedly few municipalities were as proactive as this. While it appears that only a minority of Canadian municipalities has a strong and clear vision for their sustainability objectives, it is increasingly important that these plans be developed effectively (Parkinson & Roseland, 2002).

Current statistics state that 1252 municipalities of the near 4000 Canadian municipalities have some form of sustainability plan (roughly 25%) (FCM, 2006; Robinson & Gore, 2005; University of Alberta, 2014). The province of Ontario fairs much better than the rest of the country with 265 of its 444 municipalities (approximately 60%) having some form of sustainability plan (Government of Ontario, 2010; University of Alberta, 2014).

One explanation for the high percentage of Ontario municipalities with some form of sustainable community plan might be as a result of the 2005 Agreement for the Transfer of Federal Gas Tax Revenues under the New Deal for Cities and Communities (Government of Ontario, 2010). As the name of the agreement suggests the governments of Canada and Ontario as well as the AMO and the City of Toronto made an agreement to transfer revenue from the Federal Gas Tax to cities and

communities within Ontario in return for creating an Integrated Community Sustainability Plan (AMO, 2008; Government of Ontario, Government of Canada, AMO, The City of Toronto, 2005).

While there were many requirements for communities to qualify as an eligible recipient of the transfer agreement, Schedule G noted that “the eligible recipient will develop or enhance an Integrated Community Sustainability Plan, either by itself or as part of some higher level of agglomeration” (Government of Ontario et al., 2005 p.34). While this inclusion in the agreement might seem trivial considering only 20 municipalities in Ontario are currently registered as having an ICSP (University of Alberta, 2014), the transfer agreement defines an Integrated Community Sustainability Plan as: “a long-term plan, developed in consultation with community members, that provides direction for the community to realize sustainability objectives, including environmental, culture, social and economic objectives” (Government of Ontario et al., 2005 p.5). This definition allows communities to revise their current sustainability plans or enhance their preexisting Official Plan because there appears to be some correlation that 210 of the 265 sustainable community plans across Ontario were created after the transfer agreement (University of Alberta, 2014). Furthermore the Association of Ontario Municipalities has created a sustainability planning toolkit to assist with the formulation and implementation of these sustainability plans (AMO, 2008).

An alternative to the participation approach to sustainable community plans is the partnership approach. A partnership approach is a unique way because a local government can incorporate local corporations into their sustainable vision. Through the use of a Collaborative Community Sustainability Strategy (CCSS), a local government can address social, economic and environmental issues such as: adequate housing, natural resource use, infrastructure, carbon and waste management, green economy, etc., on a much larger scale (Clarke, 2011; Clarke et al., 2014). CCSS tends to involve a large number of partners from the private, public and not-for-profit sectors with a long-term vision and greater impact (Clarke, 2014). While the CCSS approach is relatively new to Canada, it is utilized in some notable communities such as Hamilton, Whistler and Greater Vancouver (Clarke, 2014).

Why is Sustainable Community Planning Important for Cities and Other Municipalities?

For the first time in global history, nearly half of the world's population lives in urban areas (Roseland, 2000). This statement has even more truth for Canada because 81% of Canadians now live in urban areas (Thompson, 2013). This urban migration is not only an economical choice but also one made by individuals who are making deliberate choices to reduce commuting time and live in a more compact, sustainable way. Some cities are actively trying to market themselves to this niche clientele by investing in new parks, frequent and green transportation and other sustainable enticements such as the region of Greater Vancouver which has incorporated all of these elements into their 100-year plan entitled *A Sustainable Urban System: The Long-Term Plan from Greater Vancouver* (City of Vancouver, 2012). As a municipality develops their sustainable community plan, complete with sustainable policies and market-based instruments, so does the municipality's ability to entice new inhabitation, business and visitors (Portney & Berry, 2010).

The Business Case for Implementing SCPs

What is a Business Case?

According to the Treasury Board of Canada, a business case is typically "a presentation or proposal to an authority by an organization seeking funding, approval, or both for an activity, initiative, or project" (Treasury Board of Canada, 2009, p.7). A business case presents a proposed investment decision into a strategic context providing the information required to make an educated and informed decision on whether an investment (of time, financial or simply commitment) should proceed (Treasury Board of Canada, 2009). A business case provides the description of viable options, the benefit of making a decision and recommends a course of action for a proposition which will include: costs, risks, time frame, change requirements, impact on stakeholders, etc. The development of a business case is an important part of the decision-making process because it considers the entire life-cycle of an investment and the effects the investment will have on the investee (Treasury Board of Canada, 2009).

The Business Case for Sustainability

The business case for sustainability covers the various benefits, change requirements and investments necessary for a business, community or individual to become more economically, socially and environmentally stable (Zokaei, 2013). In the business world, the case for sustainability has proven successful as companies that aspire to more sustainable operations such as waste reduction, emission reduction and limiting nonrenewable resources are outperforming their competition (Zokaei, 2013). In fact, it is now a very common belief among CEOs that addressing sustainability will be key to future business success (Zokaei, 2013).

There are proven examples that adopting sustainable business practices results in future success. This makes the business case for sustainability a win-win business strategy. That is, a strategy that benefits the company, the community (socially or economically) and simultaneously benefits the environment (Elkington, 1994). A win-win business strategy finds tangible and intangible benefits that will outweigh the costs necessary to make the changes. Thus, creating a financial incentive and an environmental benefit (Elkington, 1994).

The business case for sustainability encourages increasing resource efficiency, reducing wasteful activities and encouraging more value-added activities. Focusing on these key areas will result in a positive financial affect for an organization (Schaltegger, 2006; Zokeai 2013). Any attempt to measure and manage sustainability issues that result in operational success, must be examined closer to determine the relationship between sustainability performance and its competitive and economic performance (Schaltegger, 2006).

The Business Case for Implementing Sustainable Community Planning

While sustainable communities are recognized for their desirable policy goals, there is less certainty of how to achieve this goal (Bulkeley & Betsill, 2005). The reality shows that most municipalities are using 40-year-old growth strategies no longer relevant to today's culture (Roseland, 2000). The structure of a household has changed dramatically as have the workplace and the work force. Municipalities are still building suburbs for large families with inner city jobs and endless land and energy (Roseland, 2000). This reality is no longer the case; another lane on the freeway can no longer solve the mounting traffic congestion. There is increasingly unaffordable housing, receding open space and stressful social patterns (Roseland, 2000). A new, modern, way of planning our communities is necessary for long-term development and growth.

The financial case for implementing sustainable community planning is a factor as well when considering the Canada-Wide Costs of urban sprawl. Larger municipalities such as Calgary, which has found that adopting a denser growth pattern that uses 20% less land could save \$11 billion in capital costs (Thompson, 2013). "Halifax recently found that it could save hundreds of millions of dollars by reducing expansion of low-density sprawling development towards more dense urban development" (Thompson, 2013, p.iii). As the financial case has been proven for these larger municipalities, small/developing municipalities can adopt similar approaches concerning their own urban planning.

Many communities are developing their sustainable community plans with help from their key stakeholders. Current trends of the formulation stage include documenting how sustainable a community is through the use of indicators, flows, footprints, etc. Yet, current implementation strategies seem to fall short of making a larger impact (Bulkeley & Betsill, 2005). Implementing a sustainable community plan has the capability to “reduce energy budgets, reduce material consumption, and a smaller, more compact urban pattern interspersed with productive areas to collect energy, grow crops, and recycle waste” (Roseland, 2000, p.30). An SCP enables a community to realize the “triple-win” potentials that are available to them through sustainability management. This task is not a job to be delegated to engineers and scientists in a remote department but requires a core strategic taskforce for each community (Schaltegger & Wagner, 2006).

Strategic taskforce planning is a prerequisite to running a successful community and often results in revealing weaknesses that might be surprising. Few communities can fail to benefit from developing one (Vandenburghs, 1992). There are many tools available for municipalities to assist in the implementation of their sustainable community plans and implementing sustainability within their operations and their community. Guidelines such as The Sustainability Planning Toolkit for Municipalities in Ontario by the Association of Ontario Municipalities provides assistance with the transition (AMO, 2008). The use of market-based instruments also helps with the implementation phase as strong sustainability incentives (Rae, 2007). These tools have the potential results of immediate cost-savings or revenue generation, which will assist the institutionalization of sustainability within a community.

Market Mechanisms for Sustainable Community Development

Introduction to Market-Based Instruments

The awareness of market-based instruments (MBIs) and their advantages have been present since Pigou (Pigou, 1920). Yet, it has taken the better part of a century for policy makers to come to terms with their full potential (Henderson & Norris, 2008). Market-based instruments have been defined differently throughout the years but have some key elements that are commonly found within their definition. Generally, market-based instruments are defined as policy tools that encourage behavioral change through financial incentives or disincentives (Clarke & MacDonald, 2012; Hockenstein et al., 1997; Rae, 2007; Stavins, 2001). By using the financial incentives, policy makers can motivate agents to manage natural resources or environmental assets (Henderson & Norris, 2008; Rae, 2007). This is an effective way of creating market incentives when no current market exists (Rae, 2007). The various types of market-based instruments typically include: imposing pollution charges, creating a tradable permit or deposit refund system, reducing a market barrier

and finally, government subsidies (Hockenstein et al 1997). These categories can be further broken down to: price-based instruments, rights-based instruments and market friction (Clarke & MacDonald, 2012).

While market-based instruments are attractive in both theory and practice, they have been known to fail general expectations, causing criticism (Hockenstein et al., 1997). One of the major issues with MBIs is their inability to guarantee environmental outcomes due to their relaxed standards and the challenge of calculating regulatory market costs accurately (Henderson & Norris, 2008). The challenge in regulation is displayed highly with desirable results but is often quite limited; in short, there is not one type of MBI that can accurately manage all environmental problems (Henderson & Norris, 2008; Newell & Stavins, 2003). Advocates of MBIs would state that when there is a clear economic benefit, then MBIs could achieve the same economic goals as alternative regulatory approaches such as, command-and-control and should be explored further due to their theoretical benefits (Henderson & Norris, 2008). While it is widely recognized that there is potential cost-savings when using MBIs, there is limited evidence to reinforce the cost-saving advantages in actual practice (Henderson & Norris, 2008; Newell & Stavins, 2003). This study will help fill that gap by gathering evidence of cost-savings potential.

Market Structures for Small Communities

The market reality for small communities forces local jurisdictions to trade-off social and environmental outcomes for short-term economic considerations (Hendrickson et al., 2011; Hockenstein et al., 1997). Cash-strapped municipalities are encouraged to do more with less through their political cycle, which most often rewards economic gain over longer-term community outcomes (Hendrickson et al., 2011). It is for this reason that market mechanisms for sustainable community development is an attractive framework to embrace sustainable community development principles (Hendrickson et al., 2011). These tools, policies and practices help showcase energy-efficient buildings, affordable housing programs, compact land-use environmental issues such as waste management and air quality, and community economic development strategies (Hendrickson et al., 2011; Hockenstein et al., 1997).

Market mechanisms can foster greater accountability, transparency, strategic direction and outcomes to compliment conventional economic doctrine in sustainable community planning for small communities (Hockenstein et al., 1997). Market mechanisms were designed to: “acknowledge all policies impact on the market, debunk the market-friendly myth, optimize environmental, social and economic benefits rather than assume short-term benefits are always in a community’s best

interest and question whether economies can grow indefinitely when physical and resource constraints are directly linked to finite ecosystems” (Hendrickson et al., 2011, p.14).

There are four components to evaluate and manage policy alternatives and market impacts:

1. Strategic Directions
2. Strategies
3. Actors
4. Policy Instruments

(Hendrickson et al., 2011)

For more in depth analysis of these components refer to Table 1.

Strategic Directions (Section A)

Strategic directions are “articulating values, ideas, assumptions, goals and objectives that underlie a municipality’s development over the long-term and help clarify economic assumptions when using markets and market signals to guide sustainable development” (Hendrickson et al., 2011, p.165).

Strategic directions can be divided into two areas: cross-cutting, which integrates the major market mechanism strategies, and governance and decision making that use current organizational structures and decision making processes as well as their institutional leadership in order to implement change (Hendrickson et al., 2011).

Strategies (Section B)

Market mechanism strategies are the most commonly discussed aspect of market-based instruments. These tools are specific approaches to achieve policy objectives that include overlapping, nested and hierarchal relationships. The three main types of approaches are: price-based financial instruments, rights-based regulatory instruments, and market friction reduction instruments (Hendrickson et al., 2011).

Price-Based Financial Instruments

Price-based financial instruments are the most widely used form of MBIs. Price-based financial instruments adjust the price of goods or services to reflect their relative environmental impact. These instruments can come in many forms such as: taxes, charges, subsidies, levies, tradable permits, deposit-refund schemes, etc. (Rademaekers et al., 2011; Roseland, 2000). These particular

policies are favoured within environmental economics and will be used more as economic instruments when pollution control and energy consumption tools become higher in demand (Gayer & Horowitz, 2006; Roseland, 2000). This demand for pollution control and more efficient energy consumption comes from a market failure where property rights for environmental commodities are ill defined and individuals do not bear the full social costs. There are three ways to overcome these market failures while still generating cost savings: pollution charges, tradable permits and government subsidy reductions (Clarke & MacDonald, 2012; Lewis, 1996).

Rights-Based or Quality Based Regulatory Instruments

Rights-based or quality-based regulatory instruments work to control the quantity of an environmental good or service to the socially desired level (Clarke & MacDonald, 2012). These quality targets will motivate agents to improve their environmental performance as required (Henderson & Norris, 2008). These instruments use standards, certifications, controls and permits to create markets and influence property rights. Examples of rights-based regulatory instruments would include the European Emissions Trading System, Carbon Offset Scheme and the US Sulphur Dioxide Tradable Permit Scheme, which lead to 40% reduction in US Sulphur Dioxide emissions below 1980 levels (Henderson & Norris, 2008; Hendrickson et al., 2011; Rademaekers, Van der Laan, Smith, & van Breugel, 2011).

Market Friction Reduction Instruments

Reducing market friction can also serve as a market-based instrument. When using market friction reductions, significant gains can be made for environmental protection and increase cost effectiveness. They can also be used as a market aid, infusing it with quality information while reducing transaction costs (Clarke & MacDonald, 2012). These consist of regulation instruments, volunteer instruments, expenditure and reducing transaction costs (Rademaekers et al., 2011).

Three types of market friction reductions that specifically have this result are:

1. Market Creation used for input/outputs associated with environmental quality with measures that facilitate the voluntary exchange of rights. For example, to promote more efficient allocation and use of scarce water supplies.
2. Liability Rules that encourage firms to consider the potential environmental damages of their decisions.

3. Information Programs, such as energy efficiency product labeling requirements (Clarke & MacDonald, 2012; Hendrickson et al., 2011; Rademaekers et al., 2011; Stavins, 2001)

Actors (Section C)

Actors refer to organizations and firms implementing policy and delivering public services consisting of government departments, private sector organizations and not-for-profits. The four actor types (private, public, not-for-profit and hybrid actors) are an important part of market mechanisms because they are the key contributors to market-based strategies using policy instruments (Hendrickson, Lindberg, Connelly, & Roseland, 2011a). Acknowledging small local governments as key actors is an important step in selecting the appropriate market mechanisms that can benefit a small municipality.

Policy Instruments (Section D)

Actors such as small municipalities use policy instruments as tools and actions to influence the behavior of the public. This influence of behavior is usually in response to the supply of resources that can be more efficiently managed. Policy instruments most typically fall into four categories: regulations, voluntary instruments, expenditure and financial (dis)incentives (Roseland & Henderson, 1998).

1. Regulations are the most traditional policy instruments. The instruments under this category include laws, licenses, tradable permits, emission credits and service charges. These regulations have a legal basis that has the ability to cap a market.
2. Voluntary mechanisms are actions taken by an organization that generally do not require regulations or financial incentives. Commonly these mechanisms do not require expenditure. However, they can involve some financial capital to be maintained properly. This category includes providing information to encourage behaviour change, using volunteers or NGOs as a means of working toward community objectives or offering technical assistance.
3. Public expenditure or direct government expenditure consists of any use of public money. By spending money on specific activities, government bodies can promote specific community objectives. This can be accomplished through a variety of means such as: contracting, monitoring, investing and procurement, enterprise and public/private partnerships.

4. Financial incentives are attractive alternatives to traditional regulatory approaches. They do not generally require expenditure on enforcement because they create a constrained market environment in which firms behave as they normally would. This category uses pricing, taxes, charges, subsidies, tax incentives, grants, loans, rebates, rewards, surety bonds, vouchers and permit expedition.

(Roseland et al., 1998; Hendrickson et al., 2011; Jacobs, 1993)

Table 2 - Market Mechanisms for Sustainable Community Development

Section	Category	Definition	Examples
<i>A</i>	<i>Strategic Directions</i>		
	Cross-Cutting	Integrates the major market mechanism strategies of price-based, rights-based and reducing market friction.	Community economic development, local-first campaigns, climate change mitigation, smart growth
	Governance and Decision Making	Uses current organizational structures and decision-making processes as well as their institutional leadership to implement change.	Sustainable procurement in government, firms, schools. Resource efficiency targets and recycling programs.
<i>B</i>	<i>Strategies</i>		
	Price-Based Financial Instruments	Adjusts the price of goods or services to reflect their relative environmental impact.	Charges, fees, subsidies and taxes.
	Rights-Based or Quantity-Based Regulatory Instruments	Works to control the quantity of an environmental good or service to the socially desired level.	Green building by-laws, standards, certifications, controls, permits, parking requirements, disposal bans.
	Market Friction Reduction Instruments	Functions as a market aid infusing it with quality information and reducing transaction costs.	Reduce transaction costs. Provide seed money for research and development.
<i>C</i>	<i>Actors</i>		
	Private Actors	Profit-driven. Aims to produce/operate more efficient goods and services.	Sole proprietorship, partners, and corporations
	Public Actors	Public service and politically driven. Uses regulation to influence market signals by (dis)incentives.	Government departments, agencies, boards, and commissions
	Not-for-profit Actors	Selflessly driven. Supports civil society.	Not-for-profit societies, charitable organizations
	Hybrid Actors	Blended actor types based on private, public and not-for-profit actors.	Social enterprises, enterprising not-for-profits

<i>D Policy Instruments</i>			
Regulations	These regulations have a legal basis that has the ability to cap a market.	Laws, licenses, tradable permits, emission credits and service charges	
Voluntary Mechanisms	Actions taken by an organization that generally do not require regulations or financial incentives.	Giving out information to encourage behaviour change, using volunteers or NGOs as a means of achieving community objectives or offering technical assistance.	
Direct Government Expenditure	Any use of public money to contract, monitor, invest, and procure.	Contracting, monitoring, investing and procurement, enterprise and public/private partnerships	
Financial (Dis)incentives	Price signals may spawn market-oriented regulations linked to prescriptive performance measures.	Pricing, taxes, charges, subsidies, tax incentives, grants, loans, rebates, rewards, surety bonds, vouchers and permit expedition	

(Hendrickson et al., 2011)

Market-Based Instruments with Cost-Saving Potential

While there are many different ways to influence the market within a small municipality, many of the more traditional market-based mechanisms can be quite costly, especially if they require regulations, which must be monitored and controlled (Roseland & Henderson, 1998). For small municipalities, there are alternatives to these traditional regulatory approaches that result in cost-savings rather than added expenses. These market-based instruments are usually financial incentives or volunteer mechanisms (Roseland & Henderson, 1998). A few examples of how a community can use market-based instruments to generate cost-savings are as follows:

The current trend for market-based instruments is the use of “economic instruments” in environmental policy. These tools influence economic behaviour by providing environmental incentives to improve behaviour or disincentives for negative behaviour (Roseland, 2000). While behaviour change is an important aspect of market-based instruments, it should only be applied when there is a clear economic benefit, and when alternative regulatory approaches cannot achieve the same environmental goals (Henderson & Norris, 2008). The emphasis on cost effectiveness makes market-based instruments an attractive option instead of less flexible regulatory

alternatives. Flexibility in market-based instruments could generate cost-savings where the costs of compliance varies significantly across the target group (Henderson & Norris, 2008; Newell & Stavins, 2003)

Pollution charge policies place a fee or a tax on the amount of pollution that an organization generates (Pigou, 1920). This fee or tax makes it worthwhile for a firm to reduce emissions to the point where its cost is equal to the tax rate. An example of how pollution charges can result in cost-savings is a deposit-refund system, where consumers pay a surcharge when purchasing potentially polluting products, and receive a refund when returning the product to an approved center for either recycling or disposal (Stavins, 2001).

Tradable permits can achieve cost-saving allocation as a charge system, while avoiding the problem of uncertain responses by firms. When trading permits, the accepted overall level of pollution is established and permits are allocated to required firms. Firms that keep their emissions below their allotted level can sell their excess permits to other firms or they can use them to offset excess emissions in other areas of their facilities (Stavins, 2001).

The final way of generating cost savings with market-based instruments is through government subsidy reductions. Subsidies are very similar to taxes in the sense that they can provide incentives to address environmental problems. However, many subsidies promote economically inefficient and environmentally unsound practices (Stavins, 2001). By eliminating economically harmful subsidies and investing in those that promote smart growth and greater efficiency, a government can generate cost-savings as well as a desired sustainable outcome.

While market-based instruments are gaining momentum as a useful tool to reach primary environmental objectives as well as cost-saving potential, it is important to remember that the success of these outcomes will always be constrained by political realities. Through specific community evaluation, a governing body can distinguish between intelligent and unnecessary compromises that hinder the market-based instruments' performance (Henderson & Norris, 2008). Forward-thinking communities appreciate the fact that cost-effective regulation can make communities more competitive in the global market place compared to regulations that impose higher than necessary control costs (Tietenberg, 1990). A summery table of market-based

instruments with cost-savings potential has been created for the purpose of this literature review (See Appendix A).

Other Cost-Saving Initiatives

While market-based instruments are a new and effective way to generate cost-savings or new revenue, communities can also benefit from cost-saving initiatives that exist within organizations internal operations. Cost-savings that come from internal operations are considered to be the “low-hanging fruit” of sustainable development due to their high capability to generate cost-savings compared to their relative ease of implementation (SWR, 2014). Communities and other organizations that are looking for tangible ways to reduce their environmental impacts while maintaining a responsible budgeting system should first look at operational cost-savings as a starting point for their sustainable community plan implementation. The cost-saving initiatives that have been identified for this paper have been split into six categories: equipment and procurement; building materials and design; commuting; business travel; water; and waste.

Equipment and Procurement

By using existing equipment or new equipment as well as procuring more environmentally sustainable purchases, a community can generate cost-savings while addressing environmental impacts through electricity use and lifecycle impacts by developing cost-saving products such as: lighting retrofits, power management settings and energy efficient appliance upgrade (SWR, 2014).

Building Materials and Design

Industry Canada estimates that an organization can save up to 40% of their operating costs by investing in energy efficient upgrades (Industry Canada, 2011). Since energy can be a huge part of a community's operating costs, reducing the energy consumption through efficiency measures can reduce these costs significantly as well as the operational environmental impact. Natural Resource Canada's Energy Efficiency and Planning Guide outlines effective ways to increase energy efficiency through building materials and design including: building structure, heating and cooling, and use of space (Natural Resources Canada, 2012).

Commuting and Business Travel

The World Wildlife Foundation estimates that 2.7% of Canada's workforce currently telecommutes which translates into a national Greenhouse Gas reduction of 1.4 tonnes per commute, per year

(WWF, 2008). By investing in carpool initiatives or hybrid vehicle purchasing incentives, a community can reduce its carbon footprint without demanding additional capital. Other sustainable business travel upgrades such as fleet greening can also have a large impact. These projects have proven to affect employees' well-being as well as reduce carbon emissions. Business travel refers to avoidable travel that can be avoided by implementing a number of business travel options such as telecommuting and work from home policies; these policies can save up to \$10,000 per employee (Telework Research Network, 2014).

Water

Many communities are unaware of the actions they can take to conserve water without affecting the health or comfort of their residence (SWR, 2014). Water conservation can result in cost-savings through reduced water usage both operationally and within the community without affecting every day routines of daily living. There is also a large amount of electricity (up to 25-30%) used to distribute water by means of electrical pumps (Szychta, 2006); by conserving water there is substantial electricity savings as well. A wide range of water conservation initiatives are available depending on the community's current water distribution system.

