Planning for Healthy Communities in Nova Scotia: The current state of practice.

by

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A thesis

presented to the University of Waterloo

in fulfilment of the

thesis requirement for the degree of

Master of Arts

in

Planning

Waterloo, Ontario, Canada, 2013

Author's Declaration

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

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Abstract

There is a growing recognition of the importance of the built environment in mediating people's health related decisions, such as whether to walk rather than drive, or what types of food to purchase. The built environment has been identified as a significant determinant of health by the World Health Organization and many other organizations across the globe. This has spurred research on how and to what extent community design impacts health. Most research in Canada has been focused on major urban centres. Research in rural contexts on the connection between planning and health is limited. Despite much research on land-use and design to support healthy communities, how planners interpret the application of this research within the social, political, and jurisdictional confines of their planning practice is largely unexamined. Through an online survey and 10 semi-structured interviews with planners in Nova Scotia, the question of whether and how rural planners should address health issues is explored. The intention of this research is to better understand the connection rural planners see between their planning practice and health issues in their communities. This research found that planners indicated that health is important to address in planning practice, which confirms recent national level research. However, each respondent's interpretation of health and how it related to planning practice was slightly different. Working with public health workers and agencies was supported as a way to improve community health, but most participants saw themselves as consultants to public health staff concerning projects and initiatives to support healthy communities rather than as collaborators. Provincial government "silos" were cited as the biggest barrier to implementation of planning practices to address health issues like physical inactivity. Results confirm what has been identified in the literature as barriers to rural planners addressing community health issues.

Acknowledgments

I would like to thank my supervisor Dr. Roger Suffling for his support and guidance through the completion of this research project. His observations, feedback, and support were instrumental in seeing me through the many bumps and slumps. Also his understanding of how complicated things can get while juggling, home, school, and work was invaluable. I would also like to thank my co-supervisor Dr. Mark Seasons for his keen observations, positivity, and daring me to think bigger. Thank you both for putting up with me.

I would like to thank all of the participants who gave their time and energy to complete the survey and those that participated in the interviews. I learned a lot from all of you. I am a better planner because of our conversations.

This work took a long time to complete and there were numerous points at which giving up seemed like a good option. There are a number of people who supported me through those periods by providing their time and expertise. I would like to thank Dr. Phyllis Rippeyoung and John Brzustowski for helping me to understand statistics. I would like to thank Barb Anderson (FDC) and Dr. Mervyn Horgan, at Acadia University for their input and advice, and reinforcing the idea that my work was relevant. I would like to thank Dr. John Colton, Dr. Shelley MacDougall, Matthew Rippeyoung, and David Edelstein for their feedback on my ideas, methods, writing, but mostly just listening to me kvetch. In particular Matthew – thanks for being a remarkable friend.

To my friends at the University of Waterloo, Paul Jakubicek, Chris Langley, James Tyler LaPointe, and Mark Groulx for providing moral support and ensuring I had a lot of fun while living in Waterloo. I would like to thank Paul Jakubicek in particular for his ongoing and valuable friendship. Also in Waterloo I would also like to thank Al and Val Daigen and Clara and Ola Tjornbo – thanks for providing me a second home in Waterloo.

To my friends in Wolfville, thank you for welcoming me and making this town such a great place to live and work. In particular thanks go to Jen, Eric, and Bryn Kershaw, the Parks-Brzustowski's, and Andy Brown for providing me the time and space to complete this thesis in the last few months.

My family was a constant source of support and inspiration. I would like to give a big thank you to my wife Emily Kathan, who supported me physically, emotionally, and spiritually through this entire process. She made sure I had everything I needed to get my work done, and selflessly gave of her time and energy. An extra special thank you goes to my daughter Sadie Kathan-Howell – really all this work is for you. You inspire and motivate me to be a better person and to work hard at creating a brighter future for all.

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LIST OF ABBREVIATIONS

AT	Active Transportation
BE	Built environment
CAO	Chief Administrative Officer
CBRM	Cape Breton Regional Municipality
CCHS	Canadian Community Health Survey
CIHI	Canadian Institute for Health Information
CHCP	Canadian Healthy Communities Project
CHB	Community Health Board
CHP	Community Health Plan
DHA	District Health Authority
GHG	Greenhouse Gas
HBE	Healthy Built Environments
HCP	Healthy City Planning
HRM	Halifax Regional Municipality
HUP	Healthy Urban Planning
ICSP	Integrated Community Sustainability Plan
OECD	Organisation for Economic Co-operation and Development
PHAC	Public Health Agency of Canada
LUB	Land-use by-law
MGA	Municipal Government Act (Nova Scotia)
MIZ	Metropolitan Influenced Zones
MPS	Municipal Planning Strategy
NSPDA	Nova Scotia Planning Directors Association

1 INTRODUCTION

This research investigates issues related to planning and health in small[1] and rural communities. I seek to understand to what extent and how municipal planners in Nova Scotia are addressing health in their practice. I have probed how municipal planners understand health as it relates to their practice, how working in small and rural areas influences their decision-making about planning for healthy communities, the extent and style of their work with health professionals, and how municipal planners can be better equipped to tackle health issues.

The definition of health has changed over time. The dominant rhetoric in public health circles has shifted from pathogenesis, the identification of causes of ill health, primarily causes of infectious disease, to salutogenesis, the identification of causes of good health (Corburn, 2007). The World Health Organization's definition of health is based on the concept of salutogenesis. The absences of injury and illness are still core components of being in good health, however, other factors such as feelings of social connectedness, access to food, shelter, meaningful employment and opportunities for recreation are now considered of equal importance.

The idea that where we live, can determine how well we live, has gained increasing momentum in the planning and health research literatures in the last decade and has served as a starting point for research agendas on policy development, urban design and new forms of practice in these respective professions (Ding and Gebel, 2012). The majority of this work has covered how the built environment influences physical activity and the health outcomes of that interaction. Researchers have also looked at the impact of planning policy and the built environment on factors like diet and mental health. Internationally, the built environment and urban planning are beginning to be seen as critical components of health promotion and population health interventions (WHO, 2008). In Canada the Heart and Stroke Foundation of Canada has asserted that there is a connection between Canadian's health and the built environment (Heart and Stroke Foundation of Canada, 2010). The Public Health Agency of Canada lists physical environments as one of the key determinants of health (Public Health Agency of Canada, 2009). Planning organizations have also taken up this issue - the Canadian Institute of Planners (CIP) has adopted healthy communities as a national project and has funded nationwide research as well as the development of a healthy community design manual. The Ontario Professional Planners Institute (OPPI) in 2009 released the *Planning by Design: A Healthy Communities Handbook* that outlined best practices in healthy community planning.

[1] I use the term small communities in reference to communities that may not be easily categorized as rural or urban.

Seeking to bridge the health and planning disciplines. The Public Health Agency of Canada (PHAC) in 2009 published a report titled *Bringing Health to the Planning Table: A Profile of Promising Practices in Canada and Abroad*, highlighting successful examples of planners collaborating on community health issues. In 2009 the Provincial Health Services Authority of British Columbia initiated a project focused on fostering collaboration on community health issues between health professionals and professional planners through a workshop program. The workshop program had health professionals and planners share key concepts about their respective professions.

In Nova Scotia the importance of the built environment in promoting health has received some attention. A variety of planning-related research projects have been completed, such as the development of built environment indicators for active transportation, (Curran, Grant, Wood, 2006), identifying factors which limit local governments in making investments in the built environment to promote health and reduce youth obesity (Grant et al. 2010), and research on the value, cost, and public interest in active transportation infrastructure and programs for Nova Scotia municipalities (Rehman, 2010) as well as the development of the *Healthy Places Toolkit* (2007) a manual to support planning practices that consider health.

An outcome of this increased interest in the connections between health and the built environment is the development of new research questions. Who has responsibility for the development of healthy sustainable communities? What do healthy communities look like and how do we facilitate their development? The majority of the literature published on the built environment, planning and health has focused on three main areas: a) quantifying the effects of different land-uses and built forms on health, b) qualitative investigation of how people relate to their built environments and how they feel the built environment impacts their ability to make healthy choices, and, c) promoting and facilitating collaborative efforts between planners and health professionals. In Canada most research to date has been completed in major urban centers such as Toronto or Montreal, and to lesser extent smaller cities such as Hamilton and Halifax (Dobson & Gilroy, 2009; Farhang et al. 2008). A smaller proportion of research on planning, the built environment and health has looked at these issues in the context of rural communities (Millward & Spinney, 2011; Grant & Manuel, 2011).

In Nova Scotia 45% of the population lives in what Statistics Canada defines as rural communities. However, other sources believe this percentage to be more in the range of 60% (Rural Communities Impacting Policy Project, 2003). Except for the Halifax Regional Municipality (HRM), Cape Breton Regional Municipality (CBRM), and also the Town of Truro, all other Nova Scotia municipalities have populations under 10,000 and several have less than

1,000. However, each major population center, the HRM, CBRM and Truro have rural areas that can be classified as rural within their boundaries. In Nova Scotia several reports have highlighted the low level of physical activity in the province and its cost to the province's health care system and its labour force competitiveness (Coleman, 2002a & 2002b).

1.1 JUSTIFICATION

Recently, a surge of academic literature has come from public health, medicine, geography and planning researchers on the need to pay closer attention to land-use decisions and their impact on the health of our communities. The justification for this is varied. Some writers point to the historical roots behind planning practice (Corburn, 2004, Barton, 2010), and some to the negative impact of poor community design on health and the potential for healthier community design (Sallis et al. 2009; Frumkin, Frank and Jackson, 2004). Some identify the burden that ill health places on communities, health services, governments and societies (OPPI, 2009; RPTI, 2007). Increased illness and disease from lifestyle factors, like physical inactivity, can result in demand for health services outstripping the available resources of health care providers, which is of particular concern in the context of a public health care system. In Canada health care spending has become a dominant budget item for many provinces (CIP, 2012).

> *In a number of Canadian provinces, health-related spending is consuming 40% or more of provincial budgets. According to the Canadian Institute for Health Information, health-care spending is growing faster than Canada's economy and spending on prescription and non-prescription drugs is growing faster than spending on hospitals and physicians.*
> *(MMHA& OPPI, 2009, pg. 2)*

In the United Kingdom the increasing pressure placed on health care services has led to the suggestion that steps to reduce demand for services through encouraging healthier lifestyles must be taken, before demand outstrips resources.

> *There is likely to be an increasing funding gap between the demand for health services and the sector's ability to meet those demands. Addressing this gap requires long term and strategic action, reducing the demand for health services by promoting a healthier population. Spatial planning has a key role to play in shaping environments which make it possible for people to make healthier choices about exercise, local services, travel, food, nature and leisure.*
> *(Royal Town Planning Institute, 2007, pg.3).*

Therefore it is important for planners in all communities to be aware of the possible health consequences of their decisions. But to what extent is this work already being done? Planning has a long, albeit inconsistent, historical tradition of using land-use control and policy to improve the health of citizens (Corburn, 2009; Barton and Tsourou, 2000). Many planners feel their work has always been focused on community health issues (Chapman, 2010; Allender at al., 2009). In Canada there is an uneven burden of chronic diseases between villages, cities, regions, and provinces (Dean and Elliot, 2012; Black et al. 2011; Pouliou and Elliott, 2010). In Canada rural areas tend to demonstrate lower levels of positive health behaviours such as regular exercise and a balanced diet and overall have less healthy populations (PHAC, 2006; Mitura and Bollman, 2003). How are planners responding to these issues and how can they, if at all, respond to them in practice? This research investigates these questions.

1.2 Current Research

Research to date has focused on techniques to quantify the impact of the arrangements of streets, residential, commercial, recreational and other land-uses on health. Particularly the impact on active transportation, access to nutritious food, and services that support health such as medical, recreational or social services (Ding and Gebel, 2012). Other strands of research have looked at the positive and negative policy implications of using health as a lens to assess the suitability of development, such as incorporating Health Impact Assessments into development proposals or including public health representatives in the development process (Moore, 2011; Corburn, 2009; Laurian, 2006). Another theme is investigating how health issues and input from public health practitioners can be incorporated into the planning and development process (Forsyth et al. 2010; Botchwey et al 2009). Research on health, planning, and the built environment has included a wide variety of subjects from mental health, housing to injury prevention.

A small amount of research has looked at quantifying physical activity behaviours of rural residents, e.g. how they access physical activity, and their use of active transportation. This is typically in terms of differences along an urban to rural gradient (Millward and Spinney, 2011; Boehmer, 2006) Very little research can be located which looks at the larger policy, practice, and educational aspects of incorporating health into rural and small town planning. However, there is ample research on how small and rural communities are typically challenged in terms of spatial accessibility to services and built capital, and also how these communities rate poorly on key health indicators in comparison to their urban counterparts (Douglas, 2010; Markey, Connolly, and Roseland, 2010;

Halseth and Ryser, 2006). Understandably, it is difficult to determine the exact need for research on health-oriented planning at the small town and rural level if little research exists.

Program or education based public health approaches to improve lifestyles has been shown to be limited in their impact (Kohl at al. 2012; Coutts, 2008; PACY, 2007; Lake and Townshend, 2006). Recognition of the limited effectiveness of promotion, policy, and program efforts to improve people's health, specifically those targeting physical activity and healthy eating has spurred interest in understanding how and where we live impacts health (Kohl et al., 2012). Policy, programming, and built environments that re-enforce each other are needed to foster meaningful and long term change (Blacksher and Lovasi, 2012; Rehman, 2010; Salens and Glanz, 2009; Curran, Grant, and Wood, 2006).

1.3 Scope of Inquiry

The scope of this inquiry was intentionally broad, as a limited amount of research has been completed to date on how planners in non-urban areas are interpreting or implementing health-oriented planning. Current, urban-based research shows strong evidence to support using land use planning as a tool for improving community health; however urban areas are, by definition, quite different from small and rural communities. This research adds to the currently limited amount of research on the use of health in planning practice in non-urban areas.

1.4 Thesis Organization

This thesis is organized into nine chapters. This first chapter outlines the key concepts considered when designing this research as well as terminology, objectives of the research and underlying assumptions. The second chapter reviews the literature on planning and its connection to health and planning practice in small and rural communities. The third chapter presents the methods used in this research. The fourth chapter is the profile of the case study site, Nova Scotia. Chapter five, six and seven outline the results and analyze the findings of the study. Chapter eight discusses the implications of the findings for planning research, practice and education. Chapter nine provides recommendations for addressing the challenges identified in the findings.

1.5 Research Question

This research seeks to explore a single main question:

To what extent and how, do planners in small and rural municipalities in Nova Scotia acknowledge and address community health challenges in the course of their practice?

The research also looks to answer the following sub-questions.

- How do planners understand health as it relates to their practice?
- How does working in non-urban areas affect planners' responses to health challenges in practice?
- What opportunities and barriers do planners identify in integrating health challenges into their practice?

1.6 Definitions

1.6.1 Health

Health can be difficult to define as it encompasses a broad range of environmental, biological and social factors (Barton, 2009; Riva et al. 2009). Researchers often use slightly different definitions of health, however most see it as an anthropocentric concept, i.e. health is primarily used in reference to the physical, mental and spiritual wellbeing of humans (Corburn, 2009; Barton, 2009; WHO, 1992).The WHO definition of health is the one used most in research on planning, and health, planning, and the built environment and the social determinants of health (RTPI, 2007; OPPI, 2009; CABE, 2009). The WHO defines health as: *Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.* (WHO, 1948).

This research interprets health broadly. A complimentary definition to the one used by the WHO is used by Gatrell (2002) who looks at health in terms of resources; to him health is having, *access to the resources and support structures - both personal and societal - that do not restrict individuals from achieving their potential* (Gatrell, 2002, pg. 12).The definitions used by Gatrell, (2002) and the WHO are inclusive of many facets of human experience, as both understand health as an aggregate of a large number of interdependent factors. These include access to employment, social support systems, and non-toxic environments.

1.6.2 COMMUNITY HEALTH

Community health issues or challenges are referred to frequently in this research. Community health refers to the collective state of health of a group within a geographical area or locality (McKenzie, Pinger and Kotecki, 2012). It is similar to population health; however, population health tends to be broader in scope and may consider health across a number of geographic areas simultaneously (McKenzie, Pinger and Kotecki, 2012). In both community health and population health the goal is to address health issues, such as chronic disease, addictions, and mental health, not through the direct treatment of individuals, but rather by identifying and addressing the factors which lead to a particular health outcome, such as obesity. The following example from the Public Health Agency of Canada illustrates the thinking behind a population health approach to addressing a community health issue.

> "Why is Jason in the hospital?
> Because he has a bad infection in his leg.
> But why does he have an infection?
> Because he has a cut on his leg and it got infected.
> But why does he have a cut on his leg?
> Because he was playing in the junk yard next to his apartment building and there was some sharp, jagged steel there that he fell on.
> But why was he playing in a junk yard?
> Because his neighbourhood is kind of run down. A lot of kids play there and there is no one to supervise them.
> But why does he live in that neighbourhood?
> Because his parents can't afford a nicer place to live.
> But why can't his parents afford a nicer place to live?
> Because his Dad is unemployed and his Mom is sick.
> But why is his Dad unemployed?
> Because he doesn't have much education and he can't find a job.
> But why ..?"

(Public Health Agency of Canada, Determinants of Health, What Makes Canadians Healthy or Unhealthy? Para 6).

Community health issues arise from or are exacerbated by the social, economic and environmental characteristics of a given community and are manifested in the health outcomes of individuals and families living in those communities(McKenzie, Pinger, and Kotecki, 2012; Raphael, 2004). Community health issues are difficult to define precisely as they can be physiological, mental or social issues. Diseases like diabetes, illnesses like

depression, and social and economic conditions like homelessness can all be grouped under community health issues (McKenzie, Pinger, and Kotecki, 2012; Raphael, 2004).

1.6.3 Healthy Communities

In this research the term, healthy communities, will be used frequently. This term refers to communities that:

- Encourage and support access to basic material resources, food, shelter, clothing;
- Provide structures that support individuals in attaining a high quality of life; and
- Support complete physical, mental and social well-being and not merely the absence of disease or infirmity.

1.6.4 Built environment

The definition of the built environment used in this research comes from 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 subway trains, 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, pg. 1446)

1.6.5 Planning in Small Municipalities and Rural Communities

The issue of decline in rural and small municipalities is a well-researched topic in the social sciences (Reimer, 2006). Many studies investigate the specific challenges of rural communities and small towns and the difficulties that they face. Research spans economic issues such as the decline of traditional primary industries to spatial and demographic characteristics such as remoteness, low population densities and aging populations (Bryant & Joseph, 2001, Polese & Shearmur, 2002, Slack, Bourne & Gertler, 2003).This research asserts that there are unique spatial, demographic, economic, cultural and environmental issues that small towns and rural areas face. This research also assumes that many planning and economic development practices such as *New Urbanism* or creative economy strategies are not appropriate or feasible in many of these geographies. In this research, planning is interpreted as the work related to spatial planning and land-use controls but also the variety of research, engagement,

visioning and other activities required for economic development, environmental protection, and social development.

Planning as a discipline has evolved to include a wide range of sub-disciplines and specializations (Fischler, 2012). In this research the focus is on planning practice as it relates to small and rural communities. What planning practice encompasses differs between planners and planning theorists (Fischler, 2012; Hodge and Gordon, 2008). Planning in a small town or rural context usually involves an array of land-use and spatial planning activities alongside social, economic and environmental planning work (Caldwell, 2010; Hodge and Gordon, 2008). While the same work may be done in urban areas, it is often subdivided amongst several departments departmental and is addressed by specialists (Hodge and Gordon, 2008). In the rural context one planner or a small planning department will be responsible for the full gamut of planning responsibilities which may include non-urban issues such as agriculture and natural resource management (Douglas, 2010). Planning in rural areas is also marked by challenges and opportunities not faced in urban planning, such as limited capacity and finances, closeness of residents to government and municipal administration and vast space between settlements (Douglas, 2011, Caldwell, 2011, Hodge and Gordon, 2008). Rural planners also have significant challenges in directing growth as it is typically sporadic or may come all of a sudden (Douglas, 2011). How rural challenges influence planning decisions will be examined later.

1.6.6 HEALTH-ORIENTED PLANNING

> *A healthy community provides multiple benefits across numerous topic areas. There are very few topics that can't relate in some way to the health of a community. To cover a truly comprehensive analysis of its entire component parts could be an endless - though enlightening - pursuit.*
> (Healthy Communities Practice Guide: CIP, 2012)

Three main theoretical frameworks exist that connect planning practice to health namely: Healthy Urban Planning (Barton and Tsourou, 2000), Healthy City Planning (Corburn, 2009) and Health Built Environments (Barr, 2011 B; Renalds, Smith and Hale, 2010; Frank et al. 2005). These are discussed in the literature review.

In order to simplify the discussion of planning practices and theories that deal with health in this thesis I will use the term health-oriented planning. This will serve as a generic term to describe any planning practice that focuses on health, the creation of healthy communities or addresses community health issues. It is not the intent of this research to evaluate any one theoretical framework.

2 REVIEW OF THE LITERATURE

> "*Our system of planning evolved out of the need to control infectious disease. This was resolved many decades ago by the provision of central water and sewer services, the separation of noxious land uses, and general improvements made to industrial processes. Planning and health remain inextricably linked, however, the challenges today are chronic disease, our skyrocketing health care costs, and a host of issues (such as climate change and energy conservation), which are often interrelated with the built environments that we create*."

(Canadian Institute of Planners, *Healthy Communities*, para 2)

The following section outlines the current literature on the themes and sub-themes that guide this research, namely: health-oriented planning, collaborative planning, and the practice of planning in small towns and rural communities in Canada.

There are many reasons to attempt to improve the health of communities. Economic reasons include a healthier work force, reduced costs to health care systems and also the amenity migration potential of a 'healthy community'(Moore, 2011; MMHA and OPPI, 2009; Coleman, 2002). Displacing automobile traffic with active transportation can have the positive outcome of cleaner air (Barton, 2010; Smart Growth, 2009; Frank and Kavage, 2008).

There are a wide range of physical and mental health risks that have been associated with different forms of community design and built environments (Renalds, Tracy, and Hale, 2010; Barton and Tsourou, 2000):

- Sedentary behaviour and inadequate diets, and its outcomes such as obesity;
- Depression;
- Increased levels of substance abuse;
- Alienation and fear;
- Injury due to accidents.

The majority of research on planning, the built environment and health looks at the relationship between planning and the above health risks. Housing, parks and public spaces, distribution of food stores and retail relative to residences, public transit, community safety, and community connectedness have all been studied relative to planning's impact on them and developing healthy communities.

In *Healthy Urban Planning* (2000), published by the World Health Organization (WHO), Barton and Tsourou, elaborate on the potential impact planning can have on health. It is important to note that Barton and

Tsourou do not suggest a causal relationship between planning activities, such as urban design or policy development, and health outcomes. Rather, the idea is that planning can facilitate positive health outcomes by providing environments that present opportunities to engage in healthy lifestyles.

Table 2-1: Potential Effects of Planning on Health (Adapted from Barton and Tsourou, 2000).

Objective	Potential Effects of Planning Decisions
Social cohesion	Social cohesion can be undermined by settlement patterns that create dispersed populations and sever communities. Social cohesion can be facilitated by creating safe and permeable environments where people are encouraged to meet informally.
Housing quality	Poor housing can have a profound impact on the physical, social, and mental health of residents. A broad range of housing types with easy access to health, education and leisure services is essential.
Access to work	Facilitating attractive opportunities for business, especially those that encourage diversity in employment, is essential. Non-motorized and equitable transport strategies are paramount to supporting a full range of employment opportunities.
Accessibility to services and retail	Access to shopping, health care, recreation, and education services can be improved through urban design, land-use policies and transportation planning that supports easy access through public transport or by walking.
Local, low-input food production	Planning can encourage a greater variety of food retailers to support healthy food options within walking distances to residential areas and the allocation of land for people to grow their own food.
Safety	Public space, such as parks or streets that are intimidating due to fear of road accidents or fear of assault encourage car use and limited time out of doors, thereby increasing car dependency and reduced social interaction. Planning and urban design can help to create spaces that calm traffic and ensure a natural process of surveillance over public space that can reduce fear and the actual incidence of crime.
Equity	Planning can help in the process of providing lower-cost housing, facilitate the provision of job opportunities, and help enhance accessibility to services and facilities.
Air quality and aesthetics	Poor air quality can stem from land-use and transportation policies that locate incompatible uses near each other or support congested roads. Planning can limit these incompatibilities and support less polluting forms of transportation, while also creating an aesthetically pleasing environment.
Water and sanitation quality	Planning can only indirectly impact water and wastewater treatment. When assessing potential new developments, planning can impose standards and criteria that protect water quality and ensure that sanitation and wastewater infrastructure is not overwhelmed by storm surge flows and excessive run-off.
Quality of land and mineral resources	Planners can raise awareness about the importance of responsible management of natural resources.
Climate stability	Planning can reduce the rate of human emissions of greenhouse gases by influencing energy use in buildings and transport and by developing policy to support renewable energy development.

2.1 HISTORICAL CONNECTIONS BETWEEN HEALTH AND PLANNING

The connection between planning and health has a long history, both in Canada, the United Kingdom and the United States (Corburn, 2009; Cliff, 2008; Barton, 2005). In *Planning Canadian Communities 5th Ed*, Hodge and Gordon (2008) point out that when planning was becoming established as a profession in Canada, it shared several areas of focus with public health, such as fire safety, housing, and dealing with the negative health impacts of pollution from industry. In general terms the goal of early planning was improving the health, safety and public welfare of the community (Hodge and Gordon, 2008).

Modern planning originated in the nineteenth century expressly to combat the unsanitary, overcrowded and inhumane conditions of the burgeoning industrial cities across North America and Europe (Frank and Kavage, 2008; Barton, 2010). Public health, planning, and civil engineering in North America evolved together as a consequence of late-19th century efforts to reduce the harmful effects of rapid industrialization and urbanization, particularly infectious diseases (Corburn, 2009). Reformers recognized that poor housing conditions, inadequate sanitation and ventilation, and dangerous working conditions helped cause devastating outbreaks of cholera and typhoid (Corburn, 2004).

2.1.1 MIASMA AND CONTAGION

At the beginning of the 19th century when rapid urbanization and industrial growth was occurring, "miasma" and "contagion" were the dominant theories for the causes of outbreaks of disease (Corburn, 2007). Miasma was understood as 'bad air' but also considered to be a product of contaminated soil and water (Corburn, 2004). The proponents of the miasma theory understood disease to be the product of bad environments, consequently solutions were to create places that had clean, fresh air, sunlight and met sanitary standards (Corburn, 2009). Contagion theory supporters, by comparison, believed that disease was transmitted through physical touch, typically from a person or a contaminated substance (Harvard University Library: Open Collections Program, para 4-5). Again the belief was that sanitation would reduce the risk of disease. It was a common assumption that those who engaged in morally and physically intemperate behavior or who had inferior cultural practices were more likely to get cholera when exposed to these miasmas and environmental conditions (Corburn, 2009). Observations that the poor, who lived in densely populated urban slums, suffered from cholera in greater numbers than the rich, who were very differently housed, were used as evidence for this assertion (Harvard University Library: Open Collections

Program, Public Health, para 1-5; Corburn, 2009). By the end of the 19th century, the driving ideology in public health had become germ theory, and this shift continued through the first half of the 20th century. (Corburn, 2004). The consequence of this theoretical shift was that environmental factors that did contribute to poor health, such as overcrowding, pollution, and general unsanitary environments, were no longer seen as being the purview of health agencies and professionals (Corburn, 2004; Bhatia et al. 2003).

The main strategy employed by both planning and public health to deal with the negative health impacts of urbanization during the late 19th to mid-20th century was to respond *…by physically removing and displacing wastes and people* (Corburn, 2007, pg. 689). Urban surveys undertaken by Edwin Chadwick, Frederich Engels, Rudolph Virchow and others exposed the intense concentration of sickness and high death rates in the hastily and chaotically built neighbourhoods of the era (Corburn, 2009). In addition to the separation of different uses within the city, early planners and public health practitioners focused on the design and layout of streets and the provision of adequate ventilation and "breathing spaces" within urban areas. This idea of ordered and separated uses and the development of urban parks as 'breathing spaces' was reflected, for example, in England in the ideas of Ebenezer Howard and the Garden Cities Movement, and in America, in the work of Lewis Mumford (Corburn, 2009). Ultimately this practice concerning the functional separation of activities into separate urban zones became codified in North America as the practice of zoning (Corburn, 2009).

2.1.2 THE RISE OF CITY BEAUTIFUL AND SCIENTIFIC RATIONALITY

At the beginning of the 20th century there were two movements vying for the dominant orthodoxy and orthopraxis of the new profession of planning. The First National Conference on City Planning (1909) in the United States saw this conflict come to a head between Benjamin Clarke Marsh, representing a social justice perspective on planning which saw the plight of the urban poor as a central duty of the profession, and Fredrick Law Olmstead Jr., representing a scientific rational perspective on planning, which was influenced by Daniel Burnham's Plan of Chicago, which ushered in the City Beautiful movement. After this time Frederick Law Olmstead Jr. became president of the National Conference on City Planning. He would later state in his keynote address at the second national conference (1910) that the profession was a "forum" for all those involved with the physical shaping of cities, not just for addressing the needs of the poor (Corburn, 2009). The views of Benjamin Marsh were increasingly marginalized. By the fifth national conference in 1913, entitled "The City Scientific," Olmsted and his supporters had successfully defined the new field of planning as technocratic, and professionals were debating how

to incorporate new scientific and technical tools into their practice of analyzing and designing efficient cities (Corburn, 2007). Around 1915 American city planners extended Taylorist notions of scientific efficiency in adopting a hierarchical ordering of land uses, which became modern zoning practice (Corburn, 2007). Olmstead's ideal of a technocratic rational planning profession became the dominant practice paradigm for many decades.

2.1.3 DISCONNECTION

While the fields of public health and planning shared a common origin, by the middle of the 20th century, the focus of each discipline had changed (Corburn, 2004, Bhatia et al. 2003). By the beginning of the 1900's it had become widely accepted that miasma and contagion were unable to explain why, despite ubiquitous filth in some areas, disease only occurred occasionally (Bhatia et al. 2003)[2]. Miasma and contagion gave way to the development of germ theory (Corburn, 2009). Medical science began to supersede efforts to make environments healthier and to remove physical harms (Corburn, 2009). The idea of environmental reforms became viewed as unnecessary by the medical community. Moving into the mid twentieth century the biomedical model of health, which focuses on the influence of individual lifestyles and genetics, became the dominant paradigm in the health field (Corburn, 2009). The biomedical model shifted the emphasis of health promotion to personal risk factors such as smoking, diet, and physical activity (Corburn, 2009). At the same time, planners across North America focused their efforts on urban renewal and economic development and infrastructure development such as highway expansion (Corburn, 2004; Bhatia et al. 2003). During the early to mid-twentieth century, planners and public health professionals became much less involved in the design of roads, water and sewer systems, and the management of most infrastructures became the purview of engineers (Corburn, 2009).

2.2 ADVOCACY PLANNING

By the 1960s, planning was grappling with widespread social unrest, and dealing with the backlash from the major urban upheaval of slum clearances and disinvestment of urban cores (Corburn, 2009; DeVille and Sparrow, 2008). Planning was being called to account for these actions and to respond to activists' claims that mega-public development projects and modernist theories on design and urban renewal projects were destroying the social

[2] The famous 1854 *Soho pump case* as it is popularly known occurred prior to this. An anesthesiologist by the name of John Snow demonstrated that a contaminated water pump located in a poor neighbourhood of London was spreading cholera. Snow ushered in the beginning of the discipline of epidemiology and to some extent germ theory. Despite his findings miasma and contagion remained popular theories on the spread of disease up to the beginning of the 20th century (UCLA, Department of Epidemiology, http://www.ph.ucla.edu/epi/snow/broadstreetpump.html) .

and economic fabric of old neighbourhoods and dispersing the resident population (Grant and Patterson, 2012; James, 2010; Corburn, 2009). Activists also challenged public health professionals to address why, in the face of rising economic prosperity and improvements in medical technology, inequalities in health persisted, particularly for the urban poor and people of color (Corburn, 2009; Davidoff, 1965).

