

**Exploring How Healthy Rural and Small Town Built Environments can be Achieved
through Municipal Policies which Encourage Innovation**

by

Suzanna Kaptur

**A Thesis
Presented to
The University of Guelph**

**In partial fulfilment of requirements
for the degree of
Master of Science
in
Rural Planning and Development**

Guelph, Ontario, Canada

© Suzanna Kaptur, April, 2014

ABSTRACT

EXPLORING HOW HEALTHY RURAL AND SMALL TOWN BUILT ENVIRONMENTS CAN BE ACHIEVED THROUGH MUNICIPAL POLICIES WHICH ENCOURAGE INNOVATION

Suzanna Kaptur
University of Guelph, 2014

Advisor:
Dr. Wayne Caldwell

The built environment in rural communities is vastly different from that of an urban environment. There are unique challenges and issues that affect rural communities when considering the built environment and land use planning. This research explored the use of innovative initiatives related to developing healthy built environments in rural municipalities across Ontario. The research methods included a literature review, a survey which was analyzed using NVivo 10 software, as well as key informant interviews with planners and public health professionals. This research uncovered patterns in terms of the lessons and tools which rural communities use in order to implement innovative initiatives and policies. Three case studies were used to demonstrate the results of the research: the City of Kawartha Lakes, County of Huron, and Haliburton. This thesis concludes by providing tools and recommendations for rural and small town communities which are aimed at developing healthy and resilient built environments.

ACKNOWLEDGMENTS

There are many individuals whom I would like to thank in making the completion of this thesis possible. First of all, I would like to thank my advisor Wayne Caldwell, who introduced me to the topic of ‘healthy rural built environments’ and has been supportive throughout the entire course of completing research and thesis writing.

I would also like to thank my committee member, Bronwynne Wilton, who has provided me with great feedback on the work that I have been submitting throughout the course of thesis writing.

Another individual whom I would like to thank is Paul Kraehling, Doctoral student at the University of Guelph, who has been a great colleague regarding all things related to ‘healthy rural built environments’.

I would also like to acknowledge and thank all of the planners and public health professionals who took time out of their busy schedules to speak with me and provide me with great insight into the topic of healthy rural communities.

Last but not least, I would like to thank my family and friends, words cannot express what a great support system you have been throughout the course of my graduate degree. I would like to thank my mom, Anna Muniak-Kaptur, whose encouragement and independent spirit has given me the confidence to pursue this degree. I would also like to thank my significant other, Darren Miller, who has been an incredible support and without whom I could not have done this.

Table of Contents

ABSTRACT..... **ii**

ACKNOWLEDGMENTS **iii**

Definitions..... **vii**

Index of Figures and Tables..... **viii**

Chapter One: Introduction and Research Purpose.....**1**

 1.1 Introduction1

 1.2 Research Statement2

 1.3 Research Goals and Objectives2

 1.4 Scope4

 1.4.1 Why is a Healthy Built Environment Important in Rural and Small Town
 Communities?4

 1.4.2 The Importance of Innovation and Social Innovation5

Chapter Two: Healthy Rural Communities Literature Review.....**7**

 2.1 Introduction7

 2.2 Literature Review Process8

 2.3 A Rural Lens on the Built Environment and Health10

 2.3.1 Active Transportation11

 2.3.2 Air Quality13

 2.3.3 Water Quality15

 2.3.4 Access to Affordable Healthy Food16

 2.3.5 Injury Prevention19

 2.3.6 Climate Change22

 2.3.7 Safe and Affordable Housing23

 2.3.8 Livelihood and Economic Opportunities26

 2.3.9 Natural Spaces/Greening of Communities27

 2.4 Solutions for Healthy Rural Communities: Health and Sustainability.....29

 2.4.1 Social Factors Associated with Healthy Rural Communities29

 2.4.2 Environmental Factors Associated with Healthy Rural Communities36

 2.4.3 Recreational and Cultural Factors Associated with Healthy Rural Communities....39

 2.4.4 Economic Factors Associated with Healthy Rural Communities43

2.5 Conclusion.....	47
Chapter Three: Methodology	48
3.1 Surveys	49
3.2 Key Informant Interviews	49
Chapter Four: Results	50
4.1 Survey Results	50
4.2 Survey Analysis	52
4.3 Key Informant Interview Results	53
Chapter Five: City of Kawartha Lakes Case Study	58
5.1 Municipal Profile	58
5.2 Key Theme	59
5.3 Innovative Initiative	59
5.4 Key Lessons	61
5.5 Case Study Summary	61
Chapter Six: Huron County Case Study	62
6.1 Municipal Profile	62
6.2 Key Theme	63
6.3 Innovative Initiative	63
6.4 Key Lessons	64
6.5 Case Study Summary	65
Chapter Seven: Haliburton Case Study.....	66
7.1 Municipal Profile	66
7.2 Key Theme	67
7.3 Innovative Initiative	67
7.4 Key Lessons	68
7.5 Case Study Summary	69
Chapter Eight: Recommendations and Tools for Healthy Rural Built Environments	70
8.1 Specific Lessons Learned	70
8.2 Discussion of Findings: Cross Case Summary	70
8.3 Recommendations	72

8.4 Ten Things To Do	74
8.5 Conclusion	77
Reference List	78
Appendix A: Healthy Rural Communities Survey Questions	85
Appendix B: Guiding Questions for Key Informant Interviews.....	89
Appendix C: Innovative Initiative Promotional and Educational Materials	90

Definitions

Built Environment: The built environment includes our homes, schools, workplaces, farmland, parks/recreation areas, business areas and roads. It extends overhead in the form of electric transmission lines, underground in the form of waste disposal sites, and across the country in the form of highways. The built environment encompasses all buildings, spaces and products that are created or modified by people (as cited in Srinivasan, O’Fallon and Dearry, 2003).

Green Infrastructure: The network of open space, woodlands, wildlife habitat, parks and other natural areas, which sustain clean air, water, and natural resources and enrich their citizens’ quality of life (Williamson, 2003).

Innovate: Make changes in something established, especially by introducing new methods, ideas, or products (Oxford Dictionaries, 2014).

Innovation: The action or process of innovating (Oxford Dictionaries, 2014).

Rural: Rural and small town refers to individuals in towns or municipalities outside the commuting zone of larger urban centres (with 10,000 or more population) (Statistics Canada, 2001).

Social Innovation: Social innovation refers to new strategies, concepts, ideas and organizations that meet social needs of all kinds - from working conditions and education to community development and health - and that extend and strengthen civil society. The term has overlapping meanings. It can be used to refer to social processes of innovation, such as open source methods and techniques. Alternatively it refers to innovations that have a social purpose - like microcredit or distance learning. The concept can also be related to social entrepreneurship (entrepreneurship is not necessarily innovative, but it can be a means of innovation) and it also overlaps with innovation in public policy and governance (Williams, 2012).

Social Innovation (2): New ideas that resolve existing social, cultural, economic and environmental challenges for the benefit of people and planet (Williams, 2012).

Index of Figures and Tables

Figure 1: Healthy Rural Built Environments Diagram	9
Figure 2: Word Frequency Query for Municipal Survey Responses derived from NVivo 10	52
Figure 3: Activating Kawartha Lakes with Dan Burden	59
Figure 4: Jane’s Walk Downtown Goderich.....	64
Figure 5: Share the Road Program in Haliburton	67
Table 1: Methodology	48
Table 2: Sample of Survey Responses from Municipal Planners.....	50
Table 3: Sample of Survey Responses from Public Health Professionals.....	51
Table 4: Key Informant Interviews.....	53

Chapter One: Introduction and Research Purpose

1.1 Introduction

The built environment affects our day to day life; whether it is when we step outside of our homes in the morning, get into our cars, walk down the street to get lunch, or enjoy a jog along a trail, we are in contact with and reliant on the built environment around us. Since the built environment “encompasses all buildings, spaces and products that are created or modified by people” (as cited in Srinivasan, O’Fallon and Dearry, 2003), we are in the built environment at almost all times and it has a profound impact on our quality of life and well-being. Since we are continuously in contact with the built environment, it has become important to us that the built environment be healthy and effective. This has been most evident with the emergence of ‘smart growth’ principles which encourage building mixed use communities with a strong sense of place, preserving open space and farmland, investing in green infrastructure as well as creating walkable neighbourhoods. Smart growth principles are practical goals for shaping –and reshaping– the built environment (LaGro Jr., 2008). Essentially, when we design our communities, the built environment can encourage interaction or hinder it, and in turn can have an effect on our health (Jackson and Sinclair, 2012).

In North America, it was not until the second half of the twentieth century that environmental health was looked at in relation to the built environment. What we build and how we build it affects our overall environment and therefore also affects the sustainability of our communities (Jackson and Sinclair, 2012). In the nineteenth century, improvements to the built environment included removing biological and industrial waste and supplying clean water, safe food, home heat and lighting, and mass and personal transit (ibid). These efforts were important

and eventually led to smart growth principles, however these principles have been more prevalent in large metropolitan cities. Due to factors described below, rural and small town communities require a different approach to improving and creating a healthy built environment. Rural communities often cover broad geographic areas; have lower population densities and less financial resources (MMAH, 2014). This research will attempt to identify some of the tools that are necessary in rural and small town communities in order to have successful and healthy built environments today and in the future.

1.2 Research Statement

This research will explore how innovation and the implementation of creative policies and tools can contribute to the development of healthy rural communities. There are currently clear urban design guidelines and tools for metropolitan cities, however these guidelines and strategies are lacking for small and rural communities. Tools that can be used for implementing elements in the built environment which have positive impacts on the well-being of residents will be developed through this project, which will be informed by exploring both the planning and public health perspective on healthy rural communities.

1.3 Research Goals and Objectives

The first goal of this research is to explore the unique challenges and issues that affect rural and small town communities when considering the built environment and land use planning. This will be achieved by reviewing the literature and demonstrating that the built environment in rural communities is vastly different from that of an urban environment. The following topics have unique characteristics in the context of a rural built environment, these include: active transportation, air quality, water quality, aging communities, community design, land use

planning, agriculture, local food, climate change and the greening of communities. This research will identify and analyze the unique challenges faced by rural communities to ensure that the built environment contributes positively to the overall health of residents.

The second goal of this research is to explore how innovative policies can contribute to the development of healthy rural communities. The research will describe the necessary tools for achieving a healthy built environment in rural communities through a review of the literature and case studies. There are clear urban design guidelines and tools for metropolitan cities; however these guidelines and strategies are lacking for rural and small town communities. This research will draw connections between the elements in the built environment that have positive impacts on the well-being of residents and how these elements could be implemented through innovative policies.

These research goals will be met by completing the following objectives:

1. To demonstrate the unique challenges experienced in rural and small town communities in regards to the built environment.
2. To research built environment conditions that allow residents the opportunity to make *healthy choices* and improve *quality of life*.
3. To identify policies and guidelines which promote the *design* and development of a healthy and safe built environment in rural communities.
4. To provide specific *tools* for rural and small town communities which foster the development of healthy, safe and effective rural built environments.

1.4 Scope

1.4.1 Why is a Healthy Built Environment Important in Rural and Small Town Communities?

The built environment in rural communities is very different from that of an urban environment. There are unique challenges and issues that affect rural communities when considering the built environment and land use planning. Some of the differences are evident in the distances that people must travel to get to destinations, a smaller tax base which results in less financial resources for municipalities, and the declining overall health of residents in rural and small town communities, which was discovered at a Canada-wide level in the following study: “Canada’s Rural Communities: Understanding Rural Health and its Determinants”.

As an example, transportation planning in rural communities is usually focused on infrastructure for roads and cars. This is mostly due to the distances that people must travel from their homes to various destinations and reflective of the diffused low density land use base (Young, 2008). As a result, there are less multi-use trails, sidewalks, and bike lanes in rural areas, which decrease opportunities for residents to take part in active transportation. This is a negative circumstance, as active transportation is a way in which to incorporate physical activity into one’s daily routine.

A lower tax base, due to the diffused low density land use patterns, is another challenge for rural municipalities as property taxes are the main resources available for infrastructure and amenity development (MMAH, 2014). Therefore rural and small town communities must rely on more creative and ingenious methods for acquiring resources, which can be much more challenging.

Another difference is that rural areas are at a general health ‘disadvantage’ when compared to urban areas for many health-related measures. This was discovered at a Canadian – wide level, “Canada’s Rural Communities: Understanding Rural Health and its Determinants” initiative undertook an in-depth statistical analysis of various health risks and mortality rates between and amongst rural and urban populations (DesMeules & Pong, 2006). Another interesting finding was that health related lifestyle factors such as smoking and obesity rates were higher in rural Canada and dietary practices, leisure time and physical activity rates were lower in rural Canada (ibid).

These issues illustrate the need and importance for the development of healthy rural built environments. Since rural communities are inherently different from urban ones; a unique approach is necessary when it comes to community design and healthy built environments in rural places and small towns.

1.4.2 The Importance of Innovation and Social Innovation

To innovate, means to make changes in something established, especially by presenting new approaches, ideas, or products (Oxford Dictionaries, 2014). Through generating new methods and ideas for both policies and initiatives, improvements to rural and small town built environments are possible.

One promising trend is social innovation; which includes new strategies, concepts, ideas and organizations that meet social needs of all kinds - from working conditions and education to community development and health - and that extend and strengthen civil society (Williams,

2012). This type of innovation focuses on improving the quality of life for citizens; improving and enhancing the built environment is made possible through movements such as social innovation. Therefore, social innovation is integral to the success of developing healthy built environments. Due to the unique nature of rural and small town environments 'innovation' and especially 'social innovation' aid in revealing the solutions to some of the issues being experienced, such as; sparsely dispersed communities, long travelling distances, lack of resources, and declining health of residents.

To the extent possible, social innovation initiatives must engage a wide-range of citizens. Those advocating for social innovation recognize that a true Ontario-wide policy on social innovation must also nurture the environment to support and empower social innovation initiatives within the context of rural communities (Williams, 2012). Piloting the establishment of "community brokers" in rural communities could stimulate social innovation in places where community networks are widely dispersed. Community brokers could help "eliminate duplication and organizational silos, promote cross pollination, facilitate the acquirement of resources, and curate online and offline forums where communities, funders, businesses and government can innovate and resolve complex challenges across geographies and sectors" (ibid).

Overall, social innovation can be extremely useful to rural and small town communities which are in search of new strategies and ideas for built environment issues. This type of innovation could help to sprout solutions for land use planning and community design dilemmas that exist in rural communities.

Chapter Two: Healthy Rural Communities Literature Review

2.1 Introduction

This literature review will explore the concept of “healthy communities” and consider what a healthy community may look like in rural Ontario. In the recent past, the concept of a ‘healthy community’ was considered to be an outcome of ‘smart growth’. The ‘healthy community’ concept now appears to be evolving from a ‘smart growth’ perspective into a focused ‘health-centred’ approach to planning, one that places health as the desired outcome. This concept examines the impacts that the built environment has on health and how health outcomes may be improved through better planning of the built environment and the incorporation of sustainable practices.

A variety of background data and information will be provided on topics such as health, sustainability, rural planning, and the built environment. This is meant to provide a thorough understanding of the elements that are necessary in order to lay the foundations for ‘healthy rural communities’. A rural lens on various aspects of the built environment will be provided, as well as a thorough understanding of the importance of sustainability when planning for rural communities. Lastly, a variety of potential solutions will be provided to the complex problems that face rural communities, through focusing on social, environmental, recreational/cultural, and economic factors that are all related to and necessary for the formation of ‘healthy rural communities’.