Waste

Reducing waste can reduce tipping fees (where applicable) and can reduce costs directly through lower resource use (SWR, 2014). Wasteful businesses may be seen as inefficient or irresponsible by employees, customers and the public alike. Waste reduction techniques for a community can range from something as simple as enforcing double sided printing, to initiatives as complex as organic waste collection (SWR, 2014). The level of participation for these cost-saving initiatives will largely depend on the capabilities and feasibility of each community. A summary table of other initiatives with cost-savings potential has been created for the purpose of this literature review (See Appendix A).

Defining Cost-Savings within Context

One of the key arguments in favour of sustainable development trends is its ability to generate cost-savings and new revenue generation (Roseland & Henderson, 1998). However, these terms can mean something very different depending on the context. For a solar energy company, the cost-saving capability of installing a lease-to-own residence solar panel might mean energy independence or reduced energy rates after ten or twenty years, after an upfront investment. Similarly, many sustainability projects require a large up-front capital investment in order to generate greater savings in the future. This required capital investment leaves communities and

businesses hesitant to invest in sustainable projects regardless of their long-term value (Pitt & Randolph, 2009).

Cost-Savings

Cost-savings are actions that will result in fulfillment of the objectives of a purchase, at a cost lower than the historical cost or the projected cost (Alvarez, 2013). With the right tools and framework in place, a government can increase cost-savings and efficiencies while reducing their environmental impact and promoting a healthier building environment (Buchanan, 2010).

This thesis focuses on the cost-saving tools and frameworks that result in a short-term return on investment (five- year term) rather than projects that require large upfront financial investments. By focusing on direct policy changes and short-term cost-saving instrument usage, this thesis identifies many immediate sustainable solutions.

New Revenue Generation

New Revenue Generation is the process in which an organization markets a new product or service to generate income (Krmenc, 1991). While the term is commonly used in cost-effective business strategies, it fits more accurately in profit generation. The new revenue generation capabilities of sustainable governments and businesses have proven successful because the green economy is growing ten times faster than the general economy (Santa Monica College, 2012). It is for this reason that developing improved operational efficiencies is becoming a top priority for local city planning officials (Santa Monica College 2012).

While this project focuses on cost-saving policies and initiatives it also includes the policies that create new revenue generation, as the data collection portion of the research has also identified which market-based instruments result in cost-savings. The inclusion of these instruments is documented for the use of future research and presentation on small market municipal revenue generation.

While there are many ways that a city could develop cost-savings through the development of social partnerships or through participation in larger external partnerships, etc., this project will focus on cost-savings and new revenue generation from a municipal budgeting perspective. By focusing on municipal budgeting, one can clearly deduct specific actions that result in cost-savings rather than speculate on the effect of external conclusions.

Classifying Municipalities

The term *small municipalities* varies in definition depending on context and geographic location. Currently, there is no approved international definition for terms such as *urban, cities, municipalities or rural* (United Nations, 2013). This can make it difficult to understand which definition an author is using. In order to ensure accurate terminology for this paper, the author chose to select terminology that meets the following criteria:

1. The term encompasses all population clusters between 10,000 inhabitants and 100,000 inhabitants,
2. The term refers to a local area with municipal responsibilities, such as local administrations and,
3. The term is accepted to describe a population within the Province of Ontario.

This research study focuses on local areas in the geographic boundaries of the Province of Ontario. The areas have populations between 10,000 and 100,000 inhabitants. The following section will discuss the various definitions that could be used to meet this description and explain why the term *small municipalities* was chosen.

Central Metropolitan Areas and Census Agglomerations

A Central Metropolitan Area (CMA) is defined as a very large urban area with a core population of at least 100 000, combined with adjacent urban and rural areas (Parkinson & Roseland, 2002; Statistics Canada, 2011). This term does not meet the section criteria as it refers to a population greater than 10,000 to 100,000.

A Census Agglomeration (CA) is defined as an area with an urban core population of 10,000 to 99,999 and includes the residents within their commuting zone (Plessis et al., 2001; Rural Ontario Institute, 2013). While this term is accurate in terms of population, it does not refer to a centralized governing body. As a Census Agglomeration is used purely as a term for collecting census data (Ross, 2014) it does not meet the selection criteria.

Small and Smaller Cities

In the Province of Ontario a *smaller city* refers to all cities with a population between 10,000 and 100,000 (Government of Ontario, 2010; Immigration Canada, 2014; Rural Ontario Institute, 2013). This term meets the second and third criteria and meets the study's population requirements. However, it does not encompass *all* local areas with this population. When a municipality surpasses a population of 10,000, it can apply for city status. However, there are many communities

that meet the population criteria but have not yet applied for city status due to historical references or simply regional preference. Some communities such as the Town of Oakville and the Town of Milton are examples that would meet the selection criteria but not the definition of *small cities* (AMO, 2013).

Rural and Small Town Definition

While the Town of Oakville and the Town of Milton both have a population over 100,000, communities that are classified as a town in Southern Ontario generally have a population under 10,000 and are classified as *rural* or *small*. Rural or small towns are municipalities that have their own governing body and are located outside of the commuting zones of larger urban centers (Plessis et al., 2001). Rural towns can be further identified due to a greater distance from another major urban area (Rural Ontario Institute, 2013). While the criteria for this study aims to include all communities with governing bodies, the population focus of the study requires the exclusion of small and rural towns.

Local Municipalities

In Canada, the term *municipality* refers to “all authorities that have municipal responsibilities, such as local administrations, metropolitan and regional municipalities” (Quesnel & Hamel, 2007, p.5). This term meets the second and third term of the selection criteria and includes towns, townships, cities and regional county municipalities. While this terminology represents the geographic regions more accurately under consideration, it is important to further focus the research criteria in terms of population. While the terms *urban*, *rural* and *county* have been used in the past to classify the different types of municipalities, the Province of Ontario now recognizes three types of municipalities as identified in the Municipal Act (Service Ontario, 2001). Municipalities can be categorized into three areas: upper-tier municipalities, single-tier municipalities and lower-tier municipalities.

Which *tier* a municipality is placed depends on their responsibilities and the boundaries in which they operate. A single-tier municipality is defined as a separated municipality located within a county but is not considered part of the county for municipal purposes. Examples of this are: the City of Guelph, within Wellington County and the City of Brantford, located in Brant County (AMO, 2013).

An upper-tier municipality covers a wider territory including two or more lower-tier municipalities, usually a county or a regional municipality. These can also be known as metropolitan municipalities and include local municipalities such as The Region of Waterloo or Halton Region (Quesnel & Hamel, 2007; Service Ontario, 2001).

A lower-tier municipality can vary greatly in population. This tier is a smaller part of an upper-tier municipality that forms its own local municipality responsible for municipal public services. Examples of a lower-tier municipal can range from a village to a city including the City of Markham (pop. 301,709) and the Township of Carlow (pop. 892)(Quesnel & Hamel, 2007; Service Ontario, 2001).

According to the Municipal Act, a local municipality can be any single-tier or lower-tier municipality (Service Ontario, 2001). While this definition would meet the selection criteria, the range in population can vary from very small (Manitoulin Island pop. 10) to very large (The City of Toronto pop. 2,600 000). Therefore, it is necessary to make a more specific term to define the case criteria.

Small Municipalities

The following terms have given some insight to what terminology would be appropriate for the research selection criteria. From the terms *census agglomeration* and *small cities*, we have learned that the population distribution of 10,000 to 100,000 is a common division criterion within the Province of Ontario. From the term *small city* the researcher has found the closest term to the criteria both in population and in local governance (however the exclusive use of this term excludes other qualifying communities that use the term *county, town or township*). Therefore, a more encompassing term must be used.

The term *municipalities* encompass all self-governing communities within the Province of Ontario yet the term describes communities with a very large range in population. Even using the three official types of municipalities does not limit the term to the population range studied in this research. Therefore, a new term will have to be created to classify the case selection criteria.

Within the context of the Province of Ontario, this research will use the term *small municipalities* to refer to all areas with municipal responsibilities, such as local administrations, with an urban core population of 10,000 to 100,000 inhabitants and include the residents within their commuting zone. This term will be used to describe the case communities used in this study.

Chapter 3: Methods

Introduction

This chapter details the methodology chosen for this study. It explains the purpose and research questions, the research design for the study, the criteria used for case study selection, its data collection and data analysis techniques. Next, this chapter touches on the limitations and advantages of these research methods. Finally, it covers the reliability and validity of this study.

This thesis has been developed using a qualitative approach based on a multi-case study analysis of current sustainable community plans developed in small municipalities located in Ontario. Based on the data, an analytical comparison of the multiple cases has determined the capabilities of market-based instruments as a means to operationalize a Sustainable Community Plan.

Research Design

In order to conduct this research, the researcher found the *qualitative research approach* to be the most appropriate due to the nature of the available data and resources (Creswell, 2014). This study conducted an in-depth analysis of the use of MBIs in small municipalities. A case study research design was chosen as the most effective methodological approach in order to gather the amount of data necessary (Creswell, 2014; Yin, 2012). Rather than using a single data source, a multi-case study analysis using key informant interviews increased the level of accuracy of the research by comparing the results from one case study to other case studies similar in nature. Using a multi-case study analysis prompted this research to explore alternative possibilities (Creswell, 2014).

Case Study Selection

The community case studies that were used for this research paper were selected based on the following criteria:

- The community is implementing a sustainable community plan for over three years
- The community is using market-based instruments which are related to their sustainable community goals
- The community is within the geographic boundaries of the Province of Ontario
- The community is classified as a lower or upper tier municipality
- The community currently holds a central population between 10,000 and 100,000
- The community is willing to provide the necessary data to conduct the research study

The first criterion was chosen to gauge the municipality's level of *sustainability goal* implementation. By reviewing a sustainable community plan, the researcher had a better understanding of what cost-saving instruments are most likely used to meet their goals and which area cost-saving initiatives were utilized. The timeframe was based on the recommendations from the research partner, Lura Consulting, to give an adequate amount of time to see the results of cost-saving initiatives. The second criterion was chosen to better understand how market-based instruments have affected cost-savings. Ideally, the market-based instruments would be visible within a sustainability report; however, this was not always the case for small communities.

The geographic boundary of the Province of Ontario was chosen as the third criteria for two reasons. First, Ontario is home to 444 municipalities (Ontario: Ministry of Municipal Affairs and Housing, 2014) and therefore, increases the relevance of this study because concluding results and suggestions are applicable for a large sample. Secondly, by limiting this study to one province rather than the entire country, this study outlines specific details of the unique economic capabilities and restraints that come with the provinces financial incentives and funding opportunities. By focusing on upper and lower tier communities not only will the research be able to specialize on a marginalized population group but will be able to gather strong data for the rural focus of this paper. Finally, this study chose municipalities with populations between 10,000 and 100,000. This demographic has the potential for great cost-savings but it has not been as active in developing sustainable community plans and market-based instruments as municipalities with higher populations (Robinson & Gore, 2005).

Lura Consulting Inc. identified communities that fit the case community selection criteria based on past experiences with cliental. Lura is a sustainable consulting agency that specializes in formulating sustainable community plans. They have successfully completed or provide consulting services to over 50 sustainability or climate action strategies with an emphasis on communities (Lura, 2013). Communities selected for this case study analysis are: Halton Hills, Huron County, Frontenac County, King Township and Huntsville which will provide a balanced analysis of lower tier and upper tier municipalities.

Data Collection

Data collection was conducted in partnership with Lura Consulting by means of a qualitative case study research design. Lura identified past clients that met the case criteria. Since the selected case communities were former clients, Lura had great potential to connect the researcher with the most appropriate community partners for interviews to: collect necessary background information on

the community; determine the financial position of each organization; obtain updated statistics and status of current initiatives; and review the development of each community's MBIs. Lura offered a wealth of knowledge as to the focus and interpretation of each community's SCP.

As appropriate community partners were selected, data collection was conducted by creating case study overviews and then using key informant interviews (Creswell, 2014). Case study overviews were developed through information gathered from: each municipality's sustainable community plan, information available on case community official websites and any other relevant documents. The interviews were mostly conducted face-to-face, unless scheduling or travel restraints limited the interview process to telephone. The interviews were conducted as a means of collecting in-depth information about the selected community and to confirm public information gathered externally for the case study overview.

To prepare for key informant interviews the researcher conducted the followings steps to prepare accordingly for each community partnership member:

1. Gather and review existing data relevant to the study for each case community.
2. Determine what information is still required from each community.
3. Determine which community partner would best serve as a possible key informant.
4. Develop an interview tool.
5. Gauge the interest of identified possible key informants.
6. Conduct interviews with responsive parties.
7. Compile and organize key informant interview data.

(UCLA, 2012)

Information on each community was collected and reviewed to identify what information already existed publically, either from the municipalities themselves or third-party organizations. The process also identified what additional information was required from key informants. Lura Consulting helped determine which community partners best served as an initial point of contact and key informant.

In order to initially gauge the interest of the selected participants, Susan Hall of Lura contacted the community partners via email (Appendix B). The communities that responded positively to the email were given a second email message explaining the project in more detail accompanied with a

consent form if the selected communities were willing to participate (Appendix C and D). After this phase face-to-face interviews or telephone interviews were arranged.

In order to better analyze collected data, an interview tool was created to improve data organization. The interview tool contained a script for the interviewee outlining the purpose of the study, explaining who was involved in this process, what will happen to the collected data and how it could impact the community (UCLA, 2012). The interview process usually included multiple key informants in order to maximize the level of information gathered. Each key informant group was given two documents in advance of the interview. The first document introduced the research study, asked initial questions, defined key terminology for clarification, and concluded by thanking them for their time and explaining next steps (Appendix E). The second document provided a list of top cost-savings or new revenue generating initiatives commonly used for communities with similar demographics of the case communities (Appendix F).

This list was compiled from information gathered through the literature review (See Appendix A), suggestions from Lura Consulting and initiatives listed in each community's sustainability plan. From the literature review, multiple market-based instruments were identified and categorized based on the sustainability topics most commonly found in a SCP and then cross referenced with the types of market-based instruments. The same process was done for other cost-saving initiatives (See Appendix A).

Once this list was created it was presented to experts at Lura Consulting to see which market-based instruments the researcher was most likely to find when interviewing each municipality, choosing approximately five options from each category (See Table 29). Some sustainability topics included a greater number of listed MBIs such as *Land-Use or Building*, which had eight listed MBIs. Others such as: *Civic Engagement or Social Infrastructure*, *Housing or Employment*, and *Safety or Crime* had no notable MBIs and were represented with an all-encompassing field. Experts from Lura also suggested including an *Other* option for each sustainability topic in order to capture MBIs that did not fall under the previously selected categories.

By developing each community case (including interviews), three new market-based instruments were found and included in Appendix F as a final assessment. Below is a list of MBIs and other cost-saving mechanisms found through community case study development:

Transportation

- Drive-Thru Carbon Footprint Charge³

Energy

- Anti-Idling Policies^{4,5}

Land Use

- Sustainable Official Plan^{6,7}

Additional new revenue generation initiatives were also discovered through the interview process and added to the full matrix of NRG initiatives including:

- Municipally run Farmers Markets⁸
- Grant Funding opportunities⁹ including
 - Gas Tax Funding
 - Green Municipal Fund

On occasion, the key informants referred the researcher to other municipal employees who validated the gathered information. At the conclusion of the data collection phase, an email was sent out to the participants thanking them for their contribution (Appendix G). Upon completion of the research study, a copy was given to all participating case communities.

Data Analysis

Key information from the case study interviews was then organized and compiled for data analysis. The compilation involved transcribing interviews, typing field notes and sorting/arranging various data into themes and descriptions (Creswell, 2014). Once this compilation was complete, inductive and deductive coding of gathered materials was conducted in order to gather relevant data. From the data collection, a community profile was created on each case community outlying information such as the community's demographics, introducing the sustainability plan, cost-savings or NRG initiatives identified in each community plan, a paragraph with highlights of the interviews and a table summarizing the findings of each interview.

³ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p 5

⁴ Town of Huntsville. (2010) The Unity Plan: Huntsville's Guide to a Sustainable Future
http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

⁵ Halton Hills. (2013) Imagine Halton Hills.
http://www.haltonhills.ca/initiatives/pdf/Studies/SustainabilityStudy/1_Imagine%20Halton%20Hills%20Sustainability%20Strategy_Final.pdf

⁶ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

⁷ Interview with Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, Huron County, November 5, 2014

⁸ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

⁹ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

Cross Case Comparison

Once each community profile was completed, a cross case comparison was developed to identify similar trends across all communities. This section included an overview of cost-saving initiatives using market-based instruments and new revenue generating initiatives.

Limitations and Advantages

Every research study has its benefits and limitations based on the method selected; when the research was conducted; and which sample was chosen. The following section will address the benefits and limitations.

Method Benefits and Limitations

There are a number of limitations regarding the case study method of research collection. Yin (2012) notes that case studies can be considered a less desirable form of inquiry because of the lack of rigor. Case study researchers have at times been sloppy, ignoring their systematic procedures and inputting their own biases into their research (Yin, 2012). Case studies can also take a very long time resulting in massive documents making relevant data interpretation difficult (Yin, 2012).

This research has the advantage that the research partner, Lura Consulting, has already identified the case communities. Lura was familiar with each case and provided input regarding what content was relevant and what could be cast aside. The partnership not only expedited the data collection period but also limited bias (at least in the data collection phase). Furthermore, since this case is specifically addressing the market-based instrument usage and results, there was a good chance that these lengthy case studies will be easy to analyze.

Using key informant interviews can result in challenges reaching and scheduling face-to-face interviews with respondents. It can also be difficult to generalize the results of the study for a larger population (or other communities) unless many interviews take place (UCLA, 2012). The researcher reduced the limitation by interviewing key informants from five different communities in order to find common themes with each community. When scheduling face-to-face interviews became an issue, telephone interviews sufficed.

Time Limitations and Advantages

The implementation of MBIs within SCPs are relatively new to most Canadian communities even though the instruments have existed since the 1920s (Pigou, 1920). The limited use of MBIs constrained the ability to obtain long-term data of the cost-saving potential of MBIs. Regardless of

the limitations, the intended research period proved sufficient to gather the current state of knowledge for the research questions, benefiting the future development of this subject.

Sample Limitations and Advantages

Due to the variances in provincial tax incentives, tax regulation, policy-making autonomy and political precedence for SCPs, this study limited its sphere of relevance to small municipalities within the boundaries of the Province of Ontario and is therefore not necessarily applicable to communities outside of this geographic area.

Since this research study only focused on small municipalities, it proved difficult to find long-term uses of MBIs because the implementation of SCPs are not as common among small communities. Also, the findings of this study do not necessarily reflect larger communities (population 100,000+) and their ability to use MBIs to generate cost-savings. Finally, as this research study focused on local municipalities, it cannot necessarily reflect the use of MBIs for other levels of government or how they might be used in the business sector.

By limiting the sample of this study to small municipalities in Ontario, the study provided unique research and data that added to the understanding of the ability of small communities to use MBIs. This focus ensured maximum participation from the selected case study communities and from the partnership with Lura Consulting.

Reliability and Validity

The study used reliability to ensure that “the researcher’s approach is consistent across different researchers and different projects” (Creswell, 2014, p. 189). To address the issue of reliability, the study documented the procedures of the case study and documented as many steps in data collection as reasonable. By following these steps, transcripts could be traced back to ensure that no errors occurred during transcription. These steps also ensure that no *drifting* of key terms or definition of codes occurred during the coding process (Creswell, 2014). Finally, the results of the collected data were crosschecked with evidence gathered by other similar researchers in the field to verify consistency in results. This stage was completed by comparing collected data in the case study communities with similar case communities as well as data comparison with known literature to ensure stability of the researcher’s examination (Creswell, 2014).

This study used validity to determine whether the findings are accurate from the standpoint of the researcher, the participant, and the study readers (Creswell, 2014, p. 189). To address validity, the

research study incorporated the use of several validity strategies to ensure the research findings were accurate. The research study incorporated a *member checking* validity strategy, which included a representative from the partnership, Lura Consulting to review the case studies ensuring consistencies between interviewees. By sharing the final report with member parties, accuracy of all data collected, interpreted and analyzed ensured the validity of the research study. The researcher also used triangulation of different data sources of information to ensure validity. This examination resulted in a coherent justification of key themes within the research, verifying the validity of the study (Creswell, 2014).

Internal validity was important for the study because the research attempted to make a cause-effect relationship between cost-savings and MBI implementation (or other mechanisms) (Creswell, 2014). Threats that limited the researcher's ability to draw the correct conclusion from the data were identified. By responding early to the threats, they were minimized.

External validity was equally important for the study because there was only a small case study sample size for the data collection (Creswell, 2014). It was important for the researcher to not make incorrect conclusions by generalizing the findings from the small sample to larger municipalities or municipalities outside of the province. As a means to address this concern, the research limited the case study collection to only include municipalities with a population between 10,000 and 100,000 inhabitants that are within the geographic boundaries of the Province of Ontario. As well, the study only inductively concluded the possibility of cost-savings rather than generalizing all municipalities in this region.

Chapter 4: Results

Introduction

This chapter outlines the results of the data collection phase for the research project. The results are first explained through a comparative matrix comparing results of each case community and by evaluating the difference between the case communities Sustainable Community Plan and their actual on-the-ground initiatives.

The results of this study identify the potential for market-based instruments and other initiatives in generating cost-savings or new revenue generation for small municipalities within the Province of Ontario when operationalizing their sustainable community plans. These results further validate the inclusion of market-based instruments as a means of revenue generating or cost-savings, given their potential financial effectiveness.

4.1 The Unity Plan: Huntsville's Guide to a Sustainable Future

Huntsville has opted to create a community-based sustainability plan as a working document created by a group of community members, stakeholders, partners and the Town.¹⁰

Introduction to the Region

The Town of Huntsville is the largest community in the Muskoka Region of Ontario, located 215 kilometers north of Toronto.¹¹ Huntsville has a population of 19,056 permanent residences and an urban core of 7,197.^{12,13} The Town's economy is based on summer tourism with sales and service positions as the leading community industry.¹⁴ The local government is officially named the Town of Huntsville and is a lower-tier municipality.¹⁵



Huntsville Sustainability Strategy

The Town of Huntsville developed their sustainability plan, *The Unity Plan: Huntsville's Guide to a Sustainable Future*, in 2009 as a result of a Federation of Canadian Municipalities grant.¹⁶

The Unity Plan is designed to be a long-range plan to address environmental, social/cultural and economic issues in Huntsville, put action plans in place and monitor its effect over time. The plan builds on previous work the community had already done through the Official Plan, Strategic Plan, Community Master Plan, Business Retention and Expansion Strategy, Events and Marketing Programs and others. The Unity Plan is just the beginning – it is intended to be a living document that will be reviewed and revised as progress is made.¹⁷

¹⁰ Town of Huntsville. (2010) *The Unity Plan: Huntsville's Guide to a Sustainable Future* http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

¹¹ "Sustainability – Town of Huntsville," *Town of Huntsville*, www.huntsville.ca (Accessed Oct 2, 2014)

¹² [Town of Huntsville Census Profile](#) 2011 Census Data. Statistics Canada.

¹³ Huntsville (Population Centre) Census Profile. 2011 Census Data. Statistics Canada.

¹⁴ National Household Survey. 2011 Census Data. Statistics Canada.