2.3 The Commission on Conservation and the Canadian Healthy Communities Project

In Canada there are two significant public policy programs that sought to make health a theme for planners and other municipal officials to address: the Commission of Conservation established in 1909 and the Canadian Healthy Communities Project in 1989.

In 1909 the Canadian Commission on Conservation was established. The Commission developed out of the recognition that space was not limitless in Canada, and that in Europe settlements for all intents and purposes had expanded to fill the continent (Hancock, 1997). The Commission's focus was on conserving *the physical and vital*. The former (physical) dealt with natural resources and landscapes and the latter (vital) focused on t*he prevention of diseases, to health, and to the prolongation of life*. (Commission on Conservation, 1912, p. 148 cited in Hancock, 1997). The Public Health Committee of the Commission saw housing, settlement structure and town planning as foundational to good health (Hancock, 1997). Thomas Adams, who had been the secretary to the first Garden City in Letchworth, England, was invited to be the town planning advisor to the Public Health Committee (Hancock, 1997). Thomas Adams went on to be a prominent figure in Canadian town planning and in 1917 wrote one of the first books on planning, *Rural Planning and Development in Canada*, which continues to be an influential book for rural planners in Canada (Caldwell, 2011).

The other major public policy program was the Canadian Healthy Communities Project. The Healthy Communities Project was the result of work that began in 1973 when Health and Welfare Canada released a landmark document, *New Perspective on the Health of Canadians*. This document suggested that health professionals and the health field in general should consider the environment and personal lifestyle factors in the application of health care services (Manson-Singer, 1994).

In 1988 the WHO launched its Healthy Cities movement (Barton and Tsourou, 2000). The city based approach was intended to look at how to improve health by starting where people lived, rather than looking to treat them after illness or injury occurred. The movement supported the creation and encouragement of healthy

environments where people had access to the social, economic, and political resources to secure health (Barton and Tsourou, 2000). The Healthy Cities movement continues to this day in over 1400 cities globally (WHO, Regional Office for Europe, Urban Health, para 1).

In Canada the Canadian Healthy Communities Project (CHCP) emerged in 1989. The recognition that in Canada there are relatively few major cities meant that the CHCP steering committee opted to use the term Communities rather than Cities (Manson-Singer, 1994). The Canadian Public Health Association, the Canadian Institute of Planners and the Federation of Canadian Municipalities were founding members of the CHCP. The involvement of municipal government made the CHCP unique from other public health initiatives in Canada at the time (Manson-Singer, 1994). The organizing concept of the CHCP was that health was a resource for everyday living and as such should be embedded in the design of communities and that health impacts should be an important factor in municipal decision making. The Healthy Communities Project brought together almost three hundred public health workers, city planners, community developers, and community based organizations from across Canada, and some international people from the Healthy Cities movement, over three days during a conference in 1990. The conference itself was the beginning of the end for the Healthy Communities project as miscalculations of the conference costs led to downstream deficits. This meant that the project's centre piece, a workbook that highlighted healthy community examples across Canada, that was to act as a guidance manual for communities wishing to take part in the CHCP, was never published due to a lack of funds (Mason-Singer, 1994). The absence of this key document and the lack of a clear definition of a healthy community left the project in dire straits in 1990. Some municipalities perceived the CHCP as a process that was going to lead to a downloading of health to the municipal level. In the early 1990's the CHCP was facing competition from other social agendas of the time, the environmental movement and the safe city movement (Manson-Singer, 1994). Both of these movements had clearly defined goals and mandates and access to statistics that the CHCP did not. Both the environmental and safe city movements were able to quantify and measure successes and failures. The CHCP lacking a clear definition and articulation of strategic goals meant that it was not easy for the public to grasp and for municipalities to promote. The formal Canadian program ended in 1991, ultimately due to lack of funding (Smith at al., 2008). However, it laid the conceptual groundwork for investigating the relationship between municipal development, planning, policy, and health in Canadian communities.

2.4 RATIONALE FOR RECONNECTION

Since 2000 a surge of academic and grey literature has come from public health, medicine, geography, and planning researchers on the health impacts of land-use decisions and planning policy (Ding and Gebel, 2012). This interest has been propelled by what some have termed the obesity epidemic (Dean and Elliott, 2012) and its subsequent impacts on population health and the health care system (Chapman, 2010; Kim et al. 2010; Harrington and Elliott, 2009; Srvinivasan, O'Fallon and Dearry, 2003). Responses to population-wide health issues such as obesity have been multisectoral. Most responses have taken a programmatic approach to getting people to be more active and eat better (Srvinivasan, O'Fallon and Dearry, 2003). However, results of these programs are mixed and often do not take into account contextual factors such as the built environment (Kohl at al. 2012; Barton, 2010; Coutts, 2008; PACY, 2007; Lake and Townshend, 2006). A central driver of the current research agenda on planning and health is an interest, largely from health policy makers, in understanding the extent to which strategic investments in the built environment can yield positive health outcomes (Grant and Manuel, 2011). From 2000-to 2012 there have been many publications articulating how the many determinants of health (biology, income, education and the environment) fit together from an ecosystem perspective. Most have been based off the conceptual models developed by the WHO (1992) or Barton and Tsourou (2000) or Barton and Grant (2006), shown in Fig. 2-1.

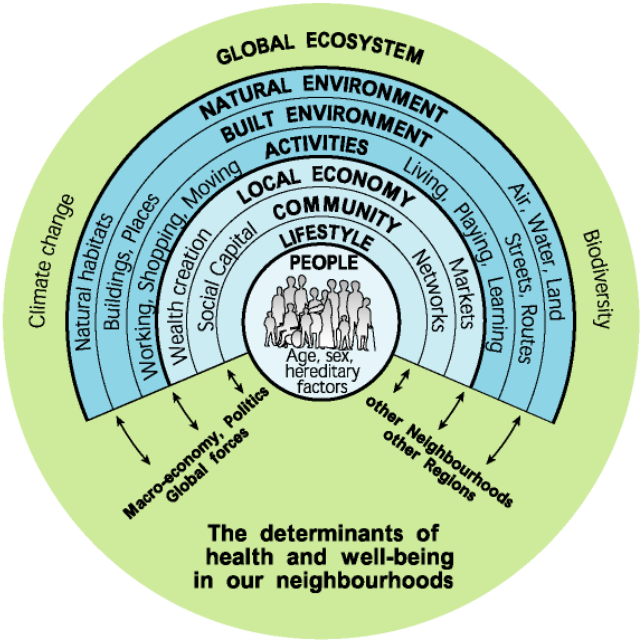

Figure 2-1: The determinants of health
Source: Barton and Grant, 2006

2.5 Canada and Nova Scotia: Health Issues

In the Canadian context, and particularly in Nova Scotia, an increase in obesity has placed the public health care system under a lot of pressure to meet the needs of a less healthy population (Corpus Sanchez, 2007; Coleman, 2002a &b). Healthcare costs currently dominate provincial budgets across Canada, and are expected to rise (CIP, 2012; OPPI, 2009; Corpus Sanchez, 2007). This rise in healthcare costs is anticipated to erode provincial budgets for education, income assistance and environmental protection, among others (Corpus Sanchez, 2007). A pressing issue for healthcare agencies is how to deal with this change in health care demand. The consensus has been to increase the focus on preventative health through a population health approach (Moore, 2011; Nova Scotia Department of Health, 2006).

In Canada there has been a steady but slight rise in the level of people classified as overweight or obese since 2003 (Figure 2-2). In Nova Scotia the percentage of population classified as overweight or obese spiked at 62% around 2008-2009 and has gone down since but remains almost 10% higher than the national average. Compared with the Canadian average, Nova Scotia has a higher percentage of population aged 65 and older (Figure 2-3). Consequently, issues around health care and the accessibility and safety of the built environment for seniors will become increasingly significant. Additionally the older population in Nova Scotia is increasingly concentrated in

small towns and rural areas, due partly to amenity migration for retirement, but also because of the out-migration of younger people for employment and education opportunities (Nova Scotia Department of Seniors, 2009).

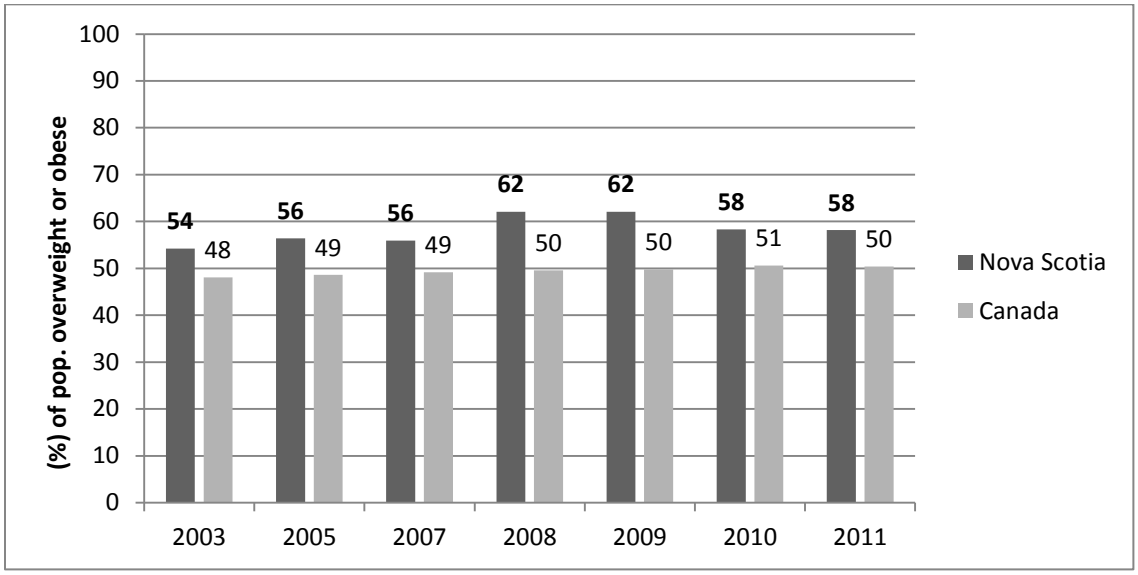

Figure 2-2: Population Canada and Nova Scotia Classified as Overweight or Obese
Source: Statistics Canada, Canadian Community Health Survey

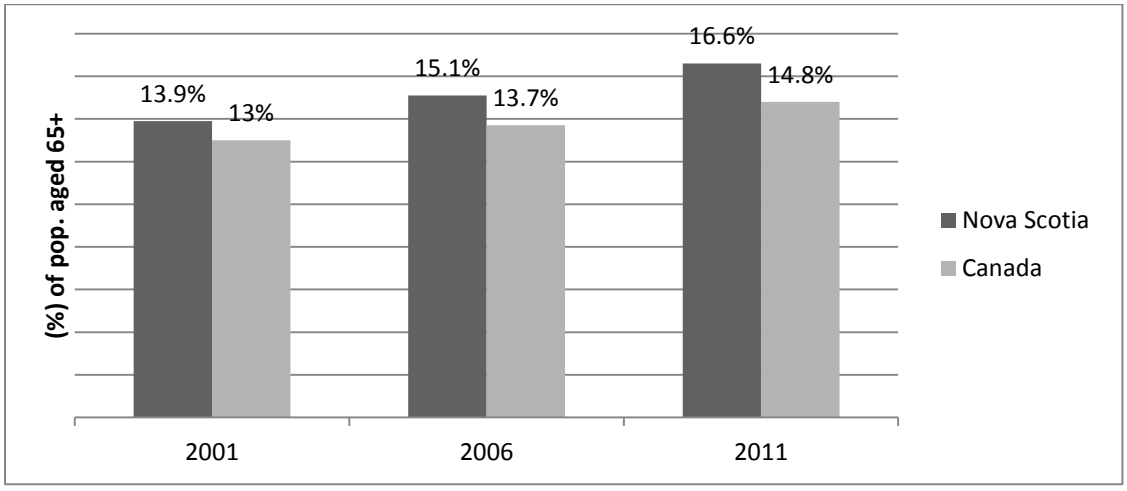

Figure 2-3: Population aged 65+ Canada and Nova Scotia (%)
Source: Nova Scotia Department of Finance, Community Counts

2.6 Population Health Approach and the Social Determinants of Health

The population health approach encompasses a wide range of health determinants and looks to address health inequalities broadly at a community or societal level, rather than one individual at a time (Public Health Agency of Canada, *What is the population health approach*?). The underlying idea is that addressing health inequities requires reductions in material, physical and social inequities (McKenzie, Pinger and Kotecki, 2012). The Public Health Agency of Canada defines the population health approach as:

> *Population health is an approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups. In order to reach these objectives, it looks at and acts upon the broad range of factors and conditions that have a strong influence on our health.* (Public Health Agency of Canada –What is the Population Health Approach? Para 1)

The population health approach looks at health in terms of its determinants, many of which are linked to economic development, soft and hard infrastructure and land-use. Just as there have been shifts in how planners view their work relative to health, so have public health practitioners shifted their view on how health is shaped (DeVille and Sparrow, 2008). The population health and social determinants approach to health issues has become increasingly popular in public health (Raphael, Curry-Stevens and Bryant, 2008). The population health approach encourages public health practitioners to expand their work into areas such as housing, job creation, education and transportation (DeVille and Sparrow, 2008). The population health model represents a shift from biomedical and behavioural risk factors as the main determinants of health, to looking more at the context in which people live and how policy decisions at various levels affect people's ability to access the resources needed to live a healthy life. The Public Health Agency of Canada identifies twelve key determinants of health.

1. Income and social status
2. Support Networks
3. Education and Literacy
4. Employment/Working Conditions
5. Social Environments
6. Physical Environments
7. Personal Health Practices and Coping Skills
8. Healthy Child Development

9. Biology and Genetic Endowment
10. Health Services
11. Gender
12. Culture

The population health approach tends to take a social determinants of health approach to improve overall health but also to reduce the disproportionate incidence of poor health among economically disadvantaged and minority groups and to shift some of the responsibility for health from the individual to society (Blacksher and Lovasi, 2012). Seeking to address health issues using a population health model which incorporates the social determinants of health represents a return to public health's historic commitment to social justice. (Blacksher and Lovasi, 2012). A problem with effectively addressing the social determinants of health is that the responsibility is often spread across numerous government departments and agencies (Johnson et al. 2008; Raphael, 2004). For example, unemployment can stem from a lack of employment opportunities (economic issue), a lack of mobility or ability to access job markets (a transportation issue) or a lack of accommodation in the work place (a disability or health issue).

2.7 Approaches to Bringing Planning and Health Together

Two primary approaches to incorporating health and planning have arisen in the peer reviewed literature; one highlights the positive health outcomes of planning practice, while the other emphasizes health as the measure of efficacy of planning policies and interventions.

Using land-use planning to support community health emphasizes the beneficial health effects of planning, such as the separation of incompatible uses, supporting non-motorized transportation, access to green space and local economic development. At their core toolkit documents like, *Planning by Design: A Healthy Communities Handbook*, (OPPI, 2009) these documents contend that planning that supports health is 'just good planning'. Research on the attitudes of professional planners has often shown that respondents believe health-oriented planning to be simply good planning practice (Barr, 2011 A; Grant and Manuel, 2011; Allender et al. 2009).

Using health as the primary lens for interpreting, addressing and implementing planning interventions and setting long range policy is another approach to planning and one that demands significant change to planning practice (Barr, 2011; Barton, 2010, Corburn, 2009). Health-oriented planning from this perspective provides room for citizens to advocate for policies and plans that support and improve their individual and collective health (Liptay, 2009, Barr, 2011). Jason Corburn's *Towards the Healthy City* (2009) and the works of Hugh Barton (2000, 2005,

2009, 2010) suggest that the health of communities, cities, and regions should be used as the measure of success of professional planning. These and other authors (Capon and Thompson, 2010, Crawford, 2010) see health as a shift to a more socially and environmentally equitable and fundamentally more comprehensive way to understand planning and development. Some authors (Laurian, 2006) have described the push for health-oriented planning as a regression to an environmental determinist theory of urban and community design. Health-oriented planning views the many intangible components of the planner's toolbox—networking, collaborative capacity, communication skills and interpretation—to be just as important as regulatory tools like zoning in fostering healthy communities (Barton, 2010, Crawford, 2010). Some planning scholars emphasize that, in order to fully address community health in planning practice, planners must become involved in areas traditionally left to other specialists like social workers, nurses, economic developers, architects and transport engineers (Corburn, 2009, Barton, 2005).

Both of the above approaches emphasize the importance of planners connecting with people from the health professions to support planning that provides a high quality of life for all residents. Many of the manuals and guidelines developed to encourage planning and urban design that support healthy lifestyles have pointed out that communities that support physical activity and mixed land-uses are also low-carbon environments and support climate change mitigation (CIP, 2012; OPPI, 2009). Having the same actions address multiple agendas (climate change and health) can be beneficial to bringing together the collective resources of multiple agencies and stakeholders to support improved community design and planning (Chipman, 2010; Burns and Bond, 2008, Frumpkin, Frank and Jackson, 2004). Professional planners in practice may be limited in which approach they can take, as processes and standards are largely defined by legislation. However, as is demonstrated by projects in Canada (CIP, 2012) and elsewhere (Pan-Canadian Public Health Network, 2010), creativity and special initiatives can expand planning discussions to include health. However, there is currently no consensus in the planning profession on whether health should be officially incorporated into practice.

2.8 Theoretical Models of Practice for Planning and Health

In my investigation of the literature on planning and health I discovered three main models of practice that deserve noting in this literature review. These are Healthy Urban Planning, Healthy City Planning and Healthy Built Environments.

2.8.1 HEALTHY URBAN PLANNING

Healthy Urban Planning came out of the WHO Healthy Cities Program which began in 1988. Healthy Urban Planning (HUP) conceptually links the environment and processes that create and shape cities to the health of residents. HUP is largely concerned with looking at urban planning from an ecological perspective. HUP links health outcomes to typical planning processes, such as zoning practice, development approvals and public participation.

> *The condition of the urban environment and how it is managed and used by its inhabitants are fundamental to human health and well-being. Many of the problems in cities today relate to poor residential and other environments, poverty, inequity, pollution, unemployment, lack of access to jobs, goods and services, and lack of community cohesion. Urban planners influence the social, physical and economic environments and how cities function. They therefore have a key role to play in addressing these problems and securing conditions in cities conducive to health and well-being and a high quality of life.*
> (Barton and Tsourou, 2000, p. 1).

Healthy Urban Planning promotes the idea that the city is much more than buildings, streets, and open spaces; it is a dynamic social space, the health of which is closely linked to that of its residents (Northridge and Freeman, 2011).

2.8.2 HEALTHY CITY PLANNING

Healthy City Planning (HCP) is a specific approach to incorporating health considerations into planning and urban development proposed by Jason Corburn of U.C. Berkley. HCP adopts and accepts much of the research on the correlation between urban design and urban settlement patterns but seeks to get at the underlying dynamics which shape development decisions. HCP is largely a theoretical frame for interpreting urban development from the perspective of health outcomes, in particular as they relate to the urban poor, immigrants, youth and the elderly and other marginalized groups. HCP's main purpose is to reframe the ways in which decisions are made in order to make the governance structure health centric.

> *"Healthy urban governance, where both the substantive content of what contributes to human well-being – the physical and social qualities that promote urban health – and the decision-making processes and institutions that shape the distributions of these qualities across places and populations are improved"*

(Corburn, 2009, p. 2).

Healthy City Planning theory is critical of planning activities that focus on built environment interventions to support physical activity and health. Corburn (2009) suggests that without the necessary institutional and political change, these efforts will fail to actually change the health of those who are most vulnerable. The fundamental problem with Healthy City Planning theory is that, if adopted, planners using this theory are explicitly adopting an advocacy position in their practice, as this approach is explicitly focused on addressing inequalities. This can limit planners' credibility with the development community and create unnecessary conflict (Barr, 2011).

2.8.3 HEALTHY BUILT ENVIRONMENTS

Healthy Built Environments (HBE) takes a primarily practice based approach to addressing health. The emphasis is on the physical design of communities, both urban and rural. HBE, while emphasizing the role of planning over shaping the built form of communities, does not totally disregard the engagement and communicative role of planning. The focus of this approach to planning and its connection to health is on how the physical structure of the community affects individual and community behaviour (Renalds, Smith and Hale, 2010). Healthy Built Environments research essentially looks for correlations between community design factors and health outcomes (Renalds, Smith, and Hale, 2010). The defining feature of this approach is that the research does not look at the built environment in terms of how political, economic or social norms shaped it; rather the focus is on objectivity and quantification (Frank et al. 2005, Barr, 2011). HBE focuses on direct actions in policy and design. Materials such as toolkits and manuals aimed at professional practice fall within this category. The material used for content analysis is almost entirely composed of these materials. Space, movement, quality of buildings and availability of resources such as recreation, food (retail and small scale personal production) are the primary foci of HBE.

2.9 WORKING TOGETHER ON HEALTH

> *"Addressing the social determinants of health to ensure the best health possible for all people in our communities is a shared responsibility..No one sector, agency or public can tackle these issues alone but we must collectively ensure that all levels of public policy support healthy lives."*
> Patricia Daly, Medical Health Officer for Vancouver Costal Health (October 2008). (SmartGrowth BC, 2009).

In the discipline of planning, collaborative work has become a large component of professional practice (Healy, 1997). The idea that planners, the public and other special interest groups should work collaboratively to address complex problems has been present in planning theory since the 1960's with Paul Davidoff's call for

planning to take on an advocacy role for marginalized urban groups (Healy, 1997). Collaborative planning as a practice is newer. Collaborative planning has been advocated by numerous planning theory scholars, one of the most notable being Patsy Healy. Healy (1997) envisioned collaborative planning as a process where traditional hierarchical and bureaucratic processes could be replaced with processes where different stakeholders could be brought together to interactively manage their collective affairs. Healy (1997) felt that this process should be as inclusive as possible. This total inclusiveness is often what she is criticised for. Some scholars argue that having too many voices in the planning process can negatively affect the clarity of arguments (Brand and Gaffikin, 2007). Regardless, Healy's theory of collaborative planning has had a significant impact on planning practice (Brand and Gaffikin, 2007).

Nearly all the research to date that relates the built environment and planning policy to health discusses the need to foster collaborative research and action between planners and health sector employees to address community health issues (Barr, 2011 B; Botchwey et al. 2009). Literature that discusses collaboration between health and planning professionals is most often focused on sharing expertise, knowledge, and resources in an integrative fashion to address health at the research or project level (Chapman, 2010; Barton, 2010; Corburn, 2009; Srivinasan, O'Fallon and Dearry, 2008). A reason for including public health in planning activities, (beyond simply gaining access to health data and it's interpretation) in particular long range and large scale developments, is the potential for advocacy (Corburn, 2009, De Ville and Sparrow, 2008). Often planners are expected to objectively present information and must not be seen to be advocating for specific issues, such as health (Fischler, 2012). Having an ongoing dialogue with public health practitioners allows for the inclusion of a voice that can represent the health of the community, in instances where planners may be unable to do so because of their professional role or simply a lack of firsthand knowledge (Lawrence and Kavage, 2008).

Very few authors have presented examples of how collaborative action should be undertaken (Moore, 2011; Corburn, 2009; Pothukuchi, 2005). Some barriers to collaborative action between health and planning professionals have been identified: professional compatibility (PHAC, 2009), knowledge and data gaps (PHAC, 2009, Barr, 2011), and the lack of recognition of a connection between the disciplines (Barr, 2011).

PROFESSIONAL COMPATIBILITY -The capacity for ideas and concepts to be effectively communicated between the planning and health disciplines is an essential component to success (Kidd, 2007). The BC Health Authority created a series of primers and workshop materials to allow planners and public health to work collaboratively

because there was recognition amongst practitioners and academics that collaborative efforts may be problematic due to differences in jargon, techniques and the professional and legal boundaries of each discipline (BC Provincial Health Authority, 2010).

KNOWLEDGE GAPS–A general lack of knowledge amongst planning professionals about health issues, and a lack of easily available evidence to advise built environment policy makers and practitioners about how the built environment (and, in particular, the urban form) affects health is a significant barrier (CIP, 2012). Activity connecting planners to health workers is crucial if major public health challenges such as obesity and the impacts of climate change such as extreme weather events are to be tackled effectively. (Pilkington, Grant, and Orme, 2008; CIP, 2012). While attempts have been made to strengthen this connection through the development of post-secondary curriculum (Botchwey et al.2009; Capon and Thompson, 2010), there is a dearth of material on how to best manage the theoretical and practical differences between the planning and health professions (Barton, 2010; Corburn, 2009). Research on how to approach collaboration between planners and professionals in the health sector is limited. There is a need for examples, both positive and negative, to lead discussion and future research as well as move the idea from theory to practice.

2.10 RURAL COMMUNITIES AND RURAL PLANNING

The following section briefly outlines some of the main differences between urban and rural areas and how these relate to addressing health in planning practice.

2.10.1 WHAT IS 'RURAL' AND HOW DO WE MEASURE IT?

For many years scholars in a wide variety of fields have been attempting to develop an objective measure to define rural areas (du Plessis at al. 2001). For some "rural" is a social construction, reflecting local history, cultural norms, lifestyles, occupations and institutions (Reimer and Bollman, 2010). Others see it as a residual category: anything that is not urban (Reimer and Bollman, 2010). For many it is a factor of the population density of a particular place and the distances between places where people live, work, go to school and enjoy recreation (Reimer and Bollman, 2010, Hodge and Gordon, 2008). In terms of socio-economic policy and planning these characteristics are particularly relevant as distance from towns is directly related to the transaction costs of economic activities, and density influences the economic mix of a local economy (Polese and Shearmur, 2005). Density and distance also impact infrastructure costs associated with utilities, municipal services and transportation networks

(Hodge and Gordon, 2008). For example, some municipal services such as sewer and water are not offered in rural areas because the cost to do so within a dispersed settlement is too high (Hodge and Gordon, 2008).

The differences between urban and rural areas are substantial enough to justify different streams of planning education, as evidenced by some universities offering planning degrees in rural planning, such as the University of Guelph and Dalhousie University in Canada. While urban areas are often easily identified and have specific agreed upon classifications (du Plessis et al, 2001), the exact definition of a rural area remains largely ambiguous. Some scholars have stated that "rural" is easily identified once you see it, but quantifying rurality remains difficult (Reimer, 2004). Often the simplest method for defining a place as rural is finding a reason to classify it as non-urban. In order to conduct quantitative analysis of rural areas, a variety of classification systems have been developed. Each classification system carries limitations and many rural scholars suggest that researchers should be careful when deciding how to define rural and should be aware of the limitations and complications associated with each classification (Reimer and Bollman, 2010; du Pleiss, Beshiri, Bollman and Clemenson, 2001).

2.10.2 Rural Health

Rural health statistics indicate that rural residents are, on average, less healthy than their urban counterparts, and are more likely than urbanites to exhibit poor health practices such as smoking and unhealthy eating (PHAC, 2006; Mitura and Bollman, 2003). The only nation-wide Canadian study of rural health was completed in 2006 by the Public Health Agency of Canada (PHAC), titled *How Healthy Are Rural Canadians? An Assessment of their Health Status and Health Determinants.* The study found that generally, across nearly all health indicators, and with the exception of cancer, rural residents were on average likely to be less healthy than urban residents. Death rates due to accidents are much higher in rural areas due to the prevalence of traditional economic activities such as farming, forestry and fishing, (PHAC, 2006). *How Healthy Are Rural Canadians?* (PHAC, 2006) suggested that, to be effective, initiatives to improve health outcomes in rural areas must take into account the spatial, economic, social and environmental aspects of the rural context .

2.10.3 Planning in Rural Areas

Planning in small town and rural Canada has always presented distinct challenges. Thomas Adams, an immigrant from Britain to Canada, was one of the first professional planners to document the specific issues that

small town and rural areas in Canada face. Depopulation, shifting economic structures that benefit urban over rural areas, the encroachment of urban areas on agricultural land, overdependence on primary resources and agriculture and the complications of low densities and at times vast distances between households and services are all issues that, to this day, characterise small town and rural Canada (Caldwell, 2011, Hodge and Gordon, 2008). Adams also raised the concerns of rural residents such as the distrust of land-use planning and the restrictions it imposes on landowners' autonomy, and the reticence to make planning an official and legally binding process (Caldwell, 2011).

In the practice of planning at the small town and rural level there are several characteristics that need to be kept in mind. First and foremost is the issue of reduced resources and capacity (Reimer and Bollman, 2010). Rural and small town planners are restricted by and large in how they tackle development. Often a small town planning department (if there is one) has one professional planner and perhaps one or more support staff, such as a Geographic Information Systems technician, development officer or an administrative assistant (Hodge and Gordon, 2008). Limited human resources mean that rural planners are often involved in multiple areas related to community development (Markey, Connolly and Roseland, 2010; Hodge and Gordon, 2008). This demand for rural and small town planners to be generalists is balanced by the often slow pace of development in rural areas (Caldwell, 2010, Hodge and Gordon, 2008), meaning that planners may have time to prepare for and respond to a wide variety of demands.

Markey, Connolly and Roseland (2010) and Wells (2002) suggest that concepts such as sustainability tend to have less relevance for rural residents or may be seen as threatening traditional resource-based economic activities or rural residents' sense of autonomy in the use of their land. Planning for healthy communities is based on many of the same core principles as sustainability (Barton and Tsourou, 2000) and therefore may be seen as irrelevant in rural contexts.

> *"There are a variety of dimensions to consider when assessing community planning capacity, including expertise, access to information and the ability to mobilize a critical mass of individuals willing to engage with and sustain ongoing planning processes. The literature identifies rural communities as facing challenges in each of these areas."*
>
> (Markey, Connolly and Roseland, 2010, pg. 7)

Parkinson and Roseland (2002) suggest that these capacity limitations are why most rural communities are less likely than urban areas to engage in projects that require complex planning and research.

2.11 GAPS

Three main gaps exist in the research on planning and health:

a. research on health and planning in rural and small town environments,
b. research on how to incorporate health issues into planning practice and
c. the manner in which planners, public health staff, and other health sector workers should address community health issues collaboratively.

This thesis research addresses the point at which all these issues intersect. Several other scholars have completed work in the above areas (Millward and Spinney, 2011a and b; Grant and Manuel, 2011; Carson et al., 2011; Cliff, 2008; Casey et al. 2008; Boehmer, 2006). However, only Grant and Manuel (2011) and Cliff (2008) discuss planning practice issues in relation to rural or remote areas, but each work focuses on planning in regards to a specific population—youth and aboriginal communities, respectively.

The literature that does touch on rural built environments and health is largely focused on evaluating and measuring environmental features affecting chronic disease, rather than on planning practice, and usually by drawing comparisons between urban and rural environments (Millward and Spinney, 2011a and b; Boehmer, 2006). Despite an extensive literature search in journals that focus on planning, public health, geography and preventative medicine, I was unable to locate research on how collaboration between public health and planning professionals is applied in a rural context.

The following section will describe the methods used in this research to better understand the relationship between planning practice and health in the largely rural province of Nova Scotia.

3 METHODOLOGY

3.1 CASE STUDY APPROACH

This thesis research looks at how planners and CAO's in Nova Scotia address health concerns in their practice. This research design uses a case study approach, using a single case study, the province of Nova Scotia. The case study design uses mixed methods to answer the research questions. A mixed methods approach is often used in case study research (Yin, 1994). Yin (1994) identifies specific circumstances under which a case study approach is most appropriate: *a "how" or "why" question is being asked about a contemporary set of events over which the investigator has little or no control* (Yin, 1994, pg. 9). In general, case studies are employed when there is little research or theory to guide an experimental research design (Yin, 2009). Case studies are useful as they maintain the holistic and meaningful characteristics of real life events, organizational processes, corporate or institutional behavior and community development (Yin, 2009).