2.2 Literature Review Process

The literature review was a collaborative effort between the University of Guelph research team¹ and public health units; particularly the Chatham-Kent and Elgin St. Thomas Public Health Units.

The research team structure included Wayne Caldwell and Paul Kraehling in an advisory and review role. I had a research and coordination role and Jennifer Huff had a contributory research role to various parts of the project. While I took a lead on the development of the literature review, contributions, edits, and directions came from other team members. The survey included in this research project was part of a broader research initiative and key elements were selected for inclusion in this thesis; my role was to contribute to the content and design of the survey and to conduct the key informant interviews listed in chapter four.

The process of working on the literature review began with some initial resource recommendations provided by the health units; these included both public health and planning related literature resources. The resources included grey literature; from all levels of government and academics, as well as published books and academic literature. Literature continued to be gathered throughout the course of review development. The decision to use specific pieces of literature was based on a variety of factors, including: recommendations by public health professionals and planning professionals, availability either through the University of Guelph library, internet searches or through bookstores, as well as the relevance of literature to the topic of healthy rural built environments.

¹ Research Team: Dr. Wayne Caldwell, Paul Kraehling - Doctoral Student, Jennifer Huff – M.Sc. Candidate, Suzanna Kaptur – M.Sc. Candidate

While working through the content of the literature review, an overall vision for the project was kept in mind, which involved an integration of elements. These elements included: rural, public health and planning features and how they relate to ‘healthy rural built environments’. A diagram was created which represents the concept described above:

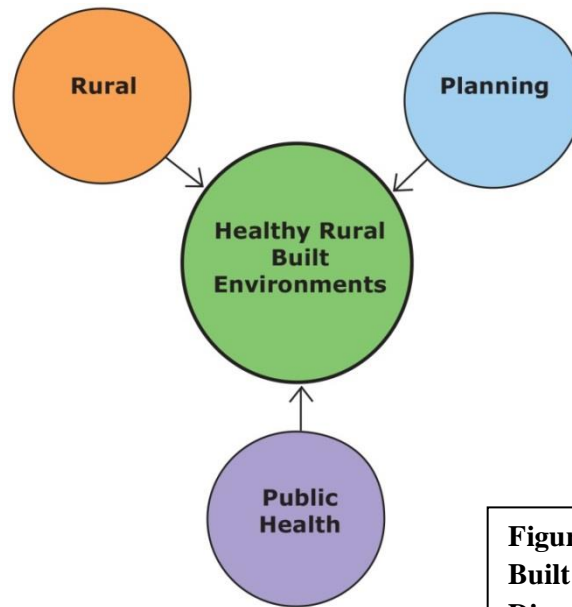


Figure 1: Healthy Rural Built Environments Diagram (2013).

2.3 A Rural Lens on the Built Environment and Health

As described by Health Canada, “the built environment includes our homes, schools, workplaces, parks/recreation areas, business areas and roads. It extends overhead in the form of electric transmission lines, underground in the form of waste disposal sites, and across the country in the form of highways. The built environment encompasses all buildings, spaces and products that are created or modified by people” (as cited in Srinivasan, O’Fallon and Dearry, 2003). These spaces range from rural streets to bustling downtowns and all the places in between (Health Canada, 2011).

Furthermore, it has been found that “health and well-being is intimately tied to social and environmental conditions and suggests that the primary focus of intervention be at the community and policy levels rather than at the level of the individual” (Minkler, 2012). Therefore the community realm and the built environment play an integral role in human health and well-being. This is true for all areas in which people reside, including urban, suburban, rural and remote. This section of the paper will focus on the importance of effective built environments in rural areas.

In considering the relationship between the built environment and health, the Ontario Public Health Standards outline several areas where public health units and municipal governments are obligated to collaborate (Ontario Ministry of Health, 2008). These areas include: active transportation, air quality, water quality, access to affordable healthy foods, injury prevention, climate change, safe and affordable housing, livelihood and economic opportunities,

and natural spaces/greening of communities (ibid). All of these topics and their relationship to rural areas will be discussed in turn below.

2.3.1 Active Transportation

Community design that incorporates opportunities for active transportation is integral to maintaining a healthy built environment, as it provides the opportunity for physical activity when travelling for both utilitarian and recreational purposes. Transport Canada defines active transportation as “all human powered forms of transportation, in particular walking and cycling. It includes the use of mobility aids such as wheelchairs, and can also encompass other active transport variations such as in-line skating, skateboarding, cross-country skiing, and even kayaking. Active transportation can also be combined with other modes, such as public transit” (Transport Canada, 2010).

Infrastructure and facilities that provide chances for active transportation in rural areas are especially important, as they are generally less prevalent in these regions. Often in rural communities transportation planning is focused on infrastructure for roads and cars. This is mostly due to the distances that people must travel from their homes to various destinations and reflective of the diffused low density land use base (Young, 2008). As a result there are less multi-use trails, sidewalks, and bike lanes in rural areas, which decrease opportunities for residents to part take in active transportation. This is a negative circumstance, as active transportation is a way in which to

“The Town of East Gwillimbury achieves its active transportation goals through a town-wide active transportation and trails network that connects people with their communities, open space areas, significant natural, historic, and recreational features” (Town of East Gwillimbury Active Transportation and Trails Master Plan, as cited in Caldwell, 2013).

incorporate physical activity into one's daily routine. Regular physical activity is important as it has the ability to reduce disease, helps to boost energy levels, improve mental health, prevent depression, and maintain self-esteem (Venhaus, 2012). The link between physical activity and health has been acknowledged at a national level in both the United States and Canada. In 1996, the U.S. Surgeon General released a statement acknowledging that there was evidence to conclude that physical activity produced positive health outcomes, such as lowering mortality rates for old and young adults, lowering the risk for heart disease and stroke, decreased risk of colon cancer and lowered risk of Type 2 diabetes, lowered weight and reduced body fat, and resulted in improvements in mood and relief from symptoms of depression and anxiety (Williams & Wright, 2007).

Recent Canadian research, supported by a substantial body of U.S. and international data, has associated the built environment, including active transportation and physical activity infrastructure, with more physically active lifestyles (Health Canada, 2011). It is acknowledged as well that there are benefits in considering each community's unique context and to target specific user groups when creating active transportation programs and approaches (Health Canada, 2011). This is important to keep in mind when considering active transportation initiatives in rural areas, as unique and different approaches are necessary when compared to urban settings. Solutions would be required to understand how to deal with longer distances between destinations, county roads, and higher traffic speeds, among other considerations.

In rural settings, where destinations can be spread across several miles, walking and biking to get to places are not realistic options. In fact, even reaching destinations by car proved to be a major barrier for rural youth. The rural transportation domain should therefore be approached differently than in urban models and should prioritize finding ways to provide transportation, such as late school buses and organized car pools, to

give youth safe, affordable, and convenient ways to access physical activity opportunities in their communities. (Yousefian, et al. 2009 as cited in Caldwell, 2013)

The above statement emphasizes the fact that transportation solutions, must meet the needs of the rural population. The differences in rural communities which include geography, culture, and the economy need to be considered (Caldwell, 2013).

2.3.2 Air Quality

Air quality is typically associated with the emissions of vehicles and industrial facilities. While the Ministry of Environment regulates the amount and type of emissions from single source facilities and the Ministry of Transportation regulates vehicle emissions there is no overarching regulating body to ensure that cumulative emissions of an area or neighbourhood are within appropriate air quality standards.

Health may be impacted in a number of ways by poor air quality, including respiratory-illnesses, such as asthma, pneumonia, bronchitis and general decreased lung function and development in children, and low-birth weights of newborns (Bray, Vakil & Elliott, 2005).

Furthermore, a significant amount of Ontario's smog originates from emission sources in the United States; this can also be referred to as transboundary air pollution. Although data analysis strongly indicates that neighbouring U.S. states continue to be major contributors to elevated levels of ground-level ozone and fine particulate matter, Ontario recognizes and takes responsibility for its local emissions and its role as a contributor to the regional transport of air pollution (Ontario Ministry of the Environment, 2005).

Based on 2003 demographics, Ontario is burdened with almost \$9.6 billion in health and environmental damages each year due to the impact of ground-level ozone and fine particulate matter. Of this total, approximately 55 per cent is attributable to U.S. emissions. The remainder is attributable to Ontario emissions related to human activity. These results are largely based on recent health studies that suggest smog pollutants have very low or no health thresholds. (Ontario Ministry of the Environment, 2005)

During extensive smog episodes, the United States contributes as much as ninety percent of ozone excluding background levels to Ontario cities and towns on the northern shore of Lake Erie, the eastern shore of Lake Huron and in the extreme southwest near the U.S. border (Ontario Ministry of the Environment, 2005).

As well, hundreds of other air pollutants, known as air toxics or hazardous air pollutants, can impact human health in some conditions. Hazardous air pollutants can be released from a broad range of activities including mining, smelting, manufacturing, electricity generation, waste disposal, vehicles, and wood burning (Halton Region Health Department, 2009).

Historically, health professionals and land use planners encouraged the separation of sensitive uses, such as homes, day cares and schools from industrial facilities in order to lessen air quality issues. However, traffic corridors have also come to be recognized as significant sources of pollutants and separation between sensitive uses and such corridors may also be required (HEI, 2010). Further, the amount of time spent commuting (including children who ride on school buses for long periods of time) has also been linked to negative health effects from cumulative exposure to air pollution (Natural Resources Defence Council, 2001).

Certain populations of people are more sensitive to the negative health impacts associated with air pollution. While poor air quality can affect all people, it is the young, the elderly, pregnant women and those with existing health problems who are more likely to become ill, be hospitalized, or to die prematurely in response to poor air quality, rather than healthy adults (Halton Region Health Department, 2009).

Another relevant air quality issue in rural areas relates to farming; farmers are exposed to heavy and hazardous equipment, as well as to a wide range of noxious substances such as pesticides. Moreover, “the farm is both a workplace and a home, implying that children and seniors may also be exposed to the same health and safety risks” (Laurent, 2002). While other hazardous occupations are typically regulated and their workers protected against unsafe working conditions through legislation, in farming, due to the prevalence of independent owner/operators, health and safety regulations may not be given adequate attention (ibid).

“Farmers are exposed to noxious substances such as pesticides – children and seniors may be exposed to the same health and safety risks” (Laurent, 2002).

2.3.3 Water Quality

Development often results in the removal of nature’s water filter. Water, rather than being filtered through natural vegetation and soil before reaching underground aquifers or streams and rivers, instead travels as surface run-off over paving, concrete, asphalt and rooftops, before entering either a municipal stormwater treatment facility or directly into streams and rivers carrying with it all the surface pollutants collected. As a result, underground aquifers may not be recharged adequately and there is a potential that the aquifers or the lakes and streams may

become polluted. Aquifers also have the potential to be impacted by failed private septic systems (Frumkin, Frank, Jackson, 2004).

Development that is dependent on ground water (wells) and private septic systems may be particularly vulnerable to water quantity and quality issues, however urban areas relying on water reservoirs or even on long distance fresh water sources have the potential to become contaminated or suffer from limited quantities during drought.

“For existing private well and septic system owners, the promotion of well stewardship and the need for support of stewardship programs is apparent” (Imgrund, 2009).

Inappropriate or ill-managed land uses in proximity to these vulnerable water sources may also negatively impact water quality (Frumkin, Frank, Jackson, 2004). Furthermore, while both rural and urban water sources are susceptible to contamination, regulatory frameworks exist for the protection of municipal drinking water, while stewardship is the main method for groundwater protection in the operation of private wells (Imgrund, 2009).

2.3.4 Access to Affordable Healthy Foods

Recent research has investigated the ability of the built environment to enable people to eat healthy food. There are several means by which the built environment can either promote or hinder a person’s ability to eat healthy. The combined trends towards larger, big box food stores and associated zoning regulations have led to large areas being devoid of an available location to obtain food stuffs, otherwise known as ‘food deserts’. In such areas, the only available sources of groceries tend to be corner stores. There are many communities that can be considered as having

‘food deserts’, these are typically low income neighbourhoods or rural communities (Gilliland, 2012). “A food desert is a socio-economically distressed neighbourhood where there is no nutritious food source within walking distance” (ibid). A study was completed to measure and map levels of access to food-retailers in Chatham-Kent, Ontario. The summary of findings showed that access to unhealthy food retailers (variety stores and fast food) is better than access to grocery stores in Chatham-Kent. Generally, the most distressed neighbourhoods have three variety stores and three fast food establishments closer than the nearest grocery store. Overall, there are many food deserts in Chatham-Kent; “food deserts are an issue of health equity. Unequal access to healthy food may further worsen health inequalities due to socio-economic difficulty” (Gilliland, 2012).

In studies completed in the United States, it has been shown that rural communities face healthy food access challenges. “In one example from the Mississippi Delta, nearly three-quarters of households that qualify for food stamp benefits must travel more than 30 miles to reach a large grocery store or supermarket” (PolicyLink, 2013). The major food related issues in rural areas are different from those in urban areas given the low population density, lengthier distances between retailers, and rapid rise of supercenters and their effect on other food retailers (Karpyn, 2010). Residents in communities that are underserved in terms of healthy foods, usually lack the transportation to be able to make trips to grocery stores in other parts of the community. Rural residents generally have greater access to cars; however those that do not, such as migrant farmworkers, for example, have practically no available public transportation to stores beyond their immediate communities. With limited transportation, low-income residents often must rely on smaller convenience stores closer to their homes (PolicyLink, 2013). While basic groceries

may be available at a corner store they are not competitively priced, and tend to consist primarily of packaged convenience foods, which are low in nutritional value.

Another issue associated with access to healthy food, is the availability of local food. A large amount of food available in grocery stores or supermarkets is imported. The import of foods often involves the burning of fossil fuels during transportation. The chemicals emitted by the burning of fossil fuels have other effects in addition to their contribution to global climate change (Xuereb, 2005). Fossil fuel combustion creates a variety of chemicals which contribute to environmental problems such as acid rain, smog, and toxic air pollution. These emissions are increased with the transport of food imports (ibid). To a certain degree, replacing consumption of food imports with local ones is possible on an individual level. However, barriers exist to purchasing local food, including perceptions that it is unavailable, consumer inability to identify it, and acceptance of preserved foods in the off-season (ibid). Reducing food imports will require policy changes that make local food consumption more convenient to consumers. The Region of Waterloo Public Health's document *Toward a Healthy Community Food System* (2005) suggested several possible strategies for moving towards this goal. These included increasing urban agriculture plans, expanding farmers' markets, establishing farm to organization programs, and encouraging the local food processing and distribution industries. A combination of these approaches has potential for reducing the environmental effect of food miles (Xuereb, 2005).