¹⁵ Ontario Ministry of Municipal Affairs and Housing. (2014) <http://www.mah.gov.on.ca/Page1591.aspx>

¹⁶ Town of Huntsville. (2010) *The Unity Plan: Huntsville's Guide to a Sustainable Future*. http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

¹⁷ Town of Huntsville. (2010) *The Unity Plan: Huntsville's Guide to a Sustainable Future*, p.i. http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

The 64 page document lists several reasons for developing a sustainability plan including:

- Ensuring eligibility for the Federal Gas Tax funding
- Opening doors for other funding opportunities
- Providing a framework for municipal decision making
- Providing leadership in the District
- Implementing sustainable change¹⁸

The following table summarizes The Unity Plan’s structure:¹⁹

Table 3 - The Unity Plan, Town of Huntsville

Name of Region	Huntsville
Sustainable Community Plan	The Unity Plan: Huntsville’s Guide to a Sustainable Future Plan
Year Adopted	2009
Payback Period	Approximately Seven Years ²⁰
Component	
Preface	Executive Summary, Acknowledgements, Letter from Mayor, Letter from Working Group
1. Introduction	Explains Huntsville’s vision, focus and sustainability principles
2. About The Plan	2.1 Defining Sustainability 2.2 Developing the Unity Plan 2.3 How It All Fits Together 2.4 Community Input and How it has Shaped the Unity Plan
3. Our Sustainability Strategy	3.1 Goals Goal #1: Environmental Protection Goal #2: Municipal Operations and Infrastructure Goal #3: Energy Conservation Goal #4: Transportation Goal #5: Land Use Planning Goal #6: Social Well-being Goal #7: Education Goal #8: Public Health and Health Care Goal #9: Healthy Active Community Goal #10: Arts, Culture, and Heritage Goal #11: Economic Development Goal #12: Affordable Housing
4. Implementation and Monitoring Framework	4.1 Unity Plan Organization Chart 4.2 Leadership and Resources 4.3 Accountability 4.4 Financial Considerations 4.5 Unity Review 4.6 Community Collaboration, Engagement and Outreach

¹⁸ Town of Huntsville. (2010) The Unity Plan: Huntsville’s Guide to a Sustainable Future http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

¹⁹ Town of Huntsville. (2010) The Unity Plan: Huntsville’s Guide to a Sustainable Future

²⁰ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

Formation of the Sustainable Community Plan and Timeline

The formation of The Unity Plan included contributions from many parties both within the community government and from the community including:

- A tasked working group
- The Members of Council
- Environment Committee Members
- Town of Huntsville Staff Support
- The Green Plan Task Force
- The Accessibility Advisory Committee
- Over 1,200 community members
- The Lura Consulting Team²¹

The following table summarizes key dates in the development and implementation of the plan²²

Table 4 - The Unity Plan Timeline

The Unity Plan Timeline	
2009	Town of Huntsville was awarded a grant through the Federation of Canadian Municipalities to develop a sustainability plan
2010	Stakeholders collaborated to prepare the Unity Plan, releasing the final version September 3, 2010
2010-2012	Six working groups implemented projects related to the Unity Plan, reporting to the Unity Plan Implementation Committee (UPIC), a Council committee
2012	The UPIC made changes to the way the Unity Plan is implemented; working groups were replaced with project-based groups. The UPIC is replaced by the Sustainability Committee, a Council committee
2013	The first community and corporate sustainability projects were identified
2014	The implementation of the Unity Plan continues

The most current version of the Unity Plan does not offer a timeline for how or when the sustainable projects might occur instead, referencing the sustainability plan as Huntsville’s guide to a sustainable future. The Unity Plan is a long range plan intended to “address environmental,

²¹ Town of Huntsville. (2010) The Unity Plan: Huntsville’s Guide to a Sustainable Future http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

²² “Sustainability – Town of Huntsville,” *Town of Huntsville*, www.huntsville.ca (Accessed Oct 2, 2014)

social/cultural and economic issues in Huntsville to put action plans in place and monitor the effect of these actions over time.”²³ As the Unity Plan is intended to be a living document, it will be reviewed and revised as progress is made.²⁴ The 2014 Conservation and Demand Management Plan have an energy reduction target to reduce energy consumption to 2011 levels by 2019 (5-year period 2014-2019).²⁵

Next Steps for Sustainability

After the formulation of the sustainable community plan, Huntsville has a number of action items for the implementation of the plan including:

- An implementation committee that reports to council
- A series of implementation teams that:
 - Are comprised of community organizations and individuals
 - Include Town staff as resources
 - Work together to develop detailed action plans for the goals and facilitate their implementation
 - Work together to engage the community
- A process to engage the community in the plan
- A monitoring and reporting framework to make sure the plan stays on track
- Identification of funding opportunities²⁶

Including the identification of funding opportunities into the implementation phase indicates that the community is interested in the potential benefits of MBIs and other cost-saving initiatives.

Top Sustainability Challenges and Focuses for the Region

One of the bigger challenges for the region was to operationalize their sustainable community plan after it was completed. Nearly a year passed from the plan’s completion to when Huntsville began to see actual change. The momentum that took place is accredited to Huntsville hiring their first Sustainability Coordinator, Rebecca Francis. When this position was filled Huntsville began to act on their sustainability plan.²⁷

²³ Town of Huntsville. (2010) The Unity Plan: Huntsville’s Guide to a Sustainable Future, p. i.

http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

²⁴ Town of Huntsville. (2010) The Unity Plan: Huntsville’s Guide to a Sustainable Future

http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

²⁵ The 2013 Sustainability Annual Report (Huntsville)

²⁶ Town of Huntsville. (2010) The Unity Plan: Huntsville’s Guide to a Sustainable Future

http://www.huntsville.ca/en/townhall/resources/unityplan_finaldraft.pdf

²⁷ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

Energy has been another area where Huntsville is focusing their sustainability efforts. Municipalities have been asked to create a conservation demand management plan by the provincial government and moving forward, the Huntsville Town Council members have set an ambitious target for conserving energy. A major challenge for the office will be their objective of meeting the energy conservation target over the next five years.²⁸

Currently, Huntsville's final focus area is employee and staff involvement. The sustainability office is constantly working to create a culture of sustainability within the corporation and its staff members, through educational campaigns, and promotions. Two recent initiatives involved sustainable printing techniques and directing staff to power down at the end of the day.²⁹

Pre-Interview Findings

By analyzing both Huntsville's *Unity Plan* and *The Sustainability Annual Report* from the past three years, some operational cost-saving initiatives as well as new revenue generation focus are currently being pursued or in the plan to initiate in the future. No market-based instruments were identified in the pre-interview findings.

There are a number of cost-savings initiatives that Huntsville is currently pursuing that are included in their latest annual report. Some of the more major initiatives include the following:³⁰

- Investing in MicroFit Solar Voltaic Panels (p. 12)
- Creating central waste diversion depots at the Town Hall (p. 16)
- Vermi-composting at two municipal buildings (p. 17)
- Printing reduction efforts and challenges (eliminating colour printing and setting default printer settings to double sided) (p. 19,22)
- Powering down computers and lighting (p. 23)
- The development of an active transportation strategy (p. 38)
- Hybrid Vehicle purchasing³¹ (p. 10)
- Energy retrofit program³² (p. 10)

While few areas of Huntsville's annual reports or *Unity Plan* mentioned possible initiatives of new revenue generation, it was mentioned that Huntsville would look at attracting green industries and businesses to the area as part of their 2011 annual report³³

²⁸ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

²⁹ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

³⁰ The 2013 Sustainability Annual Report (Huntsville)

³¹ The 2012 Sustainability Annual Report (Huntsville)

³² The 2011 Sustainability Annual Report (Huntsville)

Interview Findings

The following three tables identify the findings from the interview with the Huntsville Sustainability Coordinator, Rebecca Francis. From the interview, it was noted that the Town is promoting many cost-saving initiatives and MBI's that come from other levels of government or from private organizations.³⁴

Table 5 - Town of Huntsville's Top Operational Cost-Saving Initiative

Equipment and Procurement	<ul style="list-style-type: none"> • Sustainable Printing Efforts • Environmentally Friendly Product Procurement (under review) • Buying Local Policies (under review)
Building Materials and Design	<ul style="list-style-type: none"> • Some town buildings have sustainable design components but no buildings that are LEED certified • Canada Summit Centre has had a number of sustainable upgrades and renovations including <ul style="list-style-type: none"> ○ Solar hot water ○ Thermostat control and temperature controlling ○ High efficiency windows ○ Weather stripping
Commuting and Business Travel	<ul style="list-style-type: none"> • Business Travel Policy <ul style="list-style-type: none"> ○ Promotes carpooling and sets car rental restrictions • Some trails but no Transportation Management Plan • Bicycle promotion • They have purchased one Hybrid Vehicle
Water	<ul style="list-style-type: none"> • None Applicable
Waste	<ul style="list-style-type: none"> • E-Waste Recycling is contracted to a local company • Vermicomposting in two municipal buildings • Waste Diversion Depots at Town Hall
Energy, Air and Climate Change	<ul style="list-style-type: none"> • They have a Conservation Demand Energy Plan • Energy Retrofit is planned for next year • Converted streetlights to LED • IT Department purchased energy efficient equipment • There are currently six MicroFit systems
Other	<ul style="list-style-type: none"> • Hiring Sustainability Personnel • Encourage Natural Areas/Ecology <ul style="list-style-type: none"> ○ There is a tree-planting subsidy available

³³ The 2011 Sustainability Annual Report (Huntsville) page. 9

³⁴ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

Table 6 - Town of Huntsville's Top Cost-Saving Market-Based Instruments

Transportation	<ul style="list-style-type: none"> • Anti-idling by-law as a fine
Water	<ul style="list-style-type: none"> • Performed at a District level
Waste	<ul style="list-style-type: none"> • Performed at the District level but the Town does let people know about other MBI's from other areas (Provincial or private sector) that exist • User-Pay Garbage Disposal System
Energy, Air and Climate Change	<ul style="list-style-type: none"> • Anti-Idling Policies
Land-Use or Building	<ul style="list-style-type: none"> • None Applicable
Food Security	<ul style="list-style-type: none"> • The Town provided property to develop a community garden • Food Co-op starting in Huntsville but is located outside of the Town's efforts • The Town provided property to start a farmer's market but the market itself is not run by the municipality
Local Economy	<ul style="list-style-type: none"> • The Town provides a \$2,500 grant for students and environmental research connected to the Unity Plan. This grant has been awarded twice in the past two years and is under review
Ecological Diversity	<ul style="list-style-type: none"> • None to note
Civic Engagement or Social Infrastructure	<ul style="list-style-type: none"> • There is a planning grant aimed at rezoning properties to certain high level urban densification development standards
Housing or Employment	<ul style="list-style-type: none"> • None to note
Safety or Crime	<ul style="list-style-type: none"> • None to note

Table 7 - Town of Huntsville's Top New Revenue Generation Initiatives

Energy	<ul style="list-style-type: none"> • None to note
Eco-Tourism	<ul style="list-style-type: none"> • No eco-tourism plan but there is sustainable events included in Tourism capabilities
Green Economy	<ul style="list-style-type: none"> • The town is creating an innovation incubator in connection with the University of Waterloo with a sustainable focus on the building • There is a shopmuskoka.com campaign but not specifically for Huntsville
Sustainable Agriculture	<ul style="list-style-type: none"> • The farmers market is not owned or operated by the Town • There is a buy-local group called the CashMob which goes to local shops but this is not Town run
Grant Funding	<ul style="list-style-type: none"> • They receive gas tax funding • They have received funding from the Green Municipal Fund

Top Local Story

A large part of the Huntsville Unity Plan is based on the efforts of community champions. As Rebecca Francis states:

“We do what we can corporately, but [the success of the Unity Plan] relies on members of the community to champion projects. Whatever they are interested in; there is a process for that.”

A noted project refers to local food. The municipality owns Orchard Park and as the name suggests the public park was once an old apple orchard and still holds a number of apple producing trees. The park is situated at the very end of one the community’s major trails and was seemingly underutilized. A group of citizens saw greater potential for this area and proposed the space be developed to a state where they could host an annual apple picking festival. The Town approved the idea, which included a plan to prune some trees and replace others to make space for new trees. The group also raised a small amount of money to pay for improvements to the park and has since held two annual apple-picking festivals (Applefest) with increasing attendance and success. During Applefest, local community members come and pick their own apples, and learn about the different ways to make use of apples (jellies, jams, sauces, etc.). The festival appears to be growing into a strong community event that could be a model for other areas of the community.

While this project was not specifically intended to be a cost-saving initiative, the entire project did not cost the community anything and actually generated a small amount of capital. The creation and success of the popular festival would not have been possible without the introduction of the Unity Plan. While this is a small example of how the Unity plan can create new projects without added cost to the municipality, it has created a stronger sense of social and environmental sustainability that will serve as the basis for larger projects to come.³⁵

³⁵ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

4.2 Imagine Halton Hills

Imagine Halton Hills is an Integrated Community Sustainability Strategy that focuses on a long-term community vision to the year 2060. The plan is the end product of successful community engagement with various community stakeholders led by the Town Sustainability Advisory Committee in collaboration with the Town.³⁶

Introduction to the Region

While the Town of Halton Hills is located on the outer edge of the Greater Toronto Area, much of the municipality remains rural. The community is comprised of several smaller towns, villages and rural settlements that together fall under the Town's jurisdiction. Halton Hills is one of four municipalities that make up the larger Halton region, which includes: Halton Hills, Milton, Burlington and Oakville.³⁷ Of the 502,000 people living in the Halton Region, approximately 59,000 live in Halton Hills.³⁸ Halton Hills has an economy based on a variety of different sectors ranging from agriculture to health care.



The two most prominent business sectors have been identified as Professional and Business Services (20%) and Retailers (17%).³⁹ The official name of the community is the Town of Halton Hills and it is a lower-tier municipality.⁴⁰

Halton Hills Sustainability Strategy

In 2013, the Town of Halton Hills developed an Integrated Community Sustainability Plan, entitled *Imagine Halton Hills*. This ICSP comprised from their previous 2007 sustainable community plan

³⁶ Halton Hills, *Community Sustainability Strategy*, <http://www.haltonhills.ca/initiatives/Sustainability-Strategy.php> (Accessed October 8, 2014)

³⁷ Halton Hills. (2013) *Imagine Halton Hills*. http://www.haltonhills.ca/initiatives/pdf/Studies/SustainabilityStudy/1_Imagine%20Halton%20Hills%20Sustainability%20Strategy_Final.pdf

³⁸ Halton Hills Census Profile. (2011) Census of Population. Statistics Canada (Accessed October 8, 2014)

³⁹ Halton Hills. (2012) *Halton Hills Economic Development Strategy* <http://www.haltonhills.ca/initiatives/pdf/masterplans/EDO/ConsultationsReportNovember2012.pdf>

⁴⁰ Ontario Ministry of Municipal Affairs and Housing. (2014) <http://www.mah.gov.on.ca/Page1591.aspx>

entitled the *Halton Hills Green Plan*.⁴¹ The community prepared the plan including its strategy, vision, focus areas, goals and indicators. Led by the Town's Sustainability Advisory Committee as well as the Town's Steering Committee, they received input from many community experts and champions in all areas of sustainability.⁴² The document serves as a guide for Halton Hills vision 50 years from now. The vision for their sustainable future is as follows:

*"In 2060, the urban and rural communities of Halton Hills balance economic prosperity with a deep commitment to the natural environment, while retaining viable local agriculture and small-town feel, and being socially equitable, culturally vibrant and strongly connected."*⁴³

The 111-page document lists the following reasons for developing a sustainable community plan:⁴⁴

- Allows for proactive planning over the long-term to prepare for and address challenges and long-term risk
- Provides an opportunity to envision our future without being constrained by current and short-term trends, priorities, and ways of thinking
- Allows the community to shape shorter-term plans and strategies
- Focuses on improving quality of life
- Improves the health of the community's natural environment, society, culture, and economy
- Empowers the municipality to address current and future needs and to shape the future
- Establishes a shared vision, focus areas, and goals that can guide individuals and businesses in their behaviours and operations
- Reduces operating costs for the municipality and businesses
- Better positions the community to access external funding sources

⁴¹ Halton Hills. (2013) *Imagine Halton Hills*.

http://www.haltonhills.ca/initiatives/pdf/Studies/SustainabilityStudy/1_Imagine%20Halton%20Hills%20Sustainability%20Strategy_Final.pdf

⁴² Halton Hills. (2013) *Imagine Halton Hills*.

http://www.haltonhills.ca/initiatives/pdf/Studies/SustainabilityStudy/1_Imagine%20Halton%20Hills%20Sustainability%20Strategy_Final.pdf

⁴³ Halton Hills. (2013) *Imagine Halton Hills*, p. 16.

http://www.haltonhills.ca/initiatives/pdf/Studies/SustainabilityStudy/1_Imagine%20Halton%20Hills%20Sustainability%20Strategy_Final.pdf

⁴⁴ Halton Hills. (2013) *Imagine Halton Hills*.

http://www.haltonhills.ca/initiatives/pdf/Studies/SustainabilityStudy/1_Imagine%20Halton%20Hills%20Sustainability%20Strategy_Final.pdf

The following table summarizes Imagine Halton Hills structure⁴⁴:

Table 8 - Imagine Halton Hills Structure

Name of Region	Halton Hills
Sustainable Community Plan	Imagine Halton Hills
Year Adopted	2013
Payback Period	Twenty years ⁴⁵
Component	
Preface	Executive Summary, Acknowledgements, Messages from Mayor and Steering Committee
1. Our Halton Hills	About the community, the history with sustainability, explaining the importance of sustainable development and community values
2. Introduction	The community sustainability strategy, defining sustainability, the strategy by committee and how it will function
3. Imagine Halton Hills in 2060	The community vision and the four pillars of sustainability
4. Cultural Vibrancy	Sense of community, youth, arts & culture, parks & trails, recreation & sports, heritage and libraries
5. Economic Prosperity	Diversified economy, food and agriculture, tourism, balanced tax base, knowledge-based industry, creative sector, live-work opportunities, green economy, infrastructure
6. Environmental Health	Natural Heritage, Water, Air Quality and Green House Gas Emissions, Land Use, Biodiversity, Natural Resources, Consumption and Waste Generation, Energy
7. Social Wellbeing	Housing, Transportation, Seniors, Social and Health Services, Poverty, Comfort and Safety, Learning
8. Moving Forward	A commitment to moving forward, strengthening our community capacity, measuring and reporting, engaging the community, getting involved
Glossary and Appendices	Our Journey to Sustainability – Summary of Community Collaboration

Plan Priorities and Focus Areas

Halton Hills is using the four pillars of sustainability that they define as: Cultural Vibrancy, Economic Prosperity, Environmental Health, and Social Wellbeing. Using these four pillars has shown how Halton Hills focus areas fall under at least two pillars of sustainability with over half falling under three or four of the pillars.

⁴⁵ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

The following table summarizes key dates in development and implementation of the plan

Table 9 - Imagine Halton Hills Timeline

Imagine Halton Hills Timeline	
2007	The Mayor and Council establish a multi-stakeholder Mayor's Green Plan Task Force
2008	The Task Force prepares the town's first Green Plan to demonstrate local leadership on the environment including 70 practical recommendations for improvement
2008	Halton Hills Council creates the Office of Sustainability to champion sustainability
2009	Town Council establishes the town Sustainability Advisory Committee
2013	Imagine Halton Hills is approved by Council, developing from the success of the Green Plan
2014	To date, action has already been taken on 91% of the Green Plan's 70 recommendations. This has translated into reduced operating costs, more efficient resource use, water conservation, cleaner air and strong community partnerships.

Pre-Interview Findings

Halton Hills community sustainability strategy *Imagine Halton Hills* offers a wealth of information regarding the cost-savings and new revenue generation initiatives currently pursued by the Town. By analyzing this document, as well as the 2007 *Green Plan*, and various consultation reports, the researcher was able to identify several operational cost-savings and new revenue generation initiatives as well as market-based instruments used by the Town as part of their sustainability strategy. There was also a large amount of future recommendations that would also result in cost-savings or new revenue generation.

There are a number of cost-savings initiatives that Halton Hills is currently pursuing that are included in the latest versions of their sustainability plan. Some of the major initiatives include the following:⁴⁶

- Investing in Green Building Practices (p. 38)
- Investing in building retrofits or sustainable renovation, including green roofs and geothermal (p. 54)
- Green parking lot upgrades including:
 - Storm water runoff

⁴⁶ Halton Hills. (2013) *Imagine Halton Hills*.

- LED lighting
- An electric vehicle charging station (p. 59)
- They have invested in human transportation plans as well as a transportation master plan (p. 60, 71 and 87)
- They have participated in the Halton Region Rain Barrel program (p. 67)
- They have developed a smart commute program (p. 70)
- They have purchased a hybrid vehicle and invested in bio-diesel vehicles (p. 79)
- And have invested in renewable energy/energy conservation (p. 80)

Several market-based instruments were identified within Imagine Halton Hills as well. The town is preparing a new green building standard which mandates that all new buildings owned or operated by the Town will consider such things as: energy, water conservation, community design, air quality, natural environment, waste management, innovative and other green features and communication.⁴⁷ Halton Hills has a very strong waste diversion program that includes collecting recycling, composting and e-waste.⁴⁸ Halton has invested in energy reduction policies, regulations & planning and set strong goals to further invest in this area.⁴⁹ Finally, Halton supports policies and rebate programs offered by other levels of government such as the Halton Region Toilet Rebate Program as part of their water reduction strategy⁵⁰ and encourage strong provincial policies on near-urban agriculture as part of their buy-local strategy.⁵¹

New revenue findings have been captured by the sustainability plan and include: shop local campaigns⁵², sustainable tourism⁵³, attracting and promoting a green economy⁵⁴, investing in renewable energy generation⁵⁵, live-work developments as well as promoting and providing high-density, mixed use facilities to accommodate local business.⁵⁶

⁴⁷ Halton Hills. (2013) Imagine Halton Hills, p. 38, 71, 72 and 80.

⁴⁸ Halton Hills. (2013) Imagine Halton Hills, p. 77.

⁴⁹ Halton Hills. (2013) Imagine Halton Hills, p. 79-80.

⁵⁰ Halton Hills. (2013) Imagine Halton Hills, p. 67.

⁵¹ Halton Hills. (2013) Imagine Halton Hills, p. 46.

⁵² Halton Hills. (2013) Imagine Halton Hills, p. 43.

⁵³ Halton Hills. (2013) Imagine Halton Hills, p. 48.

⁵⁴ Halton Hills. (2013) Imagine Halton Hills, p. 58.

⁵⁵ Halton Hills. (2013) Imagine Halton Hills, p. 80.

⁵⁶ Halton Hills. (2013) Imagine Halton Hills, p. 55.

Halton Hills Exemplary Environmental Efforts⁵⁷

The 2007 Halton Hills Green Plan lists the 3E's (Exemplary Environmental Efforts) most of which are cost-saving operational activities. The cost-savings include:

Town Owned Facilities

- Installation of innovative features such as waste heat recovery systems, lighting dimmer systems, demand side load reduction systems and timer/motion sensor switches
- Lighting retrofits to energy efficient lights in all municipal facilities
- Installation of natural gas dehumidification equipment in place of traditional electric units
- Conversion of hot water tanks from electric to natural gas and reduction of temperature to 55 degrees Celsius, 130 Fahrenheit
- Installation of energy efficient features such as programmable thermostats, sunscreens and reflective film on windows in strategic locations exposed to direct sunlight to reduce heat gain as well as the installation of high-efficiency energy refrigeration equipment
- Installation of waterless urinals to help save 100,000 liters (26,425 gallons) of water annually
- Use of HeatSaver, a liquid solar blanket for indoor swimming pools
- Staff carpooling when traveling off site to the same destination
- Use of Leadership in Energy and Environmental Design (LEED) principles in the design of new buildings

Recreation and Parks Programs

- Solar Light Trial and on-going measures to reduce hydro consumption for park lighting
- Reduced mowing areas along the shore-line of Fairy Lake to encourage natural areas
- Infrastructure Services
- L.E.D. Traffic Signal Change out Program
- Salt Management Plan to reduce the use of road salt in winter
- Reuse of construction materials such as concrete, catch basins and asphalt
- Use of bio-diesel fuel in off-road vehicles and equipment
- Ask for and consider proposals for alternative fuel vehicles in tender documents
- Increased aerating, fertilizing and top dressing programs to reduce the amount of pesticides used for grass maintenance

Libraries

- Reduced lighting in the summer months
- Recycling of used paper in printers and for scratch pads

⁵⁷ Halton Hills Green Plan, 2007

Halton Hills Hydro

- Compact fluorescent light (CFL) bulb *giveaway* in the summer of 2006
- Implementation of an imaging system with the long-term goal of reducing the amount of paper used
- Implementation of e-billing, a service that allows customers to receive and pay bills electronically
- Participation in a Provincial coupon program encouraging consumers to purchase energy efficient products
- Incorporated comprehensive Environmental Management Policies into the Town's Official Plan, with the objective of reducing greenhouse gas emissions, protecting watercourses and water resources, facilitating tree planting, reducing auto use, and promoting energy efficiency in building design
- Developed Official Plan urban design policies that encourage the use of energy efficient streetlights, energy efficient building design, and development design that is compatible with existing natural heritage features

Future Recommendations That Will Result in Cost-Savings or New Revenue Generation

The Green Plan also offered many future recommendations that would result in cost-savings or NRG. While some initiatives have already been reflected in Imagine Halton, the researcher has included the initiatives as an advancement comparison to current developments.