The main research question (*How and to what extent do planners in small and rural municipalities in Nova Scotia acknowledge and address community health challenges in the course of their practice?)* and sub questions all fall under the "how" or "why" category. This research seeks to understand contemporary planning practice and in this circumstance the researcher has no control over the 'events' i.e. planning practice. The reason Nova Scotia was selected was because it is composed primarily of small and rural communities. 40 of the 54 total municipalities have populations below 10,000 people and 33% of that 40 are below 2,000 people. Nova Scotia, has both a manageable number of municipalities (n=54) and all municipalities, even the capital region, the Halifax Regional Municipality have a large proportion of what can be classified as rural area within their jurisdiction.

Case studies inherently value context, so adopting a case study approach means that the researcher believes the context is highly relevant to the phenomenon under investigation (Yin, 1994). In order to gather in-depth contextual information qualitative methods will also be used. Qualitative methods, similar to the case study approach, are often used where there is limited theory or research on a given topic or the research questions seek to understand the "why" of a phenomenon rather than "how many" (Yin, 1994, Creswell, 2009).

The external validity of case study research is limited and therefore care must be taken to not generalize findings to other contexts (Bryman and Teevan, 2005, May, 2008). External validity is not a concern in this research because the research question is context specific. In commencing this study, I was unaware of what to expect as research on the subject of health and planning in non-urban areas is a significant gap in the literature (RPTI, 2009,

Barr, 2010, Ding & Gebel, 2012) There have however been a number of studies in Nova Scotia that investigated the relationship between the built environment, planning, and health. These studies covered a range of issues: environmental correlates of health and physical activity in rural areas (Millward and Spinney, 2011), fast food restaurant locations relative to deprivation (Jones, 2009), development of indicators for health-oriented design (Curran, Grant & Wood, 2006), and a study on the attitudes of planners and others on investing in infrastructure to support increased physical activity in youth (Grant et al. 2010; Grant & Manuel, 2011). However, to date I have been unable to locate research that focuses on health-oriented planning in terms of its implications for planning practice in a rural context .

3.2 RESEARCH PARTICIPANTS

I sought to have each municipal unit in Nova Scotia participate in this study (Total n=54). Those invited to participate were municipal directors of planning or those who were in an equivalent position for each municipal unit. In Nova Scotia, Chief Administrative Officers (CAO) or Municipal Clerks would be the most likely people to be in charge of development control and planning work in municipalities where a professional planner is absent. I specifically wanted to speak with those that would have in-depth knowledge of the mechanics of land-use planning and development control, but also would be able to discuss higher level policy issues.

This research received full ethics clearance from the Office of Research Ethics at the University of Waterloo on June 21, 2011, with a modification submitted and approved September 22, 2011. Participants were initially contacted via email. Each planning director or CAO was contacted via email and was sent an information letter outlining the research and the link to the online survey. A copy of the information letter and consent form has been included in (Appendix A).

3.3 METHODS

3.3.1 REVIEW OF METHODS

Research to date that investigates health issues in planning practice has focused on three areas:

- Developing objective measures of the built environment and the impact of built form, features and services on individual and community health (Frank et al., 2005).
- Integration of health and planning practice and policy (Barton, 2000).
- Identifying theory and practice that supports the connection of health and planning professionals (Kidd, 2007; Corburn, 2009).

This research looks to add to this literature by answering the following questions:

How and to what extent do planners in small and rural municipalities in Nova Scotia acknowledge and address community health challenges in the course of their practice?

I. How do planners understand health as it relates to their practice?

II. How does working in non-urban areas affect planners' responses to health challenges in practice?

III. What opportunities and barriers do planners identify in integrating health challenges into their practice?

3.3.1.1 OBJECTIVE MEASURES OF THE BUILT ENVIRONMENT AND THE IMPACT OF BUILT FORM, FEATURES AND SERVICES ON INDIVIDUAL AND COMMUNITY HEALTH.

Salens, Frank et al. (2004) and many others (Ewing and Cervero, 2010; Frost at al., 2010; Curran, Grant and Wood, 2006; Frank et al., 2005) have sought to objectively measure the health impacts of different built environment features (bicycle lanes, sidewalks, parks) forms (high density, mixed use, gridiron street patterns) and services (food retail, recreation facilities, health services) through quantitative methods. The use of GIS data to measure physical activity has been particularly prevalent. The goal of much of this quantitative work is to better understand how to use urban design and land-use planning to create healthier communities (Kim et al. 2010). Health promotion agencies such as the Heart and Stroke Foundation and some planning organizations such as the Ontario Professional Planners Institute have taken this research and used its findings to create design, best practices and policy manuals as well as audit tools to plan communities.

3.3.1.2 INTEGRATION OF HEALTH AND PLANNING PRACTICE AND POLICY

A second focus of current research dealing with health, planning, and the built environment has been on the integration of health as a priority in planning practice. This research has primarily used qualitative research, to examine how planners and other municipal officials interpret and act upon health issues (Moore, 2011; Grant & Manuel, 2011; Barton, 2010). A Canadian exception is the *Taking the Pulse* survey distributed by the Canadian Institute of Planners, in May, 2011 (Appendix B). Research looking at the integration of health into planning practice often discusses issues in general terms and looks at planning as a whole, rather than what can be the very different roles of planners in the public versus private sector or the differences between specialized versus generalist planners (Corburn, 2009) or rural versus urban planning (Ding and Gebel, 2012).

3.3.1.3 CONNECTING HEALTH AND PLANNING PROFESSIONALS THROUGH THEORY AND PRACTICE

The third thrust of research has been on re-establishing the link between planning and health theoretically and through collaborative professional practice. Research has covered either theoretical approaches or has examined case studies of collaborative efforts between planning and health disciplines (Capon and Thompson, 2010; Botchwey et al. 2009; Srinivasan, O'Fallon and Dearry, 2003). Concrete or systematic examples of how, with whom, and under what circumstances collaboration between planners and health professionals should take place has been limited (Corburn, 2009).

3.4 DATA COLLECTION METHODS

This research employed a literature review and an iterative exploratory approach to the central research question. Table3.1 illustrates these steps.

The first stage involved a broad review of the literature on planning and health followed by a content analysis of professional literature (planning manuals, toolkits) on incorporating health into planning and urban design. This stage provided a review of current research and theories on the connection between planning and health and the prevalence of rural research on this topic. The results of the content analysis were used to develop survey questions.

The second stage involved collecting primary information from research participants using sequential methods. The first method used was an online survey. The survey served two purposes, a) to gauge the respondents' understanding and experience with the research topic: planning and its relation to health and, b) to develop questions for in-depth interviews. At the end of the online survey participants were invited to participate in a follow up interview. Interviews were semi-structured using both the research questions and the responses from participants as guides. Interview participants were encouraged to discuss what they felt was relevant.

Often quantitative surveys follow qualitative interviews or focus groups which are used to generate meaningful questions for the survey, (Creswell, 2009, Bryman & Teevan, 2005). In this research this was not deemed the most effective route to exploring the main research questions. The decision to gather information through a survey and then interviews was based on informal discussions over the course of 2010 with planners, public health, and municipal officials. From these conversations it became apparent that health was not a common consideration in planning practice. Therefore, interviews or focus group discussions were deemed to have been

pointless as participants would not have been be familiar with the research area. The survey used in this research was employed first to gauge what the baseline understanding of the ideas and concepts under examination, namely planning for healthy communities was across the province. At the outset of the research it was my opinion that meaningful interview questions could not have been developed until it was known whether study participants were at least aware of the subject area covered in this research.

TABLE 3-1: Research Stages

Research Steps	**Research Method**
Stage 1: Gathering contextual information to guide information collection	Literature Review
	Content Analysis of Planning Manuals and Guides
Stage 2: Collecting primary information	Online Survey
	In depth Interviews

Table 3-2 below summarizes areas of enquiry related to the research questions and the method employed in gathering information.

TABLE 3-2: AREAS OF ENQUIRY

Area of Inquiry	**Literature Review**	**Content analysis**	**Online Survey**	**Semi-structured Interviews**
Knowledge of health-oriented planning concepts and relationship between planning and health.	✓		✓	✓
Experience with collaborative work with health sector/professionals.	✓		✓	✓
Influence of community type (urban vs. rural) on response (policy & action) to health and planning issues.	✓		✓	✓
Needs associated with pursuing healthy planning and land-use policy.	✓		✓	✓
Barriers to health-oriented planning practice	✓	✓	✓	✓

Defining features of health-oriented planning & healthy built environments	✓	✓	✓	✓

3.5 Content Analysis Methodology

Content analysis was used to gain insight into what advice experts, academics, and agencies such as the Heart & Stroke Foundation of Canada, were providing to planners and other persons interested in health, the built environment, and planning. In this research the content analysis was not used directly as a tool to answer the primary research questions, but more as a contextual basis from which to develop the questionnaire and the interview process and later to inform the analysis of the results of these data collection methods. The use of tool kits, guideline documents, and manuals are all common practice in planning.

Content analysis can take both a qualitative or quantitative form – the latter usually entails the counting of specific words or phrases and the former examines how the document interprets the relevant social context (May, 2008). The form of content analysis used in this research is quantitative. Content analysis entails a largely iterative process, whereby a document is visited several times over the course of the analysis. According to Bouma & Ling (2006) content analysis follows much the same process as an observational study, in that prior to investigation often a checklist is developed which will categorize what is observed in the reading of the document. When using a content analysis method it is important to ensure that the documents being reviewed are similar enough to be compared. Comparing a popular periodical like the New Yorker, to the Journal of the American Planning Association would not result in useful conclusions as they are not designed for the same audience and differ greatly in what they value as knowledge, therefore content analysis may not be appropriate in those circumstances (May, 2008).

Planning toolkits and manuals are often designed for specific users, a specific scope, and scale of analysis, (site versus regional scale) or are focused on individual issues such as transportation, finance, urban design or health. Many manuals are not applicable to rural contexts, such as the Health & Urban Planning Toolkit (n.d.) by the Healthy Urban Development Unit of the City of London's, National Health Service branch. The documents chosen for this content analysis research presented themselves as general and applicable to both urban and rural contexts, or least not explicitly urban. Documents for the content analysis were collected through an internet search using the search terms: health and planning, healthy planning, healthy urban design and planning for health. Also, several

manuals were located through the literature review. To be considered for analysis a document had to meet the following criteria:

- The document focused on the health impacts of the built environment and planning.
- The document provided advice or guidance on how to use planning, policy and design to improve health.
- The document suggested that the material provided was applicable to both urban and rural contexts or was not explicitly urban.

The content analysis was intended to be broad, but also to gather some key information: a) who are the documents intended for, b) are the documents heavily weighted towards urban environments, c) what features and attributes (physical & non-physical) do the documents present as most important to supporting healthy built environments and/or communities, d) do they support interdisciplinary action, e) what do they promote as central issues in creating healthy communities and/or healthy built environments, and f) what spatial scale do the documents focus on?

3.6 SURVEY

Surveys typically use either a general survey method which seeks to make generalizations about a population based on the sample surveyed or they employ an experimental design which seeks to validate or reject a hypothesis (Bouma& Ling, 2006).The survey used in this research seeks to make generalizations and as such follows a general survey method. Surveys usually entail some form of random sampling, in order to make generalizations, and also to reduce potential bias and to allow for statistical assumptions (Creswell, 2009). In probability sampling, a specific set of population characteristics is typically used to determine the sample, such as people from a specific town or university. Non-probability sampling is sometimes used synonymously with purposeful sampling, where a specific an individual (e.g. occupation) or set (e.g. occupation, age, city of residence) of characteristics are used to select participants. (May, 2008). In non-probability samples, the ability to generalize from the sample to the general population is limited if not erroneous. The non-probability sample can however provide a good picture of a specific subset of the population (Bryman and Teevan, 2005). In this research, there is no sampling procedure because the goal was to contact all directors of planning, or their equivalent, for all municipalities in Nova Scotia.

Another reason for employing a survey instrument is that surveys are an effective method for gathering information over large geographic areas such as an entire province (Bryman and Teevan, 2008, Creswell, 2009). A

survey was deemed highly appropriate in order to rapidly gather information from across the Nova Scotia. The use of a survey to investigate how planners across Canada integrated health issues into their planning practice has been used by the Canadian Institute of Planners (CIP, 2011). Additionally sampling specific occupations to understand how health issues figured in planning and development in the Atlantic context has been employed before (Grant & Manuel, 2011; Grant et al. 2010).

3.6.1 Online Survey

Bryman and Teevan (2005) identify numerous advantages associated with using an online survey format for collecting data, such as being less costly compared to mail-out and telephone surveys, having a faster response than mail out surveys, and are easier to collate results. Bryman and Teevan (2005) also point out that online surveys have been shown to have fewer unanswered questions than mail out surveys, and open ended questions are also more likely to be completed on online surveys. Bryman and Teevan, (2005) and (Bouma& Ling, 2006). identify some disadvantages of using online surveys:

- having the survey restricted to those who are "online"
- low response rates, due to the filtering process of email systems,
- the desired respondent simply not recognizing the survey as important due to the volume of other email and online requests and,
- the problem of multiple responses or,
- responses from a person who is not the desired respondent.

In the case of this research the first disadvantage is negligible due to the profession of the respondents, which necessitates that they have internet access.

At the end of the online survey, participants were asked whether they would like to participate in the interview portion of the research. If respondents indicated that they would like to participate in the interview portion, they were sent a follow-up email to arrange when and how the participant would like to conduct the interview. If the respondents did not respond within one week of the initial email follow up, an additional email was sent. If they had still not responded two weeks after the date of the first follow up email they were contacted via their publically listed telephone number and asked directly if they still wanted to participate in the survey. If they indicated interest an interview was scheduled.

3.6.2 SURVEY DESIGN

The survey followed specific lines of questioning based on the content analysis research, the literature review and the *Taking the Pulse* Survey distributed by the Canadian Institute of Planners, in March of 2011. Examples from three of the CIP survey questions) were used in my online survey. These questions, used in the *Taking the Pulse* survey, were deemed essential to gauge respondent's awareness of planning and its connection to health, health determinants that they related to planning, and to identify barriers to health-oriented planning experienced by respondents in Nova Scotia.

3.6.2.1 CONFIRMATION OF PROPER RESPONDENT

Surveys in general face the potential problem of unwanted responses (Creswell, 2009; Bryman and Teevan, 2005). In the case of online surveys, this can be additionally problematic as desired recipients can easily forward the online survey to unwanted individuals. The first five questions in my survey were used to ensure that the desired respondent was answering the survey. Information about respondents that could be substantiated, such as number of positions in a planning department, was compiled prior to the release of the survey. If answers from respondents varied dramatically from the collected data, then the response was examined more critically or discarded.

3.6.2.2 OPINION & ATTITUDES

Questions 8, 9and 10 asked whether respondents thought that health was an issue worth looking at in their work. Question 17 presented five statements to respondents and asked them to indicate what they thought of current research on health and the built environment and its relevance to non-urban areas.

3.6.2.3 ACTIONS & EFFORTS

In the current literature on health and planning, reoccurring questions are: where do the two disciplines intersect from a practitioner perspective? How and should collaboration between health and planning professionals occur? An objective of this study was to begin to understand what, if any, collaborative efforts have been undertaken in Nova Scotia between health and planning professionals. In the survey, two questions were asked about this connection. "Have you ever consulted any of the following sources about health issues in your community and if you have not already consulted any of these sources would you consider doing so in the future?" The rationale was:

1. To be able to identify whether planners had engaged in consultation with people in the health field;

2. To explore their openness to the idea, and also the level of importance they placed on accessing expertise and information on health issues and,
3. If a collaborative effort was identified, to explore the successes or failures that they experienced.

These questions were also intended for follow up in semi-structured interviews. Depending on their survey response interview participants were asked why they had, or had not, had any consultation with health professionals.

3.6.2.4 Health Determinants, Municipal Priorities & Built Form Characteristics

The remaining questions in my online survey were designed to understand:

a) Whether planners and CAOs saw their work as addressing any of the determinants of health.
b) What health supportive services (transit, recreation services), built form and urban design features planners and CAOs interpreted as important to their municipalities.
c) To have planners and CAOs gauge to what extent their particular municipality contained specific infrastructure and built forms that have been connected to health.

The list of health determinants identified by the World Health Organization (WHO http://www.who.int/hia/evidence/doh/en/) and the Public Health Agency of Canada (PHAC http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php) were selected as variables or they informed variables in several questions.

The last two questions were drawn from the eight health and planning documents used in the content analysis. Terms and concepts that appeared frequently, such as walkability, active transportation, or food security, etc. were used as variables in questions 18 and 19. Many of these variables have also been used in other research on the connection between health, the built environment and planning (Kim et al. 2010; Lake & Townsend, 2006; Curran, Grant & Wood, 2006).

3.7 Semi-structured Interviews

In a mixed-methods research approach interview processes can be structured, semi-structured or unstructured. In exploratory research however, unstructured or semi-structured is more common (Creswell, 2009). In this study a semi-structured approach was deemed best to gather meaningful responses. Semi-structured interviews allow interviewers to cover very specific topics, while still providing the respondent freedom in how they answer questions (Bryman and Teevan, 2005). The intent of the interviews was to allow respondents the opportunity to

expand upon their survey responses and provide insight into why the survey questions were or were not relevant to their context, or to provide examples of how they were tackling health concerns in their communities.

Interviews were held at times that were most convenient for the respondents. Respondents had the option to conduct the interview over the phone or in person. Some interviews were held within days of completing the online survey, others were at most a month after completion. The first interview was held on July 27, 2011 and the final interview was held on September 12, 2011. With the exception of one, all interviews were recorded using a digital recorder and transcribed. A copy of the transcription was sent to respondents for their approval prior to analysis. They were specifically asked to review the transcripts to see if their anonymity was suitably maintained, and if the transcript properly reflected their comments. Respondents were encouraged to add material that they felt would be useful in understanding their comments in the interview. After approval was received from all interview participants, the transcripts were given code numbers to maintain the anonymity of the respondents while still allowing them to be identified in the text.

3.8 SUMMARY

The research design for this project entailed the use of a mixed methods approach that focused on a single case study, Nova Scotia. Respondents came from the 54 municipalities that make up the province of Nova Scotia. The methodology for this research entails the use of three main methods of information gathering, content analysis, an online survey and in-depth interviews, a process known as triangulation.

4 CASE STUDY PROFILE

The reasons for selecting Nova Scotia are discussed in the Introduction and Methodology section, however, some points bear repeating. Nova Scotia was selected for this study for three primary reasons:

- As the province is largely made up of small towns and rural communities with only one major city, it provides a useful context for exploring health and planning from a rural perspective.
- The second reason being my familiarity with the social, economic and health issues prevalent in the in Nova Scotia.
- The final reason for selecting Nova Scotia was that in 2006 the province began investigating ways to reduce burgeoning health care system costs, through adopting a population health approach to public health and increasing investment in community level interventions (Corpus Sanchez, 2007; Nova Scotia Department of Health, 2006).

4.1 NOVA SCOTIA SOCIO-DEMOGRAPHIC PROFILE

Along with New Brunswick and Prince Edward Island Nova Scotia is a Maritime Province. Total land area of the province is 53,338 km^2, with a coastline of almost 7,400 kilometres. The 2011 Census identifies the total population of Nova Scotia as 921,727. Just over 53% of the total population resides in in the Halifax Regional Municipality (HRM, 390,308) and in the Cape Breton Regional Municipality (CBRM, 101,604). The province is divided into 18 counties and Nova Scotia has 54 municipalities of varying sizes:

Table 4-1: Nova Scotia Municipalities

Municipal Unit Typology	**Land Size (Range)**	**Population density(Range)**
3 Regional Municipalities	2,427.3 - 5,523.3 km^2	4.5 people per km^2 to 70 people per km^2
21 Rural Municipalities	1400km^2 -4,200 km^2	2 – 23 people per km^2
30 Towns	1.9km^2 - 19km^2	92.5 – 870 people per km^2.

Outside of the Halifax Regional Municipality (HRM) and the Cape Breton Regional Municipality (CBRM), and the Town of Truro no other municipalities have population centres over 8,000 people. The following section will

outline some of the demographic features of Nova Scotia. This section will also provide background on the planning system and health profile of the province.

Table 4-2: Socio-demographic Profile of Nova Scotia: 1996-2011

Nova Scotia Profile				
	1996	***2001***	***2006***	***2011***
Total Population	909,280	908,005	913,465	921,727
Population Density (Pop per km^2)	17.1	17.0	17.1	17.3
Median Age (#)	35.8	38.8,	41.8	43.7
% of population 65+ years of age	13.1	13.9	15.1	16.7
Median Household Income ($)	42,785	44,764	46,605	Data currently unavailable
Top three industrial sectors by total employment	• Retail trade industries • Health and social service industries • Manufacturing industries	• Retail trade industries • Health and social service industries • Manufacturing industries	• Retail trade industries • Health and social service industries • Manufacturing industries	Data currently unavailable.

Source: Statistics Canada, Census Profile, Nova Scotia, 1996, 2001, 2006, 2011

As the table indicates the Nova Scotia population is growing, although not dramatically. The population is getting older. Incomes are not growing particularly fast and are lower than the national median income of $53,634 as of the 2006 census. In Nova Scotia 45% of the population lives in what Statistics Canada defines as rural communities (Statistics Canada: Summary Tables: Population, urban and rural, by province and territory).

4.2 PLANNING IN NOVA SCOTIA

The practice of planning in Nova Scotia is governed by the Municipal Government Act (MGA). The one exception is the HRM which has its own legislation, the Halifax Charter. The MGA outlines the responsibilities and powers that are provided to municipalities through the province. Similar to other provinces, Nova Scotia sets policy guidelines in line with the MGA that are intended to guide planning decisions at the municipal level called the Statements of Provincial Interest. The Statements of Provincial Interest are intended to serve as guiding principles to help provincial and municipalities' government departments in making decisions regarding land use. The statements came into effect in April of 1999 and have not been amended since. At present, five Statements have been adopted.

- **Drinking Water Supply** - To protect the quality of drinking water within municipal water supply watersheds.
- **Flood Risk Areas** - To protect public safety and property and to reduce the requirement for flood control works and flood damage restoration in floodplains.

- **Agricultural Land** - To ensure the protection of agricultural land and to seek to maintain a viable and sustainable food resource base.
- **Housing** – To provide a range of housing opportunities that meets the needs of all Nova Scotians.
- **Infrastructure** - To make efficient use of community infrastructure, particularly municipal water and wastewater facilities.

The structure of municipal planning varies amongst municipal units across the province. Several municipal units have no planning department or planner. In these cases land-use planning and development issues are handled by a planning commission, the CAO, or by private consultants, or (in some cases a mix of these). In terms of planning and land use control each municipal unit can be categorized according to the following:

- (1) individual unit planning, i.e. planning department is specific to an individual municipality i.e. a singular community;
- (2) county/regional planning, i.e. planning is done over a broad geographical area and might encompass numerous villages and communities;
- (3) no planning, i.e. there is no planning department and any work required is done ad hoc through consultants or planning duties may be assumed under a different department's administrator;
- (4) planning commission or shared service planning, i.e. planning is done by a commission which works for two or more municipal units, or planning services are shared with more than one municipality as needed.

This typology of planning service has evolved over time in response to demographic and economic trends. Areas seeing population decline or disinvestment have tended to either avoid planning or have in some cases decided it is not an essential service (Stephen Feist, Senior Planner at Service Nova Scotia & Municipal Services, personal communication, July, 2009). Other responses to slow growth or modest decline have been to share services across a planning commission for a group of municipalities that could not justify a planning department or hiring a full time planner. In cases where CAOs are involved in the administration of land-use controls and development agreements, they may do all work internally or contract out some planning services. Thus each municipality has differing resources when it comes to managing planning and development.

4.2.1 LAND-USE PLANNING IN NOVA SCOTIA

Municipal planning is largely governed by a series of land-use planning documents. Many municipalities have developed Municipal Planning Strategies (MPS), which serve as the policy basis for land-use and other areas such as heritage, renewable energy, and so on. The Municipal Planning Strategy (MPS) is enacted through Land-use By-laws (LUB's), which provide specific instruction as to density, setbacks, and other site-specific regulations for development. Many municipalities have also adopted sub-division by-laws which regulate the subdivision or consolidation of lands. The LUBs and Subdivision by-laws must be in accordance with the MPS, which must reflect the intent of the Provincial Statements of Interest.

Land-use planning is not uniformly applied across Nova Scotia. While the majority of municipalities in Nova Scotia have created an MPS and LUBs there are several that have not, or they no longer use these land-use planning mechanisms. Several municipalities simply use the Provincial Statements of Interest, the Building Code of Canada and the standards set by the Department of Environment, as guidance (Figure 4-1).

Integrated Community Sustainability Plans (ICSPs) serve as an additional level of guidance in development practices in Nova Scotia. These plans were originally completed so that municipalities would be able to receive a share of the provincial gas tax to support infrastructure maintenance and upgrades. These plans outline the vision, goals, and objectives that, in theory, municipalities intend to work towards to make communities sustainable. The ICSPs are applied differently in various municipalities; some have been aligned with the local MPS. In some cases the MPS meets the requirements of the ICSP due to its emphasis on sustainability and consequently no ICSP has been developed.

Many municipalities also have plans that deal with specific issues such as economic development, transportation (including active transportation), heritage, or housing. In municipalities that utilize land-use planning, these special topic based plans are secondary to the MPS but must align with the policies of the MPS. In communities that do not control development with an MPS or LUB, these theme based plans may take a leading role in development decisions.

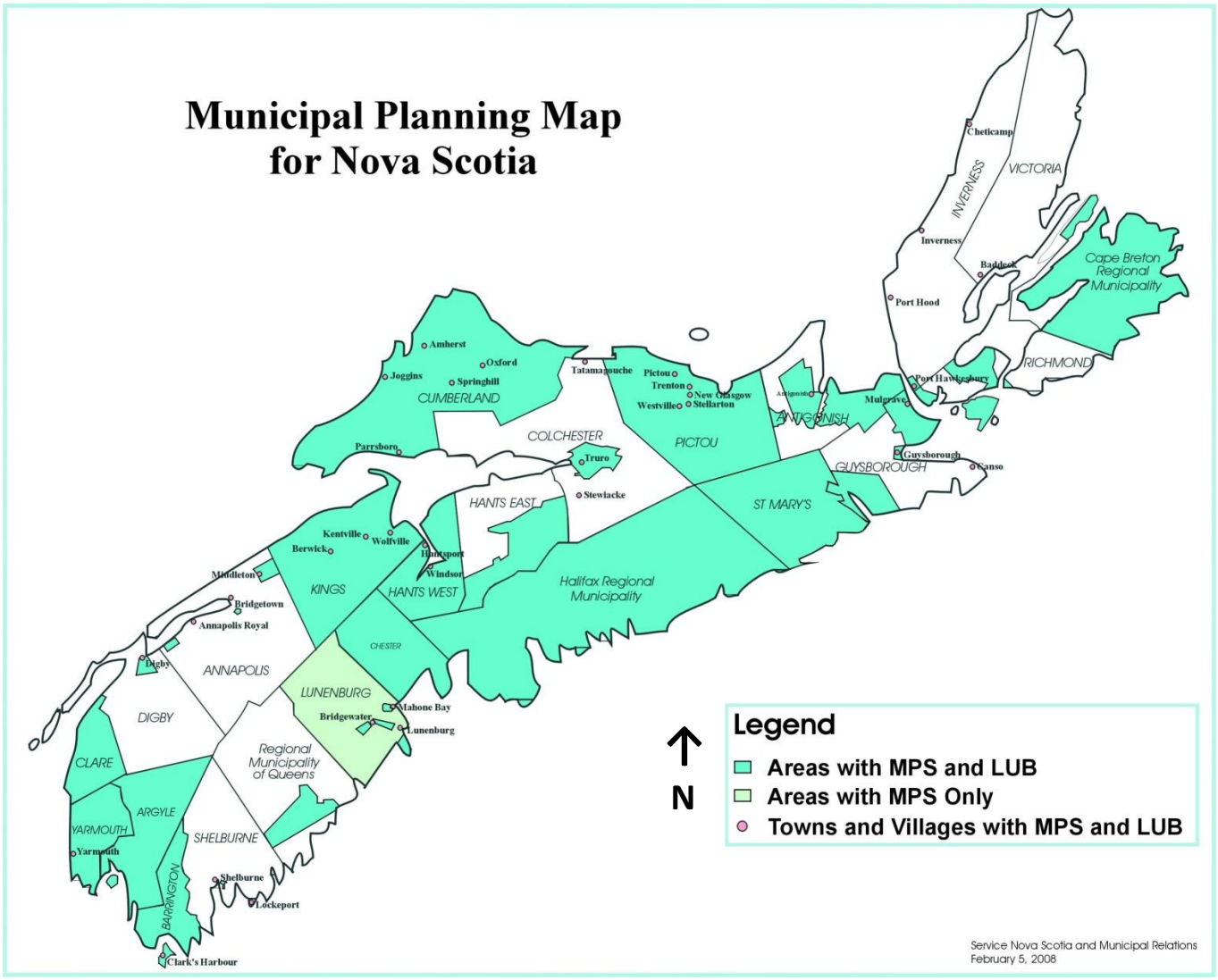

FIGURE 4-1: Areas with Municipal Planning Strategies and Land-Use By-Laws in Nova Scotia as of 2008
Source: Service Nova Scotia and Municipal Relations.

4.2.2 PLANNING ISSUES IN NOVA SCOTIA

Planning issues in Nova Scotia are not significantly different from those in other provinces. Municipalities in Nova Scotia are struggling with ageing infrastructure, an ageing population, and reductions in funding from senior levels of government and downloading of costs for services. Certain issues, for example transportation, are pressing. In rural communities transportation is a significant factor in accessing employment and essential services, such as health care. Due to the dispersed settlement pattern through most of the province, most people are dependent on cars to access employment, retail, and services. Pedestrian and cyclist infrastructure is limited. The majority of

the roads in the province are the responsibility of the provincial Department of Transportation, which makes decisions on type, quality and maintenance of roads provided.

4.3 Health Profile of Nova Scotia

Experts have suggested that people in the Atlantic provinces, which includes Nova Scotia, are, on average, living less healthy lives than people living in other parts of Canada (PHAC, 2006; Mitura and Bollman, 2003; GP1, 2002).

Table 4-3: Health Profile of Nova Scotia (2012)

Health Profile: June, 2012	**Nova Scotia**	**Canada**
Perceived health, very good or excellent (%)	58.5	60.5
Overweight or obese (%)	60.7	52.0
Diabetes (%)	8.0	6.2
Cancer incidence (per 100,000 population)	456.3	404.9
Current smoker, daily or occasional (%)	23.2	20.4
Heavy drinking[3] (%)	20.5	17.3
Leisure-time physical activity, moderately active or active (%)	52.6	52.3
Fruit and vegetable consumption, 5 times or more per day (%)	36.3	44.2
Participation and activity limitation, sometimes or often[4] (%)	35.7	28.0

Source: Statistics Canada. 2012. Health Profile., Statistics Canada Catalogue No. 82-228-XWE. Ottawa. Released June 19, 2012. http://www12.statcan.gc.ca/health-sante/82-228/index.cfm?Lang=E

4.3.1 Health Services & Public Health

In Nova Scotia the Department of Health & Wellness, is responsible for the funding and oversight of provincial health care (acute care) and public health programs. The responsibility for direct care, through medical centres and hospitals is divided amongst nine District Health Authorities which cover all of Nova Scotia. The District Health Authorities (DHA's) are semi-autonomous bodies which make decisions on health care provisions and public health programming based on regional need. Services and programs are not equal throughout the province. For example there are a larger number of programs and services aimed at addictions treatment in DHA 3: Annapolis Valley District Health Authority than in other parts of the province due to the prevalence of prescription drug abuse in that region (Moore, 2012). Figure 4-2 shows the geographic areas covered by each DHA.