Neighbourhood community gardens and farmer's markets have been considered a viable option to provide a source of fresh, affordable and culturally appropriate food to those who would not otherwise have access. The physical, social and mental health benefits of community gardens and farmer's markets have also been suggested (Wakefield, S., Yeudall, F., Taron, C.,

Reynold, J. & A. Skinner, 2007). Increasing the availability of healthy foods through community design not only contributes to improved dietary health of a community, but can also contribute to increased levels of physical activity. Specifically, the inclusion of community gardens in community design supports healthy eating and food skills while contributing to active recreation. “According to the Canadian Fitness and Lifestyle Research Institute, gardening is the second most popular physical activity for Canadian adults” (Hastings & Prince Edward Counties Health Unit - HPECHU, 2012). As outlined by Bergeron (2012) food system planning can encourage a built environment that is conducive to local food production and consumption through:

- Protecting spaces for community gardens
- Protecting agricultural land for food growing and production
- Providing better opportunities for local food processing and sale
- Encouraging the development of healthy community food sources

(As cited by Hastings & Prince Edward Counties Health Unit - HPECHU, 2012)

2.3.5 Injury Prevention

Vehicle related injuries have been described as the least appreciated risk behaviour undertaken by people (Frumkin, Frank, and Jackson, 2004). While vehicle fatalities and injuries in Canada have decreased between 1990 and 2009, from a high of

“Injury requiring hospitalization in 2011 in Grey Bruce County involved 635 cases (per 100,000 population) relative to 407 cases (per 100,000 population) for the province of Ontario as a whole” (Statistics Canada, 2013b).

262,680 in 1990 to 172, 883 in 2009, Canada is ranked 10th in terms of fatalities per billion vehicle kilometers travelled compared to other countries of the Organization for Economic

Cooperation and Development (Transport Canada, 2009 & Office of the Chief Coroner, 2012). The World Health Organization and the World Bank estimated that by the year 2020, road traffic injuries will become the third greatest contributor to the 'global burden of disease and injury' (Office of the Chief Coroner, 2012b). American statistics suggest vehicle crashes are the leading cause of death among people between the ages of 1 and 24 and cost an estimated \$200 billion annually (CDC, 1999 as cited in Frumkin, Frank and Jackson, 2004).

Vehicle related deaths and injuries include drivers, passengers, pedestrians and bicyclists. Recently the Office of the Chief Coroner of Ontario issued two reports on the issue, a 'Cycling Death Review' and a 'Pedestrian Death Review'. Both reports highlighted the importance of walking and cycling in maintaining a healthy lifestyle but noted that the built environment may not always safely accommodate such pursuits.

Some of the factors associated with such injuries include the speed of vehicles travelling, the street design itself (vehicle lane widths, proximity to sidewalks and or bike paths etc.) and overall neighbourhood design (whether it is pedestrian or vehicle oriented).

Traffic volumes have been documented to be linked to frequency of collisions, while traffic speeds are linked with collision severity. Indeed, pedestrians are 45% more likely to suffer severe injuries or die if hit by a vehicle travelling faster than 50 km/hr or higher, while they have only a 5% chance of suffering such a severe injury or be killed by a vehicle travelling 30 km/hr (Pilkington, 2000 as cited in Frumkin, Frank and Jackson, 2004).

An example of the increasingly common intersection of health and the built environment, the 'Pedestrian Death Review' concluded modification to the built environment as the primary means of reducing pedestrian deaths, in particular this included recommending a "Complete Streets" approach to the development and re-development of communities whereby streets be designed to accommodate all types of users regardless of transportation mode, age or physical ability (Office of the Chief Coroner, 2012). The report also concluded by recommending the inclusion of a 'Walking Strategy for Ontarians' be included in the revised Provincial Policy Statement and the reduction of speed limits on residential streets (ibid).

Also of particular note, research suggests that rural areas suffer from higher injury rates both from vehicle related and work related accidents due to the often long commute times and high speeds of travel and the type of occupations that are more often found in rural areas (Frumkin, Frank & Jackson, 2004, Ministerial Advisory Council on Rural Health, 2002).

Injury prevention on farms is extremely important; farms and rural areas have ponds, streams, animals, machines, equipment and vehicles not typically found in residential areas. These surroundings increase the threat of preventable deaths and injuries to people who visit, live and work on farms and in rural areas (City of Hamilton, 2013). In Ontario, from 1990 to 2004, the primary causes of agricultural related injuries and hospitalizations were (ibid):

- machine entanglements
- animal-related events
- falls from height
- machine run overs and rollovers
- being pinned or struck by a machine
- falls on the same level

A great number of fatalities and injuries on Ontario farms were in youth under the age of 16 years. Older adults had a much more significant death rate than younger adults aged 15-59; deaths in those over 80 years of age were the highest. Adults aged 65 and over also had the most significant rates of injuries requiring a hospital stay, 26% of these injuries were due to falls (City of Hamilton, 2013).

One initiative in Ontario that is attempting to improve injury prevention is Ontario's Rural Plan. This plan is aiming to help communities by addressing infrastructure requirements, which in turn could contribute to injury prevention, as well as improve access to educational opportunities (Ministry of Health Promotion, 2007).

2.3.6 Climate Change

Carbon dioxide (CO₂) produced from vehicle emissions is one of the largest source of greenhouse gases in Canada (Bray, Vakil & Elliott, 2005). Most research has come to agree that greenhouse gases from human activity are responsible for the climate change now being experienced. Health impacts associated with climate change include those directly and indirectly related to weather changes. For instance, an increasing number of smog days is associated with an increasing number of respiratory illnesses, while an increasing number of extreme heat days lead to increased number of those suffering heat exhaustion (Perrotta, 2011). Other storm events, such as ice storms and hurricanes have direct health impacts on those caught in such events and their aftermath. Further, changes to the built environment, such as including more green space and permeable surfaces to streetscapes, avoiding development on flood prone areas, and

changing building design to improve conservation of resources or reduce susceptibility to major climatic events may help mitigate the health effects of climate change (ibid).

2.3.7 Safe and Affordable Housing

Rural Ontario differs in a number of significant ways from patterns found in the rest of rural Canada (Delaney, Brownlee, & Slick, 2001 as cited in Elias, 2009). For instance, the unemployment rate in rural Ontario, at 4.3%, is much lower than the total rate for both urban and rural Canada (Bellman & Clemens on, 2008 as cited in Elias, 2009). As well, in spite of generally lower incomes, the level of poverty is lower in rural areas because of lower costs of living, principally the cost of housing (Runic et al., 2001 as cited in Elias, 2009). As an example, many artists choose to live in rural settings, due to affordable living costs, access to markets, and the attractiveness of the rural landscape (Fleming, 2009).

The Ministry of Municipal Affairs and Housing (MMAH) as part of their *Building Blocks for Sustainable Planning* project, has outlined the Protection of Second Unit Policies. Essentially this tool enables municipalities to adopt policies that allow second units in detached, semi-detached and row houses as-of-right (MMAH, 2011). This tool may be especially useful for rural communities as some benefits include, an increase in the supply of affordable housing units and increases in density without changing the community's character (MMAH, 2011).

In addition to some of the measures mentioned above, further solutions can be developed through housing and homelessness services. As a result of the provincial *Housing Services Act*,

2012, each Service Manager across the Province is required to prepare a local 10-year Housing and Homelessness Plan (Reffle, 2013). These plans are to articulate the long-term vision for the provision of housing and homelessness services over the next ten years and are required to include:

- An assessment of current and future housing needs in the Service Manager Area;
- Objectives and targets related to housing needs;
- A description of the measures proposed to meet the objectives and targets;
- A description of how progress will be measured (Housing Services Act, 2011).

In terms of safety, “the construction of homes, schools, or workplaces can be a source of chronic allergies and asthma or irritations caused by volatile organic compounds (VOCs) or natural agents such as dust mites, cockroach feces, and spores from fungi. Although molds, such as black mold, reproduce naturally in areas with high humidity, a building that is excessively wet during construction or is not sealed properly can become a long-term mold incubator” (Jackson & Sinclair, 2012). Unattended leaks and water intrusion after construction are not just cosmetic and economic problems; they are health challenges as well (ibid). Choices made in home construction materials and furnishings can also affect our health over time. Many houses built before 1978 and those furnished with old furniture likely contain lead-based paint. If this paint peels, chips, or cracks, it can be hazardous (ibid).

When looking at built environments, the goal should be to put a solution in place that alleviates multiple problems, yet we cannot authorize people’s choices in personal health. For ourselves, “although we may not know the original construction of our homes, schools, and workplaces, we can choose or advocate for wall and floor coverings not associated with health

issues, as well as choose whether to open a window for fresh air, and select appropriate plants when landscaping” (Jackson & Sinclair, 2012).

According to Allison and Peters (2011), affordable housing can be seen as a tool for making communities more liveable. They go on to discuss solutions on how historic preservation and low-income housing can be used in conjunction to contribute to the revitalization of communities. “There are tax breaks for historic preservation. But there are also tax breaks, credits, and incentives for low-income housing. Combining these two can enable projects that would normally not be viable. This is a powerful tool, because, by increasing the financial return from converting historic structures to affordable housing, we can achieve many of the goals of revitalization and liveable communities” (Allison & Peters, 2011). Rehabilitation is sustainable because it utilizes the existing energy of a building and remaining infrastructure, creates a local workforce for the community, and brings a diversity of people into the residential sector. Continued investment in heritage buildings through restoration and repair for affordable housing purposes and stabilization of historic districts through the construction of infill housing should be acknowledged as contributing to civic beautification and retention in small communities (ibid).

Furthermore, if affordable housing is created in a downtown setting, this form of development is conducive to lifestyles for low-income families. In such cases, active transportation is an option; as well there are a variety of social amenities such as daycare, hospitals, after school programs, and parks in a downtown environment that do not require extensive transportation (Allison & Peters, 2011). By combining affordable housing with

heritage preservation, we are improving both the built surroundings and liveability in small communities (ibid).

2.3.8 Livelihood and Economic Opportunities

The quick pace of change in the New Economy (Chisolm, 2006), is making rural leaders struggle to keep pace with the local economic development processes. Due to the slowing down of the manufacturing industry, many communities are struggling with finding an economic approach that works well for them. The New Economy is represented by a change from primary industries and natural resources to more technological and knowledge based economies. The New Economy is characterized by the following four attributes: globalization, accelerated pace, a knowledge driven-economy, and a reliance on specialization and networks (Blakely and Bradshaw, 2002 as cited in Doucette, 2004).

This is not to imply that rural communities are passively giving way to the actualities of the New Economy. Alternatively, driven by crisis many have found themselves searching for new prospects, identifying unused resources, creating innovative collaborations both between and within communities and devising choices to the mainstream economy (Doucette, 2004).

Arts based projects could be a solution to the economic problems facing rural communities. Arts centred projects recognize the value of art and can be an important source of pride in rural communities. The benefits and challenges of starting a creative economy in a rural setting, and its links to sustainability, are not yet well understood (Fleming, 2009). A creative economy, is one “focused on the economic geography of creative activities and on a more post-

structural understanding of culture and the economy as mutually essential ideas” (Fleming, 2009). Overall, it can be said that social, cultural, artistic and environmental variety is fulfilling for all people who live, work, and play in rural communities, and for their quality of life. The arts can become a tool for learning, social interaction, entertainment, and motivation and a vital aspect of economic development (Thorbeck, 2012).

2.3.9 Natural Spaces/Greening of Communities

Effectively designed spaces make visual and physical access to nature an incorporated and essential part of design. As a result, the spaces have the ability to improve mental health and overall ability of site users to manage major life issues (Venhaus, 2012). Therefore, incorporating nature when enhancing and revitalizing a public space has important positive effects for community members and visitors.

Parks, open space, and natural areas provide chances for physical activity, leisure, contemplation and socializing. “A community with nature present at a variety of scales contributes to the spirit of a place. The availability of green space is associated with increased levels of social capital, and exposure to nature reduces stress levels, anger and anxiety, and replaces these with feelings of pleasure” (Canadian Institute of Planners - CIP, 2012).

Furthermore, in the book *Designing Healthy Communities*, Jackson and Sinclair (2012), explains “when I was in Elgin, Illinois, I heard high-schooler Ashley Lundgren talk about attention deficit disorder (ADD) and attention deficit/hyperactive disorder (ADHD). Her research showed that up to ten percent of students are being diagnosed with ADD or ADHD and

approximately thirty-five percent of high school dropouts are students with ADD or ADHD. She found studies that say students are better able to concentrate when they are in contact with nature” (ibid). A solution could be incorporating nature into communities. Community gardens and parks connect people because they can interact with their neighbours, reducing social isolation. Isolation and alienation are big factors to address in depression and stress management. Mental health and stability are influenced by nature and green spaces. Overall, people are happiest when they are outside and surrounded by nature (Jackson & Sinclair, 2012).

Nature plays a critical role in making public spaces successful and healthy for people; however natural elements also have the effect of environmental sustainability and health. ”Environmental or ecological sustainability stems from the realization that human life (and the life of other creatures as well) is dependent upon the natural environment and its provision of ecosystem services” (Venhaus, 2012). To guarantee the prolonged existence of natural resources, sites must safeguard and repair ecosystem services and humans must act as stewards of the land. Sustainable spaces help communities build an environmental ethic by providing everyday opportunities for people to connect with nature (ibid). “Constructed landscapes can reveal the ecological processes, rhythms, and cycles of nature”, which in effect educate community members who come in contact with these spaces (ibid). Overall, sustainability is very significant in the revitalization of public spaces; it provides the public with an increased understanding of nature, allows for land stewardship, and encourages preservation.

2.4 Solutions for Healthy Rural Communities: Health and Sustainability

The complex planning issues associated with the built environment and health, have been categorized into four specific sections; social, environmental, recreational/cultural, and economic factors. These categories were developed in order to summarize and provide a comprehensive description of the various issues facing rural communities. Throughout this section, detailed descriptions of rural concerns based on the factors mentioned above will be provided, along with practical examples and potential solutions.

2.4.1 Social Factors Associated with Healthy Rural Communities

Aging Communities

A major social planning topic that many municipalities have already begun to undertake and will continue to work on is the issue of aging populations. This issue is particularly of interest to rural communities, as smaller and rural communities have larger proportions of aging populations when compared to larger urban centres (OPPI, 2009). Some of the services that will have to be improved will include increasing transportation options, geriatric services, and creating models of support that replicate systems in areas such as Denmark (Social Planning Network of Ontario, 2010). In studies on the impacts of an aging demographic, the number one issue identified is consistently transportation (OPPI, 2009).

Many communities of all sizes across Ontario have begun planning processes to explore and develop guidelines to address age-friendly communities (OPPI, 2009). These include:

- The County of Brant and City of Brantford have recently released A Master Aging Plan that creates a guide for the delivery of a wide-ranging and harmonized set of community services to older adults that have a variety of needs.
- The County of Oxford has also finalized a Master Aging Plan; the plan is intended to serve as a guide for the future development of services for seniors in Oxford County (Oxford Master Aging Plan Steering Committee et al., 2012).

An Age Friendly Community, Elliot Lake, Ontario

A very senior-friendly community in Ontario is Elliot Lake. This mining community, incorporated in 1955, lost 4,500 jobs in the 1990's when the mines closed. The community reacted by attracting retirees, since there was established high quality housing, an array of recreational opportunities nearby, good health care services, and a built environment that fostered a safe, unified community. Currently the community has developed into one where almost half of the population is retired. These retirees contribute to tourism when their friends and families come to visit, and contribute to public revenues. The town has improved its recreation facilities and added a seniors' issues office to deal with problems such as security and fraud. Transit routes are designed to stop at the front doors of residential complexes and to take seniors to the front doors of the places they need to visit, such as health clinics. The town of Elliot Lake keenly recruits and offers incentives to doctors, for them to provide health care to community residents (OPPI, 2009).