With respect to schools, businesses and local groups⁵⁸

- Work with the school boards to expand the "EcoSchool" designation thereby reducing energy use in schools. Target for all schools in Halton Hills to reach this goal
- Establish a partnership between school boards and Halton Hills Hydro in order to create a pilot project for a battery hybrid school bus
- Explore opportunities for the exchange of surplus and waste products between local businesses in order to minimize overall waste
- Expand the Farmers Market to a year round event in order to promote local food production and purchase
- Find ways to encourage local shopping, particularly for local products, in order to reduce the community's *carbon footprint*
- Work with companies that utilize *drive-thrus* to reduce greenhouse gas emissions and/or adopt alternative approaches such as the use of an *enviro-fee* surcharge for drive-thrus, with monies collected to offset the carbon footprint

With Respect to other levels of government agencies

- Work actively with the Region of Halton on water conservation initiatives, including programs for low-flow toilets and showerheads
- Work with Halton Region to increase its ability to handle an expanded list of recyclable materials
- In an effort to conserve energy by not having to drive to the landfill site, Partner with Halton Region to establish *depots* whereby Halton Hills' residents can drop off hazardous materials locally. For example, batteries, thermostats, CFL's, as well as gardening waste

⁵⁸ Halton Hills Green Plan, 2007

With Respect to the Municipality of Halton Hills and Halton Hills Hydro

- Create policies to encourage the use of energy efficient appliances, light fixtures, bulbs and water saving devices in the construction of new homes
- Adopt an anti-idling policy for Town vehicles. Assign staff to review the policies adopted in other municipalities such as Peel and Caledon
- Promote an anti-idling policy with businesses and residents. Circulate the policy for inclusion in business newsletters. Talk to school boards about anti-idling signage
- Consider purchasing an Energy and Environmental Management System (EEMS) to track energy performance and costs on an annual basis. Explore partnerships with other Halton municipalities that are using the software already
- Take a proactive stance and encourage the Province to move forward with its commitment to ban the use of pesticides for cosmetic purposes
- In conjunction with the above, establish a “Rain Barrel Incentive Program” with a specified rebate upon purchase for Town residents to encourage the use of rainwater collection
- Implement LEED (Leadership in Energy and Environmental Design) standards for all future capital projects
- Encourage all Halton Hills Council and Committee meetings to move to electronic-based meetings and agendas. This could result in substantial savings with paper and distribution costs
- Create an incentive program for employees who think green or drive energy efficient vehicles. This approach could foster and acknowledge the “green thinking” of employees
- Establish cash incentives for Town and Halton Hills Hydro staff that purchase hybrid vehicles or who request and implement the recommendations of energy audits

Interview Findings

The following three tables identify the findings from the interview with the Halton Hills Manager of Sustainability, Damian Szybalski. From the interview the researcher confirmed that Halton Hills is actively participating in many sustainable efforts that result in cost-savings and new revenue generation, including the use of market-based instruments.

Table 10 - Halton Hills Top Operational Cost-Saving Initiatives

<p>Equipment and Procurement</p>	<ul style="list-style-type: none"> • Sustainable Printing Efforts • Environmentally Friendly Product Procurement • Environmentally Friendly Equipment Procurement Policies • Buying Local Policies (this is a preference to purchase local, cannot limit purchasing due to the free trade agreement) • Road Salt Reduction • Reuse of Construction Materials (Concrete, Catch Basins, Asphalt etc.) • Pesticide Reduction Strategies (supporting the provincial ban)
<p>Building Materials and Design</p>	<ul style="list-style-type: none"> • The Green Building Standard covers all aspects of green building materials including the following: <ul style="list-style-type: none"> ○ High Efficiency Windows ○ Insulation ○ Environmental Standard Buildings (promoting the most logical standards which include but are not limited to LEED) ○ Green Roof ○ Thermostat Control (corporate energy plan) ○ Weather Stripping Windows
<p>Commuting and Business Travel</p>	<ul style="list-style-type: none"> • Transportation Management Planning • Trail Development or Bicycle Promotion (bike lockers) • Carpooling (dedicated parking spots for carpooling) • Hybrid Vehicle Purchasing Incentives <ul style="list-style-type: none"> ○ One hybrid vehicle, bio-diesel cars and trucks
<p>Water</p>	<ul style="list-style-type: none"> • Water Heater Temperature Reduction (This was an older initiative as part of the Green Plan including upgrading boiler systems.) • Rain Barrel sales (support of the Region) • Water Filtration Systems
<p>Waste</p>	<ul style="list-style-type: none"> • E-Waste Recycling • Organic Waste Collection (every private residence receives pick-up with green cart) • Waste Diversion Depots (battery drop offs, WasteWise co-op)
<p>Energy, Air and Climate Change</p>	<ul style="list-style-type: none"> • Common Energy Plan • Heating/Cooling Maintenance or Upgrades (constant energy upgrades with the SaveOnEnergy program) • Energy Efficient Lighting Upgrades or Retrofit <ul style="list-style-type: none"> ○ (CFLs, LED, Dimmable Light Switches and Task Lamps, LCD Monitors, LED Exit Signs, Light Bulb Removal, Occupancy Sensor Light Switches, Power Bars, etc.) • Renewable Energy Investments <ul style="list-style-type: none"> ○ Microfit Solar Voltaic Panels (for one of the community centres) ○ Geothermal (four buildings that utilize geothermal)

Other	<ul style="list-style-type: none">• Hiring of Sustainability Personnel• Sustainable Sector Toolkits – there was a promotion to let businesses know how they can increase efficiencies but the program has not been active for a while• Encourage Natural Areas/Ecology – from a storm water management perspective, air quality, agriculture, etc.

Table 11 - Halton Hills Top Cost-Saving Market-Based Instruments

Transportation	<ul style="list-style-type: none"> • Parking Spots for Carpool Parking, Smart Commute Program and charging stations for electric vehicles • Anti-Idling Fee exists but is poorly enforced
Water	<ul style="list-style-type: none"> • The region delivers water for the town so they set the water pricing and charges • They participate in the regions toilet bowl rebate program
Waste	<ul style="list-style-type: none"> • The region delivers waste services • The region has recently expanded the list of recyclables • The region has been successful with their recycling programs and compost programs • User-Pay Garbage Disposal System - Region enforces a two bag limit and then requires a tag • Halton Hills recently centralized waste containers in their buildings to reduce waste
Energy, Air and Climate Change	<ul style="list-style-type: none"> • Anti-Idling Policies exist but are poorly enforced
Land-Use or Building	<ul style="list-style-type: none"> • Mixed-Use Development By-Laws – noted in the official plan • Sustainable Official Plan – which includes Smart Growth
Food Security	<ul style="list-style-type: none"> • Locally Grown Campaigns
Local Economy	<ul style="list-style-type: none"> • Local First Campaigns • They offer funding up to \$2000 a year for initiatives
Ecological Diversity	<ul style="list-style-type: none"> • None to note
Civic Engagement or Social Infrastructure	<ul style="list-style-type: none"> • Components evident within the Communications Strategy
Housing or Employment	<ul style="list-style-type: none"> • Components evident within the Official Plan
Safety or Crime	<ul style="list-style-type: none"> • None to note

Table 12 - Halton Hills Top New Revenue Generation Initiatives

Energy	<ul style="list-style-type: none"> • None to note
Eco-Tourism	<ul style="list-style-type: none"> • Eco-Tourism Plan
Green Economy	<ul style="list-style-type: none"> • None to note
Sustainable Agriculture	<ul style="list-style-type: none"> • Farmers Market is on Town property so the Town supports it
Grant Funding	<ul style="list-style-type: none"> • Gas Tax Funding • Green Municipal Fund • Provincial Feed and Tariff • SaveOnEnergy Incentives • Union Gas Funding

Top Local Story – Regional Water Reduction

Because Halton Hills relies on groundwater, water conservation is an increasingly important issue for the growing community. While Halton Hills does not control its own water operations (Halton Region provides this service.) there are a number of areas that Halton Hills participates in to encourage water reduction within the community. Halton Region offers a toilet bowl rebate program for citizens looking to upgrade to a more efficient toilet, which Halton Hills supports and promotes to the public. Halton Hills also partners with the Region every year to offer rain barrels for sale. The region can offer the barrels at a good rate because it buys in bulk; this competitive rate makes purchasing rain barrels incredibly popular with community members. The Manager of Sustainability, Damian Szybalski elaborates:

“We sold thousands to our local residence in partnership with the Region, who procures them, we then put out an RFP to whomever wanted to purchase them and then we helped them set up in the Town and also provided resources to man the event. When we did it the first time, we sold out of the rain barrels in twenty minutes.”

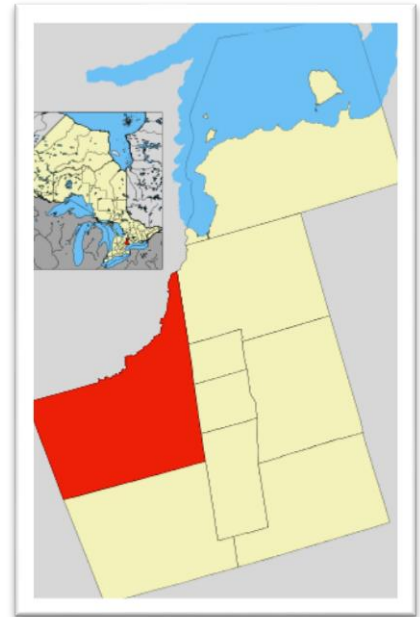
While the market has dropped off since the first launch, the sale of rain barrels has been steady. Halton Hills still sells approximately 500 rain barrels every year. Considering Halton Hills is a community of 60,000 the program has been incredibly successful and will maintain momentum until the demand for the rain barrels falls off. Within the Halton Hills Green Development Standards, the Town has also invested in low-flow water fixtures, showers and faucets.

4.3 King Township's Integrated Sustainability Plan

The King Township Sustainability Plan is an Integrated Community Sustainability Plan that demonstrates how King Township is committed to making smarter resource decisions, community design and finance management.⁵⁹ The plan was funded by a grant from the Federation of Canadian Municipalities' Green Municipal Fund.

Introduction to the Region

King Township is located in the Regional Municipality of York, around 45 minutes north of Toronto yet still within the Greater Toronto Area. King is known for their rolling hills, horse and cattle farms and vegetable production.⁶⁰ Over 99% of King Township is located within the Greenbelt area, giving the township predominately rural population dispersion. The township is composed of a village and hamlets including King City and Snowball.⁶¹ These populated areas have a collected population of 19,899⁶² but is suspected to grow to 35,000 by 2031.⁶³ The official name of the region is called the Township of King and is a lower tier municipality.⁶⁴



⁵⁹ King Township, *King Townships Integrated Sustainable Community Plan*, 2012

<http://sustainableking.com/wp-content/uploads/2012/07/King-Township-Sustainability-Plan-Revised-May-25.12-FINAL.pdf>

⁶⁰ Township of King, *2013 Budget and Business Plan*, 2013

[http://www.king.ca/government/departments/Finance/Documents/2013%20Budget/2\)%202013%20Budget%20and%20Business%20Plan%20-%20At%20a%20Glance.pdf](http://www.king.ca/government/departments/Finance/Documents/2013%20Budget/2)%202013%20Budget%20and%20Business%20Plan%20-%20At%20a%20Glance.pdf)

⁶¹ Township of King, *2013 Budget and Business Plan*, 2013

[http://www.king.ca/government/departments/Finance/Documents/2013%20Budget/2\)%202013%20Budget%20and%20Business%20Plan%20-%20At%20a%20Glance.pdf](http://www.king.ca/government/departments/Finance/Documents/2013%20Budget/2)%202013%20Budget%20and%20Business%20Plan%20-%20At%20a%20Glance.pdf)

⁶² King Township Census Profile. (2011) Census Profile of Population Statistics Canada (Accessed October 16, 2014) <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-csd-eng.cfm?LANG=Eng&GK=CSD&GC=3519049>

⁶³ Township of King, *2013 Budget and Business Plan*, 2013

[http://www.king.ca/government/departments/Finance/Documents/2013%20Budget/2\)%202013%20Budget%20and%20Business%20Plan%20-%20At%20a%20Glance.pdf](http://www.king.ca/government/departments/Finance/Documents/2013%20Budget/2)%202013%20Budget%20and%20Business%20Plan%20-%20At%20a%20Glance.pdf)

⁶⁴ Ontario Ministry of Municipal Affairs and Housing. (2014) <http://www.mah.gov.on.ca/Page1591.aspx>

King's Sustainability Strategy

King Township developed their sustainability plan, *King Township's Integrated Sustainability Plan*, in 2012 as part of a collaborative effort involving stakeholders from the public, private and community sectors as well as support from King Township Staff. The intention of the plan is to develop a critical view of where King Township wants to be 20-25 years and develop tangible solutions to address these long-term goals.⁶⁵

The 80-page document has 19 themes organized by the four pillars of sustainability:⁶⁶

Table 13 - King Township's ISP Themes

Environmental	Economic	Socio-Cultural	Financial
Waste	Village Vitality & Prosperity	Sense of Community	Managing Growth
Water	Agriculture & Equine	Connection to the Land	Financial Sustainability
Energy, Air Quality, Climate Change	Local Economy	Heritage	Annual Budget & Business Plan
Transportation	Tourism Advancement & Promotion	The Arts	
Natural Areas & Stewardship		Health, Safety & Wellness	
Land-Use Planning		Research, Partnerships & Innovation	

⁶⁵ King Township, *King Townships Integrated Sustainable Community Plan*, 2012
<http://sustainableking.com/wp-content/uploads/2012/07/King-Township-Sustainability-Plan-Revised-May-25.12-FINAL.pdf>

⁶⁶ King Township, *King Townships Integrated Sustainable Community Plan*, 2012
<http://sustainableking.com/wp-content/uploads/2012/07/King-Township-Sustainability-Plan-Revised-May-25.12-FINAL.pdf>

The following table summarizes King Township’s Integrated Sustainability Plan structure:⁶⁷

Table 14 - King Township's ISP Structure

Name of Region	King Township
Sustainable Community Plan	King Township’s Integrated Sustainability Plan
Year Adopted	2012
Component	
Preface	Executive Summary, Forwards from the Mayor, CAO and Chair, Acknowledgments
Introduction	Introduction, How The Plan Works, Our Vision
Pillars and Priorities	Lists the Sustainability Pillars and Themes, Immediate Priorities
Goals and Strategies	The plan breaks down its goals to pillars including: <ul style="list-style-type: none"> • Environmental Pillar • Economic Pillar • Socio-Cultural Pillar • Financial Pillar
Concluding Thoughts	How The Plan Was Developed, Framework For Implementation, Glossary Of Terms and Lists of Acronyms
Maps	<ul style="list-style-type: none"> • Township of King in a Regional Context • Township of King Natural Features, Roads and Settlement Areas • York Region Transportation Network
Appendices	<ul style="list-style-type: none"> • Potential Action Bank • Potential Indicators and Targets • Possible Funding Sources • List of Potential Partners • Sustainability Alignment Tool

Formation of the Sustainability Plan and Timeline

This plan was developed through extensive community collaboration and consultation. Over 3,000 contacts were made within the community through presentations, mapping sessions, and display

⁶⁷ King Township, *King Townships Integrated Sustainable Community Plan*, 2012
<http://sustainableking.com/wp-content/uploads/2012/07/King-Township-Sustainability-Plan-Revised-May-25.12-FINAL.pdf>

booths, as well as online through Facebook, Twitter, and an online survey.⁶⁸ The following table describes the timeline of the plan:⁶⁹

Table 15 - King Township's ISP Timeline

King Township's Integrated Sustainability Plan	
May to August, 2011	Phase 1: Visioning and Awareness-Raising
September to November, 2011	Phase 2: Strategies and Actions
December 2011	Phase 3: Final Plan and Implementation
April 2012	Official Plan is Released, to be reviewed every five years
2031-2036	Actions of original plan are to be completed <ul style="list-style-type: none"> • 30% reduction in energy demand by 2031 • 75% reduction in solid waste disposal by 2031

Pre-Interview Findings

By analyzing the King Township Integrated Sustainability Plan (KTISP) as well as the KTISP Appendices and progress reports, the researcher was able to identify many market-based instruments that have been either implemented in the past or have some discussion about future implementation. While many of the market-based instruments used by King Township were in place before the ISCP was developed, they have been highlighted within the plan as areas that complement their sustainability goals or areas that can be enhanced for the future in order to develop new policies and by-laws.

⁶⁸ King Township, *King Townships Integrated Sustainable Community Plan*, 2012
<http://sustainableking.com/wp-content/uploads/2012/07/King-Township-Sustainability-Plan-Revised-May-25.12-FINAL.pdf>

⁶⁹ King Township, *The Process: Building the King Township Sustainability Plan*.
<http://sustainableking.com/the-process/> (Accessed Oct 16, 2014)

Market-based instruments that pre-exist include:

- Reviewing the official plan and zoning by-laws to incorporate urban design and site plan control⁷⁰
- Right-to-Light By-law⁷¹
- Green Development Standard⁷²
- Tree Planting By-law⁷³
- Fill By-law⁷⁴
- Dark Sky Policy⁷⁵
- Intensification Strategy⁷⁶
- York Region Transit Charge (administered by the region not the township)⁷⁷
- Pedestrian and Cycling master plan⁷⁸
- Two bag garbage collection limit⁷⁹

A number of market-based instruments have also been highlighted as possible initiatives for the future including: an Anti-Idling By-law⁸⁰, structuring water rates to reduce consumption⁸¹, and adopting water efficient landscaping requirements.⁸²

⁷⁰ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 27 & 40.

⁷¹ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 27.

⁷² King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 27.

⁷³ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 5.

⁷⁴ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 27.

⁷⁵ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 27.

⁷⁶ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 28.

⁷⁷ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 45.

⁷⁸ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 45.

⁷⁹ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 49.

⁸⁰ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 10.

⁸¹ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 11.

⁸² King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 11.

There were a number of initiatives resulting in operational cost-savings identified through the ISCP, and Sustainable King Progress reports including:

- Construction of LEED certified buildings⁸³
- Blue Box and organic waste collection⁸⁴
- Electronic waste collection⁸⁵
- Hiring a sustainability coordinator⁸⁶
- MicroFIT solar program⁸⁷
- Paper reduction strategies⁸⁸

Potential operational cost-saving initiatives for future consideration included: the development of a smart growth plan⁸⁹, conducting an energy audit⁹⁰, conducting a waste audit.⁹¹

The new revenue generation connected to King Township's ISCP included generating additional funding through access of the Green Municipal Fund and Gas Tax funding⁹², and developed an eco-tourism focus within the Townships tourism strategy.⁹³ King Township has also developed a ground mounted solar array, finding new generation through that venture as well.⁹⁴ There has been talk about future new revenue generation as well as the development of a Green Business Strategy⁹⁵, converting the Township's biomass into energy⁹⁶ and by exploring the development of a drive-thru fee.⁹⁷

⁸³ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 13, 28 & 40.

⁸⁴ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 49.

⁸⁵ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 49.

⁸⁶ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. vii.

⁸⁷ King Township, *Sustainable King Progress Report*, 2013, p. 8.

⁸⁸ King Township, *Sustainable King Progress Report*, 2013, p. 8.

⁸⁹ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 6.

⁹⁰ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 8.

⁹¹ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 11.

⁹² King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 13 & 84.

⁹³ King Township, *King Townships Integrated Sustainable Community Plan*, 2012, p. 58.

⁹⁴ King Township, *Sustainable King Progress Report*, 2013, p. 11.

⁹⁵ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 15.

⁹⁶ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 12.

⁹⁷ King Township, *King Townships Integrated Sustainable Community Plan Appendices A-D*, 2012, p. 5.

Interview Findings

The following three tables identify the findings from the interview with the King Township Chief Administrative Officer, Susan Plamondon and the Sustainability Coordinator, Sara Puppi.

Table 16 - King Township's Top Operational Cost-Savings

Equipment and Procurement	<ul style="list-style-type: none"> • Sustainable printing efforts • Environmentally friendly product procurement • Environmentally friendly equipment procurement policies • Buying local policies are limited due to the FTA but they are finding ways to still buy local • Road salt reduction • Reuse of construction materials (concrete, catch basins, asphalt, etc.) • Pesticide reduction strategies
Building Materials and Design	<ul style="list-style-type: none"> • The latest building they constructed met LEED Silver standards. • Exploring sustainable design principals • Conducted a building assessment to consider retrofitting existing buildings • Some Township owned buildings will be shut down or sold due to their lack of use • The new town hall will be a repurposed building with a LEED certification
Commuting and Business Travel	<ul style="list-style-type: none"> • Transportation Management Planning is in development • Trail development or bicycle promotion • Carpooling (corporately), there is a parking spot designated just for carpooling in the parking lot • Idle Reduction is in development
Water	<ul style="list-style-type: none"> • Low-flow toilets • Rain barrel sales at subsidized cost • Water filtration systems
Waste	<ul style="list-style-type: none"> • E-Waste recycling • Organic waste collection (roadside) • Waste diversion depots (operated by York Region)
Energy, Air and Climate Change	<ul style="list-style-type: none"> • King Township does not own their own hydro facility • Corporate Energy Plan • LED streetlight upgrades • Solar as source of energy has been considered
Other	<ul style="list-style-type: none"> • Hiring of sustainability personnel • Developed a green check list for new developments to consider • Encourage natural areas/ecology through planting, sitting on committees, research, support, etc.

Table 17 - King Township's Top Cost-Savings Market-Based Instruments

Transportation	<ul style="list-style-type: none"> • None to note • Considering the zoning by-laws and policies shortly
Water	<ul style="list-style-type: none"> • Encouraging new development to consider water efficiency • Piggy-backing with other partners
Waste	<ul style="list-style-type: none"> • Recycling Programs <ul style="list-style-type: none"> ○ Expanding list of recyclable materials • Compost Programs • Bag Tag Garbage Disposal System
Energy, Air and Climate Change	<ul style="list-style-type: none"> • Council supported an easier process allowing private owners to invest in the MicroFit program
Land-Use or Building	<ul style="list-style-type: none"> • Undertaking the official plan which will need to be aligned with the Sustainability Plan • Green Building Checklist • High rise development has a lower tax rate than single family residential • They have a tax increment financing tool used to mitigate the increase in property value
Food Security	<ul style="list-style-type: none"> • Locally Grown Campaigns • Farms get favourable property tax if they produce over a certain amount of farm related income
Local Economy	<ul style="list-style-type: none"> • Shop Local campaign
Ecological Diversity	<ul style="list-style-type: none"> • Supported when possible
Civic Engagement or Social Infrastructure	<ul style="list-style-type: none"> • None to note
Housing or Employment	<ul style="list-style-type: none"> • None to note
Safety or Crime	<ul style="list-style-type: none"> • None to note

Table 18 - King Township's Top New Revenue Generation Initiatives

Energy	<ul style="list-style-type: none"> • None to note
Eco-Tourism	<ul style="list-style-type: none"> • Eco-Tourism Plan is part of the tourism master plan
Green Economy	<ul style="list-style-type: none"> • The official plan policies note that they want green economy, careers and development • Shop Local Campaigns
Sustainable Agriculture	<ul style="list-style-type: none"> • Support local Farmers Market and support a local community farm
Grant Funding	<ul style="list-style-type: none"> • Gas Tax Funding • Green Municipal Fund • Solar Panel funding, Eco-Energy Grant

Top Local Story – A Community with a Plan

While King Township is at the very early stages of implementing their Sustainability Plan they made sure that all other plans aligned with it early on to make sure that they do not run into issues farther down the road. Susan Plamondon of King Township explains:

“It would be really heartbreaking to suddenly have to stop all of the progress you made and see it all become undone because suddenly the finances are not there.”