[3] Population aged 12 and over who reported having 5 or more drinks on one occasion, at least once a month in the past year.
[4] Population aged 12 and over who reported being limited in selected activities (home, school, work and other activities) because of a physical condition, mental condition or health problem which has lasted or is expected to last 6 months or longer.

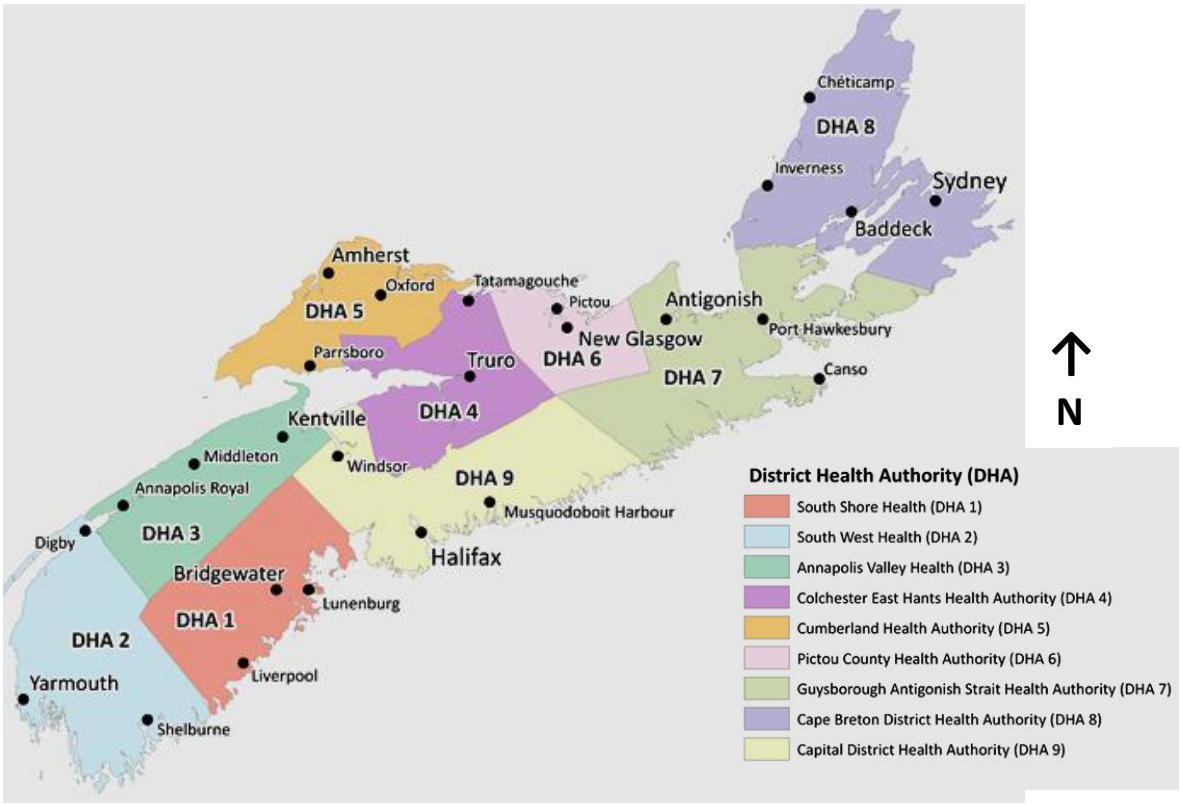

FIGURE 4-2: DISTRICT HEALTH AUTHORITIES (DHA): NOVA SCOTIA
Source: Nova Scotia Department of Health and Wellness, http://www.gov.ns.ca/health/ccs/

4.3.2 COMMUNITY HEALTH BOARDS

An interesting component of the structure of health services in Nova Scotia are the Community Health Boards (CHBs). There are 37 Community Health Boards across Nova Scotia. The CHBs are volunteer organizations that are intended to act as community level health advocates. The primary role of the CHBs is to collect and share information on health issues in their respective communities. CHBs are expected to:

- Collect and share information on local health needs and services.
- Encourage partnerships and community participation around health initiatives.
- Identify factors that influence health.
- Help educate the public about health and the health care system.
- Develop community health plans which set program and policy priorities and advise their health authority on ways to improve health and health services.
- Identify ways to make the communities healthier.
- Participate in the allocation of grants to promote better health.

(Community Health Boards Nova Scotia, *The Role of the CHB*, http://www.communityhealthboards.ns.ca).

In order to provide regionally specific health care, the CHBs as well as the District Health Authorities, were established. The CHBs serve as a link between the community and the District Health Authority. Every three years the CHBs are expected to develop a Community Health Plan that outlines the priority health issues for that health board and recommendations to the community and District Health Authority on how to address them.

4.3.3 Community Health Issues in Nova Scotia

Obesity, addiction, injuries (fatal and non-fatal), heart disease, diabetes, and infectious disease outbreaks are all community health issues. This research is primarily concerned with health issues that have been linked to social and environmental determinants of health. A review of each CHB's most recent Community Health Plan reveals a wide range of community health issues in Nova Scotia. The most frequently cited issues are:

- Chronic disease and its management;
- Addictions and substance abuse;
- Physical activity;
- Obesity;
- Lack of safe and affordable transportation;
- Employment and battling poverty;
- Improved information about health services and health trends.

As the above list of community health issues demonstrates, CHBs consider community health issues to be both physiological conditions but also behavioural, socio-economic and infrastructure based, like transportation. This view of community health issues is in line with the WHO, Public Health Agency of Canada, and the majority of academic literature dealing with the determinants of health (Raphael, Curry-Stevens and Bryant, 2008; WHO, 2008; PHAC, 2006).

4.4 Summary

Nova Scotia is a useful case study for assessing the influence of rurality on health-oriented planning as it is a primarily rural province and the population demonstrates negative health outcomes and behaviours that have been highlighted in the literature on planning, built environment ,and health.

Assuming that health is determined by more than just biological and physiological factors, and is also influenced by the shape and composition of our neighbourhoods, towns and regions, what role should those who shape where we live, work and play take in tackling community health issues? The following sections comprise the findings and analysis portion of this thesis. These sections will explore how planners in Nova Scotia interpret their role in dealing with community health issues.

5 CONTENT ANALYSIS

The purpose of the content analysis, as outlined in Chapter 3,was to identify subjects (e.g. collaboration, integration of health data into planning analysis, etc.) and categories (social and physical determinants of health) relevant to health-oriented planning. The content analysis was used to understand what guidance on health-oriented planning was being made available to planners and how the work of planning for healthy communities is being envisioned in professional planning literature. The content analysis process entailed several readings of each of the documents in Table 5-1.

A recent addition to the list of planning guides dealing with health is *Healthy Communities Practice Guide* (2012) by the Canadian Institute of Planners. This guide was released after the content analysis was complete. Consequently, the guidance provided in that document was not taken into consideration in the development of the survey questions. However, the majority of material included in the *Healthy Communities Practice Guide*, supports, or is drawn from the guides included in the document analysis.

TABLE 5-1: DOCUMENTS USED IN CONTENT ANALYSIS

Nova Scotia
Healthy Places Toolkit, (2007), Thompson, K. and M. Willison, for the Chebucto Communities Development Association, Spryfield, HRM, Nova Scotia
Ontario
Planning by Design: A Healthy Communities Handbook (2009), Ministry of Municipal Affairs and Housing, Ontario & Ontario Professional Planners Institute
British Columbia
Creating Healthy Communities: Tools and Actions to Foster Environments for Healthy Living (2009) Miro, Alice & Jodie Siu, SmartGrowth BC,
Canada
Shaping Active, Healthy Communities A Heart and Stroke Foundation built environment toolkit for change: (2010) Heart & Stroke Foundation of Canada
United States
How to Create and Implement Healthy General Plans: A toolkit for building healthy, vibrant communities (2008) Public Health Law & Policy and Raimi + Associates
United Kingdom
Building Health: Creating and enhancing places for healthy, active lives (2007) National Heart Forum, Living Streets, Commission for Architecture and the Built Environment (a)
Good Practice Note 5: Delivering Healthy Communities (2007) Royal Town Planning Institute (b)
Australia
Healthy by Design: a planners' guide to environments for active living (2004) National Heart Foundation of Australia

The content analysis looked to gather some key pieces of information:

a) For whom are the documents intended?
b) Are the documents heavily weighted towards urban environments?
c) What features and attributes (physical & non-physical) do the documents present as most important to supporting healthy built environments, planning and/or communities?
d) Do the documents support interdisciplinary action?
e) What do they promote as the central issue in creating healthy communities and/or healthy built environments?
f) What spatial scale do the documents focus on?

Information collected through the content analysis varied from straight forward word counts (e.g. how many times rural was mentioned) to identifying whether specific concepts were discussed, such as walkability, mixed use development or social equity. All the documents varied in there scope of issues as is shown in the analysis.

The documents were examined for the following:

1. Intended audience – who is the intended user of the document (e.g. planners, general public, engineers)?
2. Focus – what does the document emphasize as important to planning for a healthy community (e.g. active transportation, housing, governance)?
3. Counting of words (Not including headings or references)–what scale of settlement is most often referred to in the document (E.g. urban, rural, small/communit(ies)/town, village, suburban, peripheral, non-urban)?
4. Examples/Case Studies used – what examples/cases are used to demonstrate healthy planning practice? (E.g. major urban, urban, suburban/peri-urban, village, town, rural or remote)?
5. Key concepts: What community features or characteristics are identified as being important for a healthy community (E.g. Density, Mixed Use, connected streets, dedicated sidewalks/bike lanes/active transportation infrastructure, proximity, and variety of retail options)?

5.1 Content Analysis Summary

A number of common themes became apparent through the content analysis. A variety of built environment features, concepts, and planning theories such as active transportation, mid-high density, streets with high levels of connectivity, *Smart Growth* and *New Urbanism* appeared frequently in the documents (Table 5-3).

Support for collaboration with health sector professionals was emphasized in all documents, the reasons cited for collaboration were:

a. to increase capacity for research and access to funds through different funding streams,

b. to encourage multi-sectorial approaches needed to effectively shape policy and practice and to foster change in the population, also to avoid redundancies in projects and
c. to ensure that appropriate measures and interventions are applied through use of data and knowledge from both health and planning.

The majority of the documents analyzed looked at a broad scope of community design and planning issues. While the emphasis was on physical activity, other factors such as energy security, economic diversity, and the protection of agricultural land were identified. More emphasis was placed on the health impacts of physical environments and urban design over and above socio-economic and social capital factors, such as political engagement, poverty reduction, or social alienation. However, social and mental health outcomes were linked with physical components such as public space and connectivity between residential areas and retail and service areas. The relationship between environmental factors and health outcomes is not implied to be causal in the documents. Rather the emphasis is on providing the highest level of convenience for people to make choices that support social, physical, and economic health easier.

Surprisingly the emphasis of the documents was not as urban centric as I supposed. While urban examples dominated the documents, every document made reference to rural areas, either by way of a case study or example of a best practice. Several documents also identified that applying design and policy ideas designed for urban areas could be problematic in rural areas. Overwhelmingly the geographic scale discussed in the documents was the community or neighbourhood level. Interventions and design guidelines were often presented in a site specific manner. However, overall the emphasis was on urban rather than rural contexts.

In the documents, the street environment figures as a key unit of analysis and intervention for health-oriented planning and community design. The street level is the focus of many planning and design theories such as New *Urbanism*. The street is the main transportation space for pedestrians, it is where people, live, interact or avoid interaction due to fear and it is where retail and services are accessed. Consequently, the fact that the documents used for the content analysis, focus on the street level and is not surprising.

All documents referenced specific planning theories. *Smart Growth* and *New Urbanism* were mentioned the most; followed by *Transit Oriented Development* (TOD) and *Crime Prevention Through Environmental Design* (CPTED). These theories emphasize much of what was highlighted in the documents: emphasis on design and land-use, compact development, mixed use, walkable scale environments a variety of transport options and the importance of having retail and recreational options near residential areas.

As a group, these eight documents represent recent thinking on what constitutes health-oriented planning from three continents. Each document identifies the same or similar built environment features, socio-economic factors and approaches to planning. Based on this agreement amongst documents, the features identified in can be assumed to be representative of what is being presented to planners as planning theories and built environment characteristics that are supportive of health. Each document suggests inter-disciplinary collaboration between planners and professionals from the health sector. This agreement amongst documents points to the significance of collaboration to support health-oriented planning. Therefore, in order to investigate the extent to which planners in Nova Scotia address health considerations in their practice the items listed in Table 5-2 and Table 5-3 were used to shape questions in both the online survey and, to some extent, in-depth interviews.

TABLE 5-2: Content Analysis Results – Health-Oriented Planning: Summary

	Audience	*Supports Collaboration With Health Professions /Sector*	*Focus*	*Key Word Count: Unit of analysis– 4 most often cited units.(Excludes References, Index and Table of Contents)*	**Non-Urban Examples/ Case Studies Used**
1. Nova Scotia Healthy Places Toolkit, (2007), Thompson, K. and M. Willison,	All stakeholders	Yes	Comprehensive	1)Community 2)Neighbourhood 3)Urban 4)Town	None provided
2. Ontario Planning By Design: A Healthy Communities Handbook (2009), Ministry Of Municipal Affairs and Housing Ontario and Ontario Professional Planners Institute	All stakeholders	Yes	Comprehensive	1)Community 2)Rural 3)Urban 4)Neighbourhood	Yes, throughout
3. British Columbia Creating Healthy Communities: Tools and Actions to Foster Environments for Healthy Living (2009) Miro, Alice and Jodie Siu, SmartGrowth BC.,	Developers, Planners, Health Sector, local government and planning and health advisory boards	Yes	Comprehensive	1)Community 2)Neighbourhood 3)Urban 4)Town	Yes, throughout
4. Canada Shaping Active, Healthy Communities a Heart and Stroke Foundation Built Environment Toolkit for Change: (N.D.) Heart and Stroke Foundation of Canada	All stakeholders	Yes	Physical Activity	1)Community 2)Urban 3)Neighbourhood 4)Region	None provided
5. United States How to Create and Implement Healthy General Plans: A Toolkit for Building Healthy, Vibrant Communities (2008) Public Health Law and Policy and Raimi + Associates	Planners	Yes	Comprehensive	1)Community 2)Neighbourhood 3)Urban 4)Region	None provided
6. United Kingdom (A) Building Health: Creating and Enhancing Places for Healthy, Active Lives (2007) National Heart Forum, Living Streets, Commission for Architecture and the Built Environment	General public – land use professionals	Yes	Urban planning –Physical activity	1)Urban 2)Community/ Town 3)Village 4)Rural	Yes, a few
7. United Kingdom (B) Good Practice Note 5: Delivering Healthy Communities (2007) Royal Town Planning Institute	All stakeholders	Yes	Comprehensive	1)Community 2)Rural 3)Urban 4)Neighbourhood	NA
8. Australia Healthy by Design: A Planners' Guide to Environments for Active Living (2004) National Heart Foundation Of Australia	Health, Planning and Landscape Architecture professionals.	Yes	Physical Activity-Social inclusion	1)Community 2)Urban 3)Neighborhood 4)Rural	Yes, one

TABLE 5-3: Content Analysis Results – Health-Oriented Planning: Design, Development and Policy Suggestions

	Nova Scotia	**Ontario**	**British Columbia**	**Canada**	**United States**	**United Kingdom (a)**	**United Kingdom (b)**	**Australia**
Community scale that is Walkable/Cycle able	✓	✓	✓	✓	✓	✓	✓	✓
Mixed use development	✓	✓	✓	✓	✓	✓	✓	✓
Active transportation design/ infrastructure	✓	✓	✓	✓	✓	✓	✓	✓
Recreation, play and cultural facilities/areas (indoor and/or outdoor)	✓	✓	✓	✓	✓	✓	✓	✓
Interconnected street and path network	✓	✓		✓	✓	✓	✓	✓
Mid-High density development		✓	✓	✓	✓	✓		✓
Safety/CEPTED	✓	✓	✓		✓		✓	
Public transit/TOD	✓	✓		✓	✓			✓
Affordable housing	✓		✓	✓	✓	✓		
Access to healthy food	✓	✓	✓		✓		✓	
Green/natural space	✓	✓	✓			✓	✓	
Clean environment (air, soil, water)	✓	✓	✓				✓	
Aesthetically pleasing/Quality outdoor public/meeting space	✓	✓		✓				✓
Diversity of and close proximity to retail/services	✓				✓	✓	✓	
Community gardens							✓	✓
Injury Prevention		✓	✓					
Community engagement					✓			✓

6 SURVEY RESULTS

This research is the second survey of Canadian planners that looks at understanding how planners interpret and incorporate health issue into planning practice. The first survey, *Taking the Pulse: Benchmarking Planning for Healthier Communities* was sent to all members of the Canadian Institute of Planners (CIP) in the spring of 2011. The CIP survey sought input from professional planners in the public, private, and academic sectors as well as planning students, on how and to what extent they were aware of, and had engaged with health issues in their work. My survey (Appendix C) focused solely on Nova Scotia and only sought input from municipal Planning Directors, or in municipalities that lacked a planning department, the CAO or Municipal Clerk. The original intent was not to compare the results with the CIP survey, but ultimately some of the results were similar, and bear mentioning. The CIP survey results were released in 2012 and were therefore not reflected in the design of my survey.

6.1 SURVEY RESPONSE SETS

The total number of responses was 24 however 4 were dropped post-survey. Two response sets were dropped because too many questions were unanswered. Another two response sets were dropped because they were from planning commissions in Nova Scotia. The respondents from the planning commissions indicated frustration with the survey questions. The planning commission directors are responsible for planning services in multiple municipalities. They felt they could not reliably answer the questions as posed. Many of the survey questions did not make sense when applied to multiple municipalities simultaneously. To maintain the validity of the analysis the two response sets from planning commissions were dropped, leaving twenty total cases. Table 6-1 and 6-2 illustrate the breakdown of survey responses.

TABLE 6-1: SURVEY RESPONSE BREAKDOWN

SURVEY RESPONSES	
Total Responses	*24*
Total dropped due to validity and completeness issues	*4*
Total Responses used in analysis	**20**

TABLE 6-2: SURVEY RESPONSE BY RESPONDENT TYPE

TOTAL RESPONSES BY RESPONDENT TYPE	
Planning Director	**14**
CAO	**6**
Total Responses	**20**

I had hoped for a high response rate, (or even a 100% response rate) so that survey results could be run through a series of inferential statistics to look for relationships between rurality, planning department versus no planning department and population trends. Ultimately the sample size (n=20) negated the use of inferential statistics. Given the total sample size (n=20) the use of parametric tests would provide a misleading p-value and a Type 1 error, consequently non-parametric tests were chosen as the safest approach to analysis. The cell sizes for tests like chi-squared and non-parametric tests like Mann Whitney U and Kruskal Wallace were too small in most cases[5] or simply yielded non-significant results. Consequently, the use of inferential statistics was set aside and the analysis focused on descriptive statistics. A full description of the inferential statistical process is available in Appendix D.

6.2 INDEPENDENT VARIABLES USED IN ANALYSIS

To measure the effect of rurality on participants' responses a group of independent variables were selected based on a) their use in other studies looking at the connection between health and rurality (CIHR, 2006, Nova Scotia Food Security Network, 2008) and, b) their accepted use as measures of rurality elsewhere (du Plessis et al., 2001, Bollman & Clemenson, 2008, 2008; Douglas, 2010). The null hypothesis supposes that, interest and action by planners on community health issues, (for example obesity, social isolation, or malnutrition), is not affected by how rural a municipality may be. As was discussed in the literature review, defining and measuring rural is difficult, and can require multiple approaches (Reimer and Bollman, 2010; Hodge and Gordon, 2008; du Plessis et al. 2001). The variables chosen for this research are shown in Table 6-3: Independent Variables

[5] The development of a population size variable was used which, in most cases increased the cell size appropriately to at least 5. However, even in this case the relationships did not demonstrate a p-value suitable at the 0.05 confidence level.

TABLE 6-3: INDEPENDENT VARIABLES

Variable	Criteria	Developed by:
Metropolitan Influenced Zones (MIZ) categories[6]	Based on percentage of commuting for employment. Divided into 6 classes. Classes refer to the % of employed labour force who commutes to an urban core (either a Census Metropolitan Area (CMA =pop. >100,000) or a Census Agglomeration Area (CA = pop. 10,000 – 99,999). Classes rated from urban core to remote communities that have no commuting for employment. Classes are defined by the level of influence one area has over another, higher influence equals more commuting. The assumption is that the lower the strength of the MIZ influence rating the further the community is from the CMA and the more rural or remote it is. 1. Census Agglomeration (with census tracts) 10,000 – 99,999 2. Census Agglomeration (without census tracts) 10,000 – 99,999 3. Strong MIZ: 30% or more 4. Moderate MIZ: at least 5% but less than 30% 5. Weak MIZ: more than 0% but less than 5% 6. No MIZ: includes all CSDs that have a small employed labour force (less than 40 people), as well as any CSD that has no commuters to a CMA/CA urban core (	Developed by Statistics Canada (du Pleiss et al. 2001; Statistics Canada, 2006)
Organisation for Economic Co-operation and Development (OECD) definition	The OECD definitions are part of a territorial scheme for the collection of internationally comparable "rural" data. •Rural = < 150 people per Km2 •Non-rural = >150 people per Km2	The definition was developed for the Rural Indicators Project, an initiative of the OECD Rural Development Programme, launched in 1991 to support analysis and cooperation on rural development across the OECD membership (du Pleiss et al. 2001)
Nova Scotia Municipal classes	The reasons for the different classes of municipality are largely based on past legislative and service decisions . The classes were defined in a series of legislative acts which outlined different service requirements and taxation abilities based on the different classification. The three classes are: • Regional Municipality • Rural Municipality • Town	Developed originally by Federal government and modified through provincial legislation.
Population size variable	Definition set arbitrarily to split sample as evenly as possible to test for significance. • Less-rural to urban >10,000 population. • Rural< 10,000 population.	Developed by myself for the purpose of this research.
Population trend	Used to look for relationship between population trend and responses. • Growing – population increase between 2006-2011 • Decline – population decrease between 2006-2011	

[6] All municipalities within Nova Scotia are either CMA, CA (non-tracted), Moderately Influenced or Weakly Influenced.

The independent variables selected were assumed to have some level of influence over the responses from the survey participants. The strength of that influence was not assumed, only that it was present. In the analysis of the survey, other variables were considered, such as whether the respondent was a planner or not, and the number of employees in the planning department. However, these two variables appeared to have no effect on responses and were therefore left out of the analysis. In the interview results section both rurality and staff size were more significant in explaining participants' responses.

Overall the majority of respondents came from the more rural class of each variable (Table 6-2).

TABLE 6-4: RESPONDENTS (%) BY VARIABLE CLASSES

Variable	Classes	Urban or Rural	(%) of survey respondents	Number of respondents
Metropolitan Influenced Zones Classes	*CMA*	*Urban*	5%	1
	Census Agglomeration (without census tracts	*Less urban*	15%	3
	Moderate MIZ	*Less rural*	25%	5
	Weak MIZ	*Rural*	55%	11
Organisation for Economic Co-operation and Development (OECD) definition	*>150 persons per km2*	*Urban*	*35%*	7
	<150 persons per km^2	*Rural*	65%	13
Population size variable	*>10,000 persons*	*Urban*	40%	8
	< 10,000 persons	*Rural*	60%	12
NS Municipal classes	*Regional Municipality*	*NA*	15%	3
	Rural Municipality	*NA*	40%	8
	Town	*NA*	45%	9
Population trend	*Growing*	*NA*	60%	12
	Declining	*NA*	40%	8

6.3 SURVEY RESULTS

The main feature of the survey results is how similar responses are between respondents. There are high levels of agreement among survey respondents regardless of how rural their municipality may be considered as well as the other population trends.

The results are broken down by theme (the Identification theme, name of municipality employed by, planner or not, etc. is not analysed), and where appropriate, are compared to the results of the 2011, CIP survey *Taking the Pulse: Benchmarking Planning for Healthier Communities*.

TABLE 6-5: SURVEY THEMES

Survey Themes	Survey Question #'s[7]
Identification *(for analysis and confirmation of identity purposes)*	**2-7**
Opinion	**8-10, 17**
Practice	**11 -13**
Barriers	**14**
Consultation	**15-16**
Built environment and community factors	**18-19**

6.4 OPINION

6.4.1 IS HEALTH A PLANNING ISSUE?

Questions 8-10 asked respondents if they believed that health is impacted by the built environment, and whether planners, and municipalities should address health in their work. The respondents were provided a semantic differential of strongly agree to strongly disagree to answer these three questions. All the responses to question 8 "*Do you agree that the built environment has an impact on health*?' and 9 "*In general do you agree that health is an issue planners should address in their practice?*" were either "strongly agree" or "agree". There were slightly more respondents that simply "agreed" than "strongly agreed" but the difference between the two was minimal. For question 10 "*Do you agree that health is an issue municipal governments should seek to address?"* all the responses with the exception of two were either "strongly agree" or "agree". The remaining two responses were neutral. There was nothing significant about the two respondents that provided a neutral response to question 10, other than they were quite dissimilar in terms of population size, density and profession.

6.4.2 RESEARCH AND RURALITY

Question 17 was also an opinion question; the focus was on how respondents viewed (at the time, i.e. 2011) current research on planning and health and its applicability to rural and small town contexts. The underlying issue was whether rurality presented a challenge to implementing health-oriented planning. Question 17 consisted of five statements. Respondents were asked to indicate their level of agreement with each.

1) Current research on health and the built environment is applicable to small town areas.
2) Current research on health and the built environment is applicable to rural areas.
3) There is a need for more research on the impact of the built environment on health outside of cities.

[7] Question 1 was to confirm the respondent's willingness to participate in the survey; Question 20 was to confirm the respondent's willingness to participate in the interview portion of the research.

4) Non-urban areas (small town, rural, remote) are limited in what they can do to plan for health.
5) Communities outside of urban areas cannot support the infrastructure to facilitate healthy behavior (E.g. active transportation, recreation facilities, etc.)

These first three statements make the assumption that the reader is aware of current research or has reviewed research on the impacts of the built environment on health. I felt this assumption was reasonably safe based on the fact that prior to my survey, CIP had released the *Taking the Pulse* survey and the Nova Scotia Planning Directors conference for 2011 had focused on the connections between planning and health. Therefore I felt that respondents were likely to have encountered at least some research relating planning to health. The respondents were given a sematic differential scale of 1-5 (1=”strongly disagree” to 5=”strongly agree”), the higher the score the higher the level of agreement. The scores for each statement (1-5) were summed to provide a total score. A score of 20 would mean all respondents indicated they “strongly disagreed” with the statement, a score of 60 would indicate that all respondents “neither agreed, nor disagreed” with the statement, and a score of 100 would mean that all respondents “strongly agreed” with the statement (Figure 6-1). The numbering of statements in Figure 6-1 is based on the order they appeared in the survey. The highest score was for statement 3. Figure 6-2 shows the response breakdown per statement (number of “strongly disagree” to number of “strongly agree” responses). Statements two, four and five are the only ones to have any level of disagreement.

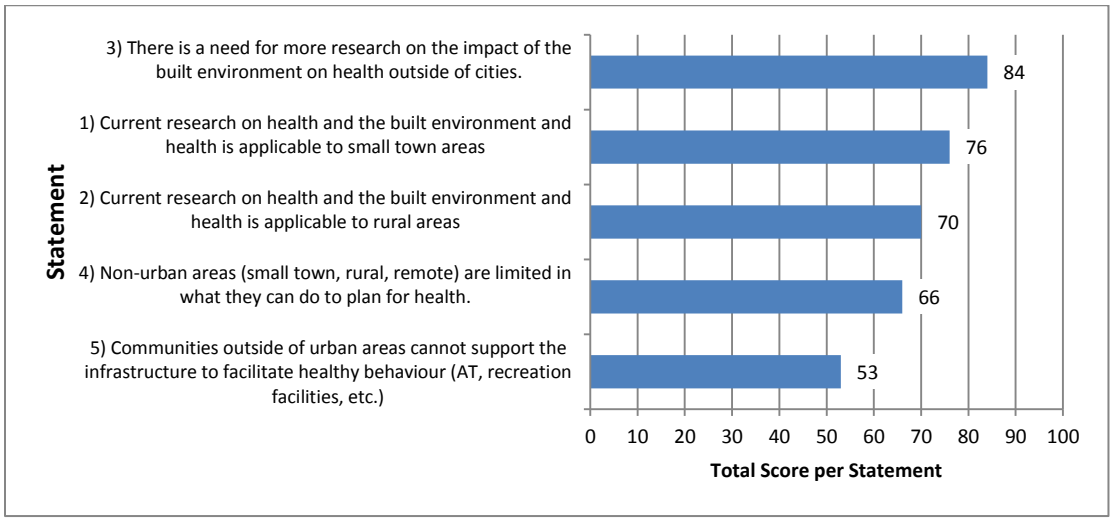

FIGURE 6-1: Q17 - LEVEL OF AGREEMENT PER STATEMENT – TOTAL SCORE (The x-axis shows the sum of all responses per statement**)**

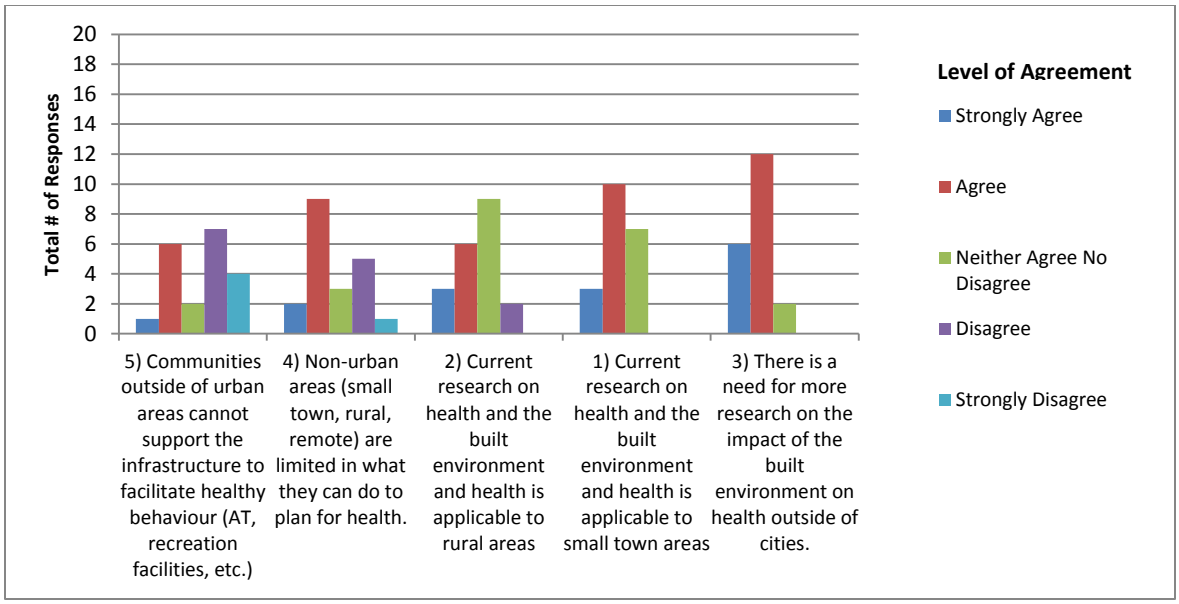

FIGURE 6-2: Q17 - LEVEL OF AGREEMENT PER STATEMENT

6.5 PRACTICE

Questions 11, 12, and 13 were used to gauge whether respondents thought of or addressed health issues in their practice.