As mentioned previously, not all communities will be equally affected; many smaller municipalities and communities in northern Ontario are aging more rapidly than larger cities in

Ontario (OPPI, 2009). The solutions to the challenges of an aging population are many, “ranging from changes in legislation to allow for property tax credits for low-income seniors as well as infrastructure redesign such as road narrowing, or the addition of pedestrian islands, to make walking more comfortable. These benefits are considerable, since many of the changes will also make life easier for children, parents, disabled persons and others” (OPPI, 2009).

Youth and Child Land Use Planning

Another very important social factor to consider when developing a healthy rural community is planning for the needs of children and youth. Youth and child land use and transportation policies are very important, especially in today’s car dependant society. In 1974, sixty-six percent of all children walked or rode a bike to school. By 2000, that number had dropped to thirteen percent, and childhood obesity had skyrocketed (Jackson & Sinclair, 2012). Furthermore, rural children are approximately 25% more likely to be overweight than their metropolitan counterparts. One of the factors that may be driving this epidemic in rural settings is a lack of physical activity (Yousefian et al., 2010). Studies have shown that walking or bicycling to school increases children’s concentration, improves mood and alertness, and enhances memory, creativity, and overall learning. Programs that promote safe routes to school for children result in improvements in both academics and physical fitness. When infrastructure and social programs create and support those safe routes, schools in areas with initially low levels of walking or biking to school show increases in these healthy behaviours by twenty to two hundred percent (Jackson & Sinclair, 2012).

A specific document was developed to address the above noted issues, titled *Child and Youth Friendly Land-Use and Transportation Guidelines*, which was created by the Centre for Sustainable Transportation at the University of Winnipeg. The twenty one child and youth friendly land-use and transportation guidelines were developed in the spirit of a statement by Enrique Peñalosa, former mayor of Bogotá, Colombia; who stated “if we can build a successful city for children we will have a successful city for all people” (OPPI, 2009b). As stated by the OPPI (2009b), the guidelines are organized in six groups, which include the following: *Give priority to the needs of children and youth, plan for children and youth as pedestrians, plan for children and youth on bicycles (and other wheels), plan for children and youth as transit users, focus on journeys to and from school, reduce transport’s adverse impacts on children and youth.*

Active & Safe Routes to School Project, Peterborough, Ontario

An example of a project that focuses on youth and child land use and transportation is the Active and Safe Routes to School project in Peterborough, Ontario. The City of Peterborough started this initiative as a joint venture with local community organizations to promote sustainable transportation choices within the city (City of Peterborough, 2012). The project involves a variety of community groups around Peterborough County. As described by the City of Peterborough (2012), Active and Safe Routes to School is a programming project that includes the following current programs:

- a) Car Free School Days – the first Wednesday of the month is designated as a Car Free School Day
- b) High School Shifting Gears – two weeks where students and teachers track their travel to school to win prizes by increasing their walking, cycling and transit use

- c) On the Bus Workshops – Grade 3 students get a workshop on how to ride the bus including a transit ride to important landmarks in the city
- d) Grade 8 Transit Quest – all grade 8 students in the city receive a free transit pass for March Break
- e) School Travel Planning Maps – student-friendly maps of walking, cycling and transit access to several schools around the city have been created and distributed

The Active and Safe Routes to School project focuses on the transportation methods that students use to get to and from school. The aim of this initiative is to understand current travel patterns of students and to educate and encourage more active and environmentally conscious methods of travelling to and from school (City of Peterborough, 2012).

All of the goals described above seek to improve the health of children and youth, and expectantly aim to reduce epidemics such as childhood obesity. The initiatives described also indicate planning that is environmentally conscious by reducing the amount of vehicle emissions, which is an indicator of sustainable community design and practices.

Community Access to Healthy Food

In order to sustain a healthy rural community from a social planning perspective, access to affordable and nutritious food is a fundamental necessity. This fact is true for all individuals in a community, both old and young, and everyone in between. Currently across Canada, communities are working together on developing grassroots solutions to ‘food security’ (Public Health Agency of Canada - PHAC, 2012b). There are many definitions of food security and many solutions undertaken by communities to address food related problems. However, one definition that has been used internationally, as well as in Canada, is the following: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (Agriculture and Agri-Food Canada, 1998 as cited in PHAC, 2012b). More recently, many groups have supplemented the definition, introducing concepts of local self-sufficiency, protecting human dignity in food access, the need for food system reform, environmental sustainability, cultural considerations, and the importance of engaging communities in undertaking these issues (PHAC, 2012b).

Food security has come to refer to the various food related issues that our society is currently experiencing. The promotion of food security has inspired hundreds of “Community Food Actions (CFAs)” (PHAC, 2012b). The recently developing CFAs are varied and many are quite innovative. There are some CFAs such as food cooperatives, which are concerned with getting affordable foods into the hands of individuals. Other initiatives are focused on developing community capacity to produce and prepare their own food; these include actions such as community gardens and kitchens (PHAC, 2012b). Some other CFAs involve policy, which aims

to reduce poverty and/or support local food economies. For the most part, Community Food Actions reflect a commitment to working collaboratively as a community to find solutions that will enhance quality of life and make a difference (PHAC, 2012b).

Haliburton Highlands Food Coalition

Haliburton County is an example of a rural community that has embraced Community Food Actions. Haliburton County (Haliburton Highlands) is an area at the north end of Southern Ontario, just south of Algonquin Park. The Community Food Actions that Haliburton has undertaken include the creation of the Haliburton Highlands Food Coalition. This coalition is a working group formed to develop, inspire, and enhance the production and purchase of local foods within the region (County of Haliburton, 2011).

The Haliburton Highlands Food Coalition has a variety of goals including; supporting educational opportunities and knowledge of local foods, improving resident awareness and access to local food, providing support to local food producers, improving the health of their community, and strengthening the local economy (County of Haliburton, 2011). A key way in which the Coalition achieves its goals is through their website and database which lists Farmers' Markets, Food Producers, Restaurants and Retailers, and Groups and Associations related to local food production. The function of the website is to connect farmers with consumers and to advertise local food events. Overall, the Community Food Actions that have been undertaken in Haliburton County are an example of sustainable and progressive initiatives that aim to solve community food related problems.

2.4.2 Environmental Factors Associated with Healthy Rural Communities

A Sustainable Approach: Taking Care of People and Nature

There are a wide range of environmental and sustainable measures that rural communities can undertake in order to improve the health of both people and nature. Sustainable rural environments involve making connections between human, animal, and environmental health, this is crucial to understanding wellness. “Keeping people, animals, and environments healthy is economically preferable to taking care of them when they are sick” (Thorbeck, 2012). A report commissioned for the Friends of the Greenbelt Foundation has identified that the goods and services embedded within the Greenbelt of the Toronto-centred region returns to the economy a value of \$2.6 billion of value on an annual basis. This is found within the land base of the Greenbelt that provides services for clean air, water, and land (David Suzuki Foundation, 2006). A variety of goods and services of nature and of natural systems can be identified for Ontario communities.

Environmental Advisory Committee in Caledon, Ontario

The Town of Caledon has taken an environmental focus, this is apparent in their Official Plan policies which emphasize environmental sustainability. To further illustrate the community’s commitment to environmental initiatives, Council has enacted an ‘Environmental Advisory Committee’ of interested citizens to provide advice on all topics dealing with the environment. The Town has also created an environmental planner position which is quite rare for municipalities with populations under 100,000 people (Caldwell, 2008).

Alternative Land Use Services (ALUS) program in Norfolk County, Ontario

Alternative Land Use Services (ALUS) was designed by farmers for the use of farmers. It is reflective of a means to conserve and restore Canada's natural capital. The program respects and rewards farmers for good environmental management on their properties. The program is incentive based; ALUS does not compensate farmers for their impact on the land through environmental regulations. Instead it provides the tools and capacity to build on their good environmental practices (Agriculture and Agri-Food Canada and North American Wetlands Conservation Council, 2009).

There are several key principles associated with the program:

- 1) Shared responsibility for government and landowners. Farmers receive annual payments and 'other forms of compensation'.
- 2) Stewardship and conservation provides service valuation at 'fair market value'.
- 3) ALUS provides payments for the maintenance of existing natural works.
- 4) It is based on measureable environmental goods.
- 5) Farmers lead the environmental agenda.
- 6) ALUS is independently monitored.
- 7) Transparent and accountable.
- 8) Represents a fee for service; does not represent a significant increase for farm incomes.

(Agriculture and Agri-Food Canada and North American Wetlands Conservation Council, 2009).

Munsee-Delaware Nation Tree Reforestation Project

Another interesting case comes from the Munsee-Delaware Nation Tree Reforestation Project on their lands near London, Ontario. Seventy seven thousand trees have been planted on ‘idle agricultural lands’ near London, Ontario and carbon credits associated with the trees’ climate change mitigation benefits have been sold to a major corporation to offset its corporate gas emissions impacts. The land is on the Munsee-Delaware Nation and the buyer of the carbon credits is the TD Bank (Caldwell, 2011b).

This is the first carbon forest to be developed on First Nations land in Ontario and the first time a comprehensive guide has been used that accounts for the greenhouse gas value of the trees. The Munsee-Delaware Nation has launched Munsee Tree Corp. to handle the project and hopes to expand to other areas. The trees planted at Munsee-Delaware are a fast-growing hybrid poplar developed by researchers at the University of Guelph (Caldwell, 2011b). Tree Canada, a not-for-profit corporation, has calculated the seventy seven thousand poplar trees will sequester twenty thousand tonnes of carbon dioxide. The plan is to grow the trees for thirty-one years and then harvest them for biofuel production (ibid). Planting the trees has employed forty-two youth over a six week timeframe. For the TD Bank, the project will help it to meet its commitment made in 2008 to have carbon-neutral business operations (ibid).

Overall, all of the environmental ideas and initiatives described above identify solutions that will improve both the well-being of humans and the natural environment in rural communities. This is extremely important in order for “short-and long-term rural community success which embodies a synergistic relationship between the human and natural environments, society and culture, and the economy” (Thorbeck, 2012).

2.4.3 Recreational and Cultural Factors Associated with Healthy Rural Communities

In many instances, small towns are surrounded by agricultural land on the periphery. The preservation of this land is extremely important as it provides agricultural functions, however also provides natural heritage and culture. This type of land is significant to small communities because it provides scenery, heritage, natural features and potential places for recreation. In order to maintain these elements; it is important to preserve rural landscapes, which ultimately contribute to human health and well-being. The characteristics of rural historic landscapes include “land uses and activities, patterns of spatial organization, response to the natural environment, and cultural traditions; there are also circulation networks; boundary demarcations; topography; vegetation related to land use; buildings, structures, and objects; clusters; archeological sites and small scale elements, etc.” (Longstreth, 2008).

In existing agricultural landscapes, “it is the permanency of human processes interacting with the natural landscape – farming versus (sub) urbanization – that will best ensure protection of this cultural resource. The physical components of the past should be protected to the highest degree possible” (Longstreth, 2008). However, conservation of specific “scenes” should not take precedence over insertion of new agricultural elements or crops if they respond to contemporary farming practices (ibid); an example could be farming practices that incorporate stewardship and environmental practices. A good approach to agricultural preservation, is to work to protect the material and process traditions of the past, integrating components so that the overarching appearance of these heritage lands remains intact, and facilitating new approaches to support the continuation of farming and preservation of the natural heritage and scenery of the rural landscape (Longstreth, 2008). This type of preservation will encourage the well-being of the

agricultural landscape, as well as contribute to the well-being of communities in and around these landscapes.

Active Transportation in Rural Communities

Another important reason for preserving historic rural landscapes is that they are able to provide opportunities for active transportation in small communities. The rural landscape can provide opportunities for multi-use and recreational trail systems, rail-trail projects, and general enjoyment of natural heritage features such as woodlots. All of these amenities and components can contribute to the health and well-being of residents in small communities. The challenge lies within connecting villages/towns and the broader agricultural lands in an effective and safe manner. To shed some light on this topic, Active Transportation (AT) Plans for small communities have given some guidance and ideas on how to develop successful recreational facilities for residents in small and rural communities.

AT Plans for both Minden and Haliburton, Ontario, offer some innovative solutions for active transportation in small communities, which increase opportunities for physical activity. A key point made in both AT Plans was that connections to ‘key points’ or ‘hotspots’ are a great way to develop active transportation facilities in villages and rural areas (Young, 2008 and Hall, 2009). As an example, some assets around which active transportation could be developed in Minden, Ontario include: The Gull River, Minden Hills Cultural Centre, Minden Walking Trail, Heritage Buildings identified through Heritage Tour signage, and events such as ‘Timberfest’ (Young, 2008). Similarly in Haliburton, Ontario, hotspots were identified that could aid in successful active transportation development (Hall, 2009). Through public engagement and

research activities, the following key areas were identified for the development of active transportation facilities in, Haliburton: the Bridge on County Road 21, Haliburton Walking Trail as safe route to school and medical facilities, Wetland Boardwalk on Haliburton Walking Trail, and Haliburton Walking Trail to Medical Centre, Drag River Rehabilitation Trail, and the Rail Trail towards Barnum Lake (Hall, 2009).

These AT Plans indicate solutions on how to make active transportation a reality in small communities and rural areas. In the AT Plans discussed above, key natural, cultural, and service landmarks are used to create connections by the use of trails, sidewalks, and bike lanes. This helps create active transportation facilities that are functional, attractive, and safe. Moreover, these ideas promote the possibility of active transportation facilities in small and remote areas, by focusing on the existing assets and cultural wealth of these communities.

Eastern and South-western Ontario Art, Heritage, and Culinary Trails

The Eastern Ontario Trail Alliance has developed a variety of trail systems for all types of trail users. Trails have been developed based on various themes that appeal to a variety of users, one particular trail system is based on art and heritage amenities. This trail system has the purpose of recreation, however due to heritage and art elements could also have the purpose of active transportation, if residents and visitors are travelling to these locations. The trail system in Eastern Ontario has the benefit of history and architectural details in the towns, hamlets and villages surrounding the trails (Eastern Ontario Trails Alliance, 2012). Often described as an artist's and photography lover's delight, one can let creativity flow amongst the natural and historic elements. There are galleries, antique and treasure shops for residents and visitors to explore. Due to the cultural characteristics of the trail, unique heritage indulgences and top notch

craftsmanship can be found along the way, passed on through many generations (Eastern Ontario Trails Alliance, 2012).

The trails in rural communities have the ability to connect to a variety of other assets that can be found in these regions which are filled with culture, history, agriculture and nature. In south-western Ontario the trails are often connected to culinary, artisanal, farmland, studio and gallery amenities. Such is the case in Middlesex County and the heart of Sarnia-Lambton, this region offers the Forest City and the Carolinian Life Zone; a hotspot for natural diversity, which then connects to Lake Huron (Government of Ontario, 2013). In this type of journey, it is possible to find everything from farmer's markets and pick-your-own berry farms to a flour mill, vineyards and even a fishery.

Another exciting experience can be found on the North Shore of Lake Erie; which includes communities such as Port Stanley and St. Thomas. In this region, "there are miles of shoreline, sandy beaches and picturesque ports and villages" (Government of Ontario, 2013). Some activities that can be enjoyed in this area include sport fishing, cycling along farmlands or discovering the many studios and galleries showcasing visual arts attractions in the area.

All of the regions in south-western Ontario mentioned above offer a variety of cultural and recreational opportunities, as well as incorporate agri-tourism, tourism, agriculture, history and culture. This is fundamental in understanding the many qualities that rural communities are valued for by residents and visitors, as they offer unique experiences. These experiences have the

ability to improve the quality of life and well-being of residents, as well as the economic development of rural municipalities.