When King Township (already a very sustainability minded community) decided it was time to create a sustainability plan, they made it a focal point to which all other plans were created. Four years ago (2010) King Township wrote their official plan and shortly thereafter, the Sustainability Plan served as their strategic plan. Susan Plamondon and Sara Puppi explain:

“[Since the Official Plan, King Township has developed a] community improvement plan within the last year or two, economic development strategy, business retention and expansion plan, tourism development, parks master planning, cultural master plan, transportation master plan, etc. All of these plans have been implemented since the sustainability plan and many of these strategies were recommended by the sustainability plan.”

By aligning all future plans with the Official Plan and Sustainability Plan as guidelines, King has set ambitious targets and goals, making the implementation stage clear and exciting for Councilors, employees and external partners to work with.

Now that King Township has aligned their vision they are ready to take action. Already, the Sustainability Coordinator has a list of early wins. And, with the building properties review and the new city hall development in the works, the Township will find new and exciting ways to meet their sustainability goals. The Mayor of King Township has aligned his vision with the Sustainability Offices plan as well. Once the sustainability committee (consisting of equal community residence and corporation employee representation) was fully formed, the Mayor took it upon himself to abolish all other committees in related fields, eliminating red tape and potential conflicts.

Now as King begins their implementation phase, they are determined to minimize opposition and maximize sustainable development. While King has noted that creating a culture change will be their hardest challenge moving forward, they already see internal and external mentalities aligning to their sustainability plan. Susan Plamondon concludes:

“The truth is as a corporate entity, it has always been about the bottom line. So it’s always been difficult for us to say that we’re doing this because of our sustainability plan. It’s always been an underlying value.”

King Township knows that sustainability requires long-term growth and long-term investments. By framing sustainability in this way, they are posed for significant sustainable growth.⁹⁸

⁹⁸ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, (December 10, 2014)

4.4 Take Action for Sustainable Huron, Huron County Sustainability Plan

Take Action for Sustainable Huron is a long-term community sustainability plan that outlines the vision; ideas and aspirations for Huron County in 2030. The report is based on input collected from hundreds of community members, leaders, organizations and networks.⁹⁹

Introduction to the Region

Huron County is located on the southeast shore of Lake Huron between Bruce County and Middlesex County.¹⁰⁰ The County oversees administration of nine municipalities, including the Town of Goderich, compiling a permanent resident population of 59,100.¹⁰¹ The area boasts the most agriculturally productive county in all of Ontario and is a leader in agricultural technology and innovation.¹⁰² The local government is officially named the County of Huron and is an upper-tier municipality.¹⁰³



Huron's Sustainability Strategy

The County of Huron developed their sustainability plan, *Take Action for Sustainable Huron*, in 2011 with assistance from the Green Municipal Fund, a Fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities.¹⁰⁴

The sustainability plan was developed through a yearlong community-based collaborative process that began in 2010. The document connected a broad range of community visions, ideas and inspirations for the next 20 years.¹⁰⁵

The 156 page document lists several reasons for developing a sustainability plan including:¹⁰⁶

⁹⁹ Community Sustainability Plan, *Sustainable Huron*, <http://www.huroncounty.ca/sustainablehuron/sustainablecommunity.php> (Accessed Oct 7, 2014)

¹⁰⁰ The County of Huron, *Huron County*, <http://www.huroncounty.ca> (Accessed Oct 7, 2014)

¹⁰¹ Huron County Census Profile. (2011) Census of Population Statistics Canada. (Accessed Oct 7, 2014)

¹⁰² The County of Huron, *Huron County*, <http://www.huroncounty.ca> (Accessed Oct 7, 2014)

¹⁰³ Ontario Ministry of Municipal Affairs and Housing. (2014) <http://www.mah.gov.on.ca/Page1591.aspx>

¹⁰⁴ Huron County. (2011) *Take Action for Sustainable Huron*. <http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹⁰⁵ Huron County. (2011) *Take Action for Sustainable Huron*. <http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

- Having a clear long-term vision
- Strengthening economic vitality and social security
- Improving our self-sufficiency
- Protecting and restoring our natural assets
- Minimizing our ecological footprint
- Attracting great talent and building healthy communities
- Empowering people through participation and leadership
- Promoting environmentally sound technology and business
- Promoting good governance
- Attracting funding

The following table summarizes Take Action for Sustainable Huron’s structure¹⁰⁷:

Table 19 - Take Action for Sustainable Huron's Structure

Name of Region	Huron County
Sustainable Community Plan	Take Action for Sustainable Huron
Year Adopted	2011
Component	
Preface	Acknowledgements, Foundation for a Sustainable Future, Foreword,
Introduction	Defines sustainability, explains the vision and mission statement, and gives sustainability principles
Priority Projects	Rather than sector based, this sustainability plan focuses on projects such as: <ul style="list-style-type: none"> • Rural Storm Water Management Plans • Municipal Energy Plans • Sustainable Marketing • Sustainable Arts and Culture • Transportation • School Yard Greening • Food Enterprise, Local Food Enhancement • Sustainable Business Expansion • Sustainable Manufacturing <p>These projects are to be implemented over the next two years</p>
Developing the Plan	Identifies the current sustainable situation of the community
Goals and Strategies	Identifies the broad strategies the County will use to achieve their vision
Implementation Plan	Designed to outline how actions will be implemented, who will be responsible, the mechanisms to succeed and the partnerships required
Appendices	Includes the Huron County Sustainability Tool-Box, Community Partners Committed to the Plan, and Current Conditions Report 2011

¹⁰⁶ Huron County. (2011) Take Action for Sustainable Huron.

<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹⁰⁷ Huron County. (2011) Take Action for Sustainable Huron.

<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

Formation of the Sustainability Plan and Timeline

The formation of Huron’s Sustainability plan was a community-led collaboration involving a large stakeholder group including:¹⁰⁸

- The Sustainable Huron Steering Committee
- Almost 2000 community members
- Huron County project staff
- The Lura Consulting team

The following table summarizes key dates in development and implementation of the plan¹⁰⁹

Table 20 - Take Action for Sustainable Huron's Key Dates

Take Action for Sustainable Huron Timeline	
2007-2008	Municipal leaders engaged the Huron County community to create a common vision for a sustainable future
2009	A yearlong community-based collaborative process was completed creating a living document of community goals
2010	The <i>Take Action Report</i> outlining the sustainable goals of the community was released and approved by County Council
2011	The Community Sustainability Plan <i>Take Action for Sustainable Huron</i> is officially released
2014	The implementation of the community goals continues
2030	Community goals are to be complete

The SCP has set a benchmark of 20 years to complete its sustainability goals.

Top Sustainability Challenges and Focus for the Region

Huron County is committed to implementing sustainability through its community sustainability plan, which differs from a municipal sustainability plan in the sense that all projects are implemented through community partners rather than operationalized through an official municipal department. Because Huron County does not have the funding or approval from Council for a coordinator who would lead an operational approach, Huron has adopted a “loose effort” or “see what happens next” approach in its absence.

¹⁰⁸ Huron County. (2011) Take Action for Sustainable Huron.

<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹⁰⁹ Huron County. (2011) Take Action for Sustainable Huron.

<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

While this “loose effort” approach has worked for Huron in the sense that the priority projects identified by the steering committee have seen great success, most will continue to develop as strong campaigns for sustainability continue across the community. However, this approach also leaves gaps for other sustainability opportunities due to the absence of full-time sustainability personnel who would oversee campaigns and plan as a whole.

Pre-Interview Findings

By analyzing Huron County’s documents, *Take Action for Sustainable Huron*, I was able to identify some operational cost-saving initiatives, market-based instruments and new revenue generation focus that are currently being pursued or they are in the plan to initiate in the future.

Many of the cost-saving initiatives identified in the plan come from other initiatives that *Take Action* identified including:¹¹⁰

- Municipal Energy Plan (p. 21)
- Trail Development and Bicycle Promotion (p. 27)
- Developing a multi-model transportation network (p. 29)
- Sustainable Manufacturing Toolkit development which is currently on its second edition (p. 41)

The sustainability plan also identified maximizing energy conservation within the development and building industry as a future goal for Huron County.¹¹¹

Market-based instruments that were identified in the plan include:¹¹²

- Reviewing by-laws for downtown buildings (concerning multi-use facilities) as well as reviewing Community Improvement Plans for mixed-use development (p. 35, 135)
- The Huron Clean Water Project which offers financial assistance to improve and protect water quality (p. 130)
- The User-Pay garbage disposal system (operated by the region) (p. 133)
- And the Huron County Payment for Ecological Goods and Services Pilot Project (PEGS) which provides annual financial payment to compensate for environmental goods (p. 133)

Opportunities that offered possible new revenue generation focused on the food industry. A strong effort was to provide a local agricultural leadership program which helps promote careers in

¹¹⁰ Huron County. (2011) *Take Action for Sustainable Huron*.
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹¹¹ Huron County. (2011) *Take Action for Sustainable Huron*, p. 47
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹¹² Huron County. (2011) *Take Action for Sustainable Huron*.
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

agriculture in the area¹¹³. There is emphasis on identifying new markets, wholesale product action, “buy local” initiatives and increasing participation with the local food market.¹¹⁴ Future areas of new revenue generation include maximizing appropriate local energy generation within the county and investing in the creation of sustainable tourism practices.¹¹⁵

Interview Findings

The following three tables identify the findings from the interview with the Huron County Director of Planning and Development, Scott Tousaw and Rebecca Rathwell, Project Manager with the Planning and Development Department. From the interview it was noted that many areas identified as cost-savings or NRG initiatives by the researcher did not apply to Huron County, either due to the format of their sustainability plan or because a higher or lower-tier municipality oversaw the control of such initiatives.

Table 21 - Huron County's Top Operational Cost-Savings

Equipment and Procurement	<ul style="list-style-type: none"> • Sustainable Printing Efforts • Environmentally Friendly Product (not part of plan) • Environmentally Friendly Equipment Procurement Policies (not part of plan) • Buying Local Policies (would like to engage in this but the Competition Act prevents it, as well as the North America Free Trade agreement) • Road Salt Reduction (not part of plan)
Building Materials and Design	<ul style="list-style-type: none"> • Not part of the plan but might be part of the facility management department’s priorities
Commuting and Business Travel	<ul style="list-style-type: none"> • Transportation Management Planning • Trail Development or Bicycle Promotion (yet to be implemented but will have some outcomes in the future) • Carpooling (yet to be implemented but will have some outcomes in the future)
Water	<ul style="list-style-type: none"> • Rain Barrel/Cisterns/Holding Tanks

¹¹³ Huron County. (2011) Take Action for Sustainable Huron, p. 38
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹¹⁴ Huron County. (2011) Take Action for Sustainable Huron, p. 33, 36
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

¹¹⁵ Huron County. (2011) Take Action for Sustainable Huron, p. 53, 96, and 87
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

Waste	<ul style="list-style-type: none"> • The County has planning authority but no implementation authority which is done by the lower-tiers • Waste Diversion Depots are the focus of Huron’s Waste Management Master Plan but wholly reliant on implementation from local Municipalities
Energy, Air and Climate Change	<ul style="list-style-type: none"> • A majority of this section is reviewed by the Lower-Tiers, who have done some work with LED lighting and other energy efficiencies • Predates the Sus. Plan but Huron County did a feasibility study for energy conservation and wind energy production on county lands. The upfront investment was too expensive to continue
Other	<ul style="list-style-type: none"> • Sustainable Manufacturing Toolkit was an early win focusing on cost-savings for the sector, which also benefits the county
Rural Storm Water Management	<ul style="list-style-type: none"> • Rural Storm Water management is a focus for Huron County which results in quality and quantity control of farmland and soil control

Table 22 - Huron County's Top Cost-Saving Market-Based Instruments

Transportation	<ul style="list-style-type: none"> • None currently exist
Water	<ul style="list-style-type: none"> • County has a clean water program, which provides funding for rural properties (farms or other rural properties) that are doing things that improve water quality
Waste	<ul style="list-style-type: none"> • Nothing that is driven from the County level but there are some that might happen municipally at the lower-tier
Energy, Air and Climate Change	<ul style="list-style-type: none"> • No initiatives to date
Land-Use or Building	<ul style="list-style-type: none"> • Part of the planning discussion in Huron now focuses on higher density, mixed use, walkability, healthy communities, etc. but not because of the Sustainability Plan
Food Security	<ul style="list-style-type: none"> • Locally Grown Campaigns • There have been campaigns from the Health Unit regarding food security
Local Economy	<ul style="list-style-type: none"> • The emphasis on cultural development • Business retention and expansion program • Make-Here-At-Home program
Housing or Employment	<ul style="list-style-type: none"> • There is an employment focus on some of the local economy plans listed above

Table 23 - Huron County's Top New Revenue Generation Initiatives

Energy	<ul style="list-style-type: none"> • They did a feasibility study to look into a County wind generator on County property but the initial investment was too much at the time
Eco-Tourism	<ul style="list-style-type: none"> • Most County tourism pertains to their natural environment but not marketed as such
Green Economy	<ul style="list-style-type: none"> • None to date
Sustainable Agriculture	<ul style="list-style-type: none"> • Farmers Market is not owned by the County but receives some municipal funding
Grant Funding	<ul style="list-style-type: none"> • Gas Tax Funding (but it goes to the transportation sector) • Green Municipal Fund • Other Funding Opportunities (REDD and Youth Entrepreneurship program, etc.)

Top Local Story – The Sustainable Manufacturing Toolkit

As part of *Take Action for Sustainable Huron*, the County included The Manufacturing Efficiencies Project as a major project under the Lens of Sustainability Priority Project. The Manufacturing Efficiencies Project was intended to help local companies identify opportunities to decrease their impact on the environment while making their business more efficient and improving their bottom line.¹¹⁶ As a result of the pilot project in partnership with the Sustainable Huron Project, The Huron Manufacturing Association and Midwestern Green Jobs Strategy; the Huron County Sustainable Manufacturing Toolkit: A Guide to Get You Started was created. The toolkit was launched at the Huron Manufacturing Association Awards ceremony in 2011 and offered tools and tips that will aid businesses to identify and increase efficiencies, reduce environmental impact and contribute to the local community while striving to reduce overall costs.¹¹⁷

The toolkit was one of the early successes of the Take Action plan and is an aspect of Huron County’s sustainability plan that is not typically included in other similar plans making it unique to Huron County. When asked about the Toolkit, Rebecca Rathwell commented that Huron was particularly well positioned to invest in the Toolkit as the Huron Manufacturing Association was in

¹¹⁶ Huron County. (2011) *Take Action for Sustainable Huron*, p. 41
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>
¹¹⁷ Huron County. (2011) *Take Action for Sustainable Huron*, p. 41
<http://www.huroncounty.ca/sustainablehuron/downloads/scp/CommunitySustainabilityPlan.pdf>

close proximity from her own office and demonstrated positive working relations to create a simple tool that could be implemented quickly with minimal financial investment.

“We knew that if that was one of the early win projects that could be accomplished within a three to four month timeline and within a set budget, it was something that we could take on as an early win”¹¹⁸

The toolkit has been receiving accolades from the County both internally and externally. It is now on version number two with no additional financial investment from the Sustainable Huron Committee.

¹¹⁸ Interview with Huron County’s Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

4.5 Directions for Our Future: County of Frontenac Guide to Sustainability

The County of Frontenac has opted to create an Integrated Community Sustainability Plan and is the product of ongoing research and consultation regarding the desires for a sustainable future throughout the county.¹¹⁹

Introduction to the Region

Frontenac County is centrally located in Eastern Ontario. While the City of Kingston is included in its census division, it is administered differently from the rest of the county. The county has a population of 149,738 including the City of Kingston. If the population of Kingston is removed, the total population of 26,375 remains under Frontenac County's administrative influence¹²⁰. The major industries in Frontenac include: agriculture, tourism, and



base industries (forest products and water-related industry).¹²¹ Frontenac County is an upper-tier municipality governing the following municipalities: the Township of North Frontenac, the Township of Central Frontenac, the Township of South Frontenac and the Frontenac Islands.¹²²

Frontenac's Sustainability Strategy

In 2006, the Frontenac County began developing their formal sustainability plan. After several years of development and participation from the four municipalities within its jurisdiction, the Council of the County of Frontenac adopted the plan in 2009.^{123,124} The 40-page plan was developed to establish principles and create decision-making policies that encourage, guide and promote sustainable behaviour throughout the County.¹²⁵ With four municipalities under Frontenac's administrative jurisdiction, the creation of an ISCP increases collaboration will lead to greater

¹¹⁹ "County of Frontenac," *Frontenac County*, www.frontenaccounty.ca (Accessed Oct 2, 2014)

¹²⁰ Frontenac County Census Profile. 2011 Census of Population. Statistics Canada

¹²¹ County of Frontenac: Business Retention and Expansion Report, 2007, <http://www.frontenaccounty.ca/files/Frontenac-BRE-report-FINAL-2007-06-18.pdf>

¹²² Ontario Ministry of Municipal Affairs and Housing. (2014) <http://www.mah.gov.on.ca/Page1591.aspx>

¹²³ Frontenac ISCP. (2007) Directions for Our Future <http://frontenac.credit360.com/directions>

¹²⁴ "County of Frontenac," *County of Frontenac*, www.frontenac.credit360.com (Accessed Oct 2, 2014)

¹²⁵ Frontenac ISCP. (2007) Directions for Our Future <http://frontenac.credit360.com/directions>

efficiency regarding sustainability project efficiencies within the area. Several other reasons were listed for the importance of creating such a plan:

- Acts as a unifying mechanism to ensure the pillars of sustainability are considered
- Acts to establish principles and decision-making policies that encourage sustainable behaviour
- Increases collaboration: pooling resources, knowledge and connections
- Includes important factors and non-traditional considerations when planning
- Serves as a pro-active rather than a reactive directional tool
- Assists in making Frontenac County a sustainability leader

The following table summarizes the structure of *Directions for Our Future*:¹²⁶

Table 24 - Frontenac County's Directions for Our Future's Structure

Name of Region	County of Frontenac
Sustainable Community Plan	Directions for Our Future: County of Frontenac's Guide to Sustainability
Year Adopted	2009
Component	
Executive Summary and Background Information	Executive Summary, Guide to Readers, Values and Principles, The Frontenac's Then and Now, Commitment Towards a Sustainable Future
Vision and Direction	Our Vision, The Frontenac's, Introduction to Focus Areas, Monitoring Our Success
Focus Areas	<ul style="list-style-type: none"> • Protection of Natural Areas • Land Use Planning and Management • Economic Development and Communications • Energy • Water • Solid Waste Management • Transportation • Infrastructure • Health and Social Services • Housing • Recreation and Leisure • Culture and Heritage • Capacity Building and Governance
Conclusion	Valued Community Input, Resource Glossary, Partners and Contact Information

¹²⁶ Frontenac ISCP. (2007) Directions for Our Future <http://frontenac.credit360.com/directions>

Implementation of the Sustainable Community Plan

Since 2009, the County of Frontenac has released a Sustainable Actions annual companion document to Directions for Our Future. The update is released to reflect the ideas and priorities that are expressed by members of the community and lists the projects currently under implementation. The 60-page annual Sustainable Actions document also lists priority actions that will be presented to the Frontenac County Council for budget deliberations.¹²⁷

The 2013 Annual Sustainability Actions Document highlights over 50 different projects across the four pillars of sustainability (Social, Environmental, Economic and Cultural) and highlighted many sustainability actions for implementation:¹²⁸

- Social Services Development Plan for the County of Frontenac
- Land Use Planner, Sustainability
- Brownfield Identification/Feasibility Study
- Identify the Frontenac's as a Renewable Energy Region
- County-Wide Eco-Tourism Strategy
- Transportation Management Plan
- Mandatory LEED® Rating for New Municipal Buildings
- Develop a Common Energy Management Plan for all five municipalities
- County-Wide Solid Waste Management Plan
- Municipal Water Systems – Long-Term, Integrated Management and Investment Plan

While neither Directions for Our Future nor the Sustainability Actions document offers a detailed timeline for how or when these sustainable projects might occur. The Vision of Frontenac's plan would like to see the County as a sustainable leader within the next half century:

"Our vision is that fifty years into the future, the County of Frontenac is one of the most progressive municipalities in terms of community-based sustainability planning because priorities and beliefs are determined through community consultation and County-wide considerations are well thought out to incorporate the four pillars of sustainability."¹²⁹

¹²⁷ "County of Frontenac," *County of Frontenac*, www.frontenac.credit360.com (Accessed Oct 2, 2014)

¹²⁸ Sustainable Actions 2013: County of Frontenac Priority Projects for 2009-2010

¹²⁹ Frontenac ISCP. (2007) Directions for Our Future. P. 17. <http://frontenac.credit360.com/directions>

Pre-Interview Findings

By analyzing *Directions for Our Future* as well as complementary documents such as the 2013 Sustainable Actions report the researcher was able to identify some cost-savings or new revenue generating initiatives as well as some initiatives that would classify as market-based instruments.

Surprisingly, few cost-savings initiatives were identified that would qualify as an example of cost-saving initiatives. However, Frontenac has purchased a number of hybrid vehicles and has created a *Land Use Planner, Sustainability* position which has drastically increased the amount of sustainability initiatives implemented within the region.

A number of new Frontenac revenue generating initiatives were proposed, including investing in county-wide eco-tourism,¹³⁰ creating a green business park¹³¹ and identifying Frontenac as a renewable energy region.¹³²

Since the employee in charge of sustainability operates within the Frontenac County Planning Department, a number of plans developed that could count as market-based instruments resulting in cost-savings or new revenue generation. These plans include:

- Packaging Reduction Plan¹³³
- Transportation Management Plan¹³⁴
- Common Energy Management Plan¹³⁵
- Municipal Water System long-term investment plan¹³⁶

Frontenac has also invested in a policy that requires a mandatory LEED rating for all new municipal buildings.^{137, 138}

¹³⁰ Frontenac ISCP. (2007) *Directions for Our Future*. p.14. <http://frontenac.credit360.com/directions>

¹³¹ Frontenac ISCP. (2007) *Directions for Our Future*. p.17. <http://frontenac.credit360.com/directions>

¹³² Frontenac ISCP. (2007) *Directions for Our Future*. p.15-16. <http://frontenac.credit360.com/directions>

¹³³ Frontenac ISCP. (2007) *Directions for Our Future*. p.12. <http://frontenac.credit360.com/directions>

¹³⁴ Frontenac ISCP. (2007) *Directions for Our Future*. p.16. <http://frontenac.credit360.com/directions>

¹³⁵ Frontenac ISCP. (2007) *Directions for Our Future*. p.17,18. <http://frontenac.credit360.com/directions>

¹³⁶ Frontenac ISCP. (2007) *Directions for Our Future*. p.17. <http://frontenac.credit360.com/directions>

¹³⁷ Sustainable Actions 2013: County of Frontenac Priority Projects for 2009-2010 pg.17-18

¹³⁸ Frontenac ISCP. (2007) *Directions for Our Future*. p.27. <http://frontenac.credit360.com/directions>

Interview Findings

The following three tables identify the findings from the interview with Frontenac County CAO - Kelly Pender, Anne Marie Young - Manager of Economic Development and Joe Gallivan - Manager of Sustainability Planning.