6.5.1 PLANNING DOCUMENTS

Question 11 asks respondents to identify whether health is an explicit goal in any of their official documents such as a Municipal Planning Strategy. Health as an implicit goal has been identified as being present in sustainability approaches to planning (Barton, 2010; Crawford, 2010; Barton & Tsourou, 2000).

Q11: DOES THE PROTECTION AND PROMOTION OF HEALTH APPEAR AS AN EXPLICIT OBJECTIVE OR GOAL IN ANY OF YOUR OFFICIAL PLANNING DOCUMENTS?

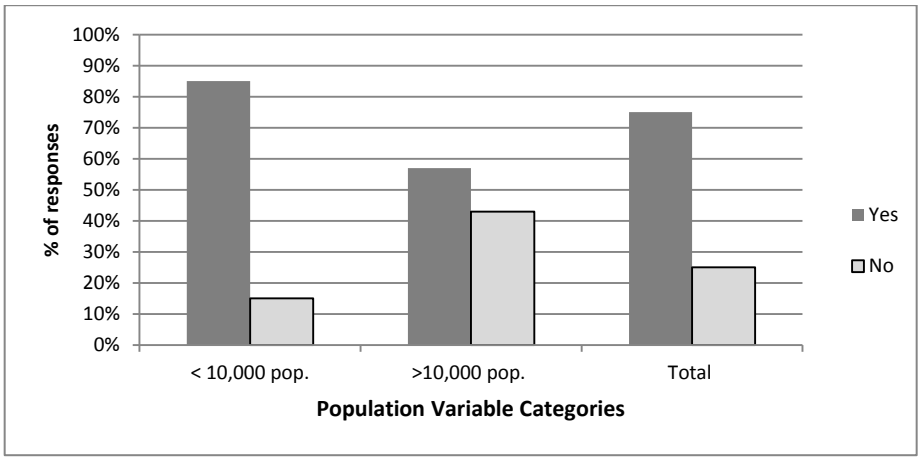

FIGURE 6-3: Q11 -POPULATION SIZE VARIABLE - <10,000 POP - >10,000 POP.

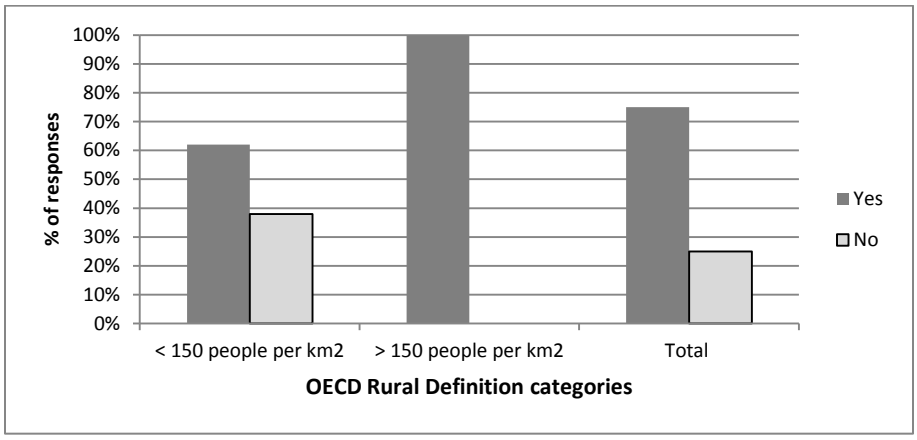

FIGURE 6-4: Q11-OECD: < 150 PEOPLE PER KM2 - >150 PEOPLE PER KM2

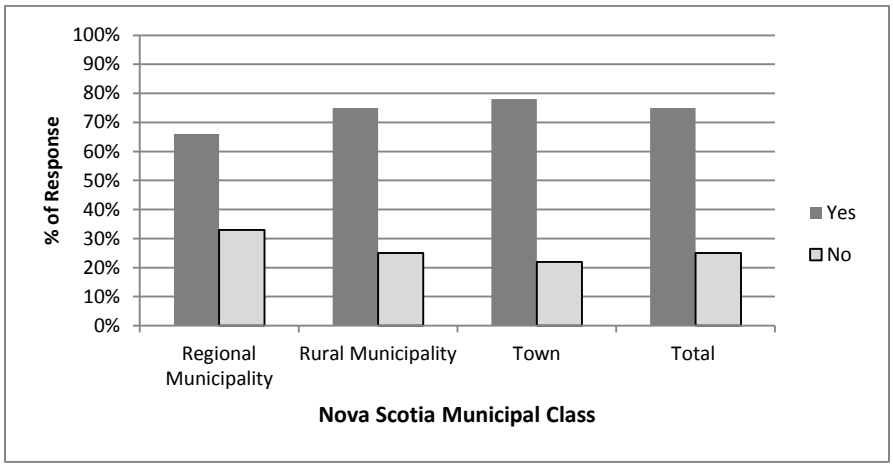

FIGURE 6-5: Q11-NOVA SCOTIA MUNICIPAL CLASSES

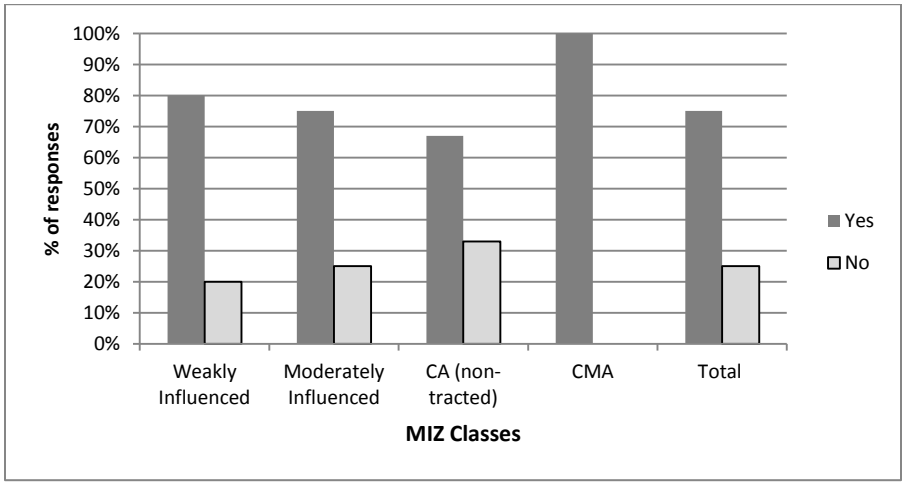

FIGURE 6-6: Q11-MIZ CLASSES

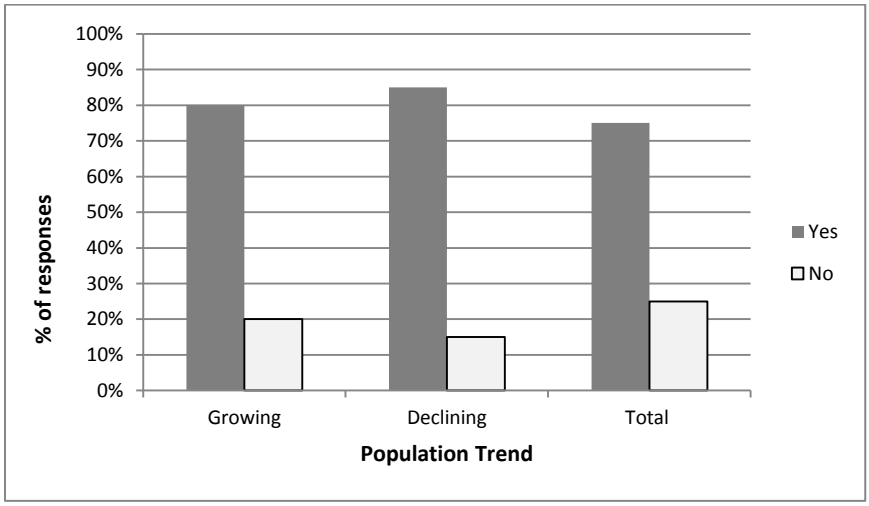

FIGURE 6-7:Q11- POPULATION TREND

6.5.2 AREAS OF WORK

Question 12 provided a list of social, economic and built environment factors that have been correlated to health. Respondents were asked to identify which correlates they have dealt with in their practice. Respondents were able to answer either yes =2, no = 1, or unsure =0. The list of correlates was developed from the content analysis and covers a broad range of environmental, economic, and social issues as shown below.

1. Affordable Housing
2. Opportunities for social interaction
3. Access to green/natural space
4. Job opportunities for residents
5. Access to affordable transportation options (Active Transportation &/or Public Transit)
6. Opportunities for cultural expression
7. Access to healthy food options (fresh produce, etc.)
8. Working conditions
9. Injury prevention
10. Accessibility of public areas for people with disabilities
11. Access to social services
12. Clean environment (Clean air, water & soil)
13. Access to health services
14. Education opportunities
15. Crime prevention
16. Opportunities for recreation
17. Political engagement in local issues

I wanted to see the extent to which respondents had dealt with health issues in their work, or generally the diversity of issues they dealt with in practice. List items like Working Conditions, Education Opportunities, Injury

Prevention, Access to Social and Health Services were expected to elicit a low number of responses. The first two (Working Conditions, Education Opportunities) typically falling under the social of health determinants literature, and the last three, (Injury Prevention, Access to Social and Health Services) being, at least in Nova Scotia, synonymous with provincial level departments rather than municipal functions. Figure 6-8 shows the different scores per correlate from my survey. Scores were derived by summing the number value of each response. A score of 40 would indicate all respondents addressed this correlate, for example every respondents (n=20) indicated yes they had dealt with access to natural green spaces, consequently the score for this correlate was 40. A score of 20 would indicate that none of the all respondents addressed that correlate.

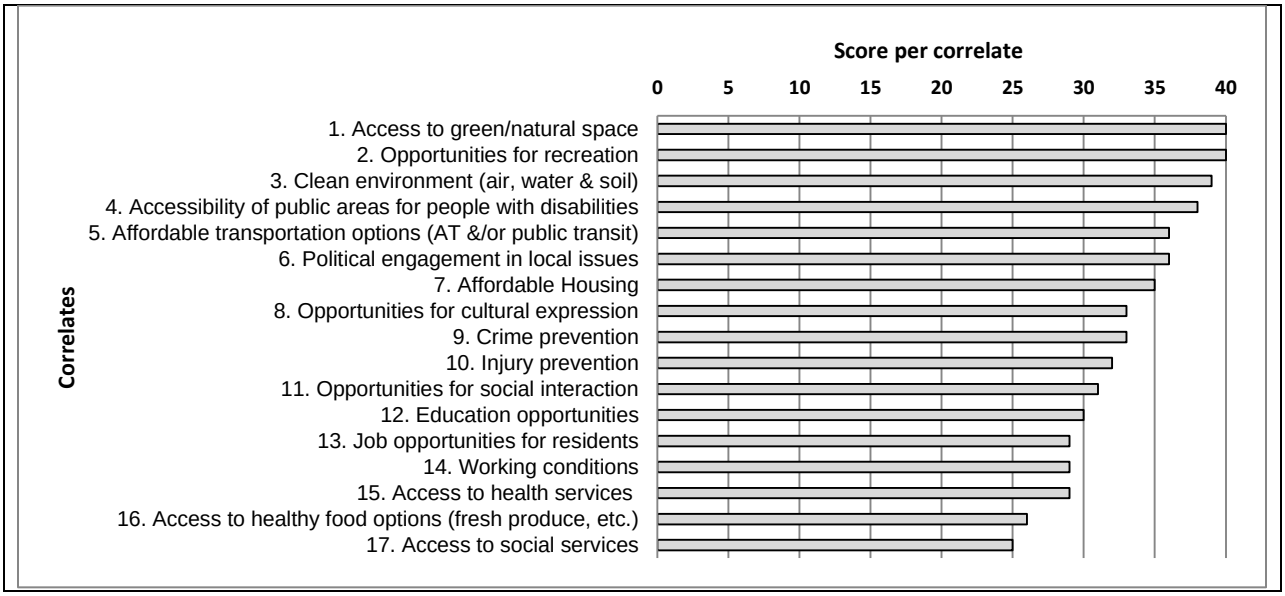

FIGURE 6-8: Q12 – HEALTH CORRELATES AND PLANNING PRACTICE

In *Taking the Pulse,* respondents were asked to identify from a list of health correlates which ones they had addressed over the past two years. The responses from the CIP survey were divided between those from urban and rural areas[8]. Both the CIP survey and the survey used in this research identified similar community health and planning correlates, such as affordable housing, public transit, and unemployment, although different phrasing and terms were used. My survey also included more correlates than the CIP survey. The correlates that were used in both the CIP survey and my survey are listed in Table 6-6 and are ranked according to the total score they received based on participant responses. Not all the correlates are directly comparable, for example, the first correlate in the CIP list

[8] The *Taking the Pulse* survey did not use a specific classification system to define rural, rather respondents were provided opportunities to identify as rural by name as opposed to a quantifiable measure.

is *1.Pedestrian and traffic safety.* There is no directly comparable correlate in my list, however, numbers 5 *Affordable transportation options (AT &/or public transit)* and 10. *Injury prevention* can be related to pedestrian and traffic safety. Nearly all correlates ranked lower in the Nova Scotia survey than the CIP survey with the exception of correlates, 2. *Opportunities for recreation*, and 3.*Clean environment*, which ranked equally.

TABLE 6-6: SURVEY RESPONSE COMPARISON
(Ranking of correlates in the *Taking the Pulse* column is based on the total number of times each correlate was selected in that survey. The ranking in column for the Nova Scotia survey is based on the total score per correlate. The score is based on adding all the scores per correlate (either 2=Yes,2=No,0=Unsure). To illustrate the differences in the ranking of correlates between the two surveys a blue line is used).

CIP survey *Taking the Pulse*		**Nova Scotia Survey**
1. Pedestrian and traffic safety		Access to green/natural space
2. Physical activity / active transportation		Opportunities for recreation
3. Access to healthy natural environments		Clean environment (air, water & soil)
4. Affordable housing		Accessibility of public areas for people with disabilities
5. Age-friendly urban design		Affordable transportation options (AT &/or public transit)
6. Opportunities for people to connect / build social networks		Political engagement in local issues
7. Security and crime prevention		Affordable Housing
8. Water quality		Opportunities for cultural expression
9. Child-friendly urban design		Crime prevention
10. Access to healthy foods		Injury prevention
11. Air quality		Opportunities for social interaction
12. Healthy housing		Education opportunities
13. Mental health		Job opportunities for residents
14. Don't know / not applicable		Working conditions
		Access to health services
		Access to healthy food options (fresh produce, etc.)
		Access to social services

For question 12 I was interested in seeing if the independent variables had any influence on the overall score. In order to explore this all responses sets (n=20) for question 12 were grouped under the various independent variables: MIZ class, OECD, NS municipal class, population variables and population trend. If every person in a class had said yes to each correlate listed in question 12 the total possible score would be 34. So the higher the average score the more correlates the respondents in that class had addressed in their practice (Figure 6-9).

TABLE 6-7: EXAMPLE OF HOW AVERAGE SCORES WERE DERIVED FOR FIGURE 6-11.

NS Municipal Classes	Individual respondent Scores	Average Score
Town,	• Town 1= 24 • Town 2= 36 • Town 3 = 12	24
Rural Municipality,	• Rural Municipality 1 = 40 • Rural Municipality 2=10 • Rural Municipality 3= 28	26
Regional Municipality	• Regional Municipality 1 = 12 • Regional Municipality 2 = 26	19

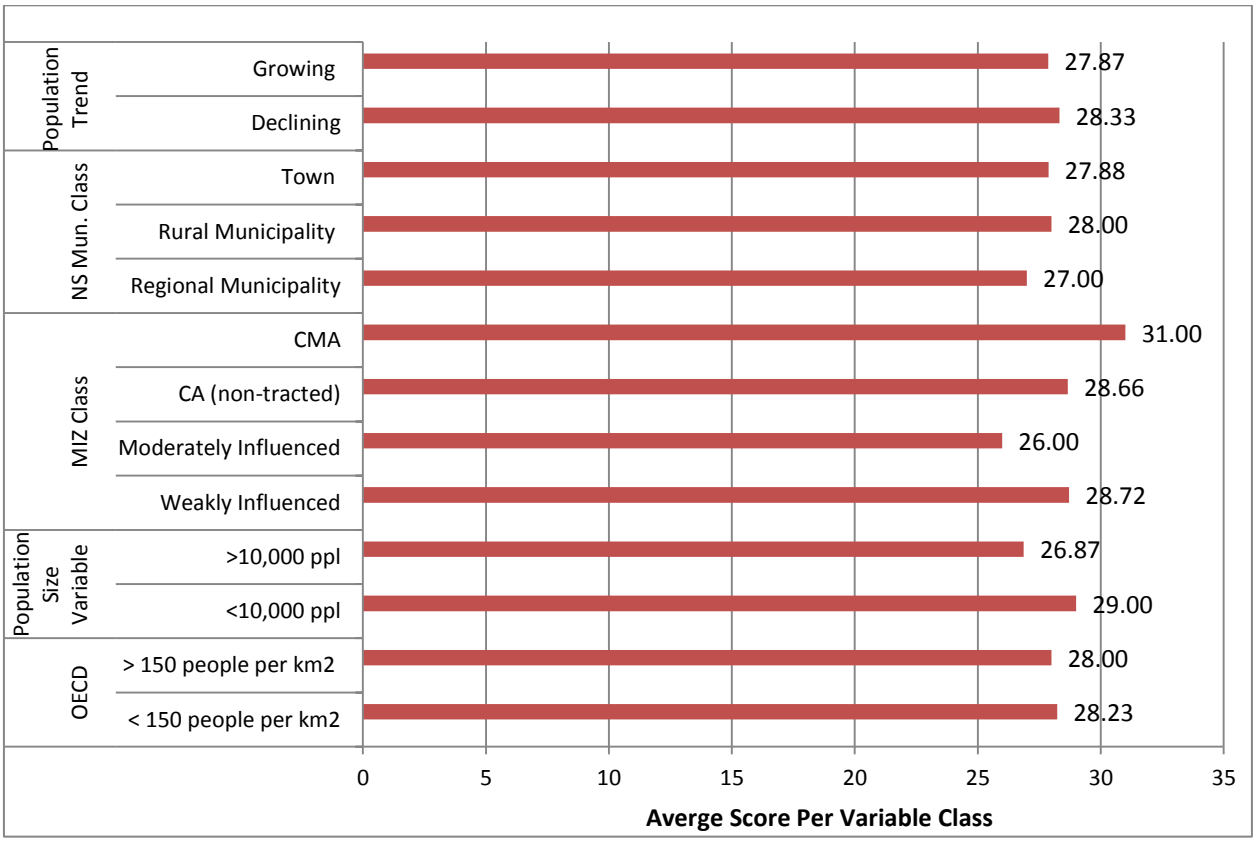

FIGURE 6-9: Q12 - AVERAGE SCORE BY INDEPENDENT VARIABLE

(The score for each respondent under each class was then calculated, e.g. Town 1 = 24, Town 2 = 36, etc. by adding together the number of Yes, No and Unsure[9] responses. Then the scores for all participants in each variable class were added together to get a total value for each variable class, e.g. Moderate Influence, Weak Influence (MIZ category) etc. and then dividing by the number of respondents in that class, an average was derived. The average was then used to compare scores between classes in each independent variable.)

[9] Value per response option -Yes=2, No=1 and Unsure=0

6.5.3 BARRIERS

Question 14 asked survey respondents to identify barriers to health-oriented planning practice. I used this question to explore what barriers were most significant to respondents. I provided a list of barriers drawn from the literature (CIP, 2011; Grant and Manuel, 2011; Capon and Thompson, 2010), but respondents were also invited to identify additional barriers. Respondents were asked to rate the barriers from 1-3. 1 being the Most Significant barrier, 2 Very Significant and 3 Significant each respondent was only allowed to select three barriers using the 1-3 rating system. A score was derived based on adding the value of all the responses for each barrier, the higher the score the more significant the barrier (Table 6-8).

TABLE 6-8: BARRIERS TO HEALTH-ORIENTED PLANNING: NOVA SCOTIA RESPONDENTS
(When calculating scores to rank the barriers each significance level (Most significant, Very Significant, and Significant) were given numerical values 3, 2 and 1 respectively. Each time a barrier was ranked as Most Significant it got 3 points and so on. The more often it was rated as most significant the higher the final score.)

Barrier		**Score**
1.	There are competing issues that demand my time	29
2.	I don't have enough human resources to tackle this issue	24
3.	Other	11
4.	My municipality's current planning policies do not allow me to address health	9
5.	I don't have enough knowledge about community health issues.	8
6.	I don't have access to appropriate data/information to make decisions	8
7.	There is no political interest in this subject	8
8.	Resources on this topic do not provide useful guidelines	4
9.	Our community cannot afford to be too demanding of developers	4
10.	Resources on this topic are not applicable to my community	0
11.	Legislation does not allow me to address health issues	0

The barriers identified in this research are similar to those identified in the CIP survey *Taking the Pulse* and have been identified in other research based in Nova Scotia (Grant and Manuel, 2011; Rehman, 2010). The issue of having competing time constraints, a lack of government support or interest, and a need for additional research and expanded knowledge of health issues is similar between the two surveys. Barriers from *Taking the Pulse* and my survey are compared according to their ranking in Table 6-9. Two barriers, namely, *Resources on this topic are not applicable to my community,* and *Legislation does not allow me to address health issues,* were not identified as barriers by any respondents.

TABLE 6-9: BARRIERS COMPARISON: CIP VS. NOVA SCOTIA

CIP Survey		Nova Scotia survey
1. Not enough government / political support		1. There are competing issues that demand my time
2. Competing issues also demand attention		2. I don't have enough human resources to tackle this issue
3. Little support among developers		3. My municipality's current planning policies do not allow me to address health
4. Need more tools		4. I don't have enough knowledge about community health issues.
5. Results are not measurable		5. I don't have access to appropriate data/information to make decisions
6. Don't have enough knowledge		6. There is no political interest in this subject
7. Don't have enough time		7. Resources on this topic do not provide useful guidelines
8. Community health issues have not come up		8. Our community cannot afford to be too demanding of developers
9. Community health responsibility of other sectors – not planning		9. Other
10. Not sure how to approach community health issues		
11. Residents do not support this approach		
12. Don't know / not applicable		
13. Health-oriented resources do not apply to my area		

Respondents were also provided the option of selecting *Other* as a barrier and then asked to identify what the barrier was. The responses are listed below.

OTHER BARRIERS

- Health issues are considered to be a provincial, not municipal matter; however, as this and other issues continue to be downloaded (in part or totally) to municipalities, the fine line between the two levels of government and who is responsible for what becomes blurred.
- Much of what impacts health as it relates to Planning is outside our control at the municipal level. The siting of schools for instance - or large format retail in areas of ex-urban sprawl.
- 1) Organizational "silos" with differing priorities within the municipality 2) Intergovernmental differences in priorities (Province funds freeways; municipality funds sidewalks and transit) 3) Outdated street

construction and traffic control standards have long favoured driving over other street uses, though there are some hopeful signs!

- Health is primarily a Provincial responsibility and should be taking the lead. Changes were made to give the Province more people services in exchange for property based services. However, municipalities continue to be involved in health issues such as public transit and obesity. Recent provincial funding is coaxing municipalities to prepare active living strategies, which is a provincial responsibility.
- 2) Our municipality is in such serious demographic and economic decline, that jobs and survival become the key issues. 3) The Federal and Provincial Governments dominate in terms of spending and resource issues on Community Health Issues. The municipality doesn't have the resources or mandate to lead, but is always in a reactive mode.
- There are currently no "built environment" projects being undertaken or planned in the community. Therefore our health focus tends to be in the areas of: recreation, developing a physical activity plan that provides opportunities for all residents, and ensuring that municipal properties and services continue to be developed with community health as an important factor in decision-making.
- It is only within the last three or four years that Council has become convinced that we have a role to play in community health. Limited resources mean that progress is slow.

6.5.4 CONSULTATION

Question 15 and 16 were intended to gauge whether respondents had: a) worked or consulted with people from the health sector, and b) whether they had sought information on health issues in their community as part of their work. Question 15 asks whether respondents have consulted people or data on health issues in the past and question 16 asks if they believe they may do so in the future. A list of sources that could provide information on community health issues was supplied. The list included health sector professionals such as, physicians and nurses. It also included organizations such as, the Department of Health and Wellness, community health board and sources of health data, such as the Canadian Community Health Survey. The list also included other sources for information, such as residents, the local school board as well as the planning department itself.

6.5.4.1 PAST CONSULTATION

Three respondents indicated that they had never consulted any of the sources for health information listed in question 15. Of these three, the only similarity they shared was that none of them had completed the *Taking the Pulse* CIP survey. The remaining 17 respondents all indicated some level of consultation related to community health.

The responses show that the local residents were the most often consulted on health issues, followed by the Department of Health and Wellness (Figure 6-10). The least consulted were the sources of information on health and health trends collected by Statistics Canada, Canadian Community Health Survey (CCHS), and Canadian Institute for Health Information (CIHI). The low rating for the CCHS and CIHI may be due to a lack of familiarity with these sources. The high level of consultation with residents and the Department of Health and Wellness is likely because these are a) the most convenient and/or b) are commonly recognized sources for information about health.

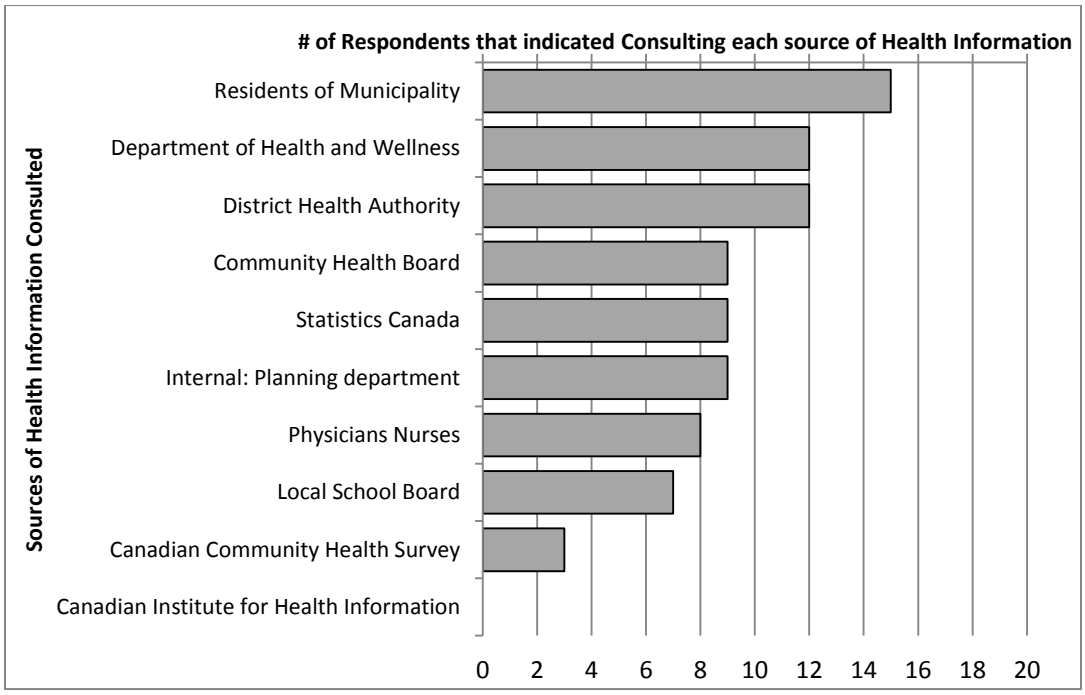

FIGURE 6-10: Q15 – SCOURCES OF HEALTH INFORMATION PREVIOUSLY CONSULTED: MOST FREQUENTLY CITED SOURCES

The number of health information sources that each respondent identified were added (Between 0-10 per respondent), then respondents'; responses were grouped according to independent variables (MIZ class etc.) from

this an average number of sources consulted per independent variable was developed to compare between classes (Table 6-10).

TABLE 6 – 10: PAST CONSULTATION: NUMBER OF SOURCES OF HEALTH INFORMATION CONSULTED

Variable	*Measure*	*Average number of sources of health information consulted*
OECD	<150 people km^2	**4.23**
	>150 people km^2	4.14
MIZ	CMA	4
	CA (Non-tracted)	3.67
	Moderately Influenced	**4.6**
	Weakly Influenced	4.09
Population	<10,000	4.17
	>10,000	**4.25**
NS Municipal Class	Regional Municipality	3.67
	Rural Municipality	**4.63**
	Town	3.89
Population Trend	Growing	**4.22**
	Decline	4.18
NSPDA	Attended	**4.92**
	Did not attend	3.57

The survey for this research was sent out two months after the 2011 NSPDA conference. The group that attended the 2011 NSPDA conference indicated higher levels of consultation with the health sector and with health information. The material covered at the conference may have encouraged some people to explore health data or consultation on health issues. In the NS Municipal class the Rural Municipalities had consulted more sources of health information. In terms of population trends, those communities that were growing in population had consulted more information sources about health issues as did the >10,000 population group. In terms of rural variables only the MIZ classes and the population size variable showed any significant variation in responses. In the case of MIZ categories, the Moderately Influenced Zones had consulted, on average, the most health information sources.

6.5.4.2 FUTURE CONSULTATION

Question 16 asked respondents to indicate whether they believed they might consult sources of health information in the future. Respondents were presented with the same list of sources as in Q15 and were asked to indicate whether they were “Definitely” (=3), “Maybe” (=2), or “Unlikely” (=1) to consult any of the listed sources in the future. Figure 6-11 shows the likelihood of each source of health information being consulted in the future.

In question 16 respondents indicated that they were more likely to consult the Canadian Community Health Survey (CCHS) and the Canadian Institute for Health Information (CIHI) than any other sources of health information (Figure 6-11). In question 15 both the CCHS and the CIHI were ranked as the least consulted sources of information on community health. The three individuals who had indicated in Question 15 that they had not consulted on community health issues all indicated that they might consult in the future. Although only one indicated he would definitely do so in the future.

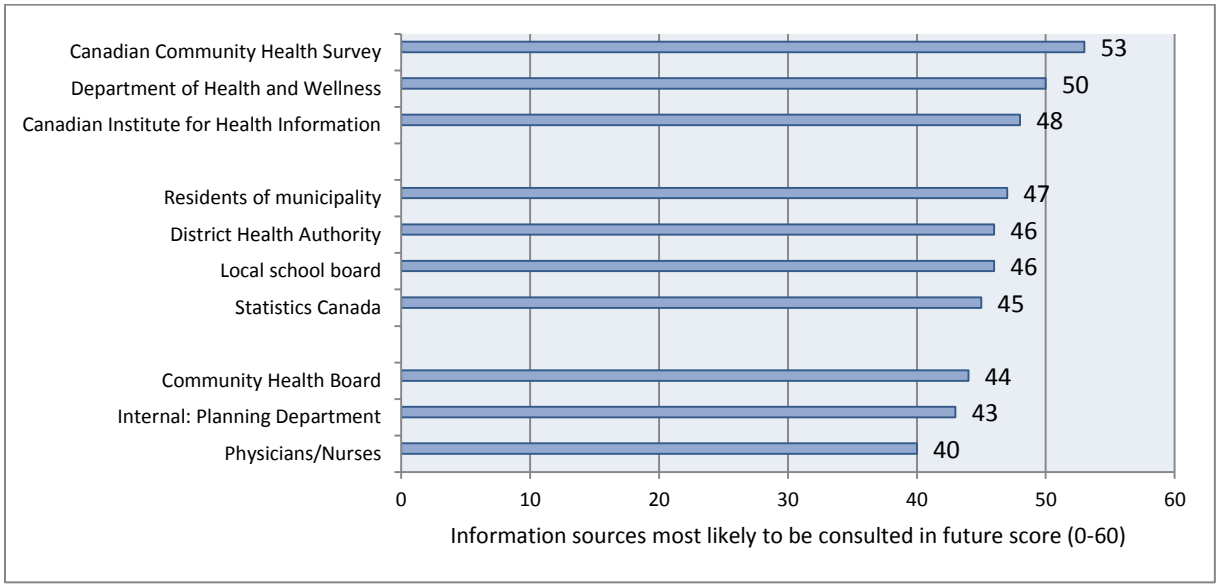

FIGURE 6-11: Q16 - LIKELIHOOD OF FUTURE CONSULTATION WITH HEALTH INFORMATION

The total number of Definitely, Maybe and Unlikely answers were added to get a total score for each respondent. The respondent's scores were then grouped into the different independent variables (MIZ classes, etc.) and an average score was then calculated for each class within the different variables (Figure 6-12). Higher scores indicate that respondents in a given variable class are more likely to consult a wider range of sources of health information.