The heritage trails mentioned above are significant as they use a community's natural assets, character and cultural attributes to develop a recreational and physically active amenity. They are unique, as they are located in traditionally rural areas and build upon special landmarks or nodes, connect places, while at the same time showcase distinctive features of communities'.

2.4.4 Economic Factors Associated with Healthy Rural Communities

One of the first steps to revitalization and the improvement of a community's economy, which will ultimately contribute to the well-being of residents, is the conservation of culturally significant attributes. Successful revitalization occurs when citizens are behind the plans and see the value of what is being done. A key way in which this could be made possible is to emphasize that, that which is held in high regards or is considered special to residents, will be respected and conserved. "Community involvement is thus not only key to the conservation process, but success depends on applying locally based collaborative strategies that respect cultural and historical traditions along with ecological systems. Community-based conservation can enable people to cooperate in both identifying and retaining the values and the essential character of places by planning for the future and managing change" (Longstreth, 2008).

Economic Development: Art, Culture, and Innovation

The acknowledgment of the importance of culture in the economic development of a community also leads to the idea of art. “Studies suggest that “the arts” have a significant role in terms of encouraging employment growth, facilitating downtown regeneration, and attracting tourists” (Garrett-Petts, 2005). It has also been shown that “a thriving culture industry also has psychological impacts on community members, helping construct and affirm the image and feel of a place” (Garrett-Petts, 2005). Garrett-Petts (2005) has indicated several key indicators of a healthy community culture:

- Opportunities for direct and indirect participation in local arts and culture
- A generative mix of high art and vernacular cultural expression
- An effective rhetoric of arts and culture advocacy

Eastern Ontario: A Creative Economy

The creative economy is made up of individuals who are paid to think. They are often analytical and explore many possibilities in order to reach viable solutions in their day to day work (Prince Edward County, 2013). Below are the categories of creative workers in a community who drive the creative economy, they include; Senior Management, Business and Finance Professionals, Health Professionals, Teachers and Professors, Professional Occupations in Art and Culture and Technical Occupations in Recreation, among others.

In Eastern Ontario this sector of the economy is growing and prospering. The creative economy “is a high growth sector and is expected to contribute 42% of the new jobs over the next decade. Eastern Ontario is in the heart of the largest economy in Canada, the 5th largest in North America and 12th largest in the world” (Prince Edward County, 2013). This geographic

position presents significant trading opportunities in the new creative economy. In a creative economy place matters, just as infrastructure and taxes are a competitive advantage for classic industrial development, quality of place and lifestyle amenities are necessary characteristics to develop the creative economy (Prince Edward County, 2013). Eastern Ontario's abundant recreational opportunities, small town and rural charm offer ideal lifestyle qualities that the creative class desires. Cultural resources play a key role in enhancing quality of place and enhancing local creative economies. Municipal cultural planning is a tool for weighing these assets and increasing success in a local creative economy (Prince Edward County, 2013). Eastern Ontario's quality of place, combined with its geographic position and creative economy base, positions it very well to grow and succeed at building a creative economy.

An encouraging sign is that the rural areas of Eastern Ontario have a much higher rate of creative industry establishments (9.0%) than rural areas in the province overall (6.5%) (Prince Edward County, 2013). As a result, Eastern Ontario has the opportunity to be a precedent or example for the rest of Ontario on establishing a creative economy. Based on "the Canadian Business Patterns data, the following sectors comprise the largest number of businesses in the Eastern Ontario Region (including Ottawa): Heritage, Photography Services, Artists, Public Relations and Architecture. When this data is reviewed without the presence of Ottawa, Photography Services comprises the largest number of creative businesses in Eastern Ontario (1,530 businesses), followed by Heritage, Artists, Public Relations and Architecture" (Prince Edward County, 2013). Overall, a greater number of workers in Eastern Ontario are employed in 'creative' occupations relative to the province as a whole. This may be attributed to the prevalence of manufacturing in other parts of the province, however further research is required to provide a stronger understanding.

People who have the psychological attributes of successful innovators are not only more likely to be attracted to a location where there is a vibrant arts and cultural community, but that exposure to the arts provides a stimulus for innovation. With the “perceived need to attract and retain “knowledgeable” workers, with relearning and innovative capacities that are now considered necessary for sustainable, competitive advantage, communities with a variety of cultural attributes can further attract and retain these types of innovative workers” (Garrett-Petts, 2005). This is important as places that do well in attracting and retaining creative people are more likely to thrive (Thorbeck, 2012). Another point is that “creative people value outdoor recreation very highly and are attracted to places and communities where many outdoor activities are available. Openness to migration is particularly important for smaller cities and rural regions. To attract and welcome creative people they have to develop the kind of social opportunities creative people value” (Thorbeck, 2012). The overarching idea is that, “the arts provide fertile conditions for developing and validating new “crazy” ideas or “out-of- the- box” thinking, in other words the arts foster innovation” (Garrett-Petts, 2005).

A community that has worked to conserve and build on its cultural, creative and artistic attributes, can inspire existing residents as well as attract new individuals and businesses, which can in turn have a positive effect on the economy of a rural community.

2.5 Conclusion

Overall, a wide variety of concepts were discussed throughout this literature review. A new path was embarked on as described by Williams (2013), this review can be considered as part of “the broader shift towards addressing complex social problems and stimulating collective impact through collaboration, where researchers have taken steps towards opening the lines of communication between two important actors in this conversation about the built environment and health: public health practitioners and urban planners” – or more suitably rural planners. It is difficult to discern one specific solution to creating a “healthy rural community”, therefore a wide-range of interesting and innovative concepts were presented in the hopes that these could be stepping stones to creating healthy rural communities. As stated by Thorbeck (2012), “the only effective way to deal with global rural issues is to look at them systematically and holistically”. The various topic areas discussed throughout this literature review aim to give rural communities, ecological, social, cultural, and health prosperity, and continue the problem solving process for rural issues (Thorbeck, 2012).

Chapter Three: Methodology

This research utilizes two different research methods in order to derive tools for rural and small town communities which foster the development of healthy, safe, and effective built environments. The diverse range of topics highlighted in the literature review called for the use of two primary methods for the research project: surveys and key informant interviews. The table below illustrates the relationship between research objectives and the methods used to acquire the necessary data.

Table 1: Methodology

Research Objectives	Data Requirements	Source of Information
To demonstrate the unique challenges experienced in rural and small town communities in regards to the built environment.	Resources describing the challenges and differences in rural built environments and communities.	<ul style="list-style-type: none"> • Literature Review
To research built environment conditions that allow residents the opportunity to make healthy choices and improve quality of life.	Resources describing communities with positive built environment characteristics. As well as, first-hand examples of existing healthy built environments in rural communities.	<ul style="list-style-type: none"> • Surveys • Key Informant Interviews
To identify policies and guidelines which promote the design and development of a healthy and safe built environment in rural communities.	First-hand information, detail and background on policies that promote healthy rural built environments.	<ul style="list-style-type: none"> • Surveys • Key Informant Interviews
To provide specific tools for rural and small town communities which foster the development of healthy, safe and effective rural built environments.	First-hand information regarding innovative initiatives that have been successful in rural communities.	<ul style="list-style-type: none"> • Key Informant Interviews

3.1 Surveys

The first method in the research was to develop a survey related to the topic of healthy rural communities. This survey was distributed to planners and public health professionals across Ontario through an on-line survey tool (Survey Monkey). Municipalities across Ontario were surveyed including the north-east, north-west, east, south-west and central regions of the province. There were a total of eighty-one survey responses from municipal planners and a total of forty-three responses from public health professionals. The purpose of the survey was to inquire about views on what constitutes a healthy rural community, any existing best practices in the municipality, as well as a rating of the degree of innovation in the community based on a continuum ranging from 'Struggling' to 'On the Cutting Edge'. A detailed version of all the survey questions can be found in Appendix A.

3.2 Key Informant Interviews

The final method used in the research included key informant interviews. Public health professionals and planners in municipalities across Ontario were interviewed based on innovative initiatives listed in survey responses. These interviews aimed to gain a deeper understanding of the themes revealed during the survey analysis, as well as to make known any lessons and tools for other rural communities desiring to implement innovative initiatives. A variety of topics were covered in the key informant interviews and in order to gain an in-depth understanding of interview responses, three municipalities were used as examples and appear as case studies in this thesis.

Chapter Four: Results

4.1 Survey Results

Through the two methods used for this research, a variety of results were revealed. This section describes the results discovered through survey responses. There were a series of five questions in the survey that was distributed to both municipal planners and public health professionals, these questions are available in Appendix A. Tables 2 and 3 illustrate responses from professionals for question five of the survey regarding innovative initiatives occurring in their communities.

Table 2: Sample of Survey Responses from Municipal Planners

Municipality	Survey Question No. 5 Responses: Do you have any policies, programs or processes that you think are so innovative respecting healthy rural communities that they should be shared with others?
County of Huron	People are reaching out on their personal time beyond their job descriptions to have conversations in the community about issues related to rural policy and planning.
Township of Scugog	Economic development activities in Scugog and all of north Durham Region are led by the Region's Planning and Economic Development department and their Durham Agricultural Advisory Committee.
Town of Hearst	Lifestyle survey of seniors and soon-to-be seniors which pointed out interests and activities to provide opportunities for better planning geared to this increasing population segment.
Township of Adjala-Tosorontio	Working on a secondary plan for one of our rural settlements, with the aim of including many policies geared toward making the community healthier and more sustainable while maintaining the rural character.
County of Lanark	Tourism has implemented "I Love Lanark County" photo contest. Previously held a nominate the '7 wonders ' of the county contest. These are used in advertising.

Prince Township	2013-2018 Accessibility Plan; Prince Township's Strategic Plan
Niagara-on-the-Lake	The Urban Design Committee has provided excellent support to the Town and is made up entirely of volunteers. There is general acceptance of this added step in the planning process. It is not mandated by the Planning Act but appears to be successful. We try to work with the Region's Health Unit on a number of fronts, including "Supper Markets" and Food Truck Events.
Municipality of North Grenville	Trails Strategy is a very progressive document.

Table 3: Sample of Survey Responses from Public Health Professionals

Health Unit	Survey Question No. 5 Responses: Do you have any policies, programs or processes that you think are so innovative respecting healthy rural communities that they should be shared with others?
Elgin St. Thomas Public Health	Active transportation work, such as the Active Elgin website and Active Elgin days.
Haliburton, Kawartha Lakes and Pine Ridge Health Unit	The City of Kawartha Lakes is undertaking five community-based secondary plans and a sustainability plan to help achieve healthy communities.
Middlesex London Health Unit	Working with communities to integrate language into their Official Plan to support healthy policy re: development infrastructure, design, transportation, walkability, safety, bike-ability.
Eastern Ontario Health Unit	Active Living Charters in a number of our rural Counties, as well working with our Counties to develop and implement Recreation, Cycling and Pedestrian master plans.
Hastings & Prince Edward Counties Health Unit	Policy document and rural area checklist are quite recent and include policy suggestions, rationale, and implementation suggestions both where the municipality can take a leadership role and also where there is an opportunity for community engagement.

4.2 Survey Analysis

The next stage of the research was to complete an analysis of the survey responses. The steps undertaken in this method included coding and key word analysis. NVivo 10 qualitative software was also utilized in this stage in order to identify key words, develop diagrams and aid in further analyzing the survey responses. The survey analysis was also able to reveal key research themes based on



Figure 2: Word Frequency Query for Municipal Survey Responses derived from NVivo 10

responses. Themes were developed based on words from both municipal and health unit survey responses. The themes were developed from the ‘top 10 words’ for both survey groups (planners/public health professionals); the source for the ‘top words’ were all survey responses. The relevance and frequency of the ‘top words’ were fundamental in deciding to include them as ‘themes’; relevance, meaning those words that strongly represent what comprises a ‘healthy rural built environment’. The information derived from the literature review also had a strong influence on theme development. Terms that were discussed in the literature review, were flagged when going through the survey responses. The key themes that were revealed through the detailed survey analysis included:

- Community Design and Land Use Planning
- Active Transportation/Active Communities
- Community Engagement and Volunteerism
- Value Added Agricultural Practices
- Local Food Initiatives
- Cultural Strategies and Revitalization
- Youth and Aging Communities Planning
- Nature and Clean Air
- Water Quality
- Tourism

The survey analysis also specified planners and public health professionals who indicated innovative best practices in their responses and were available for key informant interviews. After developing themes based on survey responses; municipalities that were available for key informant interviews were placed into corresponding themes. The municipalities that demonstrated a strong connection to developed themes based on survey responses were placed in an excel table; thereby exhibiting potential to be selected for a key informant interview.

4.3 Key Informant Interview Results

Table 4 illustrates the municipalities with which key informant interviews were conducted. Corresponding themes for each municipality are also shown in the table.

Table 4: Key Informant Interviews

Key Informant	Municipality	Theme	Description
Participant 1 (Policy Planner)	City of Kawartha Lakes	Community Design and Land Use Planning	<ul style="list-style-type: none"> • This participant informed us of the policy documents that guide the municipality. • Specific innovative initiatives relating to community design were discussed as well as tips for other rural communities.
Participant 2 (Health Promoter)	City of Kawartha Lakes	Community Design and Land Use Planning	<ul style="list-style-type: none"> • Specific initiatives and policy documents that are occurring in the municipality were discussed. • Innovative initiatives relating to walkability and community design were discussed.

Participant 3 (Planner)	County of Huron	Community Engagement and Volunteerism	<ul style="list-style-type: none"> • This participant discussed innovative initiatives that the County of Huron is taking part in, relating to community engagement. • Specific actions, lessons and tips for other rural communities were shared.
Participant 4 (Health Promoter)	Haliburton	Active Transportation/ Active Communities	<ul style="list-style-type: none"> • As a health promoter, this key informant shared successful initiatives for the community of Haliburton in relation to active transportation. • Key elements and tools for successful active transportation in Haliburton were discussed.
Participant 5 (Planner)	Halton Region	Value Added Agricultural Practices	<ul style="list-style-type: none"> • This key informant discussed on-farm diversified uses that promote a rural economy. • The Rural Agricultural Strategy developed for the region was discussed. The goals of the Strategy are to encourage viable farm succession, a healthy rural economy, successful agri-tourism, and opportunities for supplemental income for farmers.

Participant 6 (Chief Administrative Officer)	Northeastern Manitoulin and the Islands	Community Design and Land Use Planning	<ul style="list-style-type: none"> • This participant discussed the Community Sustainability Plan that was developed for the municipality.
Participant 7 (Planner)	Sioux Narrows-Nestor Falls	Water Quality and Tourism	<ul style="list-style-type: none"> • This key informant discussed the Northern Ontario Sport Fishing Centre, a successful tourist initiative in the municipality. This initiative used the community's natural assets, character and cultural attributes. • A recently developed zoning by-law relating to shoreline protection (water quality) was also discussed.
Participant 8 (Chief Administrative Officer)	Town of Hanover	Youth Planning	<ul style="list-style-type: none"> • The municipality's CAO spoke about initiatives such as the Fusion Youth Activity and Technology Centre, a precedent that Hanover is applying which exists in Ingersoll, Ontario. • This initiative is attempting to mitigate the issue of migrating youth from rural communities.
Participant 9 (Chief Administrative Officer)	Township of Prince	Aging Communities	<ul style="list-style-type: none"> • This participant spoke about their initiative focused on planning for aging communities; the 2013-2018 Accessibility Plan. • This type of plan was developed because rural communities

			have larger proportions of aging populations when compared to larger urban centres.
Participant 10 (Planner)	Township of Scugog	Value Added Agricultural Practices	<ul style="list-style-type: none"> • The Township's Planner spoke about a zoning by-law which allows for home-based occupations and home industries. These industries are meant to serve the surrounding farm community and help support the rural economy.
Participant 11 (Director of Planning)	Municipality of Trent Hills	Cultural Strategies and Revitalization	<ul style="list-style-type: none"> • The key informant discussed initiatives occurring in Trent Hills related to culture, heritage and revitalization. • These include a variety of festivals that occur in the community, which include the lilac festival, maple syrup festival and waterfront festival.
Participant 13 (Public Health Dietician)	Haliburton	Local Food	<ul style="list-style-type: none"> • Food security initiatives in the community were discussed, including the FoodNet organization and the Good Food Box initiative. Both of these programs involve providing local food to underprivileged citizens.