Table 25 - Frontenac County's Top Operational Cost-Savings

Equipment and Procurement	<ul style="list-style-type: none"> • Sustainable Printing Efforts • A buying local policies for sales and service would be beneficial but hard to implement due to the Free Trade Agreement • Reuse of construction materials • Repurposed bridges
Building Materials and Design	<ul style="list-style-type: none"> • Frontenac is aiming for a higher environmental standard and has conducted some sustainable upgrades
Commuting and Business Travel	<ul style="list-style-type: none"> • Transportation Management Planning • Trail Development or Bicycle Promotion • Carpooling promoted and developing carparks • Hybrid Vehicle Purchasing: Toyota Prius, Toyota Hybrid SUVs, etc. • Work from Home Policy – part of the economic development strategy to increase and profile this
Water	<ul style="list-style-type: none"> • Septic systems are half funded as part of the CDM
Waste	<ul style="list-style-type: none"> • Waste is handled at the lower-tier but there is no organic collection in Frontenac • Recycling Programs <ul style="list-style-type: none"> ○ Expanding list of recyclable materials
Energy, Air and Climate Change	<ul style="list-style-type: none"> • Renewable Energy Investments <ul style="list-style-type: none"> ○ Microfit Solar Voltaic Panels ○ Solar and Wind Farms but not owned by the County • Some lighting upgrades • Frontenac is considering the use of CIP for upgrades to green energy including Solar panels
Other	<ul style="list-style-type: none"> • Hiring of Sustainability Personnel • County has agreed to do a region-wide national heritage study, which will help find cost-savings through increased natural areas

Table 26 - Frontenac County's Top Cost-Savings Market-Based Instruments

Transportation	<ul style="list-style-type: none"> • Parking requirements or fees • Scrappage incentives for cleaner vehicles • Subsidies or incentives for Energy-Efficient Vehicles • Drive-Thru Carbon Footprint Charge (proposed) • Other Transportation MBI's
Water	<ul style="list-style-type: none"> • Frontenac has helped some of the lower-tier communities install dry hydrants
Waste	<ul style="list-style-type: none"> • Compost Programs • User-Pay Garbage Disposal System • Deposit-Refund System on Goods • Disposal Tax, Hazardous Waste Tax • Other Waste MBI's • There is been \$100,000.00 set aside for regional waste solutions
Energy, Air and Climate Change	<ul style="list-style-type: none"> • There has been a CIP to help develop some of these instruments
Land-Use or Building	<ul style="list-style-type: none"> • Mandatory LEED Certification for new municipal buildings
Food Security	<ul style="list-style-type: none"> • Locally Grown Campaigns • Locally Grown Grants are provided
Local Economy	<ul style="list-style-type: none"> • Local First Campaigns • Rezoning has taken place to promote micro farming • Changing other traditional zoning measures to encourage local business growth
Ecological Diversity	<ul style="list-style-type: none"> • None to note
Safety or Crime	<ul style="list-style-type: none"> • None to note

Table 27 - Frontenac County's Top New Revenue Generation Initiatives

Energy	<ul style="list-style-type: none"> • Green Energy Attraction Strategy has not gone through due to changes in the Green Energy Act
Eco-Tourism	<ul style="list-style-type: none"> • Steps are in place to develop an Eco-Tourism Plan
Green Economy	<ul style="list-style-type: none"> • Shop Local Campaigns
Sustainable Agriculture	<ul style="list-style-type: none"> • Farmers Market <ul style="list-style-type: none"> ○ Serbert Lake, Frontenac Farmers Market – money is available, creating partnerships to make a more permanent location • Identify new markets
Grant Funding	<ul style="list-style-type: none"> • Gas Tax Funding • Green Municipal Fund • Other Funding Opportunities <ul style="list-style-type: none"> ○ Trail money, Eastern Ontario Trails Alliance • Active transportation

Top Local Story – Let’s Talk Sausage

Originally each separate township in Frontenac did their own planning by the use of a planning consultant who worked unyieldingly within the parameters of the planning act. Such a black and white demeanor limited the amount of *microfarming* that could take place within the County.

One such example is that of Seed to Sausage. Seed to Sausage is an artisan sausage maker who only uses animals feed with 100% organic feed.¹³⁹ Frontenac County was looking for someone to build an advoture and developed a business case. From this process, Frontenac found the artisan sausage maker in Kingston who was willing to relocate his operation to Frontenac because of the zoning leniency. Seed to Sausage has become quite famous and has been featured in many magazines.

Another example is Back Forty Artisan Cheese. Back Forty started with an artisan cheesemaker who wanted to purchase a small farm to hand craft artisanal cheese to the highest quality.¹⁴⁰ Originally when he applied to the zoning consultant, he was required to submit an official plan for the startup and rezoning of a cheese factory, similar to other large-scale cheese operations such as St. Alberts. Rather than continuing with this lengthy application (an official plan can take up to 18 months) Frontenac was able to bypass the process by submitting a planning opinion that indicated Back

¹³⁹ <http://www.seedtosausage.ca/about-us/> (Accessed December 7, 2014)

¹⁴⁰ <http://www.artisancheese.ca/about.htm> (Accessed December 7, 2014)

Forty should count as a hollow occupation and would recommend approval. Back Forty was indeed given approval and has continued strong operations since. Joe Gallivan comments on the idea of policy change for microfarms:

“By centralizing planning across the County, Frontenac now has a better understanding of economic development and how to approach these small operations. It just isn’t beneficial to take traditional definitions and apply them to the context of what we have on the ground.... We’re looking at it more of how can we solve a problem and how can we create a solution.”

This policy change has brought new revenue to the County and aims to attract more through a similar policy overhaul. There is a business group that hopes to start a microbrewery in the area as well. Frontenac is prepared to address the zoning issues related to the microfarm policy changes to help increase economic development and startups that would otherwise not be able to exist.¹⁴¹

¹⁴¹ From Interview with Kelly Pender-CAO; Anne Marie Young – Manager of Economic Development and Joe Gallivan – Manager of Sustainability Planning, Frontenac County, Ontario. October 21, 2014

4.6 Case Community Results Comparative Matrix

The results of each case study have been compiled into three comparative matrix, identifying trends in initiatives that generate cost-savings, market-based instruments, and new revenue generation.

The results have been categorized to reflect the utilization of an initiative (Yes), not utilizing an initiative (No), being utilized by a different level of government (Regional or Lower-Tier) and in the formation process or supporting another organization responsible for the initiative (Developing, Adapted or Supporting).

Table 28 - Top Operational Cost-Saving Initiatives Matrix

	Huntsville	Halton Hills	King Township	Huron County	Frontenac County
Equipment and Procurement					
1. Sustainable Printing Efforts	Yes	Yes	Yes	Yes	Yes
2. Environmentally Friendly Product Procurement	Developing	Yes	Yes	Developing	No
3. Environmentally Friendly Equipment Procurement Policies	No	Yes	Yes	Developing	No
4. Buying Local Policies	Developing	Developing	Developing	Developing	Yes
5. Road Salt Reduction	No	Yes	Yes	Developing	No
6. Reuse of Construction Materials (Concrete, Catch Basins, Asphalt etc.)	No	Yes	Yes	No	Yes
7. Pesticide Reduction Strategies	No	Yes	Yes	No	No
Building Materials and Design					
1. Capacitors	No	No	No	No	No
2. Ceiling Fans	No	No	No	No	No
3. Multi-Use Facilities	No	No	No	No	No
a. Desk Sharing (Hoteling),	No	No	No	No	No
4. High Efficiency Windows	No	Yes	Developing	No	No
5. Insulation	No	Yes	Developing	No	No
6. Environmental Standard Buildings (LEED, ISO14001 etc.)	Developing	Developing	Yes	No	Yes
a. Green Roof	No	Yes	No	No	No
7. Thermostat Control	No	Yes	Developing	No	No
8. Weather Stripping Windows	No	Yes	Developing	No	No

Commuting and Business Travel					
1. Transportation Management Planning	Yes	Yes	Developing	Yes	Yes
2. Trail Development or Bicycle Promotion	Yes	Yes	Yes	Developing	Yes
3. Carpooling	No	Yes	Yes	Developing	Yes
4. Hybrid Vehicle Purchasing Incentives	Yes	Yes	No	No	Yes
a. Fleet Upgrades	No	Developing	No	No	No
5. Telecommuting	No	No	No	No	No
6. Work from Home Policy	No	No	No	No	Developing
7. Idle Reduction Strategies	No	No	Developing	No	No
Water					
1. Condensing Tankless Water Heater	Regional	No	No	Regional	No
2. Water Heater Temperature Reduction	Regional	Developing	No	Regional	No
3. Aerators	Regional	No	No	Regional	No
4. Low-Flow Toilets	Regional	Yes	Yes	Regional	Yes
5. Rain Barrel/Cisterns/Holding Tanks/Septic	Regional	Yes	Yes	Developing	Yes
6. Water Filtration Systems	Regional	No	Yes	Regional	No
Waste					
1. E-Waste Recycling	Yes	Yes	Yes	Regional	Lower Tier
2. Organic Waste Collection (Personnel)	Yes	Yes	Yes	Regional	No
3. Waste Diversion Depots	Yes	Yes	Yes	Regional	Lower Tier

Energy, Air and Climate Change					
1. Electrical Grid or Electrical Facility Restructuring	No	No	No	No	No
2. Common Energy Plan	Yes	Yes	Yes	No	Lower Tier
3. Purchase of an Energy and Environmental Management Tracking System (EEMS)	Yes	No	Developing	No	No
4. Heating/Cooling Maintenance or Upgrades	No	Yes	No	No	No
5. Energy Efficient Lighting Upgrades or Retrofit	Developing	Yes	No	No	No
(CFLs, LED, Dimmable Light Switches and Task Lamps, LCD Monitors, LED Exit Signs, Light Bulb Removal, Occupancy Sensor Light Switches, Power Bars etc.)	Developing	Yes	Developing	Lower Tier	Developing
6. Other Energy Efficient Products	Yes	Yes	No	No	No
7. Renewable Energy Investments	No	Yes	Developing	No	Developing
7a. Microfit Solar Voltaic Panels	Yes	Yes	Yes	No	Developing
7b. Geothermal	No	Yes	No	No	No
7c. Wind	No	No	No	Developing	No
Other					
1. Hiring of Sustainability Personnel	Yes	Yes	Yes	No	Yes
2. Sustainable Sector Toolkits (Manufacturing, Infrastructure, Service Orientated)	No	Developing	Adapted	Yes	No
3. Encourage Natural Areas/Ecology	Yes	Yes	Adapted	No	Developing

Table 29 - Top Cost-Saving Market-Based Instruments

	Huntsville	Halton Hills	King Township	Huron County	Frontenac County
Transportation					
1. Parking Requirements or Fees	No	Yes	No	No	No
2. Scrappage Incentives for cleaner vehicles	No	No	No	No	No
3. Subsidies or Incentives for Energy- Efficient Vehicles	No	No	No	No	No
4. Drive-Thru Carbon Footprint Charge	No	No	No	No	No
5. Other Transportation MBI's	Yes	Yes	No	No	No
Water					
1. Water Effluent Charges	No	Regional	No	No	No
2. Water Abstraction Charges	No	Regional	No	No	No
3. Water Pricing	No	Regional	No	No	No
4. Water-Reduction Rebate Programs (Toilet Rebate Programs)	No	Regional	No	No	No
5. Other Water MBI's	No	Yes	Yes	Regional	Yes
Waste					
1. Recycling Programs	No	Regional	Yes	No	Lower Tier
1a. Expanding List of Recyclable Materials	No	Regional	Yes	No	Lower Tier
2. Compost Programs	No	Regional	Yes	No	No
3. User-Pay Garbage Disposal System	Yes	Regional	Yes	No	Lower Tier
4. Deposit-Refund System on Goods	No	No	No	No	Lower Tier
5. Disposal Tax, Hazardous Waste Tax,	No	No	No	No	Lower Tier
6. Other Waste MBI's	No	Yes	No	No	Developing
Energy, Air and Climate Change					
1. Carbon tax	No	No	No	No	No
2. Reduce Energy Subsidies	No	No	No	No	No
3. Renewable Energy Subsidies	No	No	No	No	No
4. Anti-Idling Policies	Yes	Yes	No	No	No
5. Other Energy, Climate Change or Air MBI's	No	No	Yes	No	Yes

Land-Use or Building					
1. Density-Based Property Tax	No	No	Supporting	No	No
2. Land-Value Taxation	No	No	Supporting	No	No
3. Tradable Development Rights	No	No	No	No	No
4. Green Building By-Laws (Mandatory LEED Certification etc.)	No	Yes	Developing	No	Yes
5. Mixed-Use Development By-Laws	No	Yes	No	Developing	No
6. Sustainable Official Plan/Smart Growth Plan	Yes	Developing	No	Developing	No
6a. Grants for sustainable development or redevelopment	No	Yes	No	No	No
7. Other Land-Use or Building MBI's	No	No	Yes	No	No
Food Security					
1. Locally Grown Campaigns	No	Yes	Yes	Yes	Yes
2. Locally Grown Subsidies (Other Food Subsidies)	No	No	No	No	Yes
3. Fertilizer Tax	No	No	No	No	No
4. Nitrogen and Phosphorous Levy	No	No	No	No	No
5. Pesticide and Fertilizer Removal Subsidies	No	No	No	No	No
6. Farm Subsidies (Environmental)	No	No	Developing	No	No
7. Other Food Securing MBI's	Yes	No	Developing	Yes	No

Local Economy					
1. Local First Campaigns	No	No	Yes	Yes	Yes
2. Environmentally Geared Loans, Grants, Rebates, Rewards etc.	Yes	Yes	No	Yes	No
3. Other Local Economy MBI	No	No	No	Yes	Yes
Ecological Diversity					
1. Natural Resource Extraction tax	No	No	No	No	No
2. Wetland Cap and Trade	No	No	No	No	No
3. Ecological Permits and Controls	No	No	No	No	No
4. Ecological Compensation Programs	No	No	Adapted	No	No
Civic Engagement or Social Infrastructure	Yes	Developing	No	No	Yes
Housing or Employment	No	Developing	No	Developing	No
Safety or Crime	No	Developing	No	No	No

Table 30 - Top New Revenue Generation Initiatives

	Huntsville	Halton Hills	King Township	Huron County	Frontenac County
Energy	No	No	No	Developing	Yes
Eco-Tourism	Developing	Yes	Supporting	No	Developing
Green Economy					
1. Develop a Green Business Park	No	No	No	No	No
2. Sustainability Incubators	Yes	No	No	No	No
3. Green Business Attraction Plan	No	No	Supporting	No	No
4. Promote Sustainable Careers	No	No	Supporting	No	No
5. Shop Local Campaigns or Plans	No	Developing	Yes	No	Yes
Sustainable Agriculture					
1. Farmers Market	Supporting	Supporting	Supporting	Supporting	Yes
2. Identify New Markets	No	No	No	No	Yes
3. Wholesale Product Action Plan	No	No	No	No	No
Grant Funding					
1. Gas Tax Funding	Yes	Yes	Yes	Yes	Yes
2. Green Municipal Fund	Yes	Yes	Yes	Yes	No
3. Other Funding Opportunities	No	Yes	Yes	Yes	Yes

Table 31 - Type of MBI Observed

Type of MBI	Huntsville	Halton Hills	King Township	Huron County	Frontenac County	Average
Subsidies/ Grants	1	2	5	1	1	2/17
Fines/Charges/ Trade Information	2	2	3	1	0	1.6/15
	4	10	7	6	7	6.8/15
Total	7/47	14/47	15/47	8/47	8/47	10.4/47

Comparing SCPs to Actual Operationalization

Since most SCPs developed by the case communities were project based or target based, the researcher saw a direct connection between the low-hanging fruit, often listed as a priority project or key target, and not overarching standards or goals.

An interesting find when comparing SCP initiatives to actual operationalization was the inclusion of *future plans and areas of focus*. Many plans included potential areas for the future but few of the communities proceeded with the initiatives since the implementation of their respective SCPs.

Chapter 5: Discussion Chapter

Reviewing the Research Questions

5.1 Research Question 1

Which market-based instruments or other cost-saving initiatives are related to sustainable community plan operationalization, and are generating cost-savings (and/or new revenue) in small municipalities?

When considering the first research question, the researcher identified a number of new revenue generation/cost-saving initiatives as well as market-based instruments that are related to operationalizing sustainable community plans. While there is a long list of initiatives that can be tied to a Sustainable Community Plan, the researcher narrowed this field to the top 105 most commonly mentioned initiatives that could result in cost-savings or new revenue generation, including market-based instruments (See Appendix A for list). From this list the researcher added other initiatives identified through interviews and compiled them in the finished document used in the data analysis phase (See Appendix F for finished list).

Of the 105 most commonly used initiatives, the researcher found that 67 initiatives had been implemented to one degree or another within the case communities either by their tier or a supporting tier. Most of these initiatives resulted in cost-savings with a primary focus on energy efficiency, sustainable purchasing and transportation. A number of cost-savings recorded were implemented in partnership with a different tier of government; these results are presented in section 4.6.

Initiatives that resulted in new revenue generation were often in the developing or proposition stage. However, there was a common trend of using a sustainable community plan to access external funding, often from the Green Municipal Fund or Gas Tax Funding. There was no common trend of market-based instruments utilized to generate cost-savings or new revenue generation within small municipalities as part of a sustainable community plan. However 22 of the 45 most common MBI's were adopted to some degree across the different municipalities. Partial explanation of this trend can be accredited to different tiers of government control over areas such as waste and water.

While there are few market-based instruments currently used to generate cost-savings at a municipal level, there are some operational initiatives generating cost-savings as well as some

initiatives generating new revenue. See the following three tables for a comparison of the empirical findings with the literature:

Table 32 - Market-Based Instruments Comparison

Market-Based Instruments	Empirical	Literature	Comments
Transportation	Three examples of cost-saving MBIs found across two municipalities	cost-savings potential ¹⁴²	Many transportation MBIs were not applicable for small municipalities
Water	Three examples of cost-saving MBIs found across three municipalities	cost-savings potential ¹⁴³	Water efforts were often operated by a different level of government
Waste	Six examples of cost-saving MBIs found across three municipalities	cost-savings potential ¹⁴⁴	Waste efforts were often operated by a different level of government
Energy, Air and Climate Change	Four examples of cost-saving MBIs found across four municipalities	cost-savings potential ¹⁴⁵	Many of these MBIs were not applicable for small municipalities
Land-Use or Building	Six examples of cost-saving MBIs found across four municipalities	cost-savings potential ¹⁴⁶	Six additional examples of cost-saving MBIs were supported or developed across three municipalities
Food Security	Seven examples of cost-saving MBIs found across five municipalities	cost-savings potential ¹⁴⁷	Locally grown campaign were significant for four municipalities
Local Economy	Eight examples of cost-saving MBIs found across five municipalities	cost-savings potential ¹⁴⁸	Many small grants and local campaigns exist with some cost-savings potential across all five municipalities
Ecological Diversity	No significant cost-savings found	cost-savings potential ¹⁴⁹	One community had an adapted ecological compensation program
Civic Engagement or Social Infrastructure	Two examples of cost-saving MBIs found across two municipalities	cost-savings potential ¹⁵⁰	One municipality is developing a cost-saving MBI
Housing or Employment	No significant cost-savings found	cost-savings potential ¹⁵¹	Two municipalities are developing a cost-saving MBI
Safety or Crime	No significant cost-savings found	cost-savings potential ¹⁵²	One municipality is developing a cost-saving MBI

¹⁴² (Gayer & Horowitz, 2006; Hendrickson, Lindberg, Connelly, & Roseland, 2011; Stavins, 2001)

¹⁴³ (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

¹⁴⁴ (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

¹⁴⁵ (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

¹⁴⁶ (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

¹⁴⁷ (Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

¹⁴⁸ (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

¹⁴⁹ (Gayer & Horowitz, 2006)

¹⁵⁰ (Hendrickson et al., 2011)

¹⁵¹ (Hendrickson et al., 2011)

¹⁵² (Hendrickson et al., 2011)

Transportation

While over 97% of sustainable community plans include transportation as an area of concern (Clarke et al., 2014), there was little use of market-based instruments to address this issue. From the literature, the researcher included four common types of transportation related MBIs including: parking fees or requirements, scrappage incentives for cleaner vehicles, subsidies or incentives for energy efficient vehicles, drive-thru emission fees as well as a category for additional transportation MBIs not covered (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001).

Of the MBIs previously listed only one community implemented a parking fee or requirement and two communities listed some other form of transportation MBI. The lack of use for some MBIs such as scrappage incentives or energy efficient vehicle subsidies can be explained by communities looking for other levels of government (usually the Provincial Government) to take leadership. The idea of a drive-thru emission charge was positively received by many communities and even discussed among municipal sustainability committees; however none of the communities profiled, have a plan to implement such a fee.

Water

While over 97% of sustainable community plans include water as an area of concern (Clarke et al., 2014), there was little use of market-based instruments to address this issue. From the literature, the researcher included four common types of water related MBIs including: water effluent charges, water abstraction charges, water pricing, water reduction rebate program fees as well as a category for additional water MBIs not covered (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013).

Of the MBIs previously listed, none of the common MBIs were used within the four case communities. Three communities mentioned that they used some form of MBI to generate cost-savings. Halton Hills identified that they participate in a User-Pay Garbage Disposal System in partnership with the region.¹⁵³King Township has a hand guide they distribute to new businesses encouraging water efficiency.¹⁵⁴Finally, Frontenac County financed dry hydrants for some of the

¹⁵³ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁵⁴ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014

lower-tier communities within their region.¹⁵⁵ Both Huntsville and Huron County indicated that water was not a top priority for their sustainability plan because a different level of government was in charge of water operations for the municipality. This could explain the lack of MBI use in this category.

Waste

While over 91% of sustainable community plans include waste as an area of concern (Clarke et al., 2014), there was little use of market-based instruments to address this issue. From the literature, the researcher included five common types of waste related MBIs including:

- Recycling programs
- Expanding the list of recyclable material
- Compost programs
- User-pay garbage disposal
- Deposit-refund system on goods
- Disposal tax, hazardous waste tax
- And a category for additional water MBIs not covered

(Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013).

The first four categories of waste MBI (recycling, expanding recycling, compost and user-pay garbage disposal) saw a common trend that either all of the initiatives were being used in some way (such as the case for King Township¹⁵⁶) or that waste was the responsibility of a different tier of government (i.e. Halton Hills¹⁵⁷, Huntsville¹⁵⁸ and Frontenac County¹⁵⁹). Halton Hills also developed a centralized waste container program in all their buildings to limit waste¹⁶⁰. When it came to deposit-refund systems of goods, the researcher believes that this particular MBI might not be relevant for most municipalities concerning cost-savings. Disposal tax and hazardous waste tax,

¹⁵⁵ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014

¹⁵⁶ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014

¹⁵⁷ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁵⁸ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

¹⁵⁹ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁶⁰ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

while an effective MBI may be better utilized at a different level of government (most likely provincial).

Energy, Air and Climate Change

While 83-90% of sustainable community plans include energy (Clarke et al., 2014), air and climate change as an area of concern, there was little use of market-based instruments to address this issue. From the literature, the researcher included four common types of waste related MBIs including: a carbon tax, reduce energy subsidies, renewable energy subsidies, anti-idling policies, as well as a category for additional energy, air and climate change MBIs not covered (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013).

Of the MBIs previously listed only anti-idling policies seemed to have any type of MBI in the small communities (as seen in Huntsville¹⁶¹ and Halton Hills¹⁶²). These policies were reported to be quite poorly enforced, thus not creating significant cost-savings. In the case of Huntsville an anti-idling policy exists but only a few tickets for idling are distributed each year.¹⁶³ Most communities surveyed, found that market-based responses to these issues were better undertaken by a different party, such as the provincial government or the private energy sector.

Land-Use or Building

While 89% of sustainable community plans include land-use or building as an area of concern (Clarke et al., 2014), there was little use of market-based instruments to address this issue. However, many communities were developing MBIs. From the literature, the researcher included six common types of land-use or building related MBIs including:

- Density-Based Property Tax
- Land-Value Taxation
- Tradable Development Rights
- Green Building By-Laws
- Mixed-Use Development By-Laws
- Sustainable Official Plan/Smart Growth Plan
- Grants for sustainable development or redevelopment

¹⁶¹ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

¹⁶² Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁶³ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

- And, a category for additional land-use or building MBIs not covered (Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

The researcher found mixed results when gathering empirical data concerning land-use and building MBIs. Many communities were familiar with available land-use and building MBIs and several were in the process of developing future initiatives, such as Halton Hills smart growth plan¹⁶⁴ and Huron County's green-building by-laws.¹⁶⁵ Other than tradable development rights (which might not be best applied to small municipalities) every MBI was used, developing or supported. This indicates a strong future trend for the use of MBI in the future.