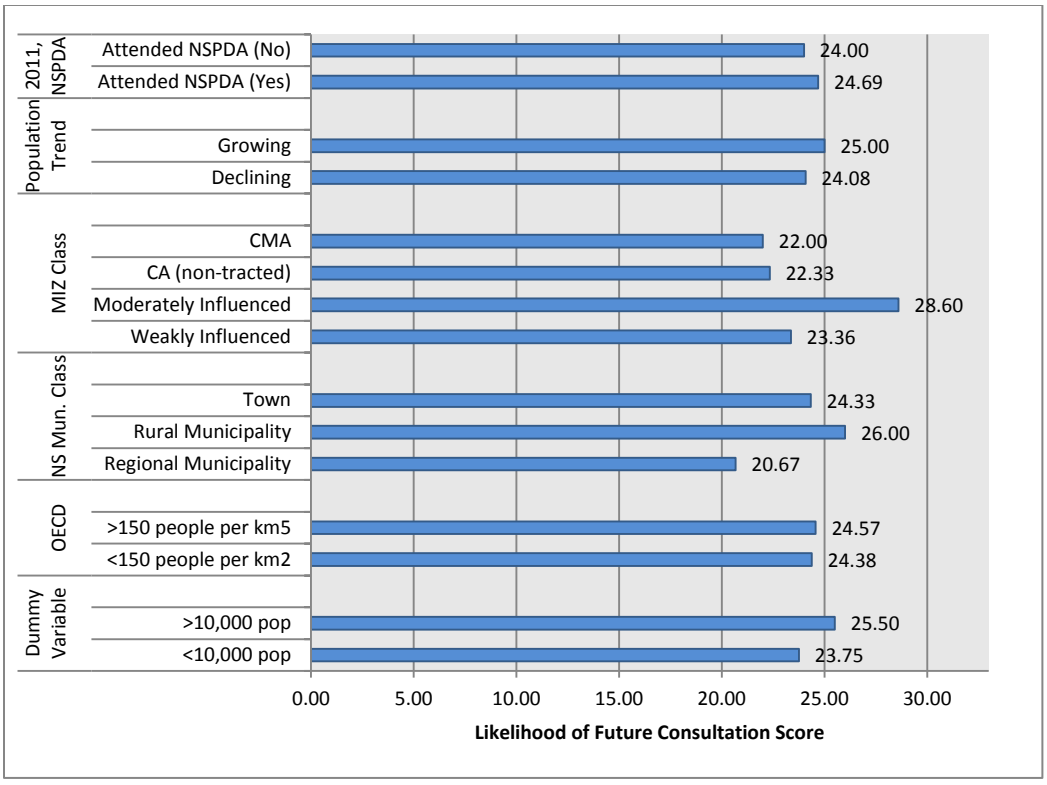

FIGURE 6-12: Q16 –LIKELIHOOD OF FUTURE CONSULTATION WITH SOURCES OF HEALTH INFORMATION

Overall the majority of averages in Figure 6-12 are similar or vary only slightly, such as the population size variable, OECD, population trend and the NSPDA. The only two variables that showed significant differences were the MIZ class and NS Municipal class. For the NS Municipal class, the Regional Municipality class was significantly lower than the other two classes. In the MIZ class the Moderately Influenced class had a significantly higher score than the other three classes.

6.6 BUILT ENVIRONMENT AND COMMUNITY FACTORS

A central assumption in this thesis is that planners from rural areas are less concerned with health-oriented planning than planners from urban areas. Planning practices that support active transportation, medium to high density and mixed use development are most often linked to urban areas and often it is the absence of these characteristics that define a rural built environment (Boehmer et al., 2006; Curran, Grant, Wood, 2006). Consequently it was assumed that rural planners would be less interested in these ideas or view them as less relevant. As was outlined in the content analysis stage (Chapter 5) of this research, a suite of built environment characteristics and services, such as connected street networks and public transit, are commonly cited as important community components in research and manuals on healthy community design. The factors identified in the content

analysis were used in this question along with some items identified in the *Taking the Pulse* survey (2011), such as having an environment that is accessible to those with disabilities with restricted mobility.

6.6.1 PRIORITIES

Question 18 asks respondents to indicate the level of importance of a variety of built form characteristics and services.

1. The community being walkable
2. Provision of space for community gardens
3. Environment accessible for people with disabilities
4. Providing physically active recreational opportunities (outdoor)
5. Encouraging affordable housing options
6. Provision of access to green/natural areas
7. Encouraging mixed-use development
8. Public transit
9. Providing physically active recreation opportunities (indoor)
10. Provision of public space (indoor)
11. Pedestrian connectivity (trails and/or streets)
12. Providing infrastructure for Active Transportation
13. Provision of public space (outdoor)
14. Opportunities for purchasing healthy food
15. Encouraging compact built form

Respondents were asked to rate the features from *Extremely important = 5 to Not at all important = 1* in relation to the planning priorities of the municipality they worked for. As some of the features, such as public transit, would not be present in all the communities respondents were given the option of selecting "Not Relevant". The values for all responses for each item in the list were added and given a score that was used to compare the importance of each item in the list; the greater the score the greater the importance of the built environment feature or municipal service. (Table 6-11). The maximum possible score was 100 – the minimum possible score was 0.

TABLE 6-11: Q18-IMPORTANCE OF BUILT FORM CHARACTERISTICS AND MUNICIPAL SERVICES FOR SURVEY RESPONDENTS

Rank	Item	Score
1	**Providing physically active recreational opportunities (outdoor)**	**78**
2	**The community being walkable**	**78**
3	**Having the built environment accessible for people with disabilities**	**77**
4	**Providing physically active recreational opportunities (indoor)**	**75**
5	**Provision of public space (indoor)**	**75**
6	Designing options for pedestrian connectivity (trails and/or streets).	74
7	Providing infrastructure for Active Transportation	74
8	Provision of public space (outdoor)	74
9	Encouraging affordable housing options	69
10	Provision of access to green / natural areas	68
11	Encouraging mixed-use development	62
12	Public transit	62
13	Opportunities for purchasing healthy food (E.g. fresh produce, etc.)	60
14	Encouraging compact built form	59
15	Provision of space for community gardens	49

To explore differences between the independent variables the total number of "Extremely Important" – "Not at All Important", answers were added to get a total score for each respondent. The respondent's scores were then grouped into the various independent variables (MIZ classes, etc.) and an average score was then calculated for each class within the different variables (e.g. Growing, Declining, etc. (Figure 6-13). Larger scores (Figure 6-13) indicate that more built environment features were identified as important by respondents in that class.

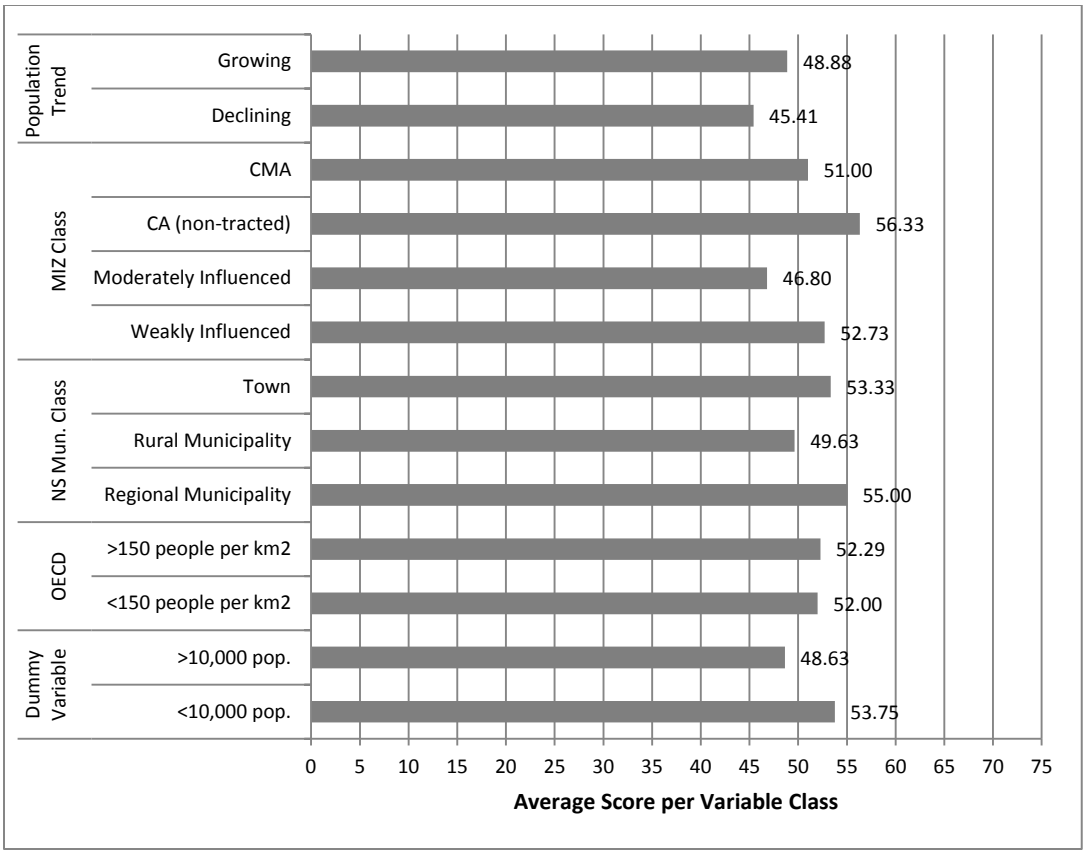

FIGURE 6-13: Q18 –BUILT ENVIRONMENT AND MUNICIPAL SERVICE FEATURES BY VARIABLE CLASS

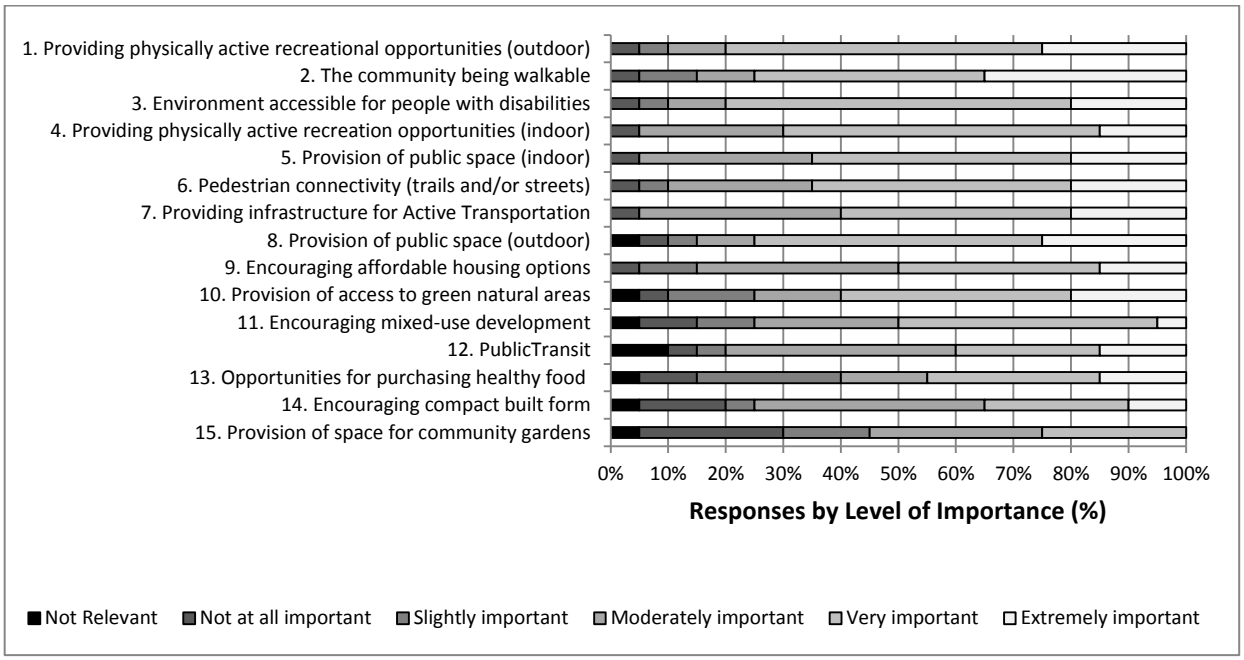

FIGURE 6-14: Q18 – IMPORTANCE OF BUILT ENVIRONMENT AND MUNICIPAL SERVICE FEATURES IN MUNICIPAL PLANNING PRIORITIES

6.6.1.1 PRESENT STATE

Question 19 used the same variables as Question 18, but respondents were asked to indicate to what extent the variables identified were present in their communities at the time of the survey. Respondents were asked to rate each listed item in terms of its presence in their municipality (Not at all=1, Slightly=2, Adequately=3, or More than Adequately=4). Respondents were also able to indicate whether an item from the list was not relevant to their context. Scores were developed by adding all the responses for each item listed in this question. The maximum possible score was 80. Scores were then rank ordered (Table 6-12). Figure 6-15 shows the extent to which each feature is identified as being present by respondents by dividing responses between the possible responses (Not relevant – More than Adequately).

TABLE 6-12: Q19 - RANKING OF BUILT FORM CHARACTERISTICS AND MUNICIPAL SERVICES BY PRESENCE IN THE MUNICIPALITY

Rank	Item	Score
1	Public space (outdoor)	**64**
2	Access to green/natural areas	**62**
3	Physically active recreation opportunities (outdoor)	62
4	Physically active recreation opportunities (indoor)	60
5	The community being walkable	55
6	Public space (indoor)	54
7	Pedestrian connectivity (trails and streets)	53
8	Opportunities to purchase healthy food (E.g. fresh produce, etc.)	47
9	An accessible built environment for people with disabilities	47
10	Mixed-use development	45
11	Infrastructure for active transportation	45
12	Affordable housing options	44
13	Compact built form	38
14	Community gardens	36
15	Public transit	35

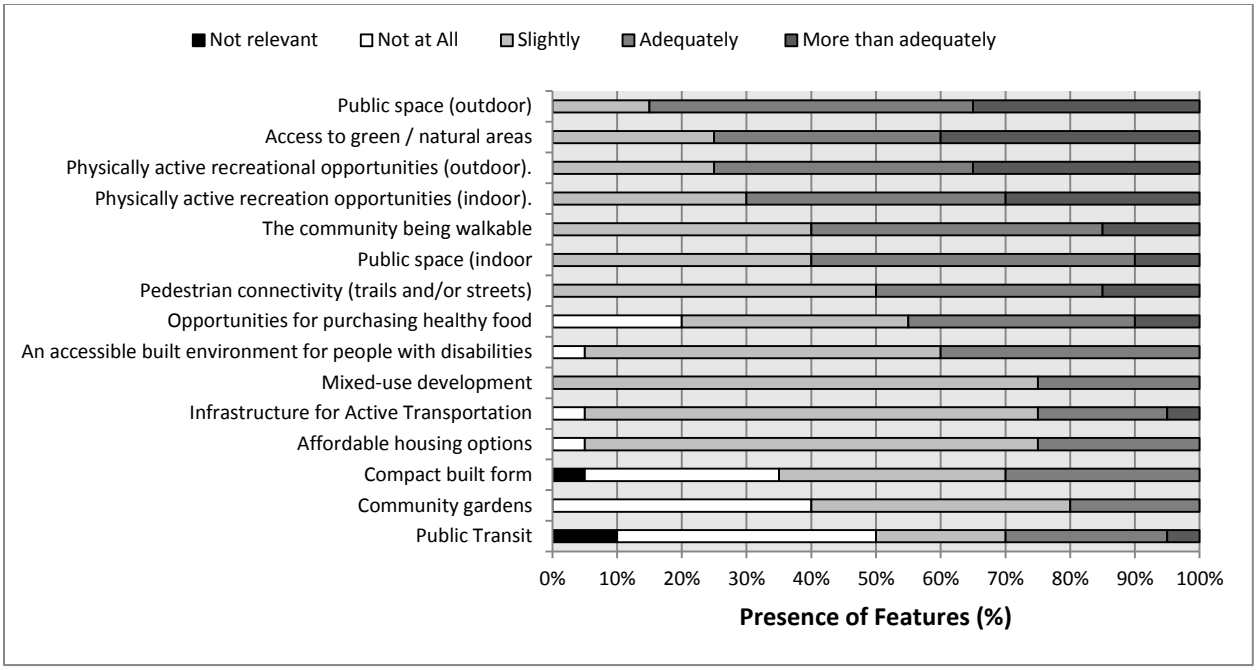

FIGURE 6-15: Q19 – PRESENCE OF FEATURES IN SURVEYED MUNICIPALITIES

Similar to question 18 the respondents' scores were grouped into the different independent variables (MIZ classes, etc.) and an average score was then calculated for each class within the different variables (Figure 6-18). Higher scores indicate a greater overall presence of the items listed in question 19.

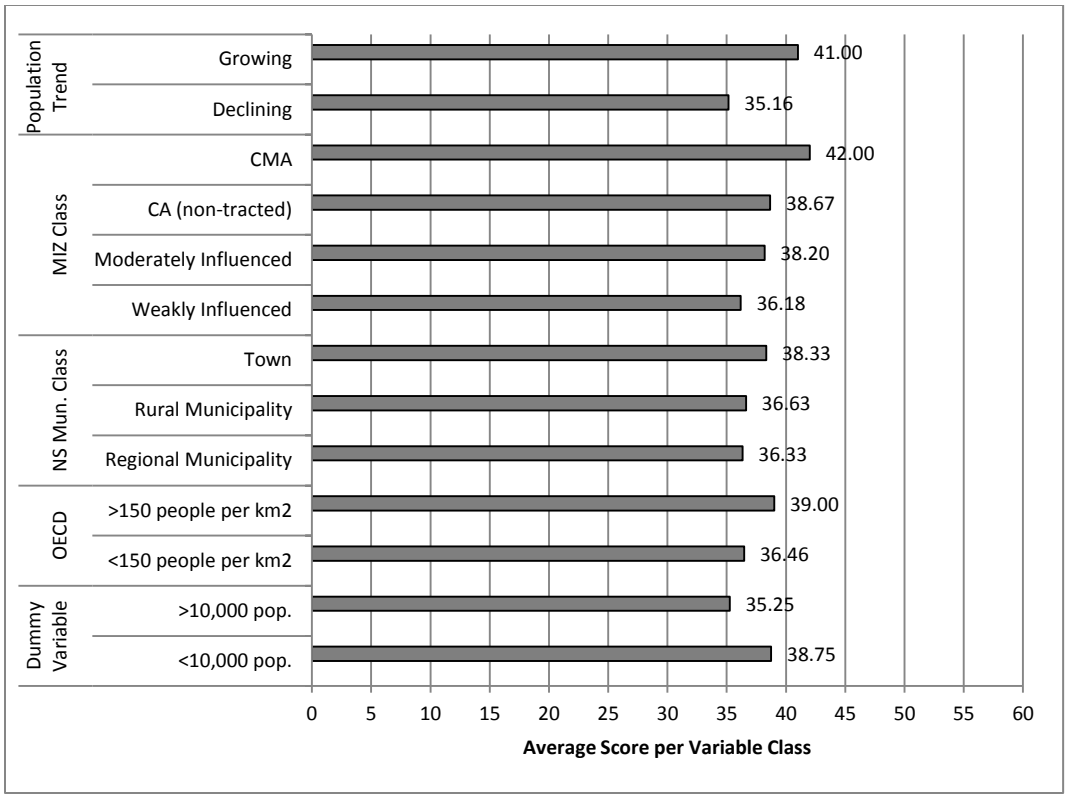

FIGURE 6-16: Q19 – PRESENCE OF FEATURES IN SURVEYED MUNICIPALITIES BY INDEPENDENT VARIABLES

6.6.1.2 COMPARING QUESTION 18 AND 19

The analysis of survey responses included all response sets (n=20). Two of the response sets came from what could be identified as primarily urban areas. To see if the responses from the two urban areas had skewed the results for question 18 and 19 each question was summed without the two response sets from the primarily urban areas. Removing these response sets from the analysis provided almost identical results to the ranking in Table 6-11 (Importance of built environment features to municipal planning) and Table 6-12 (Presence of built environment features in municipal units surveyed) Therefore I assume that the responses from the more urban areas did not have a significant impact on the overall results.

I also wanted to investigate whether there was a relationship between the rankings of items in question 18 to question 19. I compared the rankings of items from Table 6-11 and Table 6-12 (Table 6-13). In general, features that were more ubiquitous were seen as less of a priority.

TABLE 6-13: COMPARING LEVEL OF IMPORTANCE OF BUILT ENVIRONMENT FEATURES TO PRESENT STATE OF BUILT ENVIRONMENT

	↑ = Higher importance-less present ↓=Lower importance –more present ↔ =Equal importance to presence
Built Environment Features and Municipal Services	**Level of Importance (Q18) VS. Presence of Features (Q19)**
Providing physically active recreational opportunities (outdoor)	↑
The community being walkable	↑
Having the built environment accessible for people with disabilities	↑
Provision of public space (indoor)	↑
Designing options for pedestrian connectivity (trails and/or streets).	↑
Providing infrastructure for Active Transportation	↑
Public Transit	↑
Opportunities for purchasing healthy food (E.g. fresh produce, etc.).	↑
Providing physically active recreational opportunities (indoor)	↔
Encouraging mixed-use development	↔
Provision of public space (outdoor)	↓
Encouraging affordable housing options	↓
Provision of access to green / natural areas.	↓
Encouraging compact built form	↓
Provision of space for community gardens	↓

(Table 6-11 and 6-12 list the same BE features and municipal services. Table 6-11 indicated how important a BE feature was based on the planning priorities of the respondents municipality. Table 6-12 lists built environment features that respondents felt were more or less present in their municipalities. The lists were compared to see if there was a relationship between a BE feature or municipal service being present to whether it was a planning priority. The assumption being that if a BE feature or municipal service was absent and desirable (e.g. AT infrastructure) then it would be a higher planning priority to secure it or improve access to it. The inverse also being the case, if something was already ubiquitous, then it would not be a planning priority (e.g. access to green space or natural areas).

6.7 SURVEY RESULTS DISCUSSION

In late 2010 and early 2011 I had the opportunity to engage several planners and public health professionals about my thesis research. Their responses varied, some planners indicated a lack of awareness about how health related to their work. Several planners stated that health was not at all relevant to planning practice. Public health professionals indicated that the connection between their work and the built environment was important, but were unsure of how to approach the issue. Given these responses the idea for the benchmarking survey used in this research was developed. I had assumed that I would get a variety of answers from municipal planners and CAO's. I had also assumed that the respondents from more rural municipalities would be less aware or interested in health-

oriented planning. This expectation arises from the literature on the challenges that rural municipalities face, which highlights a reluctance of small and rural municipalities to expand their roles beyond what they are mandated to do, for fear of downloading from upper levels of government (Markey, Connelly and Roseland, 2010, Clark et al. 2010; Bonds and Burns, 2008). In Nova Scotia municipalities are acutely aware of this possibility as the province recently announced the shifting of some costs for corrections, public housing and education to the municipalities (News Release, Nova Scotia Government, March 22, 2011).

The responses to the survey differed from what I expected, based on conversations in 2010 and early 2011. Overall responses were far more positive than I had anticipated. There are likely two contributing factors to this difference, a) the distribution of the *Taking the Pulse* survey in spring of 2011 and b) the spring 2011 Nova Scotia Planning Directors Conference that had healthy communities as its theme. Given that most of the respondents had either completed the *Taking the Pulse* survey and/or attended the NSPDA conference, there is a good chance that respondents would be somewhat familiar with health as it related to their work. Additionally, the fact that both the survey and conference came from organizations representing professional planners lends credibility to the issue.

There were four distinct features of the survey responses. First, respondents expressed very supportive attitudes towards health-oriented planning and the importance of looking at planning in terms of its health impacts. This confirms what Grant and Manuel (2011) discovered in their research on youth health and the built environment. The opinion that municipal governments, not just planners, should be concerned with health was also interesting, given issues related to provincial downloading (Markey, Connelly and Roseland, 2010, Clark et al. 2010; Bonds and Burns, 2008). Limitations to adopting a more health-oriented planning approach to planning practice were linked to a lack of time and resources, rather than to a lack of interest in the health issues. Again this was surprising as Markey, Connolly and Roseland (2010), Morrison (2006) and Wells (2002) suggest complex concepts such as sustainability tend to have less relevance for rural residents or may be seen as a threat to traditional resource based economic activities or rural residents' sense of autonomy in the use of their land. Planning for healthy communities uses many of the same core principles as sustainability (Barton and Tsourou, 2000) and therefore may be seen as irrelevant in rural contexts or, worse, a threat.

Second, only a minority of respondents were or had been involved in work related to community health issues. Given that all respondents stated that health was a planning issue and something that planners should address the limited amount of work respondents had undertaken related to health issues was surprising. The barriers

identified in question 14 point to human and financial resource limitations as a reason for not incorporating health issues into planning practice. Third, rurality seemed to not be a significantly limiting factor in terms of what respondents viewed as important planning issues or what they were willing to include within their planning practice. Analysis of responses did not indicate that rurality equated to less interest in (which was generally high), or action related to health-oriented planning (which was generally low). In some cases, such as question 11, 12, 15 and16, the more rural an area was the more interest was expressed in health-oriented planning practice. More often than not responses to survey questions were very similar regardless of the rural measure used. Defining rurality is complex and multiple methods have been developed to define rural and to develop gradations of rurality (Reimer and Bollman, 2010, Hodge & Gordon, 2008). There is no consensus on which measure best captures rurality (Reimer and Bollman, 2010, du Plessis et al. 2001). The variables used in this research to define rurality have been deemed useful in other Canadian and Nova Scotia based research on rural communities (Reimer and Bollman, 2010; Nova Scotia Food Security Network, 2008). Given the similarity in responses across the survey perhaps, the respondents and their contexts are so heterogeneous that there is no independent variable that links them other than their role in municipal planning. Alternatively respondents may actually not be that different in terms of their human and financial resources and built environments hence the similarity between responses.

Fourth, respondents tended to rate physical planning and built environment factors as more important than social factors. Based on responses from question 12, many planners took a very broad approach to their planning practice, by getting involved in environmental, economic, and social agenda issues. Overall though, respondents indicated that they focused on physical planning more than social issues in their practice. However, whether respondents saw these actions as related to health or had undertaken them for other reasons was not captured in this survey.

Overall, the characteristics that were listed as being most present were outdoor public space, access to natural/green areas, and outdoor physically active opportunities. The least present were public transit, community gardens and compact built form. The greatest and least present characteristics by total score make sense given the primarily rural character of the province. Outdoor space is ample in rural areas due to dispersed settlement patterns and ribbon development along trunk highways. Access to natural/green areas is also ample as most rural communities are surrounded by natural areas and also have small cores, so distances to natural areas may be only a kilometre or less. Outdoor recreation opportunities in rural areas can include field sports like soccer and/or can

include activities such as hunting, fishing, hiking, and paddling, etc. Therefore depending on one's definition of recreation a rural area may have ample opportunities for recreation. The least present characteristics, such as public transit, again make sense given the rural context, as services such as public transit are often not present in rural areas due the high costs associated with dispersed populations (Gordon & Hodge, 2008). The characteristics that rate in the middle range of the scores (60-44) are less clear (See Table 6-12).

Findings from the survey suggest that an implementation gap exists for planners and CAOs working in Nova Scotia. An implementation gap is where an action may be desirable from a municipal planning perspective, but the ability to implement it, due to resource limitations, is absent or significantly limited (Markey, Connolly and Roseland, 2010). The survey findings also suggest that there is a need to increase planners' knowledge on the health impacts of planning.

6.8 SUMMARY

Based on the results of both my research and the CIP survey, we can assume that the majority of planners accept that health is both connected to their work and that it is within their mandate.

Respondents agreed that current research was applicable, but there was still a need for additional research. This may also reflect a general sentiment that small towns and rural areas often do not receive the same level of attention as urban areas do. If that was the case then this sentiment is echoed in the responses to the *Taking the Pulse* survey (Barr, 2011).

The following section presents the results of the in-depth interviews with Planning Directors and one CAO on addressing health issues in their work.

7 INTERVIEW RESULTS

Health is a complex construct, being an aggregate of a wide range of biological, social and environmental factors (Barton, 2010; PHAC, 2006;WHO, 1992). The process that leads to any given health outcome is an equally complex mix of decisions and actions made in relation to social, physical, and economic structures and environments (Corburn, 2009). The interviews provided insight into the rationale behind respondents' answers in the survey and the opportunity to explore other themes not covered in the survey.

7.1 INTERVIEW DETAILS

The interviews ranged from thirty five minutes to over an hour and were either conducted in person (4) or over the telephone (6), whichever method the participant selected. The interviews were then transcribed and coded. One participant opted not to be recorded citing concern over job security as a main reason for not being recorded. He felt that his opinions, were they read by elected officials could be taken out of context and result in a possible dismissal from his position.

TABLE 7-1: INTERVIEW PARTICIPANTS

Respondent Type				**# of Respondent**	**Interview Method**
Rural Municipality	4 Planning Directors	4 =<150 people per km^2	4 = Population >10,000	N=4	1=In-person 3 =via telephone
Regional Municipality	1 Planning Director 1 Senior Planner	2=<150 people per km^2	2= Population >10,000	N=2	1= In-person 1=via telephone
Town	3 Planning Directors 1 CAO	3=>150 people per km^2 1=<150 people per km^2	4= Population <10,000	N=4	2=In-person, 2= via telephone.

7.1.1 CAOs

As in the survey results, there were a low number of responses from CAOs, with only one opting to participate in the interview portion. CAOs are responsible for land-use and development decisions in 33% of the municipalities in Nova Scotia and as such, should be represented in research about planning and the built

environment. Unfortunately, the opinions of CAOs' are not well reflected in this section. Limited participation of town administrators in health-oriented planning research has been noted elsewhere (Grant and Manuel, 2011).

7.2 INTERVIEW RESULTS

The research findings are summarized in

Table 7-2. The findings of this research fall under several broad categories:

- Definitions of health and healthy communities;
- Role of health in planning practice;
- Collaboration with health sector;
- Provincial and municipal conflict;
- Rural dynamics;
- Planning research and;
- Local politics and culture.