The following chapter will discuss three case study examples from the key informant interviews, which will provide insight and lessons for rural municipalities and help to form tools for healthy rural built environments. All ten themes derived from the survey analysis were assessed via key informant interviews, for the purposes of this thesis, three case study examples will be discussed in further detail. These three examples are being used in order to gain a more in-depth understanding of key informant interview responses and innovative initiatives occurring in rural municipalities. As previously discussed, the results of this thesis will focus on the key informant interviews with the City of Kawartha Lakes, County of Huron, and County of Haliburton, which were conducted by this researcher as part of the broader research initiative. These communities were carefully chosen for case studies, as all three municipalities fall under research theme categories that are vital to healthy rural built environment creation, such as community design and land use planning, community engagement and volunteerism, as well as active transportation/active communities.

Chapter Five: City of Kawartha Lakes Case Study

5.1 Municipal Profile

The City of Kawartha Lakes has a population of 73,214 (Statistics Canada, 2011a) residents, it is an upper tier municipality in Eastern Ontario. Although titled a city, Kawartha Lakes is the size of a typical Ontario county and is primarily rural. The City of Kawartha Lakes was newly amalgamated from sixteen former municipalities in 2001; the main communities include Bobcaygeon, Fenelon Falls, Lindsay, Omemee and Woodville.

Being a newly amalgamated municipality, the City of Kawartha Lakes has recently developed a variety of land use planning policies that focus on creating active and healthy rural communities. The main policy documents that were created for the City of Kawartha Lakes include the Official Plan which was approved in January of 2012, five Community-based Secondary Plans (one for each population centre), an Integrated Community Sustainability Plan (ICSP), a Growth Management Strategy and a Food Charter. All of these overarching policy documents led to more specific and on the ground initiatives, which included public engagement and collaboration, community walks with walkability specialist Dan Burden (Activating Kawartha Lakes), the 100 Mile Dinner and the Kawartha Choice FarmFresh program, among other items. The priority of walkability in the community design of the municipality is evident through the Official Plan; the following is a policy excerpt:

18.13.26. Sidewalks shall be located to provide uninterrupted and safe pedestrian movement to commercial areas, transit stops and all community amenities, and shall have regard for the space between the building and the roadway in non-residential areas. (City of Kawartha Lakes, 2013)

The key informant interviews with a planner and public health promoter at the City of Kawartha Lakes revealed specific innovative initiatives which have stemmed from land use planning policies. The details regarding innovative initiatives at the City of Kawartha Lakes and the lessons that were revealed for other rural and small town communities will be discussed in this chapter.

5.2 Key Theme

The research methodology used, specifically the survey analysis revealed key themes for healthy rural built environments. Through the key informant interviews, the City of Kawartha Lakes was placed into a particular theme based on interview responses. The theme of Community Design and Land Use Planning was the most appropriate for the municipality. This was based on both the policy documents for the community, such as the Official Plan, as well as specific on the ground initiatives occurring in the municipality.

5.3 Innovative Initiative

The walking audits with Dan Burden as part of Activating Kawartha Lakes were an especially interesting initiative. Dan Burden is considered an expert in pedestrian and bicycle design; he is a consultant that focuses on walkability. Dan is recognized across North America as a specialist in getting communities



Figure 3: Activating Kawartha Lakes with Dan Burden, Source: <https://www.facebook.com/WalkFriendlyON>

back on their feet. Community members and stakeholders were invited to take part in scheduled walks with Dan Burden that took place in downtown Lindsay and Fenelon Falls. The goal was to create awareness about issues for both pedestrians and cyclists relating to the built environment and walkability, as well as to explore potential solutions. As described by the key informants, these walks proved to be successful and provided inspiration for the implementation of more walkable and active design elements in the community.

In order to gain more insight about innovative initiatives, the key informants were asked about any successes or barriers that they encountered. Some barriers that were mentioned included, consultants for policy documents that had very minimal local knowledge and background, and occasional difficulties when communicating the importance of healthy, active community design with council. However, several successes were noted during the interview, these included the overwhelming willingness of community members to participate in various projects. It was mentioned that approximately one hundred volunteers contributed to various policy initiatives, including development of the ICSP and Community-based Secondary Plans. Another success mentioned was the partnership between municipal planners and public health professionals in policy development, which has been very positive, resulting in increased capacity for implementation of initiatives and increased access to various funding sources.

Other aspects that were discussed included the resources that allowed for the various actions or initiatives to be undertaken. A key point mentioned by the key informants is that council 'buy in' is very important and their support allows municipal funding to be allocated to projects that support healthy policy creation. Funding has also been acquired from the Federation of Canadian Municipalities (FCM), as well as the Ministry of Health and Long-term Care Healthy Communities funding administered through the local health unit.

5.4 Key Lessons

The responses from the key informant interviews indicated some tips that can be shared with other rural communities which include, retaining the goal to be vibrant - as this can encompass health, innovation and economic success- and encouraging community involvement in the process of policy development. One of the most important elements for success, according to the key informants, is to have support from the community before the policy is created, which increases when there are opportunities to educate community members on the purpose and rationale for the policy. Another lesson that was shared is to not 'plan in a box' and be open to new and innovative ideas. It appears that the biggest lessons to be taken away are the importance of community support, education and involvement in order to make projects related to the built environment in rural communities successful. Other key lessons and tips for communities are to develop Community-based Secondary Plans for individual towns and hamlets, as well as to encourage partnerships between the municipality and health unit.

5.5 Case Study Summary

Overall, capacity building through the community was utilized in order to achieve the policies stated in various documents relating to community design and land use planning. Support from the community and collaboration between various community organizations made success at the City of Kawartha Lakes possible. The support of both citizens and municipal staff allowed the event of Activating Kawartha Lakes to become a reality. Open-mindedness, collaboration and unique ideas allowed an innovative initiative to come to fruition.

Chapter Six: Huron County Case Study

6.1 Municipal Profile

Huron County is located in southwestern Ontario and its largest settlement is Goderich. Huron County has a population of, 59,100 residents (Statistic Canada, 2011b). The Huron County Planning and Development Department plays a central role in land use planning, as well as community and economic development within the County. The Department provides planning and development services to the County and its nine member municipalities. The Department's mission is to plan with the community for a healthy, viable and sustainable future (Huron County, 2014).

The Department is responsible for the County's Official Plan, which provides a broad planning outline to manage the future growth and change of the County. The plan is important to the health and well-being of the County of Huron, guiding municipalities and residents on a variety of land use and development topics (Huron County, 2014).

The County of Huron values community involvement and engagement; this is evident in the following policy from the County of Huron Official Plan:

3.1 Community Values

Huron's residents value their involvement in the planning and delivery of services. Residents see more of the responsibility for services in the hands of the community in the future. Residents are encouraged to get involved in order to maintain the level of service in their communities. (County of Huron, 2013)

The County of Huron Official Plan exemplifies the importance that is placed on community and resident involvement in all aspects of planning for the County of Huron. Community input is welcome and even sought after.

6.2 Key Theme

The theme within which the County of Huron was placed was Community Engagement and Volunteerism. This was derived from information in the Official Plan, as well as through responses provided in the key informant interview. Both of these elements pointed to the strong presence of the community in all areas of decision-making and project initiatives. A specific innovative initiative exemplifying the above theme will be discussed next.

6.3 Innovative Initiative

The key informant interview with a planner from the County of Huron revealed that an innovative initiative within the County was Jane's Walk. Jane's Walk was a community organized event where residents and individuals knowledgeable on urban design and planning walked around downtown Goderich and discussed design elements that could improve the community. The Jane's Walk event was innovative for a rural community because it originated as an urban idea, and was implemented in a rural downtown. The walk was inspired by Jane Jacobs who was an urbanist and whose ideas helped inspire planning in cities such as Toronto and New York. Jane was an activist for people places and wrote about how cities can function as spaces for people and was passionate about the existence of effective public spaces. This event illustrated a combination of professional expertise and community engagement that is constantly evolving in Huron County. During the interview it was also mentioned that the County of Huron is focused on developing safe spaces for people to engage in and Jane's Walk was an example of this.

Another aspect that was discussed, was what allowed initiatives such as Jane's Walk to be implemented. As an example, this event was made possible because of dedicated municipal staff at the County of Huron; who were willing to go above and beyond to organize the event on their own free time. It was also mentioned that initiatives such as Jane's Walk were possible because of professionals and volunteer groups. The key steps to success involved finding ways to support and talk to one another, as well as pool resources.



Figure 4: Jane's Walk Downtown Goderich, Source:
<http://www.huronnewsnow.ca/>

6.4 Key Lessons

Some lessons for other communities included upholding the public interest, through striving for public engagement that is genuinely trying to build healthy communities. Through the interview it was also mentioned that council buy-in also contributes to the success and implementation of projects. This allows for new projects to be made possible through public funding, as well as encouraging fundraising and private donations. It was specified that having champions for projects is equally as important for community-based projects to be successful; as was mentioned in the interview, having an individual that is dedicated and willing to see a project through contributes significantly to the outcome.

6.5 Case Study Summary

Through the innovative initiative in the County of Huron, it is clear that having project champions, is what made the Jane's Walk event possible and successful. The dedication of staff members in the municipality, on their free time, is what made this event become a reality. The participation and input from community residents and volunteers also contributed greatly to the achievement of this initiative. After policies are created in municipalities, it is up to people within those communities to make action and success happen.

Chapter Seven: Haliburton Case Study

7.1 Municipal Profile

Haliburton is recognized as a scenic cottage and tourist community and is a county in north-eastern Ontario. The main communities within Haliburton County are the Villages of Minden Hills and Haliburton. The population in Haliburton is 17,026 residents (Statistics Canada, 2011c).

The key area in which Haliburton has been innovative is Active Transportation (AT). This initiative has been successful in Haliburton due to multiple partners coming together to undertake activities that have raised awareness of the benefits of AT. Activities have included community-based research, community forums, advocating for supportive policies, education and awareness activities and the development of planning documents. Active transportation initiatives are focused in the Villages of Haliburton and Minden. Due to the large size of the county, the active transportation projects and ideas were focused on the villages, in order to make implementation more manageable and achievable.

The importance of active transportation is noted in a policy within the municipality's Official Plan:

2.4.2.11 In a rural, dispersed community transportation facilities are important. Trails, corridors, roads and rights-of-way for significant transportation, recreation and infrastructure facilities will be protected for future use. (County of Haliburton, 2010)

Active transportation infrastructure is acknowledged as significant and must be maintained and improved. It is evident through the community's policies that active transportation is considered important.

7.2 Key Theme

After conducting a key informant interview with a health promoter from the County of Haliburton, it was evident that Haliburton fell under the active transportation and active communities theme. This was clear from the initiatives that were mentioned in the interview responses. As a municipality, Haliburton has had a great deal of success in the area of active transportation.

7.3 Innovative Initiatives

A large amount of active transportation advocacy, planning and promotion in Haliburton has occurred through the health unit and in partnership with the Communities in Action (CIA)

Committee. One of the specific actions taken in relation to active transportation is the ‘Park the Car and Get Moving’ promotion. This involved the development and distribution of walk, bike and be active maps that showed walking routes and destinations around the villages. Large versions of the maps were installed in sign kiosks located in parking lots to further encourage people to park their cars and walk. Currently, the CIA continues to print and distribute maps to residents and visitors. In terms of active transportation initiatives outside



Figure 5: Share the Road Program in Haliburton,
Source:
<http://www.toolsofchange.com>

the downtown areas, the county has been adding 1.0 – 1.2m paved shoulders on county roads when they have been up for reconstruction. About 32 km of paved shoulder have been added, some of which are within a 5 km radius of villages. Promotion of Share the Road messages have been underway since 2009. This project has been a partnership between the County, CIA and

health unit, and includes the installation of signs and bike racks, as well as campaign posters, newspaper ads and distribution of educational brochures, to educate the public.

Factors that contribute to the success of active transportation projects in Haliburton include the existence of positive partnerships. The CIA and the public health unit have worked especially hard at forging positive relationships with municipal councils and staff. As mentioned by the key informant, when working in a small community it is important to be knowledgeable about whom to go to for various projects; to be able to identify the qualified staff or community member who would be most helpful.

7.4 Key Lessons

An important lesson to be taken away for other rural communities, from Haliburton, is to have a committee or community-based group of people who value active transportation. Another important element mentioned through the key informant interview was making connections between various initiatives occurring in the community. As an example, due to a connection to cultural planning and economic development, active transportation was able to receive more exposure in Haliburton. Essentially, during the development of a Cultural Master Plan, active transportation was able to get publicity due to a strong link to cultural planning and contributing positively to the economy of the community. One last suggestion was to focus on something manageable, such as working within one area of a community to start, as well as finding creative ways to make projects feasible.

7.5 Case Study Summary

In the case of Haliburton, the community's passion for ensuring a healthy and active community sparked the desire to advocate for active transportation. The biggest success for Haliburton was the creation of committees and community-based groups that made the development of an active community, with the necessary infrastructure, into a priority. The next step involved coming up with strategies for success, such as working within manageable parameters. In this case, it was implementing active transportation initiatives in the villages to begin with and then incrementally moving out into the countryside. The existence of a realistic plan also contributed to the success of active transportation in Haliburton.

Chapter Eight: Recommendations and Tools for Healthy Rural Built Environments

8.1 Specific Lessons Learned

Through surveys and key informant interviews various key lessons became apparent from municipalities in terms of making innovative initiatives related to a healthy built environment a possibility. After assessing the responses from the key informants and narrowing down some of the messages, the following overall lessons for rural and small town communities were apparent:

- Council buy-in is very important
- Start with one manageable goal for a project
- Emphasize the economic benefits of initiatives
- Invest in community education and involvement
- Encourage champions for projects
- Have a committee or community-based group

In some cases, the lessons were mentioned by multiple informants and provided a pattern in terms of how municipalities are able to successfully plan and carry out innovative initiatives. A key pattern which was evident was that community co-operation is vital to making the policies in various planning documents become a reality in communities. When a policy promoting health in the built environment exists, elements such as council buy-in, committees, project champions etc. all make the implementation of this policy, possible and realistic through innovative initiatives.