Food Security

While 80% of sustainable community plans include food security as an area of concern (Clarke et al., 2014), there was little use of market-based instruments to address this issues. From the literature, the researcher included six common types of food security related MBIs including:

- Locally Grown Campaigns
- Locally Grown Subsidies (Other Food Subsidies)
- Fertilizer Tax
- Nitrogen and Phosphorous Levy
- Pesticide and Fertilizer Removal Subsidies
- Farm Subsidies (Environmental)
- And a category for additional food security MBIs not covered (Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

The communities surveyed all had a strong focus on agriculture as a major economic contributor. Thus, it was surprising to find that very few food security MBIs were utilized in the case communities. One MBI that was an exception to this was the use and development of *locally grown* campaigns, which was quite prominent in four of the five case communities (Halton Hills¹⁶⁶, King Township¹⁶⁷, Huron County¹⁶⁸ and Frontenac County¹⁶⁹). One possible explanation for the lack of

¹⁶⁴ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁶⁵ Interview with Huron County's Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

¹⁶⁶ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁶⁷ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014

MBI use in this category is that most initiatives are void due to individual sustainable farming efforts. This explanation is especially true concerning a fertilizer tax, nitrogen and phosphorous levy and pesticide/fertilizer removal subsidies which were not found in any of the five cases. These areas are already showing drastic improvements either due to federal legislation banning the substance or by farming associations advocating for reduction in this area. Regardless of the findings, food security MBIs could be used more in small municipalities to further develop environmental standards in this field.

Local Economy

Approximately 78% of sustainable community plans include local economy as an area of concern (Clarke et al., 2014). From the literature, the researcher included two common types of local economy MBIs including:

- Local first campaigns
- Environmentally geared loans, grants, rebates, rewards, etc.
(Gayer & Horowitz, 2006; Hendrickson et al., 2011; Stavins, 2001; Thompson, 2013)

The researcher also included a category of other local economy MBIs that the community has utilized.

Market-based instruments concerning the local economy saw the greatest amount of use within the case communities. More than half of the case communities indicated they had some form of environmentally geared loan, grant, rebate or reward that benefited the local economy and every case community indicated that they had some form of local economy MBI available. This could be attributed to a cross-coded pre-existing MBI that was adapted to benefit the environment. Huron County has plans around cultural development, business retention and expansion as well as a Make-Here-At-Home program.¹⁷⁰Frontenac County has investing in rezoning practices to promote

¹⁶⁸ Interview with Huron County's Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

¹⁶⁹ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁷⁰ Interview with Huron County's Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

micro farming and has changed other traditional zoning measures to encourage local business growth.¹⁷¹

Ecological Diversity, Civic Engagement or Social Infrastructure, Housing or Employment, Safety or Crime

Of the following categories (Ecological Diversity, Civic Engagement or Social Infrastructure, Housing or Employment, Safety or Crime) only 40-75% of sustainable community plans included them as a concern (Clarke et al., 2014). Thus, it was not surprising to find limited use of MBIs within the case communities. Regarding housing and employment; Huron County has an employment focus on some of the local economy plans they have created¹⁷² and Halton Hills has a component of both of these areas within their official plan but not as part of their sustainable community plan.¹⁷³ Concerning civic engagement or social infrastructure, one case had significant findings; Huntsville has a planning grant aimed at rezoning properties to certain development standards, promoting urban densification.¹⁷⁴ One of the more unexpected trends discovered in the research was that none of the communities seemed to have any form of MBI concerning ecological diversity (other than King Townships adapted ecological compensation programs where the township will support ecological diversity whenever possible¹⁷⁵). This trend is a missed resource because as many of the communities profiled have large ecological reserves that could benefit from a MBI. Perhaps the lack of findings in this field could be attributed to the different levels of government control over high-level ecological reserves. That being said, municipalities inaction in this area is concerning.

¹⁷¹ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁷² Interview with Huron County's Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

¹⁷³ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁷⁴ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

¹⁷⁵ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014

Operational Cost-Savings Comparison

Table 33 - Operational Cost-Savings Comparison

Operational Cost-Savings	Empirical	Literature	Comments
Equipment and Procurement	17/35 operational cost-savings found across five municipalities	Cost-savings potential ¹⁷⁶	Eight additional initiatives are in development. Findings validate the literature
Building Materials and Design	10/50 operational cost-savings found across three municipalities	Cost-savings potential ¹⁷⁷	Six additional initiatives are in development. Findings validate the literature
Commuting and Business Travel	14/40 operational cost-savings found across five municipalities	Cost-savings potential ¹⁷⁸	Six additional initiatives are in development. Mostly through planning and promotion
Water	7/30 operational cost-savings found across three municipalities	Cost-savings potential ¹⁷⁹	11 additional initiatives are operated by the regional government and two initiatives are in development
Waste	9/15 operational cost-savings found across three municipalities	Cost-savings potential ¹⁸⁰	5 additional initiatives are operated by a different tier of government
Energy, Air and Climate Change	14/55 operational cost-savings found across three municipalities	Cost-savings potential ¹⁸¹	2 additional initiatives are operated by the regional government and 9 initiatives are in development
Other	7/15 operational cost-savings found across five municipalities	Cost-savings potential	Four additional initiatives are in development or adapted. Findings validate the literature

¹⁷⁶ (Regional Carbon Initiative, 2014)

¹⁷⁷ (Industry Canada, 2011; Natural Resources Canada, 2013; Regional Carbon Initiative, 2014)

¹⁷⁸ (Regional Carbon Initiative, 2014)

¹⁷⁹ (Regional Carbon Initiative, 2014)

¹⁸⁰ (Regional Carbon Initiative, 2014)

¹⁸¹ (Regional Carbon Initiative, 2014)

Equipment and Procurement

Equipment and Procurement was one of key areas where the researcher identified cost-savings both empirically and from the literature. This category includes equipment upgrades, reduction efforts and green purchasing (Regional Carbon Initiative, 2014). All communities included sustainable printing efforts and only Frontenac County did not have an environmentally friendly product procurement policy either in place or in development.¹⁸² However, while the other four communities are still developing a buying local policy (complicated through the North American Free Trade Agreement) Frontenac has developed a purchasing policy that favours local businesses by including carbon emissions as a purchasing factor.¹⁸³ Both Halton Hills and King Township has initiatives in place to reduce road salt, reuse construction materials and reduce pesticide use while Huntsville and Huron County do not.¹⁸⁴ Frontenac County has seen some significant cost-savings through the reuse of construction materials by repurposing old bridges to pedestrian bridges elsewhere.¹⁸⁵

Building Materials and Design

Many of the cost-savings from Building Materials and Design identified in the literature were either not applicable or not utilized by municipalities. All five communities did not demonstrate efforts to include ceiling fans as a means of cost-savings and upgrades to capacitors were not utilized either¹⁸⁶. An interesting research finding indicated that none of the profiled municipalities invest in multi-use facilities or desk sharing (hoteling) as a means of cost-savings. While these initiatives are

¹⁸² Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁸³ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁸⁴ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014, Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014, Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014, Interview with Huron County's Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

¹⁸⁵ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁸⁶ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014, Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014, Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014, Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

quite popular within the not-for-profit sector and more collaborative private companies, it is likely that municipalities are not investing in this initiative either due to their bureaucratic nature or the prestige factor of not *having* to share a building with other organizations.¹⁸⁷ Both King Township and Frontenac County have LEED certified buildings and are aiming for higher environmental standards for future buildings.¹⁸⁸ Halton Hills has many building materials and design initiatives through their Green Building Standard including: high efficiency windows, promoting logical environmental standards which include but are not limited to LEED, a green roof and weather stripping windows.¹⁸⁹ Other communities who did not answer positively to this section were not currently building a new facility but were addressing this category in other ways. Huntsville for instance does not currently have any LEED certified buildings but has done a number of sustainable upgrades to their Canada Summit Centre such as solar hot water, automatic thermostat control and weather-stripped windows.¹⁹⁰ King Township is addressing operational cost-savings by shutting down or selling Township owned buildings that are no longer fully utilized or have become redundant.¹⁹¹

Commuting and Business Travel

The planning side of this field was quite developed in the empirical data. Every municipality answered positively when asked about transportation management plans, trail development plans (including bicycle promotion and active transportation), even carpooling initiatives and hybrid or electric vehicle purchasing proved to be embraced as strategies that create cost-savings. Overall, the researcher found that this topic had a positive response and will continue to develop as an area where cost-savings can be generated.

Three areas of future improvement under this topic, were telecommuting and work-from-home policies. Frontenac County is currently looking at a work-from-home policy as part of the economic

¹⁸⁷ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁸⁸ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014,
Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁸⁹ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁹⁰ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

¹⁹¹ Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014

development strategy¹⁹² but the remaining communities do not have anything in place concerning this initiative. The researcher would highly recommend these cost-efficient strategies be adopted within all communities (specifically rural communities) due to their larger impact on eliminating unnecessary travel and increasing social well-being within the workplace. Idle-reduction strategies are another area that was under-utilized in each municipality. King Township is currently developing an idle reduction strategy.¹⁹³ However, this can be a difficult area to improve considering the rural (and therefore transportation dependent) geographic reality of small municipalities.

Water

Water reduction and savings is not a high priority for most communities because water is still a fairly inexpensive commodity in Ontario.¹⁹⁴ Water reduction efforts that help community wide reduction such as low-flow toilet upgrades or rain barrel subsidies were quite prominent across the empirical evidence in communities such as Halton Hills, King Township and Huron County¹⁹⁵ but operational water upgrades resulting in cost-savings were not as prominent. It should be noted that Huntsville and Huron County were not directly responsible for their water operations but still worked in partnership with a different tier municipality with these efforts.

Waste

All municipalities have long/preexisting efforts to reduce waste within their communities, whether performed at the case community level or in partnership with a different tier municipality. Almost all communities are working to increase their consumption of recycled materials and organic waste collection and are offering ways to dispose of e-waste and other hazardous materials. This is an area where future cost-savings initiatives should be explored as every community has highly developed waste disposal operations.

¹⁹² Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan - Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁹³ Interview with Chief Administrative Officer - Susan Plamondon and Sustainability Coordinator - Sara Puppi, King Township, December 10, 2014

¹⁹⁴ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

¹⁹⁵ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014, Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014,

Interview with Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, Huron County, November 5, 2014

Energy, Air and Climate Change

Together these three categories have the largest selection of possible areas that result in cost-savings. The purpose of combining the three categories was many of the efforts used to reduce one category subsequently reduced another. The developments of a common energy plan as well as the investment in Solar Voltaic Panels were prominent in three of the five communities (Huntsville, Halton Hills and King Township). This trend can be explained due to the funding availability through the FCM for common energy plans and the provincial MicroFit program for the solar panels. Other than this trend there was one case community who has invested in most of the categories identified (excluding a usage of an enterprise energy management system)¹⁹⁶ as well as a trend of ongoing projects investing in small electrical operational savings (upgrades to LED or CFL). One category identified in the literature included in the study was electrical grid restructuring (Stavins, 2003), which would be better identified within the municipality's energy distributor than with the municipality itself.

Other

The *Other* category included areas of operational cost-savings either identified in case community research or from the literature that did not fit well within the other identified categories. One common trend within the empirical that was not identified from the literature is that the hiring of sustainability personnel increased municipal cost-savings.¹⁹⁷ By hiring sustainability personnel, a municipality has at least one individual dedicated to sustainability efforts that are in the best interests of the municipality and often result in cost-savings. Four communities had at least one individual working on municipal sustainability initiatives full-time.

The municipal development of literature to promote sustainability within the private sector was a surprising find from the empirical. Halton Hills, King Township and Huron County had developed some kind of material to help create behavioural change resulting in cost-savings. One particularly strong example of this was Huron County's Sustainable Manufacturing toolkit, which focuses on cost-savings for manufactures in the community and benefits the county as a result.¹⁹⁸ Cost-effective sustainability literature as a cost-savings initiative should be explored for future use. While each community emphasized the need for ecology or encouraging natural areas and

¹⁹⁶ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

¹⁹⁷ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

¹⁹⁸ Interview with Huron County's Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, November 5, 2014

recognized the support of the municipality to provide more ecological projects, it is not often viewed as an area of cost-savings. Most ecological services are not expressed within market-measures at a municipal level.

New Revenue Generation Comparison

Table 34 - New Revenue Generation Comparison

New Revenue Generation	Empirical	Literature	Comments
Funding	13/15 new revenue generating initiatives found	New revenue generation	Validates the literature
Other Areas	7/50 new revenue generating initiatives found	New revenue Generation	11 additional initiatives being supported or developed, area for future development

The creation of funding opportunities is arguably the top area to support the operationalization of a sustainable community plan. Every community identified multiple funding sources that increased revenue as a result of operationalizing their plan. The use of municipal resources to create new revenue generation through areas such as energy, eco-tourism and creating a green economy were not strongly identified within the case communities though Halton Hills has an Eco-Tourism plan¹⁹⁹ and Frontenac County has submitted a Green Energy Attraction Strategy (which did not go through due to the changes in the Green Energy Act).²⁰⁰ This appears to be an area that municipalities would like to invest in for the future and with the upcoming provincially mandated cap-and-trade, we might see municipalities become more involved in these areas as well.

Sustainable agriculture, which is a large portion of most case community's economy, was not a significant area for new revenue. The researcher would like to encourage future research in this area so that appropriate strategies are implemented in order to develop sustainable agriculture revenue.

¹⁹⁹ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

²⁰⁰ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

5.2 Research Question 2

What is the business case for operationalizing SCPs in small municipalities?

The business case for operationalizing SCPs from the literature

It is becoming increasingly difficult for Canadian municipalities to achieve long-term development and growth due to the threats of increasingly unaffordable housing, receding open space and stressful social patterns (Roseland, 2000). This occurs simultaneously with increased carbon emissions, solid and liquid wastes and consumption of most of the world's fossil fuels. In fact, Canadian cities annually produce a combined 20 tons of carbon dioxide per capita, which places them among the top three or four nations in terms of per capita contribution to potential climate change (Roseland, 2000). While many cities recognize that current growth strategies are outdated, the reality of the situation is that most municipalities are using growth strategies that are forty years old and are no longer relevant to today's culture (Roseland, 2000).

While there is great recognition that sustainable communities are a desirable policy goal, there is less certainty of how to achieve this goal (Bulkeley & Betsill, 2005). The business case for sustainability in small municipalities supports the various benefits, change requirements and investments necessary for a community to become more economically, social and environmentally stable (Zokaei, 2013).

The proven examples that address sustainability results in economic and environmental success makes the business case for sustainability a win-win business strategy. That is, a strategy that benefits the community (socially or economically) and benefits the environment as well (Elkington, 1994). A win-win business strategy finds the tangible and intangible benefits will outweigh the costs necessary to make these changes. Thus, creating a financial incentive and environmental benefits (Elkington, 1994).

Implementing a sustainable community plan has the capability to "reduce energy budgets, reduce material consumption, and a smaller, more compact, urban pattern interspersed with productive areas to collect energy, grow crops, and recycle waste" (Roseland, 2000, p.30). An SCP enables a community to realize the "triple-win" potentials that are available to them through sustainability management.

The business case for operationalizing SCPs from empirical research

From the empirical evidence, the researcher has concluded that the business case for operationalizing an SCP has many benefits that can result in cost-savings or generate new revenue. These benefits can be classified into two categories:

- Benefits that increase environmental sustainability
- Benefits that influence economic sustainability

Environmental sustainability benefits the SCP through environmental awareness, both within the municipality's internal operations as well as individual municipal citizens. By increasing environmental literacy and educating stakeholders of the importance and interconnectivity of community sustainability within the community, a municipality is better able to identify long and short-term problem areas, which will ultimately become costly, thus creating preemptive cost-savings. A common theme that we saw from the case studies was the investment in information based MBIs used to develop a more sustainable mindset. By incorporating sustainability into the mindsets of municipal employees and the public, municipalities will have an easier time developing future cost-savings.²⁰¹

The operationalization of SCPs creates a heightened sense of economic sustainability as well. From the empirical research, several areas of cost-savings were available that had positive environmental and social impacts such as: more efficient building standards,²⁰² commuting and transportation plans,²⁰³ and hiring sustainability personnel.²⁰⁴ As municipalities explore these areas of cost-savings, the potential for new sustainable revenue has surfaced through initiatives such as: eco-tourism,²⁰⁵ potential green energy development (placed on hold due to changes in the Green Energy Act)²⁰⁶ and grant funding.²⁰⁷ These cost-savings and new revenue initiatives suggest that operationalizing municipal SCPs have beneficial returns on investment for small municipalities.

²⁰¹ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

²⁰² Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

²⁰³ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

²⁰⁴ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

²⁰⁵ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

²⁰⁶ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

²⁰⁷ Interview with Damian Szybalski, Manager of Sustainability, Halton Hills, November 18, 2014

Comparing the Findings From the Literature and the Empirical

The researcher has noticed some key affirmation and nuances between the literature and the empirical evidence since Roseland's research in 2000 municipal planning has come a long way (Roseland, 2000). Most of the forty-year-old growth plans noted in his paper have since been updated, deleted or enhanced. Within the five case communities of this study, each of them has created an updated sustainable community plan within the last five years. Other updated plans noted in these communities are:

- Official Plans
- Official Strategy Plans
- Transportation Plans
- Climate Action Plans
- Growth Plans, among others

Many communities are not yet willing to invest additional capital in order to decrease inefficiencies in the future. While investments into long-term sustainable development is beginning to advance, significant financial investment is not yet the norm for small communities in Southern Ontario.²⁰⁸ In saying this, each community profiled in this study has invested some capital in sustainability projects. Trends toward future growth seem likely as new provincially mandated priorities arise.²⁰⁹

There is an increased importance on partnerships between different levels of government (Clarke et al., 2014). One barrier to sustainability comes from the lack of connection between different tiers of government and their collaboration of sustainability initiatives. While collaboration does exist for water and waste infrastructure as well as many other smaller projects (particularly at the regional level), the researcher has identified a need for increased partnerships for larger scale sustainability issues such as the deposit-refund system of goods which does not exist in any community, or renewable energy subsidies, which are not explored on a small municipal scale.

Interview with Chief Administrative Officer Susan Plamondon and Sustainability Coordinator Sara Puppi, King Township, December 10, 2014,

Interview with Rebecca Rathwell, Planning Project Manager and Scott Tousaw, Director of Planning and Development, Huron County, November 5, 2014,

Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

²⁰⁸ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

²⁰⁹ Interview with Kelly Pender, CAO; Anne Marie Young, Manager of Economic Development and Joe Gallivan, Manager of Sustainability Planning, Frontenac County, October 21, 2014

Other Considerations

From the case community results, the business case for operationalizing SCPs in small municipalities is currently framed around gathering an understanding of sustainability issues within a community and administering the *quick fixes* or *low-hanging fruit* before making large scale sustainable change. By operationalizing SCPs, communities have seen sustainable issues and responses slowly become integrated in the everyday political decision-making and long-term planning of the municipality. Each case community has used their SCP to help develop a basis for lasting sustainable change to come, placing them in an advantageous position to react to new sustainable trends, funding and government mandated regulations for the future.

From the empirical evidence, the researcher can conclude that current sustainable community plans are still too new to fully affirm or deny the exact cost-saving potential of operationalizing SCPs. Most of the spreadsheets and municipal budgeting trends that would be needed for this conclusion do not currently exist. However, the evidence can conclude the market-based instruments are currently beginning to be utilized and communities are beginning to accept their potential. Therefore, the feasibility of MBI's and other initiatives to generate cost-savings can be affirmed.

5.3 Research Question 3

What are the sustainable community budgeting implications and local government policy implications of this study? Also, what new contributions to literature does this study provide?

From the results of the case communities, the sustainable budgeting implications of operationalizing a SCP have not been substantial. However, there have been some positive findings correlating many MBIs and cost-saving initiatives with operationalizing SCPs. Also, funding becoming available as a result of implementing and operationalizing SCPs have been a common success across the case studies. Finally, communities that have hired a full-time sustainability officer or coordinator have seen greater success in operationalizing their SCP than those who have not hired sustainability personnel. While this study did not analyze how much return-on-investment a small municipality receives from hiring sustainability personnel, this study has noticed that communities with sustainability personnel are far more likely to operationalize their plans.²¹⁰

When considering the local government policy implications of this study, the finding of the research study has shown that policy development concerning cost-saving MBIs or operational initiatives is still in the early stages of development. Most cost-savings identified in this study were not from written policies but from municipal preferences or agreements. In order to fully identify the budgeting implications and local government policy implications, further research is required.

The policy implications of this study can best be identified by categorizing the market-based instruments currently utilized in each community. The following graph helps explain what category of market-based instruments is currently utilized:

²¹⁰ Interview with Rebecca Francis, Sustainability Coordinator, Town of Huntsville, October 15, 2014

Table 35 - Utilized Market-Based Instruments

Market-Based Instruments	Literature	Empirical	Comments
Strategic Directions	Leads to efficiency and long-term planning	Strategic directions found	Validates the literature
Actors	Public, Private, Hybrid Partnerships lead to efficiencies	Partnerships were identified for cost-savings	Validates the literature
Policy Instruments and Strategies	Subsidies and Grants	Not a significant source of cost-savings	Not Found: may be an area for future consideration
	Fines/Charges/Trades	Not a significant source of cost-savings	May not be applicable to small municipalities
	Information Based	Some examples of cost-savings	Most MBI cost-saving initiatives were in this category

This graph shows the use of market-based instruments that help identify strategic directions as well as develop cost-saving partnerships. However, market-based instruments that are used as policy instruments and strategies were kept to a minimum. (For more on policy implications see *Conclusion*).

Another new contribution to the literature that this study can provide is the limitation of social imperatives in the studied Sustainable Community Plans. While these social imperatives are covered in other areas of municipal planning, such as in the official plan, they have been excluded or only briefly touched on as a sustainability issue and therefore offer limited usage of market-based instruments. Of the profiled case communities there was notable limitation of social sustainability topics such as:

- Civic Engagement
- Social Infrastructure
- Housing
- Employment
- Safety
- Crime

These categories were areas where the researcher actively looked for MBI use or cost-saving initiatives yet even when considering other important fields when considering all three categories of sustainability (environment, society and economy) such as: family planning, education, first nations inclusion and recreation, there was limited mention, often deferring to environmental issues. Such limited exposure of social issues in favour of environmental stewardship can be considered as a missed opportunity for communities looking to broaden their sustainable efforts moving forward.

Chapter 6: Conclusion

Summary of Contribution to Theory

This thesis has explored new revenue and cost-savings of market-based instruments and other initiatives through operationalizing sustainable community plans within a small Ontario community context. Sustainable development is a high priority for municipalities as a means of limiting future expenses, reducing carbon emissions and other sustainability concerns. The reaction to the necessity for sustainable development has been developed through the use of sustainable community plans. Small communities in Ontario struggle to operationalize these plans once they have been adopted. Due to limited funds and resources, many municipalities are responding to sustainability issues with limited small projects and educational programs. One possible concern to this issue lies with the cost-saving potential of market-based instruments and other policy mechanisms. Market-based instruments have the potential to provide cost-savings or generate new revenue through new policy implementation. The researcher has found early stages of developing market-based instruments, which will lead to more substantial policy changes moving forward.

The contribution to theory for this paper is that the researcher has found an increased use of market-based instruments as a mechanism for operationalizing a sustainable community plan, specifically in regards to environmental concerns. While the cost-saving potential has not been verified, there has been significant evidence that smaller communities are now beginning to use MBIs.

It should be noted as well, that market mechanisms are almost never the sole instrument used to develop sustainable development (Gayer, 2006). They are almost always (and should be) combined with other regulations. This mixed approach to the budgeting implications of MBIs might be the key to successfully operationalizing sustainable community plans.

The researcher identified a number of market-based instruments that are related to operationalizing sustainable community plans. There was no common trend of market-based instruments utilized to generate cost-savings or to generate new revenue within small municipalities as part of a sustainable community plan. However, 22 of the 47 most common MBI's were adopted to some degree across the different municipalities. Partial explanation of this trend can be accredited to various levels of government control over areas such as waste and water.

When comparing the different types of MBI between: Subsidies and Grants, Fines, Charges and Trades, and Information based MBIs the researcher noted that a majority of MBIs utilized are information based. This trend is not uncommon as an initial starting point for communities because it only requires approval from the CAO compared to Council-run policy changes or changes to municipal budgeting. It could be deduced that these information based MBIs will result in future MBI usage within the other two sectors.

From the data collected from the case communities, it is clear that the sustainable budgeting implications of operationalizing a SCP are still in the early stages of development within the sampled case communities. While there has been some positive findings correlating between some of the more prominent areas of a SCP such as energy efficiency, other areas included within the SCP are neglected when considering cost-savings and new revenue generation, particularly the social issues included within the plan.

The researcher also noted that funding is becoming available as a result of implementing and operationalizing SCPs across the case studies. The use of this funding has been distributed in different ways but all the funding has been acquired through the operationalization of an SCP.