Along with these broad themes, issues arising that are specific to individual municipalities will be discussed. The interviews provided insight into the rationale behind respondents' answers in the survey and the opportunity to explore broader themes not covered in the survey. The following sections are divided according to the themes identified in the literature and through the analysis of the interviews themselves, as listed below:

TABLE 7-2: SUMMARY OF FINDINGS

Summary of findings and themes from literature		**Reference**	**Interview findings compared to literature.** (Confirmed, Somewhat Contrary, Refutes, Not discussed)
Role of Health in Planning Practice	Health should be a consideration in developing land-use and planning policy.	(Barton, 2010; Corburn, 2009)	Somewhat contrary
	Planners should act as bridges between health and planning departments.	(Corburn, 2009; Barr and Much, 2009)	Refuted
Rural dynamics	Low population density is considered a barrier to health-oriented planning.	(Sallis et al. 2009)	Confirmed
	Ease of communication with public and politicians' familiarity with local issues considered a benefit to working in rural areas.	(Gordon and Hodge, 2008; Reimer, 2004)	Somewhat contrary
	Human resources limited. Staffs often have multiple responsibilities, other core functions.	(Grant & Manuel, 2011; Douglas, 2010; Hodge & Gordon, 2008)	Confirmed
	Limited legislation and enforcement tools available to encourage consideration of health.	(Barr, 2011)	Confirmed
	Lack of understanding and formal training in health issues.	(Pilkington, Grant and Orme, 2008;	Not discussed
	Social networks important in facilitating social, environmental and economic change.	(Reimer, 2004)	Not discussed
	Planning in rural areas encompasses a broad range of concerns (E.g. health).	(Hodge & Gordon, 2008).	Confirmed
	Because land is not in short supply the incentive to plan for compact communities and mid-high densities is low.	(Hodge & Gordon, 2008).	Confirmed

Summary of findings and themes from literature		Reference	Interview findings compared to literature. (Confirmed, Somewhat Contrary, Refutes, Not discussed)
	Unable to justify strong planning controls on development for fear of discouraging developers.	(Rehman, 2010)	Confirmed
	Urbanization leading to the disinvestment in rural areas.	(WHO, 2008)	Somewhat contrary
	Low educational attainment and low incomes are barriers to healthy lifestyles.	(PHAC, 2006)	Confirmed
	Population decline and outmigration due to limited educational and economic opportunities.	(Grant and Manuel, 2011)	Not discussed
Collaboration with health sector policy makers	Disciplinary barriers exist	(Pilkington, Grant and Orme, 2008; Northridge & Freeman, 2011)	Confirmed
	Uncertainty regarding which discipline should take the lead.	(Botchway et al. 2009; Pilkington, Grant and Orme, 2008, Clark et al. 2010)	Somewhat contrary
Planning Research	Primacy of urban research and tool development	(Barr, 2011; Markey, Connolly and Roseland, 2010)	Confirmed
	Lack of evidence causally linking planning practice, the built environment and health.	(Ding & Gebel, 2012)	Not discussed
	Health-oriented planning tends to be mostly theoretical.	(Forsyth, Slotterback, and Krizek, 2010)	Not discussed
	Assumption that health-oriented planning is just 'good' planning.	(Allender et al. 2009)	Confirmed
Provincial and municipal conflict	Planners are limited in their ability to facilitate change in a meaningful way due to provincial and federal roles in development.	(Durand et al. 2011, Grant and Manuel, 2011)	Confirmed
	Sector versus place-based policy conflicts with local level policy and planning.	(Grant and Manuel, 2011; Sallis and Glanz, 2009; Reimer, 2004)	Confirmed
	Reluctance to expand the description of municipal responsibilities for fear of downloading	(Markey, Connelly & Roseland, 2010; Clark et al., 2010; Burns & Bond, 2008)	Somewhat contrary
Local politics and culture	Lack of political will limits new initiatives.	(Barr, 2011)	Confirmed
	Generally agreement with concepts of supporting health but may lack interest in pursuing beyond rhetoric.	(Dean and Elliot, 2011)	Confirmed

7.3 Interview Results and Analysis

The interview responses are organized according to the themes identified above (Table 7-2).

7.3.1 What does Health mean to you? & How would you define a Healthy Community?

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 (2006) published by the Public Health Agency of Canada (PHAC) suggests that the way in which a person or agency interprets the meaning of health will influence their response to health concerns. In the summary report for *Taking the Pulse*, the author notes that survey respondents expressed concern about the ambiguity of the term health (Barr, 2011). Respondents also indicated that a clearer picture of what health meant in relation to their work would help them in positioning health in their planning work (Barr, 2011). I felt that asking respondents how they interpreted what health and a healthy community were was a fundamental question to better understand their position on the relevance of health in planning. In all the interviews respondents were asked to define the concept of health as they understood it.

In several cases respondents indicated a broad understanding of health, i.e. it included numerous dimensions rather than simply an absence of disease. Only one participant identified health in a strict medical sense. Several of the interview participants were unable or were unsure of how to define health (Table 7-3). The confusion may come from some participants' perception of health having limited application to land-use and development. Participants were not asked to elaborate on their inability to define health. Immediately following the question *What does health mean to you?* participants were asked to define a healthy community. Nearly all the respondents could provide some explanation of what a healthy community was and the following themes emerged:

Active transportation/walkable communities;
Economic health;
Environmental health;
Physical/human/biological health of individuals;
Social interaction and convivial environments;
Access to food (Note: healthy food was not identified, simply food);

Many participants' responses indicate that they could intuitively make the link between health and their work. Even though some observed that health as a biological concept was not part of their day to day work, they acknowledged health as being a community issue and therefore somehow linked to their work. Population decline

was a factor linked by one respondent to the overall health of the community. This person saw population decline as directly affecting socio-economic stability, essential services, and the maintenance of family structures. Participants mentioned that out-migrants, often left behind less well-off family members who suffered from the lack of economic opportunity and social supports.

Three of the respondents identified sustainability as a way to describe a healthy community. One respondent explicitly made the connection between health and sustainability. Overlaps between healthy communities and planning approaches that emphasize sustainability have been highlighted by others (Barton and Tsourou, 2000). The connection between these two ideas (health and sustainability) is important, as much of the language in key planning documents in Nova Scotia like Integrated Community Sustainability Plans and Municipal Planning Strategies use sustainability as a framework for development.

TABLE 7-3: DEFINITIONS OF HEALTH AND HEALTHY COMMUNITY FROM INTERVIEW RESPONDENTS

	What does health mean to you?	**How would you define a healthy Community?**
Interview 1	"Not sure."	"A healthy community is one where people can live and earn a living. So there is economic health and social health. So you have to be able to live and do some meaningful work that you get reasonably well compensated for so that you can live comfortably. But then there is the whole physical health aspect of it. And that includes people having the opportunity to live a healthy lifestyle. Now it's nice if you can force them into a healthy lifestyle, that is, having a community form which forces or leads or entices people into a healthier lifestyle and that is part of a healthy community, having a form that encourages physical activity."
Interview 2	"In most cases I would be thinking of human health so that is everything from all the health indicators dealing with obesity, longevity, happiness and so on. For me I would include environmental health, ecological health , so things like air quality, water quality things like that."	"There are so many ways of defining that. If I was going to sit down and write a description I would try to be as holistic as I could. I would include human health, environmental health, ecological health I guess, as broad as that means for human health and as broad as environmental health means. But it would be the two combined."
Interview 3	Participant did not know how to respond.	"I think it fits well with the sustainable communities, because there are things that whether it's active transportation or public transportation, things that a rural municipality can do that in order to be sustainable you need to have those. With the ICSP, that ones where the indicators are basically urban based but they are still what people think of when they are considering sustainability. Things like high density etc. well in a rural area you have low density, populations spread out further, it may not be the most sustainable but you can be sustainable in other ways. But I guess it all fits together."

	What does health mean to you?	How would you define a healthy Community?
Interview 4	"I would think it is mental, emotional and spiritual well-being. We tend to think of health as physical well-being, but you can be physically healthy, spiritually lost and emotionally miserable. So I believe that all four aspects are important."	"First and foremost I would say it's a place that you can walk and pleasantly too, where you are able to get all the things you need and to be able to interact with your friends, meet new people. And included within that walking distance should be access to good grocery shopping which is becoming more and more difficult."
Interview 5	"Health would be a community that either in terms of the community maintaining its population, maintaining its status quo or growing and improving. I think with appropriate land-use we could probably help that. But at the moment we don't have that ability."	"I think a healthy community would be one that has accessibility for all individuals. We look at things like active transportation, mobility, can people get from point A to point B regardless of their mode of transportation whether it's on foot or vehicular. Healthy communities also represent all of our age groups and have things for all of our age groups to participate in."
Interview 6	Did not know how to respond.	"I think that a healthy community is really designed at a pedestrian scale that is the first key thing. That is the first thing to put the pedestrian first and the automobile somewhere down there, at least third or fourth. That would be my initial reaction and there are a whole bunch of things that flow from that; if you really want to put the pedestrian first you create higher density, change the proximity of schools, shopping, work and living…not just in comfortable distances but also with comfortable design so that it is pleasant to walk to work, walk to the store, walk to school, to walk to the doctor's office or whatever it may be. So for me that is the fundamental first principle is to design it at the pedestrian scale."
Interview 7	"Health is when you aren't sick. You aren't injured. It's when you feel good."	"It is Physical Health of the population, no people sick. The environment is clean and does not cause sickness. The built form of the area is in good shape, the infrastructure is well maintained."
Interview 8	"Health and wellbeing to me are very much the same thing. Health to me relates to being physically well, mentally well and emotionally well in a community of people who strive to maintain that kind of health. It's not the opposite of sickness for me at all; it's something quite different maybe I can't articulate it very well. Health is apparently an attitude I think, if I feel good with the people I'm around and the spaces that I have I will feel healthy, unless I have some physical ailment that sort of prevents me from leaving that but I can be. Exactly and I see it as a very sort of holistic thing."	"Well that's tricky. I would define it as a community where people are able to satisfy their needs or activities. I should say healthy activities..easily. Where there are not issues of what do I call it environmental degradation I guess there's not pollutants in the air in the soil or in the water. That creates ill health and where people can be employed in activities I suppose? Where they can be employed in safe environment, something like that."
Interview 9	"Being able to function normally in our day to day activities without being impaired by health restrictions."	"A community that provides people with the opportunity to live a healthy lifestyle to have access to health care professionals and the health care system and in particular to what I do in land-use planning its providing people with the opportunity for active transportation."

	What does health mean to you?	How would you define a healthy Community?
Interview 10	Skipped question.	"I suppose it would have to do with, you know, breaking it down into economic, social and physical health, and each of those components would have, I guess indicators. And so, people who were able to meet their basic needs in terms of having food and those sorts of things would be on the economic side of health. People who are able to live in a way and make decisions about accessing food that's good for them and exercises they should do, that would be an indicator of the physical health. And in terms of environmental health are they living in a place that's clean is the air clean is the water good to drink, is there heavy smog days, those sorts of things."

In all the statements describing the factors that define a healthy community participants used phrases like *meet basic needs*, *satisfy needs*, *comfortable design*, and *accessibility for all*, and *live comfortably* to describe a healthy community. These ambiguous phrases indicate participants conceptualized healthy communities in a broad sense. Many responses indicate that participants had not previously considered how to define a healthy community. The physical, social, and economic components of the community were easy for participants to identify: pedestrian oriented; access to employment; food and a clean environment. Despite at times struggling to identify what a healthy community is, respondents clearly have a grasp on the components of healthy communities.

Several authors and planning resources have suggested that health-oriented planning is very similar to other planning approaches (e.g. *Smart Growth* or *New Urbanism)* or very similar to fundamental good planning principles (OPPI, 2009, Barton and Tsourou, 2000). Participants were asked to describe what they believed health-oriented planning consisted of and they often drew a relationship between health-oriented planning and general good planning practice.

> *There is always an in phrase for what is just plain good planning…The idea that you should be able to do everything you need to do without needing to use a car ideally without the use of any kind of mechanised transport will always make sense.*
>
> Regional Municipality, Senior Planner, Interview 4

> *It's generally just good planning.*
>
> Rural Municipality, Planning Director, Interview 5

In general I find it is planning with the same ideas, but maybe they sometimes get called with different catch phrases. But I think planning for healthy communities has always been what the push of planning has been about.

Rural Municipality, Planning Director, Interview 2

The interview respondents largely referred to a balancing of physical and social factors. However, the emphasis was largely on active transportation and physical activity. Income or economic aspects also figured largely. Health-oriented planning was also viewed as a way to inspire or leverage support for investment in active transportation or increasing residential and commercial density. Corburn (2009) views this perception of health - planning as problematic, as it is no different from other planning frames like sustainability, that in his opinion, do not focus on the root cause of health disparities. Corburn (2009) views health, and in particular the unequal distribution of health burdens across, in his case US cities, as a manifestation of inequities in the allocation of resources. Barton (2010) also emphasizes the importance of urban planning to include political engagement and empowerment in planning exercises. Interview participant 1 was exceptionally supportive of the move towards connecting planning to health. When asked whether he felt this connection was helpful, he replied:

Extremely helpful. The thing about being a planner in this context (rural Nova Scotia) you have to be ready to use whatever tools are available, whatever kind of social mechanism or whatever your council will grasp onto to move the entire community planning agenda forward.

Rural Municipality, Planning Director, Interview 1

Health-oriented planning was supported in principle by all the interview participants. However, the support was based more on the potential for health to act as a rallying point for the public in support of planning practices such as creating neo-traditional neighbourhoods and *New Urbanist* principles. Many interview participants saw health as a valuable tool in developing a social license for '*just good planning'* practices.

7.3.2 Role of Health in Planning Practice

In the literature on planning and health, the roles that planners are expected to play can be varied. If we take Jason Corburn's approach outlined in *Towards the Healthy City*, (2009) then planners need to be strong advocates for health equity in the broadest sense. Planners need to be leaders on health supportive policy and designs and effective collaborators with health professionals (Corburn, 2009). If we look at the literature around

healthy built environments, planners are able to maintain their objective stance and health is simply an additional consideration in the design and decision making process.

As was outlined in the literature review planners have sought to incorporate health into planning practice in a variety of ways. Healthy Built Environments (BC Provincial Health Authority, 2009; OPPI, 2009), Healthy Urban Planning (Barton & Tsourou, 2000) and Healthy City Planning (Corburn, 2009) all focus on improving health. Each of these theories/approaches emphasize a different role for planning practice, focusing primarily on design and transportation (Healthy Built Environments) or focusing on the social and economic factors and the governance of cities (Healthy Urban Planning and Healthy City Planning).

A difference worth noting is that Healthy Urban Planning and Healthy City Planning presuppose specific spatial and social dynamics, such as the presence of distinct spatial units such as neighbourhoods that may suffer from divestment or the presence of identifiable marginalized groups. In the rural context, neighbourhoods may not exist in the same sense as in cities, and there may not be a clearly identifiable group that is marginalized. In rural areas and small towns that are in decline, the entire community may be relatively homogenous in its lack of resources (Halseth and Ryser, 2006). The economy of a rural community can be the result of decisions made hundreds of miles away or due to a sector-based government policy, such as when schools are closed due to student populations dropping below a specified number (Gordon and Hodge, 2008; Halseth and Ryser, 2006).

In many cases the Healthy Built Environments literature identifies factors like compactness, bike lanes and other features that can be difficult to secure in rural areas, due to population decline and historical settlement patterns that favour large allotments and dispersed population. There is a lack of a health-oriented planning theoretical framework that addresses the physical, spatial and socio-economic contexts of rural and small towns perfectly. Each interview participant was asked what role they themselves, or planners generally, could play in addressing community health. The responses were fairly consistent. All participants saw facilitation as a central role. Through facilitating discussions on health issues either at the council or community level, participants felt that they could encourage the type of development and behavior that would support a healthier community. Several respondents also indicated a need to link disciplines, such as engineering and public health.

> *It could be facilitating meetings, bring the research and ideas to the council level, I wouldn't say so much lobby, but making the councillors aware of what can be done around the healthy communities*

agenda. To play a sort of educational role to the council and to the public, including other staff as well, such as engineers.

Rural Municipality, Planning Director, Interview 3

Well in planning we can't really make it happen, any of it really. But we can definitely suggest and encourage and I think a certain percentage of it is inspiration and that is a part of our job as well. Part of that is to try to provide or encourage examples that can then inspire other people.

Regional Municipality, Senior Planner, Interview 4

And what can I do as a planner to facilitate that, where do we make those linkages, how do we encourage people who are making that new subdivision to ensure that there are linkages to the neighbouring subdivision or to the neighbouring park? We do have the means of working towards a healthy community.

Rural Municipality, Planning Director, Interview 5

The role of planner as bridge builder is common throughout the literature on planning and health (CIP, 2012; Barton, 2010; Capon and Thompson, 2010; Martin, 2010). Research suggests that planners can use the skills they possess; knowledge of municipal administration, land-use controls, urban design expertise, facilitation and knowledge translation to improve the community in collaboration with public health or other agencies (Chapman, 2010; Corburn, 2009).

In the survey, respondents were asked to identify issues they addressed in their practice from a list of physical and social determinants of health (See section 6.5.2). The list ranged from fairly standard issues for planners like transportation to less obvious one like crime prevention. In the interviews I asked participants to elaborate on why they did or did not address the issues listed in the survey. Several answered that they did not see a connection between factors like crime prevention or working conditions and health. They also suggested that issues like crime prevention or injury prevention were outside of their professional role. In discussion with one participant in particular he came to understand the possible links between things like a fear of crime limiting residents' likelihood of walking alone or going out at night after initial dismissing the connection. Several participants did not make the connection between the correlates supplied in the survey and their work even after discussion.

7.3.2.1 COLLABORATION

The vast majority of literature suggests that planners should be collaborating specifically with public health professionals (Northridge and Freeman, 2011; Barton, 2010; Pan-Canadian Public Health Network, 2009; Frank and Kavage, 2008; DeVille and Sparrow, 2008; Pilkington, Grant, and Orme, 2008). Doctors, nurses, and health policy makers are often mentioned as well, but to a lesser extent. This emphasis on public health professionals makes sense as public health work typically looks at the health of the community in a broad sense and addresses root causes of ill health rather than just the treatment of individuals (Frank and Kavage, 2008; Malizia, 2006; Srinivasan et al. 2003). The literature does presuppose that public health agencies are present, which in urban areas is a safe assumption. In rural areas there may be no public health office or worker, or there may be only a few public health staff tasked with providing services for several communities across a county (Nova Scotia Department of Health, 2006). In rural areas, other sources of information and expertise such as doctors or nurses may be the only health professional available for collaboration. Some circumstances may be less about collaboration and more about simply accessing information (Botchwey et al. 2009; DeVille and Sparrow, 2008; Frank and Kavage, 2008).

In the online survey, respondents were asked whether they had ever consulted sources for health information (See Section 6.5.4). In the interviews the participants provided specifics about their collaborative work. Two participants had become involved with their Community Health Board (See 4.3.2). One respondent assisted a local organization promoting the health benefits of active transportation. One participant attended a past Nova Scotia physicians' conference where he spoke on the health impacts of the built environment. The experiences and roles of these four interview participants were different.

> *It's interesting, the committee* (Community Health Board) *existed and then invited me to participate because they saw my role before I saw my role.*
>
> Rural Municipality, Planning Director, Interview 5

> *We all share what we are working on and as people describe the projects they are working on the wheels in my head start going and I try to think of how to incorporate that. Because we have such a general land-use plan I am looking at it as a clean slate.*
>
> Rural Municipality, Planning Director, Interview 5

The role we have been playing on there (CHB) *is helping them understand at the federal, provincial and municipal level what currently exists or legislation and requirements and what they could…They were talking about a minimum standards by-law for housing, so we could come back and say "Well here's what exists for minimum standards, here are some examples, here are some of the challenges to enforcement. It may not solve all the problems you guys think it will." So sort of doing that educational type of thing. We also looked at some stats for them and I prepared a report and presented that to council. I did a sort of preliminary need analysis in our municipality for affordable housing and made some recommendations. Basically how we move forward. If we want to build affordable housing units, what do we need to do to get those types of projects going?*

Rural Municipality, Planning Director, Interview 3

However, opinions varied on who should lead the process of analyzing and implementing strategies to target community health problems.

I think they (health department/public health) *would have to be the leaders in this, and they would be the initiator and bring us into their project as opposed to the other way around.*

Town, Planning Director, Interview 9

The local government is on the front lines, even though they may not be mandated to, say, look at health, it's still an issue that affects the community. The design of the community and the standards of living, the municipality has the ability to champion those things at the local level, as opposed to the province which will be something that will be much more difficult for them to meaningfully implement at the local level.

Rural Municipality, Planning Director, Interview 2

Barriers to collaboration between planners and public health professionals have been identified in the academic and grey literature (Northridge and Freeman, 2011; BC Healthy Authority, 2010; Pilkington, Grant and Orme, 2008). A barrier that is often mentioned is the ability, or lack thereof, for planners and people in the health field to communicate effectively. Communication can be problematic due to differences in technical language or a limited understanding of what each field can and cannot do in terms of interventions in the social, built, or natural environments. Legislation regulates what each field can do, at least in the public sector. This problem was identified by the British Columbia Provincial Health Authority and to address it they developed primers for both public health

and planners. One participant identified the unrealistic expectations of a local environmental health group regarding what the planning department and the municipality was able to accomplish as a barrier to useful collaboration:

> *We have a group right now called _____. They're a mix of people very interested in the environment and health. Their intentions are excellent but they don't understand the constraints of municipal government, particularly the financial ones. They're starting to rub people within government quite the wrong way because they're pushing and pushing and we have to juggle many responsibilities and obligations so that we can't overnight turn the town into a town full of bike lanes. From the outside they see things moving very slowly but from the inside we're frantically trying to keep up. That's the kind of potential complication that can result from collaboration, when you've got different groups with different mandates.*
>
> Town, Planning Director, Interview 10

A barrier to collaboration that has not been identified in the literature is that of distance. Rural areas tend to have low population densities (Hodge and Gordon, 2008) and distances between residential, commercial and government services may complicate the ability to have face-to-face communication.

> *The CHB is physically 45 minutes away from here. That makes it really, really difficult to make connections.*
>
> Rural Municipality, Planning Director, Interview 2

The Community Health Board (CHB) was mentioned frequently in relation to collaboration. The purpose of the Community Health Board is outlined in Chapter 4: Case Study Profile. Acting as the 'eyes and ears' of the community, the Community Health Board is expected to be aware of current community health issues and working towards either connecting organizations that can address issues or making recommendations to the District Health Authority to address them. Participants' opinions on the value of this collaboration were mixed. Some saw the Community Health Boards as great repositories of information and others saw them as ineffectual. As each CHB is different due to their being volunteer based, this is unsurprising.

> *The opportunity is just for the information sharing, the Community Health Boards for example have all kinds of useful recommendations that don't go anywhere, or as I have been told. They have great ideas but the hospital doesn't control the built form it's the municipality.*
>
> Rural Municipality, Planning Director, Interview 2

At the level of the CHB they are primarily at the promotional level, they appear to do little else. They seem to have their hands tied. There is very little that they can do.

Rural Municipality, Planning Director, Interview 1

I think there are opportunities especially through the CHBs. I think those are a good kind of structure that we can work with. We probably have to do more to ensure that they are included on our various committees' especially when we do the plan review and that sort of thing.

Regional Municipality, Senior Planner, Interview 4

7.3.3 PROVINCIAL AND MUNICIPAL CONFLICT

Crown agencies and provincial departments are big, big players in the land use game but they don't necessarily see it that way. We are mostly in a reactive decision-making stance, oh there are plans and whatnot but senior governments don't pay much attention to them. They often have their own objectives and those are often sectorial.

Regional Municipality, Planning Director, Interview 6

Municipalities, in particular rural municipalities, are often at a disadvantage when dealing with policies that are sector-based rather than place-based. As Reimer (2004) points out, sector based and senior level government policies are often set without consultation with the communities affected, which neglects what those communities have prioritized or planned to develop to meet their own goals. Grant and Manuel (2011) found that planners in Atlantic Canada felt that the actions of senior levels of government were often contrary to the plans for their communities. Adler at al. (2008) identified where school boards choose to locate schools as a significant barrier to developing a supportive built environment for active transportation at the rural-urban fringe. In the U.S., Chum (2011) found that municipal "silos" and inter-urban competition created situations where policy and strategy around municipal development led to future health inequalities in the allocation of services and resources. Participants noted that policies set at the upper level of government are often inconsistent with the policy set at lower levels. However, municipal government is often beholden to meet policy criteria set at the provincial level. Policy and regulatory conflicts between the municipality and the province were cited as the largest barriers to health-oriented planning by

interview participants. The departments of Health and Wellness, Transportation and Infrastructure Renewal and Education were often seen undermining local planning policy by setting standards for programming, infrastructure investment and facility location that interfered with the ability of municipalities to implement good planning practice.

Participants frequently referred to the inflexibility of land requirements for schools as a problem. The push for efficiency and economies of scale with regards to schools meant that school locations need to accommodate busing and large recreation areas like soccer fields. This pushes up the size of the land requirements beyond what can be accommodated within the cores of smaller communities. The consequence of having a set of static parameters for the design of schools can result in them being less accessible as they get pushed to the periphery of a community. Additionally, the main access to schools located at the periphery is often along regional highways with limited or no pedestrian access, therefore using active transportation is dangerous.

> *Schools are the worst of all. They put standards on schools, right now in Nova Scotia the Department of Education has an architectural division and the architects generally put standards on schools that drive the land requirements up into the 12 -15 acre mark that is required. That means every time you go through a location exercise with provincial people, a lot of time they don't, and they think "we have to locate this site and it has to meet all this criteria".*
>
> Regional Municipality, Planning Director, Interview 6

From the participants' perspective the results of school location policies are that students cannot walk to school and that the schools have no connection to the community. In many cases the schools serve as the only indoor purpose-built recreational facility in the community. Participants noted that the routes to school were often unsafe as they were along highways with speeds limits of 60-80km per hour and students would have to walk along the shoulder.

> *There is lip service paid to the idea that we won't bus kids at a certain distance but the reality is that we are busing kids more and more even when they are half a kilometre away from school because of a lack of safe places to walk.*
>
> Regional Municipality, Planning Director, Interview 6

Roads were the most often cited example concerning conflict between municipal and provincial policy and goals. In Nova Scotia jurisdiction over roads varies with the municipality. The urban areas (Halifax and Sydney[10]) and the towns are responsible for the roads within their boundaries. In most rural municipalities nearly all roads are the responsibility of the province, consequently the provincial policies on road quality, design, and maintenance largely defines the character of the transportation network in these areas. Frustration about the limited influence over roads was a major issue for all the participants. Regardless of what municipal planners decided was important for improving links within and between communities ultimately the decision on how roads are designed and maintained is the purview of the Department of Transportation and Infrastructure Renewal. As many participants saw it, the Department of Transportation's priority is trucks and cars with cyclists and pedestrians often not entering into the equation.

> *I think the jurisdictional gap between the province and the municipalities is a problem because when the province thinks transportation it thinks freeways and driving and trucks. It is very hard to get them interested in active transportation…. You also have a jurisdictional difference because the highways are under provincial jurisdiction. So it is extremely difficult to get any systematic consideration of active transportation whether it be biking or walking in a rural community unless it is already on the provinces radar. They are adding bike lanes here and there and that is a good thing. But it is difficult to say "we want a bike lane here." I tried that and I tried to get support for that even within the municipality and then take that to the province and it went absolutely nowhere. So you get that jurisdictional problem.*
>
> Regional Municipality, Senior Planner, Interview 4

> *One of the barriers with an Active Transportation plan in a rural municipality is you have provincial roads, the Department of Transportation is responsible for all these roads, and those are the roads that the bike lanes and the shoulders need to be built on. Whereas in a town, the town is responsible for all the roads within their towns and they have control over things, whereas we have to work with another government body to get things done.*
>
> Rural Municipality, Planning Director, Interview 3

[10] Halifax Regional Municipality and Cape Breton Municipality are only responsible for some of the roads in their municipality, specifically those contained within their urban cores. Both have significant low density rural areas within their boundaries. In these low density areas the province is responsible for many of the roads.

In many areas across the province there are also trails systems in place that link communities or provide secondary routes within a community. The trail systems are sometimes converted rail beds or trails originally built for forestry or agriculture. Some of these trails can also fall under provincial jurisdiction and again provincial policy may not be supportive of municipal policy on active transportation or physical activity.

> *We do have a trail system but it's provincial policy that the trails are also used by ATVs and so many people will not walk on them, and that debate is so acrimonious that it splits rural communities and we don't know of a solution to it. We don't have one. So we just try to keep out of it because it is just a lose-lose discussion. So jurisdictional fragmentation within organizations and between them I would say is the single biggest problem.*
>
> Regional Municipality, Senior Planner, Interview 4

Even in circumstances where a municipality has control over the design of streets, the cost of active transportation infrastructure, such as sidewalks or bicycle lanes may preclude their development. One participant noted that the cost of improving the transportation network limited the town's actions.

> *If you look at something like jurisdiction and responsibility for roads, we have a village nearby that has large amounts of commercial development and the traffic associated with that. The difference between the responsibilities and the subsequent expenses is substantial. Towns are responsible for the roads within their borders, whereas for villages the province covers those costs, such as traffic lights and so on. Should we have enough development to warrant a traffic light, we have to cover 100% of that cost.*
>
> Town Planning Director, Interview 9

Another interview participant noted the financial legacy of provincial decisions. In this person's case the decision to locate an educational institution and a hospital at the very edge of the municipality cost the municipality millions of dollars in servicing costs for water, sewer, and roads. The participant felt that, in addition to ignoring planning goals, the province was placing a significant financial burden on the municipality. This participant also felt that the decision to locate the educational institution and hospital at the periphery had undermined the economic and social character of the downtown and had encouraged additional peripheral development.

Some participants noted that some headway had been made with the Department of Transportation and Infrastructure Renewal and other departments, primarily due to the interdisciplinary and multi-sectorial nature of health-oriented planning approaches.

> *So this push of supporting the health aspects of community design has been very, very helpful. We are pulling together provincial government departments that have never worked together before together with municipal units too, to do some stuff here which is really positive.*
>
> Rural Municipality, Planning Director, Interview 1

Despite this positivity, other participants found the relationship with the provincial departments frustrating and problematic. Interview 6 summed up this dynamic nicely.

> *We try to chase these things that were provincial decisions with transit and with bike lanes and pedestrian access. But the original decision which truly changed our urban form and set the tone for a whole bunch of other issues was not ours.*
>
> Regional Municipality, Planning Director, Interview 6

The literature on rural communities and on the health impacts of planning covers the issues of senior levels of government not taking into account or even consulting local level governments on the impacts of sector -based policies (Grant and Manuel, 2011; Markey, Connolly and Roseland, 2010; Halseth and Ryser, 2006). The result of this lack of communication and collaborative decision making has been, as Interview 6 pointed out, that local planners and governments *chase* provincial development with piecemeal solutions.

Policy conflict between municipalities was also mentioned as a barrier. The one respondent who identified this issue spoke about how, in their municipality, Council and the planning department were attempting to set policies to increase density and support smaller businesses along the town's main street. The adjacent municipality, which was rural with a very low density settlement pattern, had undermined the town's attempt by supporting the location of big box retail just outside the town's border.

> *It's kind of a "Wild West" ideology. So unfortunately all around the town is what is usually described as a "dog's breakfast" with highway sprawl commercial.*
>
> Town, Planning Director, Interview 10

7.3.4 RURAL DYNAMICS

A central focus of this research was to look at how the rural character of a municipality influenced planners' professional practice in relation to community health issues. Literature on the dynamics of rural areas often points to the difficulties such areas face and also what advantages they have over urban areas (Caldwell, 2011). Ease of informal communication between residents and town staff, familiarity and quick response times are often cited as benefits of professional planning in rural areas (Caldwell, 2011). Each interview participant was asked to reflect upon how the rural character of their municipality (or portions of their municipality) made incorporating health into their work easier or more difficult. Additionally, participants were asked to identify any benefits to working in a rural context when it came to addressing health through planning practice. The results were diverse. Participants identified a wide range of problems, benefits and quirks about working in rural municipalities. The intent was not to focus on limitations, but participants more often than not identified reasons for how planning was complicated by their rural situations or how the rural context precluded health-oriented planning. The topic of rurality was visited throughout each interview. Several sub-themes arose under the theme of rurality:

- Spatial issues;
- Human resource limitations and ;
- Communication and decision making.