8.2 Discussion of Findings: Cross Case Summary

All three case studies demonstrated successful initiatives which had the goal to achieve healthy built environments in rural and small town communities. One of the key tools for success was the existence of community capacity-building and collaboration which ultimately made

these initiatives effective. All three case studies had many characteristics in common, all were initiated and made possible through community efforts, had the goal to improve the built environment through progressive design principles and progress the health of residents in rural and small town communities. The case studies also had differences, in the case of Kawartha Lakes collaboration between the health unit and municipality made Activating Kawartha Lakes extremely successful, in Huron County project champions made the Jane's Walk initiative effective and in Haliburton the perseverance of the Communities in Action Committee provided the community with exceptional success in active transportation. All of these were effective ways in which to achieve success and it is also possible to use a combination of these approaches in communities, in order to see what works for any particular community.

Another similarity within the case studies was that all of the initiatives within the three varying communities included community member involvement and action. Without community member participation these initiatives would not have been possible. For rural communities and small towns, community member involvement is crucial for the success of healthy built environments. In contrast, in urban municipalities staff capacity may be enough to successfully achieve built environment initiatives, smaller communities are different in that community interest and involvement is crucial to the realization of projects.

All of the case studies had initiatives that started in the downtown or town centre of a rural community; having a central meeting location and manageable starting point appears to contribute to the success of projects and initiatives. This is not to say that innovative initiatives are to entirely occur in downtown areas, however they could definitely start in these locations.

Advocacy can start in central locations and then spread out into the more dispersed areas of a community.

All of the communities also chose specific topics of healthy built environments to advocate for; not attempting to tackle all issues relating to the built environment, however focusing in on one area of interest. As an example, walkability and community design were the central focus for the City of Kawartha Lakes, people and public spaces were the focus in Huron County, and active transportation was the main topic in Haliburton. The focus on specific healthy built environment elements increased success in each community and as a result could be used as a technique.

Overall, there were various similarities and differences between the case studies which contributed to the success of innovative initiatives relating to the built environment in the City of Kawartha Lakes, County of Huron, and Haliburton. These successes and strategies have been shared and can help other rural and small communities that are struggling in terms of developing a healthy rural built environment.

8.3 Recommendations

The research methods have led to specific findings that have the ability to guide rural communities and provide tools for healthy rural built environments. There are some overall steps that can aid in the successful implementation of innovative initiatives, which in turn are able to create healthier built environments in rural and small town communities.

One finding is focused on community involvement. In order for a community to experience success, deciding on how to involve community members is an important task. This could involve a variety of engagement efforts, education, and community group development. This is a difficult task, as in many ways this step needs to be organic and often initiated by the community itself. However, in many instances policies can guide municipalities in encouraging community involvement and collaboration.

Another important step is to choose a topic area related to the built environment on which to focus on. Setting aside time to focus on a particular initiative leads to success, as exemplified by the case studies. All three municipalities put considerable time and effort into making a particular initiative successful. This is not to say that multiple issues relating to the built environment cannot be solved, however in order to be effective it is beneficial to dedicate time to a particular area or topic.

Building on this idea, it is imperative to have a realistic goal as a community embarking on innovative and interesting initiatives. Although in many cases, the overarching goal includes improving all areas of a municipality, it is important to remember that in order to be effective in the future it is beneficial to begin with one manageable goal. Starting in one geographic area of a community and following through with an initiative concentrated in a particular area, allows for this action to be spread out into the entire community once it is successful. In summary, the key steps to achieving successful initiatives that lead to healthy rural built environments include deciding how to involve the community, determining what topic to focus on, and deciding what geographic area to start in.

8.4 Ten Things to Do

Through the course of undertaking various research methods, from surveys to key informant interviews, the following tips were derived on ‘Ten Things to Do’ in order to help achieve healthy rural built environments:

1. Develop Community-based Secondary Plans for individual towns and hamlets.

This tip involves developing a policy document that fits the unique characteristics of a specific community. As counties may have several smaller hamlets within them, this type of document ensures that communities have policies that fit their community characteristics. As well, as funding becomes available, these policy documents encourage change through the implementation of initiatives. If communities have guidance, direction, and ideas summarized in a policy document, this encourages changes in the built environment when funding becomes available for the development of amenities and infrastructure in municipalities.

2. Encourage collaboration between the municipality and health unit.

When municipalities and health units collaborate there is the opportunity to achieve more as resources are able to be pooled together. There is also the possibility to generate a greater number of ideas through collaboration.

3. Create a community goal to be vibrant and encourage citizen involvement.

This tip could involve developing an overall vision for a community and carrying out actions that achieve this vision. It is also important to involve the community in new initiatives; such as community-based events that involve input from residents about the built environment.

4. *Educate community members and work together.*

Workshops and community events have the ability to educate through collaboration. Members of the community could be educated on certain topics as well as provide education in areas in which they are knowledgeable.

5. *Don't 'plan in a box' and be open to new ideas.*

It is important to step out of comfort zones and be willing to 'innovate'. Find new methods for actions already occurring within a community. This could involve embracing grass roots community actions and on-the-ground initiatives which help implement policies in less conventional ways.

6. *Develop safe spaces for dialogue and community engagement.*

Creating environments where community members feel comfortable sharing and collaborating is essential, as this is the best way in which to learn from one another. In a safe environment, new and innovative ideas are more likely to spark and be successful.

7. *Have council buy-in.*

This allows for new projects to be made possible through public funding, as well encourages fundraising and private donations. As an example, by placing emphasis on the combined benefits of an initiative; such as the economic, health, and environmental paybacks of a project, a community is better able to gain support from council.

8. *Have champions for projects.*

Having an individual that is dedicated and willing to see a project through contributes significantly to the outcome. This individual has the power to motivate others to participate in an initiative and provide ideas.

9. *Have a committee or community-based group to whom the initiative is important.*

When there is a committee or community-based group advocating for an initiative, success is increasingly more likely. A committee is able to give initiative, credibility, and the people power to make changes in a community.

10. *Focus on something manageable (such as working within one area of a community to start).*

When embarking on an initiative, it is important to have a realistic and achievable goal. This could mean working on only a portion of the community to begin with in order to achieve results and experience success. This would also encourage future work, as positive results would foster the desire to continue with a particular initiative.

By assessing the lessons and ‘Ten Things to Do’, it is possible to synthesize the steps required to achieve healthy rural built environments. The steps that a municipality should take include the following: acquiring council buy-in, community education, having project champions and committees, and starting with one manageable goal for a project.

8.5 Conclusion

As humans we are in the built environment at almost all times, therefore it is important that this environment be healthy. If one lives in a rural dispersed area or small town, the same opportunities for amenities and well-being need to exist as in larger cities. This research had the goal of recognizing the importance of healthy built environments in rural communities; through case study examples it also had the goal of identifying tools for rural and small town communities that would lead to the development of healthy built environments. Communities exemplified in the case studies were not selected because they were perfect examples of healthy rural built environments; they were highlighted because they are on their way to becoming healthier and they have chosen to focus on a well-defined problem area in which they have the ability to progress (Jackson & Sinclair, 2012). The research findings indicate that some key tools include having community involvement and collaboration, political support, and realistic as well as manageable goals when moving forward. Overall, successful and innovative built environments in rural and small town communities come about when people connect with one other.

Reference List

- Allison, E. & Peters, L. (2011). *Historic Preservation and the Livable City*. Hoboken, NJ: John Wiley & Sons, Inc.
- Agriculture and Agri-Food Canada and North American Wetlands Conservation Council (Canada), (2009) *Exploration of the Ecological Goods and Services Concepts and Options for Agri-Environmental Policy – Proceedings of Technical Meeting April 29-30, 2009*, Ottawa, Canada.
- Barton, H. & Grant M. (2006) *A health map for the local human habitat*. *The Journal for the Royal Society for the Promotion of Health*, 126 (6): 252-253.
- Benedict, Mark A. and Edward McMahon (2006) *Green Infrastructure: Linking Landscapes and Communities*. Washington, DC: Island Press.
- Bray, R., Vakil, C., & Elliott, D., (2005) *Report on public health and urban sprawl in Ontario: A review of the pertinent literature*. Environmental Health Committee, Ontario College of Family Physicians. Retrieved from: www.ocfp.on.ca/docs/publications/urbansprawl.pdf
- Cakmak, S., (2007) *Air Pollution: Uneven Distribution of Health Risks*. In *Health Policy Research Bulletin: People, Place and Health*, Health Canada. Issue 14.
- Caldwell W.J. (2008) *Sustainable Rural Communities - Environmental Planning and Innovation: Best Practices for Rural Communities*. University of Guelph.
- Caldwell W.J. (2011a) *Rediscovering Thomas Adams Rural Planning and Development in Canada*. Vancouver, BC: UBC Press.
- Caldwell W.J. (2011b) *Mechanisms to build Resiliency and Mitigate Impacts to Climate Change and Peak Oil while Creating Jobs for Communities in Midwestern Ontario*. Retrieved from: <http://www.workgreen.ca/content/climate-changepeak-oil-views>
- Caldwell W.J. (2013) *Active Transportation in Huron: Best Practices for Strategic Planning*.
- Canadian Institute of Planners - CIP (2012) *Healthy Communities Practice Guide*.
- Chisolm, R. H., (2006) *Rural Leadership: A Case Study of the Factors that Influence Economic Development in Two Rural Communities in South Carolina*. Doctor of Philosophy Thesis, Capella University.
- City of Hamilton (2013) *Injury Prevention: Rural & Farm Safety*. Public Health Services. Retrieved from: <http://www.hamilton.ca/HealthandSocialServices/PublicHealth/InjuryPrevention/RuralAndFarmSafety.htm>

City of Kawartha Lakes (2013) *Official Plan Amendment and Secondary Plans*. City of Kawartha Lakes, ON.

City of Peterborough (2012) *City of Peterborough Comprehensive Transportation Plan*. City of Peterborough, ON.

County of Haliburton (2010) *County of Haliburton Official Plan*. County of Haliburton, ON.

County of Huron (2013) *Huron County Official Plan*. County of Huron Planning and Development Department, ON.

David Suzuki Foundation (2006) Ontario's Wealth, Canada's Future: Appreciating the Value of the Greenbelt's Eco-services. Retrieved at: <http://www.davidsuzuki.org/publications/downloads/2008/DSF-Greenbelt-web.pdf>

DesMeules, M., and R. Pong (2006) *How Healthy are Rural Canadians: An Assessment of Their Health Status and Health Determinants, A Component of the Initiative "Canada's Rural Communities: Understanding Rural Health and its Determinants"*, Canadian Population Health Initiative, Public Health Agency of Canada, Centre for Rural and Northern Health Research, Canadian Institute for Health Information.

Doucette, K., (2004) *Manitoba Harvest: Rural Livelihood Contributions of Community Shared Agriculture & Farmers' Markets*. M Sc. Thesis, University of Guelph.

duPlessis, V., Beshiri, R., Bollman, R.D., Clemenson, H., (2001) Definitions of Rural, Rural and Small Town Canada Analysis Bulletin, Vol 3, No. 3

Eastern Ontario Trails Alliance (2012) *Arts and Heritage on the Trails*. Retrieved from: <http://www.thetrail.ca/index.php/package-deals/arts-and-heritage>

Elias, B.M., (2009) *Without Intention: Rural Responses to Uncovering the Hidden Aspects of Homelessness in Ontario 2000 to 2007*. Doctor of Philosophy Thesis, University of Toronto.
Fleming, R.C., (2009) *Creative Economic Development, Sustainability and Exclusion in Rural Areas*. Geographical Review. 99 (1): 61-80.

Frankish, J., James, A., Green, P., et al. (1996). *Health impact assessment as a tool for population health promotion and public policy*. Ottawa: Health Promotion Division, Health Canada.

Frumkin, H., Frank L, Jackson, R., (2004) *Urban Sprawl and Public Health: Designing, Planning and Building for Healthy Communities*. Washington DC: Island Press.

Garrett-Petts, W.F. (2005). *The Small Cities Book: On the Cultural Future of Small Cities*. Vancouver, BC: New Star Books Ltd.

Gilliland, J. & Sadler, R. (2012) *Mapping Food Accessibility in the Built Environment of Chatham-Kent*. Human Environments Analysis Laboratory (HEAL): University of Waterloo.

Government of Ontario (2013) *Ontario's Southwest: Take the Road Less Travelled for an Authentic Culinary Experience*. Southwest Ontario Tourism Corporation.

Green Infrastructure Ontario Coalition. 2012. *Health, Prosperity and Sustainability: The Case for Green Infrastructure in Ontario*.

Gupta, S., and L. Scenzilet, (2007) Defining, Measuring, and Analyzing Health and Place, in Health Policy Research Bulletin: People Place and Health, Health Canada, Issue 14 Retrieved from: www.hc-sc.gc.ca/sr-sr/pubs/hpr-rpms/bull/2007-people-place-gens-lieux/index-eng.php

Haliburton County (2011) *Local Food Infrastructure Report*.

Hall, K. (2009). *An Active Transportation Plan for the Village of Haliburton*. The Communities in Action Committee and the Municipality of Dysart et al.

Hastings & Prince Edward Counties Health Unit – HPECHU (2012) *Building Complete and Sustainable Communities: Healthy Policies for Official Plans*.

Health Canada (2011) *Planning Healthy Communities Fact Sheet Series No.1: Active Transportation, Health and Community Design: What is the Canadian evidence saying?* Healthy Canada by Design CLASP initiative.

Health Effects Institute HEI (2010) *Traffic Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure and Health Effects. A Special Report of the HEI Panel on the Health Effects of Traffic Related Air Pollution*. Special Report 17, January 2010.

Housing Services Act (2011) Retrieved at:
http://www.elaws.gov.on.ca/html/statutes/english/elaws_statutes_11h06_e.htm#BK16

Huron County (2014) *Huron County Planning and Development*. Retrieved at:
<http://www.huroncounty.ca/plandev/>

Imgrund, K. (2009) *Private Water Well Stewardship in Rural Southern Ontario*. MA Thesis, University of Guelph.

Jackson, R.J. & Sinclair, S. (2012) *Designing Healthy Communities*. San Francisco, CA: John Wiley & Sons, Inc.

Karpyn, A. & Treuhaft, S.(2010) *The Grocery Gap: Who Has Access to Healthy Food & Why It Matters*. PolicyLink & The Food Trust. Retrieved from:
<http://www.policylink.org/atf/cf/%7B97C6D565-BB43-406D-A6D5-ECA3BBF35AF0%7D/FINALGroceryGap.pdf>

LaGro Jr., J.A. (2008) *Site Analysis: A Sustainable Approach to Land Planning and Site Design*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Laurent, S. (2002) *Rural Canada: Access to Health Care*. Retrieved from: <http://publications.gc.ca/Collection-R/LoPBdP/BP/prb0245-e.htm#3Occupational>

Longstreth, R.W. (2008). *Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice*. Minneapolis: University of Minnesota Press.

McMahon, E.T. (2000) *Green Infrastructure*. Planning Commissioners Journal. (37) 4-7.

Ministerial Advisory Council on Rural Health (2002) Rural Health in Rural Hands Strategic Directions for Rural, Remote, Northern and Aboriginal Communities. (2002) Retrieved: www.srpc.ca/PDF/rural_hands.pdf

Ministry of Health Promotion (2007) *Ontario's Injury Prevention Strategy. Working Together for a Safer, Healthier Ontario*. Province of Ontario. Retrieved from: www.HealthyOntario.com

Ministry of Municipal Affairs & Housing (MMAH), (2008) *Growing the Greenbelt*. Toronto, ON: Ministry of Municipal Affairs & Housing.

Ministry of Municipal Affairs & Housing (MMAH), (2009) *Supporting the Greenbelt Plan: Planning Act Tools*. Toronto, ON: Ministry of Municipal Affairs & Housing.