When considering the local government policy implications of this study, there is no apparent trend regarding policy changes or upgrades as a result of operationalizing SCP's many policy changes that have resulted in positive sustainable impacts.

Recommendations for Small Municipalities

This study has developed several recommendations for small municipalities in Ontario that are looking for cost-savings or new revenue through operationalizing their sustainable community plans.

Future Focus

While small municipalities are developing strategies to address social issues such as poverty, housing, health, diversity, etc., these social sustainable issues are poorly represented in the sustainable community plans of this study's case communities. Incorporation of social sustainability issues into sustainable community plans should be an area of focus as planning to address these imperatives is not only an important inclusion of sustainable development but a possible area of cost-savings as well.

This research has found many examples of sustainable initiatives being addressed at a different tier of government. Cross-sector partnerships between multiple tiers of government, as well as private and not-for-profit organizations, should be explored in order to reach maximum efficiency and the full potential of a municipal SCP.

While further research is necessary on how relative the hiring of sustainability personnel is to generating cost-savings, there is a correlation of how effective a sustainable community plan has been when full-time sustainability personnel are available. Future consideration of the return-on-investment to hiring sustainability personnel (or addition personal) should be considered.

The Use of Market-based Instruments, Cost-Saving Initiatives and New Revenue

When considering the use of MBI's, cost-saving initiatives and NRG moving forward, this research has found 22 unique cost-saving initiatives used within the case communities. By consulting this list of initiatives as well as initiatives developed in neighbouring communities (peer-to-peer), small municipalities can develop a much better understanding of which initiatives will work best in their community moving forward. This should include a focus on new revenue generation in areas such as eco-tourism, green energy attraction or green business attraction.

All of these categories have strong potential for small municipalities and should be considered moving forward. The exploration of public and private sector funding, grants and taxes regarding local municipal sustainability initiatives should be thoroughly developed as well as there is an increasing amount of funding available for such initiatives.

Planning and Allocation

One of the largest issues identified through this research was that even when a municipal sustainability office would generate cost-savings or new revenue, this would not be reflected in the department's budget for the following year. There are several ways to address this issue:

1. Develop a Cost-Savings-to-Sustainable-Budgeting Allocation Matrix. By developing a matrix that can show city councilors exactly how the sustainability office is generating cost-savings and new revenue as well as creating a business case for future expansion of funding, sustainable funding will be able to develop and invest in more expansive projects.
2. Create a local definition to what your municipality considers an "acceptable payback period." If there is a set guideline in place for what an acceptable payback period for a

project is, the sustainability office will be able to develop a stronger argument for some larger scale projects that the municipality would normally not invest in considering large upfront costs.

3. Develop a progression plan for the municipal sustainability office. While the research of this study indicates that having sustainability personnel is directly co-related to sustainable development success, there will be a limit as to how successful these sustainability personnel will be if they are not equipped to handle the business case for sustainability moving forward (the financial side, policy side, planning side, etc.). By developing a progression plan for the office, a municipality can have a better sense of what the in-house capabilities are, and the direction the office should take in the future towards the local business case for sustainability.

Limitations of the Research Design

When considering the limitations of this research design the researcher has identified some areas of note:

1. There is potential that other MBIs and other cost-saving initiatives are being implemented in small municipalities in Ontario that were not implemented within the five case communities.
2. All of the selected case communities are past or current clients of Lura Consulting and therefore have some investment in operationalizing their sustainability plans. While the case communities were selected to show a proportionate representation of small municipalities in Ontario, these communities all have a sustainable direction.
3. All case communities have a population under 60,000 and therefore might not accurately represent communities with a higher population.
4. All selected case communities have relatively young sustainable community plans. If communities with more developed plans were selected as case communities, there is potential that more sustainable cost-savings could be found.

Future Research Direction

Based on the conclusion of this paper, there are several future research implications. The research has identified that market-based instruments are utilized within small Ontario municipalities. Future consideration of how much of a cost-saving impact MBIs are currently having and how much cost-saving potential MBIs have should be researched further.

Consideration of how social issues fit into municipal Sustainable Community Plans and how the use of market-based approaches can serve as a possible solution to these issues should be a focus for future research. This will include consideration between cross-sector partnerships and what role

they play in setting cost-saving mechanisms. By developing a framework of how these partnerships might impact municipal policies, better use of MBIs and other mechanisms can be identified.

The cost-savings and new revenue generation of hiring sustainability personnel should be explored further considering immediate cost-savings and future potential. This can be conducted considering the percentage of employees within a municipal workforce who primarily work on sustainability issues where the generation of cost-savings and new revenue is directly or indirectly resulted from that. Another area of potential cost-savings that should be further explored is the development of cost-saving initiatives of waste infrastructure considering existing successful programs.

In conclusion, economists have written extensively on the many advantages of market-based instruments as an approach to environmental problems (Gayer, 2006). While there has been long-standing support for this approach to sustainable operationalization, there has been little evidence in MBI effectiveness. Now that this paper has proven that usage of these instruments in small municipalities exists, further research of their potential can continue.

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Appendices

Appendix A –Sustainable Topics and MBI Framework Research

Market-Based Instruments and other Cost Saving Mechanisms (Hendrickson et al. 2011)	Strategic Directions	Strategic Directions 2	Strategies	Strategies 2	Strategies 3	Partnerships/ Other Actors	Partnerships/ Other Actors 2	Partnerships/ Other Actors 3	Partnerships/ Other Actors 4	Policy Instruments	Policy Instruments 2	Policy Instruments 3	Policy Instruments 4
	Cross-Cutting	Governance and Decision Making	Price-Based (Financial) Instruments	Rights-Based Instruments	Market Friction Reduction Instruments	Private	Public	Non-Profit	Hybrid	Regulations	Voluntary Mechanisms	Direct Government Expenditure	Financial (dis)incentives
Sustainability Topics (Clarke et al. 2014)													
Transportation			toll highways, fuel tax, distance and weight based pricing, vehicle registration charges, vehicle circulation tax, congestion pricing (Gayer 2006;	parking requirements (Hendrickson , 2011)	liability rule for pollution activities, green public procurement (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	aims to produce more efficient goods and services (Hendrickson , 2011)	Uses regulations to influence market signals by (dis)incentives (Henderickson n, 2011)	Supports civil society (Hendrickson , 2011)	Social enterprises (Henderickson n, 2011)	peak-period licensing, carbon credit system (emission trading) (Thompson & Bevan, 2010)		Contracting, monitoring, investing and procurement (Henderickson n et al., 2011)	scrappage incentives, subsidies for cleaner vehicles, subsidies for energy-efficient cars (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)
Water		resource efficiency (Hendrickson , 2011)	water effluent charges, water abstraction charges, water quality trading (gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	safe water standards (Hendrickson , 2011)	measures that facilitate the voluntary exchange of water rights and thus promote more efficient allocation and use of scarce water supplies, reporting requirement, green public procurement (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Uses regulations to influence market signals by (dis)incentives (Henderickson n, 2011)	Supports civil society (Hendrickson , 2011)	Social enterprises (Henderickson n, 2011)	water abstraction license, water quality permit trading (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Contracting, monitoring, investing and procurement (Henderickson n et al., 2011)	funds to support water, wastewater treatment infrastructure (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)

Waste		recycling programs (Hendrickson, 2011)	deposit-refund system, disposal tax, vehicle disposal levy, product tax, packaging tax, hazardous waste tax, unit of pricing waste (Gayer 2006; Stavins 2003; EEA, 2005;	disposal bans, waste caps and limits (Hendrickson, 2011)	liability rule for hazardous waste, product labeling requirements, green public procurement (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	aims to produce more efficient goods and services (Hendrickson, 2011)	Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)			Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	funds to support waste infrastructure (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)
Air			carbon tax, air pollution levy, non-energy-related GHG tax (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		liability rule for pollution activities, reporting requirement, green public procurement (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)	carbon credit system, cap and trade program, CFC trading, So2 allowance Trading System (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	taxes (Hendrickson, 2011)
Energy		resource efficiency (Hendrickson, 2011)	tax differentiation, energy tax, unit of pricing utilities (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Facilitate the restructuring of electricity generation and transmission (Stavins, 2003), reporting requirement (EEA, 2005; Thompson & Bevan, 2010)	aims to produce more efficient goods and services (Hendrickson, 2011)	Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)	carbon credit system, cap and trade program, Lead trading (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	reduce energy subsidies, subsidy for renewable energy, subsidies for energy-efficient cars (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)
Land Use	smart growth (Hendrickson, 2011)		density-based property tax, land-value taxation, tradeable development rights (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	green building by-laws (Hendrickson, 2011)	liability rule for environmental damage (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	aims to produce more efficient goods and services (Hendrickson, 2011)	Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)			Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	pricing, taxes, charges, tax incentives, tax increment financing (Hendrickson et al., 2011; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)

Climate Change	climate change mitigation (Hendrickson, 2011)		carbon tax, climate change levy, fuel taxes (Gayer 2006; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		liability rule for environmental damage (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)	carbon credit system, cap and trade program, CFC trading, So2 allowance Trading System, Lead trading (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	reduce energy subsidies, subsidy for renewable energy, subsidies for energy-efficient cars (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)
Food Security	locally grown campaigns (Hendrickson, 2011)	sustainable procurement in government, firms, schools (Hendrickson, 2011)	food subsidies, pesticide and fertilizer tax, nitrogen and phosphorous levy (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	food quality standards (Hendrickson, 2011)	liability rule for environmental damage (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)		Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)			Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	pricing, subsidies, remove pesticide and fertilizer subsidies, farm subsidies, agro-environmental subsidies (Hendrickson et al., 2011; Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)
Local Economy	Community economic development, local first campaigns (Hendrickson, 2011)		charges, fees, subsidies and taxes (Gayer 2006; Hendrickson, 2011)		liability rule for environmental damage (Stavins 2003; EEA, 2005; Thompson & Bevan, 2010)	aims to produce more efficient goods and services (Hendrickson, 2011)		Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)			Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	loans, grants, rebates, rewards, surety bonds, vouchers (Hendrickson et al., 2011)
Ecological Diversity			natural resource extraction tax, Wetland cap and trade (Gayer 2006; Pirard 2014)	Wetland permits and controls (Gayer 2006)	coasean-type agreements (Pirard, 2014)		Uses regulations to influence market signals by (dis)incentives (Hendrickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Hendrickson, 2011)	mitigation banking (Pirard, 2014)		Contracting, monitoring, investing and procurement (Hendrickson et al., 2011)	reverse auctions, agro-environmental auctions (Pirard, 2014)

Civic Engagement								Supports civil society (Hendrickson, 2011)	Social enterprises (Henderickson, 2011)		giving out information to encourage behaviour change (Henderickson et al., 2011)	Contracting, monitoring, investing and procurement (Henderickson et al., 2011)	loans, grants, rebates, rewards, surety bonds, vouchers (Henderickson et al., 2011)
Social Infrastructure								Supports civil society (Hendrickson, 2011)	Social enterprises (Henderickson, 2011)		Giving out information to encourage behaviour change (Henderickson et al., 2011)	Contracting, monitoring, investing and procurement (Henderickson et al., 2011)	
Housing	smart growth (Hendrickson, 2011)			green building by-laws		aims to produce more efficient goods and services (Hendrickson, 2011)	Uses regulations to influence market signals by (dis)incentives (Henderickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Henderickson, 2011)			Contracting, monitoring, investing and procurement (Henderickson et al., 2011)	taxes, tax incentives (Henderickson et al., 2011)
Employment							Uses regulations to influence market signals by (dis)incentives (Henderickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Henderickson, 2011)			Contracting, monitoring, investing and procurement (Henderickson et al., 2011)	tax incentives, grants, loans (Henderickson et al., 2011)
Safety							Uses regulations to influence market signals by (dis)incentives (Henderickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Henderickson, 2011)			Contracting, monitoring, investing and procurement (Henderickson et al., 2011)	
Crime							Uses regulations to influence market signals by (dis)incentives (Henderickson, 2011)	Supports civil society (Hendrickson, 2011)	Social enterprises (Henderickson, 2011)			Contracting, monitoring, investing and procurement (Henderickson et al., 2011)	

Other (Operational) Cost-Saving Initiatives

Sustainability Topics	Other Cost-Saving Initiatives
	<i>Operations</i>
Equipment & Procurement	Air Conditioning Maintenance, CFLs, Dimmable Light Switches and Task Lamps, Energy Efficient Products, LCD Monitors, LED Exit Signs, Light Bulb Removal, MicroFIT Solar Voltaic Panels, Occupancy Sensor Light Switches, Power Bars, Recycled Paper, T8 Fluorescent Lights, Turn Off/ Use Power Management Settings: Computer Monitors
Building Materials and Design	Capacitors, Ceiling Fans, Condensing Tankless Water Heater, Desk Sharing (Hoteling), High Efficiency Windows, Insulation, LEED Buildings, Loading Doors, Seasonal Window Sealing, Thermostat Control, Water Heater Temperature Reduction, Weather Stripping Windows
Commuting and Business Travel	Carpooling, Hybrid Vehicle Purchasing Incentives, Public Stripping Windows, Telecommuting, Work from Home Policy, Efficient Truckload Shipping, Idle Reduction Strategies
Water	Aerators, Low-Flow Toilets, Rain Barrel, Road Salt, Water Filtration Systems, Cisterns and Holding Tanks
Waste	Double Sided Printing (Automated), E-Waste Recycling, Organic Waste Collection

Appendix C – Information of Study Letter

Date:

Dear (Insert name of participant)

This letter is to inform you regarding an interview for a Master's research study at the University of Waterloo in partnership with Lura Consulting. The interview will take about 30 minutes per key informant and will focus on cost-savings/new revenue generation you have seen through operationalizing your sustainable community plan.

The aim of this study is to identify the cost-savings/new revenue generation that can occur as a result of market-based instruments or other cost-saving initiatives as operationalized through a sustainable community plan. You will be asked about which market-based instruments your municipality has implemented, what other cost-saving initiatives your municipality has implemented, the financial impact of this implementations and the overall effectiveness of these initiatives. Your observations and opinions are an important part of my study to analyze the effectiveness of market-based instruments and other initiatives to generate cost-savings/new revenue generation.

The interview will be held in person or over the phone. With your permission, I would like to record the interview to facilitate analysis of the results. Interview recordings or any other data will be kept in a secure location, and will only be shared with the core research team.

The community will be listed as a case community and highlighted within the research. You may decline to answer questions if you wish and you may withdraw from participation at any time by advising the researcher. Participation is voluntary. If you are willing to participate in this interview, please contact Reuben DeBoer at 1 (519) 717-9110 or rdeboer@uwaterloo.ca. In your reply, please indicate a time when you will be available.

As this project focuses on municipal policies and processes and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. Should you have any comments or concerns resulting from your participation in this study, please contact Maureen Nummelin in the Office of Research Ethics at 1 (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

After all of the data has been analyzed, you will receive an executive summary of the research results.

Thank you,

Reuben DeBoer, Master of Sustainability Management (MES) Candidate
School of Environment, Enterprise and Development
Telephone: 1 (519) 717-9110 Email: rdeboer@uwaterloo.ca

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In partnership with Susan Hall, Vice-President
Lura Consulting
Telephone: 416-410-3888 Email: shall@lura.ca

Funded by:  SP Sustainable Prosperity

 Mitacs

Appendix D – Consent of Participant Form

Consent of Participant Form

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities. For phone interviewers, vocalized consent will suffice when recorded.

I have read the information presented in the information letter about a study being conducted by Reuben DeBoer of the School of Economic, Enterprise and Development (SEED) at the University of Waterloo, under the supervision of Dr. Amelia Clarke.

I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted. I am aware that I may withdraw from the study without penalty at any time by advising the researchers of this decision. I am aware that my responses will reflect the community and department I represent.

As this project focuses on municipal policies and processes and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. If I have any comments or concerns resulting from my participation in this study, I may contact the Chief Ethics Officer, Office of Research Ethics at:

1 (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Consent:

I agree to participate in this study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I agree that my name may be included in a thesis list of participants.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I agree to be audio recorded during the interview.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I would like a copy of the completed thesis.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Print Name

Signature of Participant

Date of Signature

Witnessed

Date: _____

Date: _____

Appendix E – Questions for Case Communities

Introduction

This research thesis is on how Sustainable Community Plans can result in cost-savings or new revenue generation, either through internal operations or through the use of market-based instruments.

I have identified many different ways that a community can generate cost-savings or new revenue and created a framework for them. Currently I am filling framework with tools or initiatives that have been applied in small communities.

I have a series of questions to ask about the topic and we can tangent as you wish. Do you have any questions at this stage?

Initial Questions

1. How far along are you in operationalizing your sustainability plan?
2. When you think about sustainable cost-savings/NRG in regards to your community, what are the top areas/initiatives that come to mind?

Market-Based Instruments and Other Cost-Savings

Market-Based Instruments are policy tools that encourage behavioral change through trading mechanisms, by-laws, municipal legislation, and rebates. A few common examples would be: water pricing, development charges, or a fee for using a transportation system, etc.

Attached is a list of common Cost-Savings Initiatives, Market-Based Instruments and areas for New Revenue Generation. I would like to go through the list to identify which initiatives your community has invested in.

1. Of the policies or initiatives that you listed, which ones have been the most effective in generating cost-savings/NRG?
2. What areas can be better used in the future to generate cost-savings/NRG?
3. Is there someone I can talk to in order to get more details on the initiatives you answered yes for? Would they have the budgeting/financial details about this?
4. Is there anything else I should know about the plan?

Conclusion

Thank you for your time today. Would I be able to follow up with you in I require any clarification or further information? As a disclaimer, I can promise confidentiality regarding any non-public financial numbers you are willing to provide.

The timeline for this research project is to have data analyzed for the end of December and the thesis defended by April. We will be verifying with your department in January to ensure consistency and will share the research findings once the thesis is complete.

Thank you again for your participation.

Appendix F – Top Cost-Savings or New Revenue Generating Initiatives

Top Operational Cost-Saving Initiatives

What are the areas that first come to mind?

Equipment and Procurement	<ul style="list-style-type: none"> • Sustainable Printing Efforts • Environmentally Friendly Product Procurement • Environmentally Friendly Equipment Procurement Policies • Buying Local Policies • Road Salt Reduction • Reuse of Construction Materials (Concrete, Catch Basins, Asphalt etc.) • Pesticide Reduction Strategies
Building Materials and Design	<ul style="list-style-type: none"> • Capacitors • Ceiling Fans • Multi-Use Facilities <ul style="list-style-type: none"> ○ Desk Sharing (Hoteling), • High Efficiency Windows • Insulation • Environmental Standard Buildings (LEED, ISO14001, etc.) <ul style="list-style-type: none"> ○ Green Roof • Thermostat Control • Weather Stripping Windows
Commuting and Business Travel	<ul style="list-style-type: none"> • Transportation Management Planning • Trail Development or Bicycle Promotion • Carpooling, • Hybrid Vehicle Purchasing Incentives <ul style="list-style-type: none"> ○ Fleet Upgrades • Telecommuting • Work from Home Policy • Idle Reduction Strategies
Water	<ul style="list-style-type: none"> • Condensing Tankless Water Heater • Water Heater Temperature Reduction • Aerators • Low-Flow Toilets • Rain Barrel/Cisterns/Holding Tanks • Water Filtration Systems
Waste	<ul style="list-style-type: none"> • E-Waste Recycling • Organic Waste Collection (Personal) • Waste Diversion Depots
Energy, Air and Climate Change	<ul style="list-style-type: none"> • Electrical Grid or Electrical Facility Restructuring • Common Energy Plan • Purchase of an Energy and Environmental Management Tracking System (EEMS) • Heating/Cooling Maintenance or Upgrades

	<ul style="list-style-type: none"> • Energy Efficient Lighting Upgrades or Retrofit • (CFLs, LED, Dimmable Light Switches and Task Lamps, LCD Monitors, LED Exit Signs, Light Bulb Removal, Occupancy Sensor Light Switches, Power Bars, etc.) • Other Energy Efficient Products • Renewable Energy Investments • Microfit Solar Voltaic Panels • Geothermal • Wind
Other	<ul style="list-style-type: none"> • Hiring of Sustainability Personnel • Sustainable Sector Toolkits (Manufacturing, Infrastructure, Service Orientated) • Encourage Natural Areas/Ecology

Top Cost-Saving Market-Based Instruments

What are the areas that first come to mind?

Transportation	<ul style="list-style-type: none"> • Parking Requirements or Fees • Scrappage Incentives for cleaner vehicles • Subsidies or Incentives for Energy-Efficient Vehicles • Drive-Thru Carbon Footprint Charge • Other Transportation MBI's
Water	<ul style="list-style-type: none"> • Water Effluent Charges • Water Abstraction Charges • Water Pricing • Water-Reduction Rebate Programs (Toilet Rebate Programs) • Other Water MBI's
Waste	<ul style="list-style-type: none"> • Recycling Programs <ul style="list-style-type: none"> ○ Expanding List of Recyclable Materials • Compost Programs • User-Pay Garbage Disposal System • Deposit-Refund System on Goods • Disposal Tax, Hazardous Waste Tax, • Other Waste MBI's
Energy, Air and Climate Change	<ul style="list-style-type: none"> • Carbon tax • Reduce Energy Subsidies • Renewable Energy Subsidies • Anti-Idling Policies • Other Energy, Climate Change or Air MBI's

Land-Use or Building	<ul style="list-style-type: none"> • Density-Based Property Tax • Land-Value Taxation • Tradable Development Rights • Green Building By-Laws (Mandatory LEED Certification, etc.) • Mixed-Use Development By-Laws • Sustainable Official Plan/Smart Growth Plan • Grants for sustainable development or redevelopment • Other Land-Use or Building MBI's
Food Security	<ul style="list-style-type: none"> • Locally Grown Campaigns • Locally Grown Subsidies (Other Food Subsidies) • Fertilizer Tax • Nitrogen and Phosphorous Levy • Pesticide and Fertilizer Removal Subsidies • Farm Subsidies (Environmental) • Other Food Securing MBI's
Local Economy	<ul style="list-style-type: none"> • Local First Campaigns • Environmentally Geared Loans, Grants, Rebates, Rewards, etc. • Other Local Economy MBI
Ecological Diversity	<ul style="list-style-type: none"> • Natural Resource Extraction tax • Wetland Cap and Trade • Ecological Permits and Controls • Ecological Compensation Programs
Civic Engagement or Social Infrastructure	<ul style="list-style-type: none"> • Other
Housing or Employment	<ul style="list-style-type: none"> • Other
Safety or Crime	<ul style="list-style-type: none"> • Other

Top New Revenue Generation Initiatives

What are the areas that first come to mind?

Energy	<ul style="list-style-type: none">• Green Energy Attraction Strategy
Eco-Tourism	<ul style="list-style-type: none">• Eco-Tourism Plan
Green Economy	<ul style="list-style-type: none">• Develop a Green Business Park• Sustainability Incubators• Green Business Attraction Plan• Promote Sustainable Careers• Shop Local Campaigns or Plans
Sustainable Agriculture	<ul style="list-style-type: none">• Farmers Market• Identify New Markets• Wholesale Product Action Plan
Grant Funding	<ul style="list-style-type: none">• Gas Tax Funding• Green Municipal Fund• Other Funding Opportunities

Appendix G – Thank You Email for Participants

Date:

Dear (Insert Name of Participant),

Thank you for your participation in the Master's research study *The Business Case for Operationalizing Sustainability Plans Within a Small Community Context: New Revenue Generation and Cost-Savings*. As you may recall, the purpose of my study was to identify how effective market-based instruments and other initiatives have been in generating cost-savings or new revenue generation within a small community context. Ideally, the results will provide insight on the benefits of market-based instrument implementation and other cost-savings implementation with emphasis to encourage other communities to do the same.

Please note if desired, all responses to this interview are confidential and participants can be identified in my research as a municipal government staff member upon request. Once all the data is collected and analyzed for this project, this information will possibly be shared with the research community through seminars, conferences, presentations, journal articles and a Sustainable Prosperity State of Knowledge Report.

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact me at either the phone number or email address listed at the bottom of the page. When the study is complete, I will send the summary to you. The study is expected to be completed by April 2015.

As this project focuses on municipal policies and processes and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. If you have any comments or concerns resulting from your participation in this study, please contact Maureen Nummelin in the Office of Research Ethics at 1 (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

Thank you,

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