Ministry of Municipal Affairs & Housing (MMAH), (2011) *Building Blocks for Sustainable Planning*. Toronto, ON: Ministry of Municipal Affairs & Housing.

Ministry of Municipal Affairs & Housing (MMAH), (2014) *Provincial Policy Statement 2014*. ON: Ministry of Municipal Affairs and Housing.

Minkler, M. (2012). *Community Organizing and Community Building for Health and Welfare* (Third Edition). New Brunswick; New Jersey; and London: Rutgers University Press.

Natural England (2009) “*Spatial Planning in Natural England – Planning for the Natural Environment*”. Internet download at www.naturalengland.ork.uk

Natural England (2009) *Green Infrastructure Guidance*.

Natural Resources Defence Council (2001). Coalition for Clean Air. No breathing in the aisles – diesel exhaust inside school buses. New York. The Council, Retrieved from: www.nrdc.org/air/transportation/schoolbus/sbusinx.asp

North West Green Infrastructure Think Tank (2007) *North West Green Infrastructure Guide*. United Kingdom: North West Green Infrastructure Think Tank.

Office of the Chief Coroner (2012) *Pedestrian Death Review*. Retrieved from: http://www.mcscs.jus.gov.on.ca/english/DeathInvestigations/office_coroner/PublicationsandReports/PedestrianDeathReview/DI_Pedestrian_Death_Review.html

Office of the Chief Coroner (2012b) *Cycling Death Review*. Retrieved from: http://www.mcscs.jus.gov.on.ca/english/DeathInvestigations/office_coroner/PublicationsandReports/CyclingDeathReview/DI_Cycling_Death_Review.html

Ontario Ministry of Health (2008) *Ontario Public Health Standards*. Retrieved from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/interactive.aspx.

Ontario Professional Planners Institute - OPPI (2009) *Healthy Communities and Planning for Age Friendly Communities*. Toronto, ON: Ontario Professional Planners Institute.

Ontario Professional Planners Institute - OPPI (2009b) *Healthy Communities and Planning for the Needs of Children and Youth*.

Oxford Master Aging Plan Steering Committee & Sheridan, D. (2012) *Oxford Master Aging Plan – Inspiration for the future*. Retrieved from: <http://www.oxfordmasteragingplan.ca/>

Oxford Dictionaries (2014) *Oxford Dictionaries Language Matters*, Oxford University Press. Retrieved from: <http://www.oxforddictionaries.com/definition/english/innovation>

Perrotta, K. (2011) *Public Health and Land Use Planning: How Ten Public Health Units are Working to Create Healthy and Sustainable Communities*. Prepared for the Clean Air Partnership (CAP) and the Ontario Public Health Association (OPHA). April 2011.

PolicyLink (2013). *Access to Healthy Food*. Retrieved from: http://www.policylink.org/site/c.lkIXLbMNJrE/b.7634003/k.519E/Access_to_Healthy_Food.htm

Prince Edward County (2013) *Canada's Creative Corridor: Connecting Creative Urban and Rural Economies within Eastern Ontario & the Mega Region*.

Public Health Agency of Canada – PHAC (2012) *What is the Population Health Approach?* Retrieved from: <http://www.phac-aspc.gc.ca/ph-sp/approach-approche/>

Public Health Agency of Canada – PHAC (2012b) *Evaluating Outcomes of Community Food Actions: A Guide*.

Public Health Agency of Canada – PHAC (2013) *What Makes Canadians Healthy or Unhealthy?* Retrieved from: <http://www.phac-aspc.gc.ca/ph-sp/determinants/determinants-eng.php>

Reffle, Jim (2013) Manager, Health Protection Programs (Environmental Health) at Elgin St. Thomas Public Health.

Region of Waterloo Public Health (2005) *Towards a Healthy Community Food System for Waterloo Region*. Waterloo, ON: ROWPH.

Sandström, Ulf G. 2006. "Urban Comprehensive Planning – Identifying Barriers for the Maintenance of Functional Habitat Networks." *Landscape and Urban Planning* 75 (1): 43-57.
Social Planning Network of Ontario (2010) *Ontario Social Landscape: Socio demographic trends and conditions in communities across the province*. Creative Commons Attribution.

Srinivasan, S., O’Fallon, L.R., Deary A. (2003) *Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health*, *American Journal of Public Health*, 93, (9) 1446-1450.

Statistics Canada (2001) *Rural and Small Town Canada Analysis Bulletin*. Ottawa, ON: Minister of Industry. Retrieved from:
http://www.communityaccounts.ca/communityaccounts/ca_google_maps/PDF_Links/Stats_Canada_Definition_of_Rural_2006.pdf

Statistics Canada (2011a) *Census Profile, City of Kawartha Lakes, Ontario*. Retrieved from:
<http://www12.statcan.gc.ca/census-recensement/2011/>

Statistics Canada (2011b) *Census Profile, Huron County, Ontario*. Retrieved from:
<http://www12.statcan.gc.ca/census-recensement/2011/>

Statistics Canada (2011c) *Census Profile, Haliburton, Ontario*. Retrieved from:
<http://www12.statcan.gc.ca/census-recensement/2011/>

Statistics Canada (2013b) *Health Profile, January 2013*. Retrieved from:
<http://www12.statcan.gc.ca/health-sante/82-228/index.cfm?Lang=E>

Sustainable Development From Brundtland to Rio 2012 (2012). Retrieved from:
http://www.un.org/wcm/webdav/site/climatechange/shared/gsp/docs/GSP1-6_Background%20on%20Sustainable%20Devt.pdf

Thorbeck, D. (2012) *Rural Design: A New Design Discipline*. Oxon and New York: Routledge.

Transport Canada (2009) *Canadian Motor vehicle Traffic Collision Statistics*, Retrieved from:
<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2009-1173.htm>

Transport Canada (2010) *Active Transportation in Canada: A Resource Planning Guide*. Ottawa, ON: Public Works and Government Services Canada.

UOttawa (2012) *Society, the Individual, and Medicine: Definitions of Health*. Retrieved from:
http://www.medicine.uottawa.ca/sim/data/Health_Definitions_e.htm

Venhaus, H. (2012). *Designing the Sustainable Site: Integrated Design Strategies for Small-Scale Sites and Residential Landscapes*. Hoboken, NJ: John Wiley & Sons, Inc.

Wakefield, S., Yeudall, F., Taron, C., Reynold, J., & A. Skinner (2007) 'Growing urban health: Community Gardening in South East Toronto' in Health Promotion International Issue 2, Vol 22.

Williams, M., & Wright, M., (2007) *The Impact of the Built Environment on the Health of the Population: A review of the literature review*. Simcoe Muskoka District the Health. Retrieved from: www.simcoemuskokahealth.org/HealthUnit/Library/./BHCintro.aspx

Williams (2012) *DRAFT Ontario's Social Innovation Policy Paper*. Retrieved from: <http://www.marsdd.com/wp-content/uploads/2012/10/Wiki-Social-Innovation-Policy-Paper-.pdf>

Williams, L.M. (2013) *Between Health and Place: Understanding the Built Environment*. Toronto, ON: The Wellesley Institute.

Williamson, K. (2003). *Growing with Green Infrastructure*. Doylestown, PA: Heritage Conservancy.

World Health Organization – WHO (1948) Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

Xuereb, M. (2005) *Food Miles: Environmental Implications of Food Imports to Waterloo Region*. Region of Waterloo Public Health: Waterloo, Ontario.

Young, P. (2008) *An Active Transportation Plan for Minden*. The Communities in Action Committee.

Yousefian, A., Hennessy, E., Umstattd, M.R., Economos, C.D., Hallam, J.S., Hyatt, R.R., Hartley, D. (2010) *Development of the rural active living assessment tools: Measuring rural environments*. Preventive Medicine. (50) S86-S92.

Zupko B., Shearer J. & Vermeulen K. (2004) *Rural Health Study in Waterloo Region*. Region of Waterloo Public Health.

Appendix A: Healthy Rural Communities Survey Questions

Survey for Municipal Planners

Healthy Rural Communities Survey: Best Practices Identification *(Editorial note – municipal officials survey)*

Some initial considerations:

Who Should Complete the Survey? In most instances the survey should be completed by your municipal planner. If you do not have a planner, a senior municipal official (i.e. CAO/Clerk) who has a good understanding of the planning system should complete it. For your information, a separate but similar format survey is being distributed to Public Health Units across the Province.

What is Meant by a “Healthy Rural/ Rural Built Community”? This term has differing meanings to various disciplines and municipal officials. This survey is being distributed to public municipal planning officials and public health employees. The survey is intentionally broad in the hope that responders will complete it from a variety of perspectives. It is anticipated that some will complete it with a land use planning ‘tools and design’ perspective while others will complete it from a ‘community development’ viewpoint, (i.e. Using mechanisms and processes that impact the built environment).

What is Meant by Rural? For the purposes of the survey, rural includes areas that are comprised of agricultural lands, villages, towns and small cities. It also includes the rural lands attached to larger urban centres (such as Ottawa, Kingston, Hamilton, Sudbury, Thunder Bay, etc.).

Director of Planning (or other senior municipal planning official): _____

Municipality: _____

Phone and Email: _____

By agreeing to participate in this survey, you are giving consent to share information with the researchers for this project.

1. How would you define (or what are the distinguishing characteristics of) a healthy rural community?

2. In considering policy, program and process approaches, what do you consider your best practices towards formulating a healthy rural municipality (please identify areas of activity, e.g. design work, working with community, etc.)?

3. In any best practices described above, could you identify who was involved (individual, department, or community)?

4. Considering your answer to the above questions, how would you rate your municipality towards addressing healthy rural community issues?

No action [] Struggling [] Getting by [] Doing the usual [] Innovative [] On the cutting edge []

Comment to explain your above answer:

5. Do you have any policies, programs or processes that you think are so innovative respecting healthy rural communities that they should be shared with others? Yes [] No []

If yes, please describe. Can we contact you for further information or clarification on your response?
Yes [] No []

If you would like to have further information on this project, please check the following: []

Survey for Public Health Professionals

Healthy Rural Communities Survey: Best Practices Identification *(Editorial note: this survey template is being sent to Public Health staff)*

Some initial considerations:

Who Should Complete the Survey? This survey is being distributed to public health professionals within the Public Health Unit system, i.e. Health Promotion and Chronic Disease staff. This survey is not associated with the 'Healthy Communities' project of the Ministry of Health. If there is another individual within your organization that has a good understanding of the municipal planning system in Ontario and you feel should complete the survey, then please feel free to forward it. In addition for your information, a separate but similar format survey is being distributed to municipal planning officials across the Province.

What is Meant by a "Healthy Rural/ Rural Built Community"? This term has differing meanings to various disciplines and municipal officials. This survey is being distributed to public municipal planning officials and public health employees. The survey is intentionally broad in the hope that responders will complete it from a variety of perspectives. It is anticipated that some will complete it with a land use planning 'tools and design' perspective while others will complete it from a 'community development' viewpoint, (i.e. Using mechanisms and processes that impact the built environment).

What is Meant by Rural? For the purposes of the survey, 'rural' includes areas that are comprised of agricultural lands, villages, towns and small cities. It also includes the rural lands attached to larger urban centres (such as Ottawa, Kingston, Hamilton, Sudbury, Thunder Bay, etc.).

Public Health Official: _____

Public Health Unit: _____

Phone and Email: _____

By agreeing to participate in this survey, you are giving consent to share information with the researchers for this project.

1. How would you define (or what are the distinguishing characteristics of) a healthy rural community?

2. In considering policy, program and process approaches, what do you consider your best practices towards formulating a healthy rural community (please identify areas of activity, e.g. design work, working with community, etc.)?

3. In any best practices described above, could you identify who was involved (individual, department, or community)?

4. Considering your answer to the above questions, how would you rate the municipality(ies) that you work with in addressing healthy rural community issues? If there are variations between differing municipalities, please discuss in comment section: No action Struggling Getting by Doing the usual Innovative On the cutting edge

Comment to explain your above answer:

5. Do you have any policies, programs or processes that you think are so innovative respecting healthy rural communities that they should be shared with others? Yes No

If yes, please describe. Can we contact you for further information or clarification on your response? Yes No

If you would like to have further information on this project, please check the following:

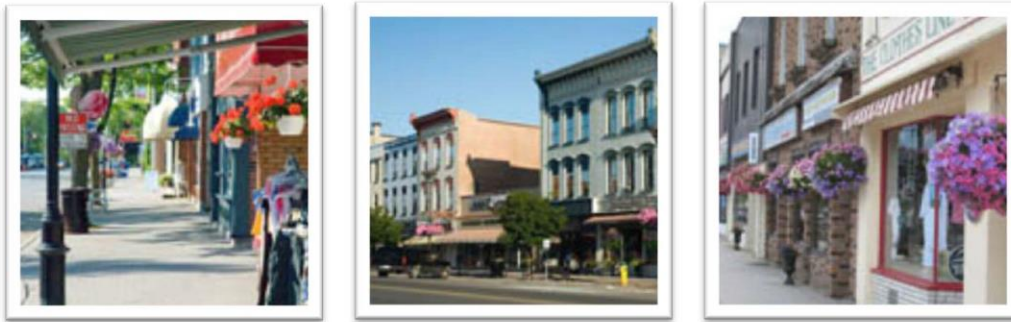
Appendix B: Guiding Questions for Key Informant Interviews

Key Informant Interview Question Template

1. Could you please help me understand why the initiatives you mentioned are innovative or *on the cutting edge*?
2. Would you be able to describe any specific successes or barriers that you encountered while undertaking the initiatives described above?
3. Could you identify what it is that allowed you to make this happen? Who provided you with /or how did you acquire the resources?
4. From your experience, what are some lessons that could be taken away for other communities?

Appendix C: Innovative Initiative Promotional and Educational Materials

City of Kawartha Lakes Promotional Material



Activating Kawartha Lakes

Wednesday, June 5th, 2013

9:00 am – 12:30pm

Academy Theatre, Lindsay

Walking Audits

Lindsay – 1:15 pm – Mill Park

Fenelon Falls – 3:45 pm - Community Centre

Highlights of the Event:

- Dan Burden, Walkable & Livable Communities Institute - Dan has worked with over 3500 communities in North America helping them determine the policies, infrastructure and features that make communities and downtowns successful, sustainable places for people
- Hear from other Ontario communities who have experienced the economic benefits of designing communities for pedestrians and cyclists
- Walking audits facilitated by Dan Burden in downtown Lindsay and Fenelon Falls

Registration Deadline – May 31st

Contact Jennifer Johnston at 705-324-9411 x 1232 or ecdev@city.kawarthalakes.on.ca

\$20 per person payable by cash, debit or credit card

* Includes lunch! Please note any dietary concerns or accessibility requirements at time of registration.



Promotion: Community Education

The collage features several key elements:

- walk and roll**: A brochure titled "An Active Commuter's Guide to using Active Transportation in the Haliburton Highlands" showing people walking and cycling.
- Map**: A detailed map of Haliburton Village showing roads, trails, and landmarks like Head Lake Park and the Otonabee River.
- Walk, Bike & Be Active in Haliburton Village**: A sign with a circular logo that says "Park the Car & Get Moving!".
- SHARE the ROAD**: A sign with a car and cyclist icon and the text "1 Metre" and "www.cyclehaliburton.ca".
- Map Kiosk**: A wooden structure with a map of the village.

Retrieved from: <http://www.toolsofchange.com>