These are listed below and explored in the following sections.

7.3.4.1 SPATIAL AND BUILT FORM ISSUES

Spatial issues came up frequently in the discussions with interview participants, in particular problems associated with dispersed populations and/or ribbon development along highways. Participants saw this spatial arrangement as an impediment to investments in the built environment such as active transportation infrastructure. In fact, active transportation was the issue most often discussed. Ideas like *Smart Growth* were also often mentioned by participants. *Smart Growth* shares several features with health-oriented planning which support actions such as:

1. Mixing land uses.
2. Building compact neighbourhoods.
3. Providing a variety of transportation choices.

4. Creating diverse housing opportunities.
5. Preserving open spaces, natural beauty, and environmentally sensitive areas.
6. Supporting engaged citizens.

(*Smart Growth principles*, SmartGrowth BC, http://www.smartgrowth.bc.ca/)

Participants cited an implementation gap between incorporating planning principles into their policy work and the ability to encourage or enforce these principles in practice. Respondents did not suggest that principles like those found in health-oriented planning or *Smart Growth* were inapplicable to their rural context. The cost to construct active transportation infrastructure like bike lanes or sidewalks was often seen either as financially difficult or beyond the municipalities' control. Participants did note that designing for active transportation was possible in rural areas but that scale of plans and projects was the key. Interview 1 was asked whether spatial forms correlated to health or those that supported active transportation such as compact development were applicable to the rural context.

> *Let's take walkable as an issue. Here we have over 10,000km^2, and something like greater than 10,000 people scattered around. So obviously there are knots of population and then strings of population, and there are large tracts of land which are in forestry some other natural resource use and then you have some identifiable communities. But these communities tend to have very soft edges; they tend to bleed into each other. So what do you mean by walkable? Is the municipality walkable? No. Are some of the villages walkable? Yes, but there are some big gaps in the infrastructure. So how do I answer that question? It's the wrong question.*
> Rural Municipality, Planning Director, Interview 1

The character of rural built form was mentioned several times. The political problems with increasing population density, creating more compact and connected subdivisions, villages and hamlets were often mentioned. The physical layout of communities, even within the more dense downtowns, was not what many respondents felt were population densities that would support active transportation. But again, scale and context were important.

> *Being in a rural setting, when you are talking about increasing density and built form here it is much different than elsewhere like Halifax or Sydney. Where the people here are used to the wide open spaces, so compact here is probably sprawl elsewhere.*
> Rural Municipality, Planning Director, Interview 2

One respondent, Interview 8, cited their own context as an example of the difficulty changing rural settlement patterns. The municipality Interview 8 worked for has a central core where retail and some services were located, but there were also ample greenfield sites within the municipality that would be easy to expand into. Beyond the infrastructure costs for water and sewer and roads there was no real impetus to contain development, especially if the initial infrastructure costs were paid by the developer. In Interview 8's context the responsibility of road maintenance would be turned over to the province and sewage and water were dealt with onsite. Interview 8 stated that it was assumed that any single family residential lot would come with at least an acre of land and that any other form of development would be acting against market forces.

> *The land mass is big enough so that we can be spread and out and are likely to be spread out.*
>
> Town, CAO, Interview 8

Several interview participants noted that the ability to expand into woodlot and undeveloped areas easily as a benefit of working in a rural municipality. Developments were considered simpler than in urban contexts due to the limited land-use and development restrictions posed by working in low density settlements or on undeveloped lands.

> *I guess it's more manageable due to the size. I guess getting input easily is a factor. But there is also the space to work with, more green space to recreate in. I guess there is just more opportunities to get out and interact with the natural world. The trails may not be directly within the communities. But we are blessed with a variety of natural features that you may want to get to and serve as recreation type destinations. It's not necessarily tied to any type of development but there are just a variety of opportunities.*
>
> Rural Municipality, Planning Director, Interview 2

> *There's an unlimited amount of physical space so in a sense it's perhaps less complex as it might be in Toronto, Halifax, Ottawa, etc… But that's really balanced off by the lack of resources.*
> Town, CAO, Interview 8

Another issue that arose was the opposition of rural residents to densification or infill development. According to participants rural residents saw density as an inherently urban idea and

conflicting with their rural idyll. Satsangi (2009) identifies an opposition to affordable housing development from rural residents due to its conflict with residents' conceptions of their rural community.

7.3.4.2 HUMAN RESOURCE LIMITATIONS

> *For rural communities facing particular capacity gaps, where the clerk, planner and budget officer may be the same person, the ability to pursue innovative practices is limited.*
> (Markey, Connolly and Roseland, 2010, pg. 15)

In the literature on rural planning and rural community development a lack of resources and capacity is often mentioned as a barrier to implementing effective planning. Limited financial capacity and human resource limitation are often the main issues identified. A lack of financial capacity to support planning can be caused by simply a lack of revenue or the need to direct funds towards other departments or debt servicing. A lack of finances often translates into human resource deficiencies and can lead to a lack of skills or simply a lack of people to do the work necessary (Halseth and Ryser, 2006). Constraints in finances, human resources, time, experience, knowledge and access to technology were all cited as barriers to health-oriented planning by research participants. In the survey for this research a lack of human resources was the second most significant barrier to planners addressing health issues (See Section 6.5.3). This was reconfirmed in the interviews.

> *I think primarily from a resource perspective we just don't have as many specialized people as you would have in a larger organization. And also people can only deal with so much technical legislation and be any good at it. Whereas some of us are already wearing so many hats and have to deal with many large documents like the Municipal Government Act, building codes and things like that which are by themselves quite enough…to add another one would be quite difficult.*
> Town, Planning Director, Interview 10

> *If some developer wants a building permit then I have to put that hat on and then it's gone again so the planning it's not systematic, it's not holistic in the sense of looking at the whole community, in where things should be happening and should not be happening. I mean I'm trying to do that when I can, but it's just not an ongoing process and that's the real problem, not having the planning resources to do it.*
> Town, CAO, Interview 8

The fact that many research participants did work that would typically be subdivided amongst several people (e.g. Development Officer, By-law enforcement officer, Planner, GIS technician) in a larger municipality was challenging. Ebbs and flows of development meant that the participants often felt rushed or pressed for time to complete development agreements, while also attempting to do extra work like long range planning or developing policy around transportation. Participants indicated that temporary positions and grants from organizations like the Federation of Canadian Municipalities helped them to do more policy planning or special projects, but they still felt this funding was not sufficient to complete all the additional policy and planning work that they wanted.

7.3.4.2.1 POLICY TOOLS

Several municipalities in Nova Scotia do not have planning departments, comprehensive planning policies or detailed land-use by-laws. In some cases municipalities have detailed land-use controls for only a portion of the municipality.

> *I would say its mishmash, we do have some controls or policies in place and we are fairly up to date to encourage walkable communities, trail systems, sensitivity to the natural environment, mixed housing options and that kind of thing. But we still have remnants of the mid 80's regarding strip mall development type things, so we are a mishmash of things. So things are working but maybe not in the best way possible.*
> Rural Municipality, Planning Director, Interview 2

> *We just have a general zone in the municipality, some of the smaller communities have detailed plans but they don't look at that type of issue. They don't look at creating a density so that we can afford to put in services that will keep our population and our communities growing.*
> Rural Municipality, Planning Director, Interview 5

> *Did I mention that only a small percentage of our municipality has land-use planning? Only a small percentage has planning representing about 22% of our population. In the last ten years we have tried several times to get land-use planning across the entire municipality. The attitude has been essentially over my dead body.*

Rural Municipality, Planning Director, Interview 3

> *The municipal planning strategy was done in days where things were typed. I can tell by looking at it and it hasn't been updated, so there's not any kind of an up-to-date holistic look at things. Looks like this is from 1987, so that's a long time ago. And so many things have changed in the way people think about environmental issues, health issues and even economic issues that this thing should really have a big reworking. So, dated policy framework, how does that sound?*
> Town, CAO, Interview 8

This lack of clear planning policy and land use controls again limited the capacity of planners to effectively manage development to support health-oriented planning.

7.3.4.3 COMMUNICATION AND DECISION MAKING

When asked about the benefits of working in a small or rural municipality in terms of health- oriented planning, interview participants cited features that have also often been highlighted in the literature: being able to make decisions quickly due to a smaller number of voices or opinions, or the small size of the administrative structure. Being familiar with residents, local business and developers meant that planners could have tacit knowledge such as the likelihood of a person following through with a development proposal, or their openness to infill or compact development. Familiarity of the community and residents also meant that, if a problem from the public was likely to arise, planners and administrators could be proactive in addressing it.

> *Yea, I think the positives are that decisions can get made fairly rapidly, you can bring people together fairly easily in terms of the municipal government to talk about issues and work them through so that's definitely a very good thing.*
> Town, CAO, Interview 8

However, while communication between planners and the municipalities' residents and elected officials may be easier due to familiarity and smaller populations, one respondent noted that geography could be a complicating factor, in particular for rural and regional municipalities that cover a large landmass and may have dozens of small communities.

I think a drawback is attempting to communicate effectively across such a huge geography. One of the things I have discovered is that a lot of people don't buy the local newspaper there are actually a few free ones they prefer. Some of my first messages out to the community were through the pay newspaper and many people did not get the message and then we had to adjust how that communication happened. Then there is of course the need to ensure that you have multiple meetings due to the population being so dispersed.
Rural Municipality, Planning Director, Interview 5

7.3.5 PLANNING RESEARCH

Research on health-oriented planning is heavily weighted to urban contexts (Barr, 2011, Boehmer, 2006). The literature review conducted for this research, as well as that by several others (Barr, 2011, Ontario Healthy Communities Coalition, 2007) found a limited amount of research on health-oriented planning in rural contexts. Despite the dearth of research on rural environs, the applicability of urban research to rural contexts should not always be ruled out (OPPI, 2009, Healthy Living Issue Group of the Pan-Canadian Public Health Network, 2009; Dalbey, 2008). As participants pointed out, ideas like walkability and compact development can apply to rural areas, just not at the same scale or in the same way as in urban areas. Ideas like compact development or pedestrian-scale design can be applied at the street, neighbourhood or community scale (CIP, 2012; OPPI, 2009). However, the general sentiment was that planning research is dominated by urban research. The participants often referred to having to translate urban research to their rural contexts. Few felt that health-oriented planning and planning research generally was directly applicable to their contexts.

And especially in a rural environment, sometimes the research documents will be available, but it's really in the urban context and you are always left wondering, "Well does that really apply?"
Rural Municipality, Planning Director, Interview 3

Not all participants felt that an urban focus to planning research was unwarranted.

I guess it's just a general impression I get. I am on a bunch of listserves for CIP and stuff and the focus of the research tends to be on cities. Bike lanes and transit not so much an awareness of smaller places, I guess it's just a general impression. But fair enough Canada is 80% urban.

Rural Municipality, Planning Director, Interview 2

One participant had actually been involved in developing one of the documents covered in the content analysis, *Healthy Places Toolkit* (2007). Despite being involved in and supportive of the development of the Toolkit, he felt that the language of the document was largely made up of platitudes. This participant felt the value of toolkits and manuals designed for health-oriented planning was in how they inspired non-professionals, i.e. non-planners.

> *Yes, especially for people who are not in planning as professionals, people who are on planning advisory committees, planning review committees, politicians, even developers I think could use it. You need something that makes it easy for people to do the right thing. I live and breathe this stuff but most people don't. So they need something that is quick and easy to run their ideas by and to inspire them.*
> Regional Municipality, Senior Planner, Interview 4

Overall interview participants, as was the case in the survey; felt that additional research is needed for rural areas. In particular, a need for research that is action oriented, that takes theory and applies it directly to the social, economic and environmental realities of rural areas.

> *At this point I am not sure, in fact as I probably indicated on the survey, I don't think I have quite enough awareness about the issues or how they are connected to really have a good idea of what would be something useful to have…Perhaps that indicates a tool that would be helpful? Educational material that would be directed towards helping to educate me or other planners on the issue and how our work can properly address health.*
> Town, Planning Director, Interview 9

7.3.6 LOCAL POLITICS AND CULTURE

The actions of planners and municipal staff in rural municipalities are largely guided by local politicians and the public. Interview participants were quick to point out that they take direction from their councils. What

staffs identify as priorities may not always be shared by council, and ultimately what council decides guides what staff work on.

One participant spoke about the time and effort it took to get the council in his municipality to accept active transportation as a valuable goal. Once accepted, the council was highly supportive of pursuing active transportation options. Participants stated that a significant part of their role was to guide and hopefully inspire council and the public, to accept land-use and urban design that could support healthier options for residents.

> *So if there was more of an interest in pursuing planning from a healthy perspective then we would likely be doing it. But it's not really the top of discussions, it's more like are you open for business. I can't say it's something I hear councillors picking up on their own. So if it's not a priority for them it's not a priority for us.*
> Rural Municipality, Planning Director, Interviewer 2

Several interview participants discussed opposition to planning and land-use controls from local residents. For some it was a significant barrier to implementing any organized approach to development. Several participants felt that the reason residents were opposed to planning was because they felt it would restrict their ability to make decisions about their private property. While participants could not identify specifically what residents felt they would lose the ability to do, some suggested that the residents' concerns were mostly about environmental controls, such as limiting burning of waste, or dumping.

> *The individuals that have grown up here, those that have had several generations grow up here those are the ones that are not that open to the idea of land-use planning. "I have always done it this way, how dare you tell me what I can't do with my land! It's been this way for x number of years!" Those are the ones who aren't that open.*
> Rural Municipality, Planning Director, Interview 3

This opposition suggests that residents believe that planning, as a land control tool, is inherently dismissive of the private property rights of landowners. It also suggests a certain amount of distrust of the local administration or at least the planning department. This perspective is not uncommon in planning (Northridge and Freeman, 2011; Corburn, 2009). However, the literature suggests that rural areas tend to have closer ties amongst residents and as such there is easier access to administration and local politicians

(Reimer and Bollman, 2010). It was difficult for interview participants to understand why long-term residents were so oppositional to planning, especially since they saw planning as working in the public's best interest.

> *I have had some interesting conversations lately with members of the public about things like "I think someone is building an automotive repair station next to my house." And I have the conversation with them saying "well that is a permitted use because all uses are permitted in the zone where you live." And they are like "Really!" It means someone could put a cement plant next to your house and there is nothing we can do about it. That's what has been happening. I am just starting to get feedback. People are just now becoming aware of what is going on around them.*
> Rural Municipality, Planning Director, Interview 5

However, residents were not the only people that participants noted as being opposed to planning. Interview 3 noted that the council that they worked for was opposed to land-use controls being applied to the entire municipality because land-use planning and the legislated public participation process that occurred around it would create conflict that the council wanted to avoid.

> *…when you have planning you have the real debates about things. Those are the heated debates and people come out and are all worked up and upset. I think it makes the politicians nervous.*
> Rural Municipality, Planning Director, Interview 3

Interview participants saw the attitudes of residents and council members as significant obstacles to investigating issues like community health. Participants did not offer much in the way of a solution to this obstacle. Several participants suggested that until there was a negative consequence stemming from a lack of development control, residents and council would remain obdurate. Specifically until the absence of specific development controls affected people directly there would be little interest in applying planning regulations. Since participants had to take their direction from council they were limited in the scope of work in which they could become involved. Some participants described this picking and choosing of goals by council as a piecemeal approach that has led to inefficient and fundamentally unhealthy environments.

7.3.7 WAYS FORWARD

Towards the end of each interview I asked participants to identify or recommend tools or research that they felt would assist them to better address health in their future work. The majority of participants were at a loss to identify a single or specific piece of research, or a tool, that they would find useful. However, three specific recommendations stood out. The first was that more educational resources were needed. Several interview participants over the course of the interview indicated that they felt they were less informed then they should be on the possible health impacts of planning and urban design.

The second recommendation looked at improving coordination between municipal and provincial policies and also amongst provincial departments and agencies. Unsurprisingly this recommendation came from the participant who had been the most outspoken on the negative consequences of sectorial rather than place based policies.

> *…the health authorities have a hard enough time dealing with the realities of our aging population and upside down age/sex pyramid as we do and probably more. But the governing structure could be the key, if you had one body that had to allocate resources between health care, sidewalks, active living programs, education all these things, maybe if you got something that was more on a community priority instead of sectorally divided into healthcare, planning, sewers, water, roads, parks, that kind of stuff perhaps that might be a better approach to deal with these issues that intersect all these areas.*
> Regional Municipality, Planning Director, Interview 6

The third recommendation directly addressed some participants' concerns over not being able to make health a priority. Interview 10 suggested that paying attention to community health should become one of the Provincial Statements of Interest.

> *So there's 5 of them (Provincial Statements of Interest) right now, and some of them address health, such as Protection of Water Supplies, but not from a holistic approach. So why not lobby for one being written about Community Health? A plan shall be written in such a way to reflect the need to improve community health or something along those lines?*
> Town, Planning Director, Interview 10

Making the consideration of community health a Provincial Statement of Interest, would mean that all developments would need to consider the health impacts of the development and mitigate those impacts as much as possible, or even stop a development altogether. This step also means that the province can in practice step in and review a development based on this policy. In Nova Scotia this has occurred recently, where a development application to rezone agricultural land ran contrary to one of the Provincial Statements of Interest. The municipality concerned had attempted to deal with the issue but the level of acrimony from the public and special interest groups led them to defer to the province. Ultimately the province intervened to uphold the Provincial Statement of Interest related to agricultural land (Service Nova Scotia and Municipal Relations, News, March 23, 2011[11]).

To a large extent the rationale for the participants' answers echoes material found in the literature on planning and health, and rural planning. Also the barriers to action that were identified were also mostly consistent with the literature. In this way many of the findings identified in this research are already well known, confirming other studies and not overly novel. The value in the findings is that they clearly identify that planners have a genuine interest in looking at health in practice and that some significant policy barriers are limiting local planners in planning for and designing healthier communities.

Raphael Fischler in a recent paper (2012) suggested that planning as a discipline is ill-defined. Fischler suggests that planning is a discipline in conflict with itself as it is constantly re-negotiating its role and relationship to people, power, and space. A central conflict within planning is whether it is an objective and value free activity or one that is value laden and focused on improving the lives of all individuals (Fischler, 2012). I believe this conflict is an underlying component to the responses provided by research participants as all participants identified an interest in addressing health issues in their work, but very few acted on this interest or saw health as something that they were unable to address within their professional role. Participants consistently expressed uncertainty about how they could actively engage in health-oriented planning.

7.4 SUMMARY

The interview process revealed a wide range of issues related to planning, the built environment and health. The majority of the findings are not unheard of in other contexts, both rural and urban, such as the conflict between municipal and provincial level policies. However, other findings such as the willingness of rural planners to engage

[11] SNSMR News http://novascotia.ca/news/release/?id=20110323005

in discussion with public health agencies on building healthier communities is not identified in the literature. Additionally, the assertion that discussion with health-oriented groups had helped planners to better understand the connection between their work and health is promising. Overall, interview participants indicated that they recognized and wished to work towards making their communities more supportive of healthy behavior, with particular focus on active transportation. Something that was noticeable in many of the interviews was a limited awareness of the wide variety of connections between land-use planning and health, in particular the impact on the food environment. The limited involvement of planners in discussions of food security has been noted elsewhere (Grant and Manuel, 2011, Grant and Manuel – presentation NSPDA, 2011).

The following section Discussion and Recommendations discusses the research findings and presents recommendations that suggest ways that Nova Scotia planners could incorporate health-oriented planning in their practice.

8. DISCUSSION AND RECOMMENDATIONS

The following section summarizes the research findings, answering the research questions, as well as discussing the implications of the findings. Recommendations will be provided that incorporate the findings of the research, for consideration by planners.

To return to the goals set out for this research, the primary research question asks:

How and to what extent do planners in small and rural municipalities in Nova Scotia acknowledge and address community health challenges in the course of their practice?

Secondary questions ask:

I. How do planners understand health as it relates to their practice?

II. How does working in non-urban areas affect planners' responses to health challenges in practice?

IV. What opportunities and barriers do planners identify in integrating health challenges into their practice?

8.1 ACKNOWLEDGEMENT OF HEALTH AS A PLANNING ISSUE

Research participants unanimously agreed that health is a planning issue, regardless of context and professional position. This was unexpected. The rationale for why participants felt that health was relevant to planning practice did vary slightly. Some participants viewed health as a holistic vision for a community, not unlike sustainability. Participants who viewed health as a holistic concept incorporated issues such as employment and injury prevention along with active transportation into their rationale for supporting health-oriented planning. Other participants felt that health, as it related to planning and land-use, is limited to physical activity, specifically active transportation.

There are two possibilities for future planning that come from this level of agreement. First, it demonstrates that planners and CAOs across the province have similar conceptions of what land-use planning and planning policy should be doing in the province, at least in terms of health. This presents opportunities to enhance planning and its role in Nova Scotia. Health-oriented planning in its various forms has been suggested as a way to enhance the value and efficacy of planning practice through directly targeting social, economic and environmental inequalities (Barton,

2010; Corburn, 2009, Barr, 2009). Second, it suggests that should planning as a discipline formalize its connection to community health and the health sector in Nova Scotia, this would be supported by planning practitioners.

The findings from this thesis confirm the results of the Canadian Institute of Planners survey *Taking the Pulse* completed in 2011. That survey found that the majority of planners agree that the practice of planning can impact health and that it is an issue to consider in planning (Barr, 2012). Research in other nations also found that planners agree that they should consider the health impacts of their work (Allender et al., 2009; Hollander, Martin, and Vehige, 2008).

8.2 How do Planners understand health as it relates to their practice

Despite unanimous acknowledgement of health as an issue that should be addressed in planning practice there was variation in how and to what extent this should be done. Responses to health issues are often shaped by an individual's, agency's or government's definition of health (PHAC, 2006). From the beginning of professional planning practice in Canada through to today the impact of development on health has been a consideration in planning practice (Grant and Manuel, 2011). Recent initiatives include the Canadian Institute of Planners' Healthy Communities national programme. Despite this longstanding connection with health, planners who participated in this research were, with a few exceptions, limited in their understanding of the health impacts of development.

In general participants found the connection between planning, land-use and health easy to agree with in principle, but in application the connection became muddled. Consequently, participants often attempted to position health as an addendum to the planning practices with which they were most comfortable. Despite the WHO definition of health being the standard used in most research, its application to planning practice remains largely unclear (Barr, 2012, CIP, 2012; Barr and Much, 2009). The development of an interpretation (or re-interpretation of current definitions) that connects planning and planners to health is needed. To foster collaborative work and avoid conceptual misinterpretation this definition also needs to be functional and accepted by public health and other collaborators from the health sector.

8.2.1 HOW DOES HEALTH FIGURE IN PRACTICE?

One of the main currents in the literature on the relationship between planning, land-use and health, is how health can be addressed in practice. This research found that by and large participants do not use health as a criterion

for making decisions. Health as it figured in practice had two main uses. First, positive health outcomes were often used as an additional justification for a project or planning decision. For example improved health would be lumped in with other possible outcomes, such as economic development or GHG reductions. The idea that a policy or action could improve health in the community was supported but was not the central driver or rationale. Climate change and/or sustainability were seen as the central reasons for adopting any specific policy or action. Second, improving community health was used as a means to leverage funds from health sector funding agencies. This served as an added rationale for framing a project in terms of its implications for improving health.

The extent to which participants went to address community health issues varied. Participant's approaches were largely determined by two main factors, a) the accepted definition of what health is i.e. salutogenesis versus pathogenesis, and b) their level of exposure to health issues through either research or outreach from a health based group or agency. These two factors may be interrelated. A participant's view of health may have been influenced by exposure to research or through formal or informal discussions with people or groups looking at health issues. In the case of this research the fact that the theme of the Nova Scotia Planning Directors Association conference in May, 2011 was building healthy communities, likely influenced participant responses. Those who viewed health in terms of salutogenesis and had been exposed to health issues through professional associations, research papers, or policy documents often saw the health implications of planning decisions in much broader terms, often including food, income, and housing as significant health and planning issues.

Participants who took a narrower perspective on planning's role in shaping healthy communities simply applied the term," healthy", to what they were already doing. These participants often referred to planning for healthy communities as *just good planning* or as an outcome of sustainability or *Smart Growth* strategies. Often participants used *SmartGrowth*, sustainability, and health interchangeably. Health and sustainability have been linked in planning and public health literature, in particular in reference to climate change (McMichael, 2006; Barton and Tsourou, 2000). Participants who took a narrower view of health emphasised the importance of physical features such as sidewalks, bike lanes, benches, parks, etc. over the social and economic determinants of health. This situation is not surprising, as using a complex lens like health in planning practice introduces uncertainty (Markey et al. 2009). Defining the limits of health within the roles of different departments in a municipality is complex, as each department has some role to play in supporting health, especially if an ecosystem type model of health is adopted (see Figure 2.1, pg. 18). Planning practitioners and academics like Barton (2010), Corburn (2009), Forsyth

et al. (2010) and Botchway et al. (2009) advocate for planners to make connections between land-use, urban design and policy to physical activity, mental health and diet. Some research participants explicitly stated these connections are not always clear or useful to planners. Even if the connection can be made, it may not be the one that motivates politicians to action.

8.2.1 COMMUNICATION OR ACTION?

The approaches that participants suggested as ways to incorporate health into their planning practice are similar to ideas of communicative action in planning. Nearly all participants saw communication as their main role in addressing community health issues in their work, specifically providing information to others on land use policy in their municipality. Communication as a primary skill in planning is well recognized in the planning literature on core competencies for professional planners (Edwards and Bates, 2011, Friedman, 1996). Dalton (2007) cites communication as the most important competency in professional practice. The belief that communication is a central component of planning may be a reason why supporting a flow of information between participants and health field professionals is prominent in the discussion on what planners should do to address community health issues.

Using planning tools such as zoning, development agreements, long range, municipal and secondary planning, land-use bylaws, and policy to support health-oriented planning was not discussed much by participants. Rather the emphasis was on acting as key informants or consultants to processes headed by others in the health field. Participants largely felt that information sharing rather than working collaboratively on projects was the role they should play in acting on community health issues. There was one exception, namely the development of active transportation plans and strategies, where participants indicated they would like to, or had consulted with public health representatives.

8.3 INFLUENCE OF RURALITY ON PRACTICE

Based on responses from participants, rurality did not significantly influence how they viewed health-oriented planning or what actions they took to address community health issues. In order to look at the impact of rurality on participants, a suite of rural measures were used to categorize and compare responses. Regardless of what measure was used to categorize respondents into more or less rural, there were few significant differences in how

they responded to questions. Overall it appeared that each participant's perspective on health (salutogenesis versus pathogenesis) and their level of exposure to information about health-oriented planning was more predictive of responses than the categories used in this research to measure rurality.

In terms of resources and capacity, rural areas face specific challenges that limit their capability to effectively implement strategies on broad social and environmental issues (Caldwell, 2010; Markey, Connolly, and Roseland, 2010). These challenges are often directly linked to capacity, time and expertise limitations, lack of fiscal resources, and ageing infrastructure, all of which are common throughout rural Canada (Douglas, 2010; Markey, Connolly and Roseland, 2010). Other challenges rural areas face include, population decline, industry closures, and outmigration. The cumulative effects of these social and economic pressures result in complex problems that are difficult for municipalities with capacity and resource gaps to address effectively (Gordon and Hodge, 2008; Polèse and Shearmur, 2005, 2002). Research participants from areas that had limited capacity in terms of planning and policy development either due to financial or political disinterest in planning tended to be hesitant about taking action on health issues despite their agreement that health is a planning issue.

There was a noticeable difference between the responses from one of the participants who worked in an urban as well as rural context and the rest of the sample. While participants were often in agreement on issues, this one respondent often indicated a slightly higher level of support or a broader perspective on the links between planning and health and the importance of adopting health-oriented planning. This difference in perspective was likely not a factor of his context but rather circumstance, as he was involved in a project to develop a toolkit on healthy community design - the *Healthy Places Toolkit* (2007).

Working in a rural area influenced the policy challenges that participants faced. Provincial level policies on facilities, services, and transportation infrastructure were seen by participants as being hostile to local planning. Policies rooted in concerns over efficiency and reducing costs for provincial government services and infrastructure were perceived by participants as often leaving rural communities with reduced convenience, gaps in services, or increased financial burdens. Many participants felt that they were in a reactive mode all the time and felt limited in their ability to be proactive in developing plans and strategic goals.

The applicability of health-oriented planning was never called into question by participants. Participants instead expressed concern about the scale at which planning principles were applied. Participants often spoke about having to modify what they felt were urban-centric ideas, like walkability, to their rural context. For example in a

rural municipality with a large land base the entire municipality may not be walkable but the local retail areas may be. Therefore planning for walkability in the municipality would be less about getting people to the downtown by walking and more about them being able to walk from shop to shop within the downtown.

Whether the municipality was a compact town of three thousand or a sprawling rural area of tens of thousands, participant responses were similar. There was no strong trend based on geography or population size. This was surprising as I had assumed planning and development priorities would be different between areas with more to less dispersed populations. However, concerns were largely the same between participants and across municipal units.

8.4 OPPORTUNITIES AND BARRIERS

8.4.1 BARRIERS

> "*Zoning ordinances continue to favour low-walkable developments; transportation investments for pedestrian and cycling facilities are considered trivial; parks are low priorities in many communities; school-siting decisions are not coordinated with community planning; and building codes do not consider physical activity inside and around buildings. Thus every day, buildings, communities and roads are constructed that discourage or prevent physical activity, and these built environments will last a long time*."
> (Sallis and Glanz, 2009, pg. 143)

Canadian communities, both urban and rural, are dealing with demographic change due to an ageing population, policies supporting labour force stability through immigration, and a significant healthcare and social services burden from chronic and non-communicable disease, addictions, disability and mental health issues (CIP, 2012; Moore, 2011; Reimer and Boland, 2010). Income and income security are often cited as the underlying factors that define an individual's health status (Raphael, 2008; Rodriguiz, 2006). Lower income Canadians, youth and the elderly are at risk of suffering health inequalities due to limited physical mobility, fixed incomes or limited resources to relocate to a more amenable context (Grant and Manuel, 2011; Capon and Thompson, 2010). Rodriguiz (2006) suggests that money equates to mobility and choice, and those who live in a community that may lack recreation, healthy food or healthcare options can travel to get what they want or simply move when the need becomes great enough. Rural area populations are largely made up of older persons and those who earn lower incomes (Douglas, 2010; Markey et al. 2010; PHAC, 2006; Mitura and Bollman, 2003). This means that rural

residents may be more dependent on their communities to provide healthful environments than urban residents as they have limited options in terms of services and have limited mobility.

Participants provided very few ideas on how to incorporate health in their planning practice, beyond supporting active transportation. Food security, housing, water quality, economic development, injury and crime prevention and supporting social connections were low on the scale of things participants were currently tackling or willing to deal with as planners. In general participants' breadth of knowledge on the connections between planning and the built environment and health outcomes was limited.

The *sector based* approach of the provincial government was quite possibly the most frustrating barrier for participants. This barrier has been noted in recent research on health and planning and active transportation in Nova Scotia (Grant and Manual, 2011; Rehman, 2010). There appears to be little change over time in how the provincial government departments have decided to tackle local issues such as active transportation. A lack of local political interest in planning and health was also a significant barrier but participants took a long-term perspective on these issues:

> *In our municipality it took a lot of time to build that support at council and the support for active transportation…and health might take some time but it will get on the list of things to support.*
> Rural Municipality, Planning Director, Interview 3

Because they worked in rural municipalities participants felt they had the advantage of frequent and direct access to local decision makers. Participants were able to frequently revisit issues with town councillors over a long period of time, and believed that they could steer council towards forms of planning like health-oriented planning.

Resource limitation, specifically human resources and time, were major limiters of what participants felt they were able to take on. Participants expressed a genuine interest in making their communities healthier but their ability to convert that interest into actionable policy or regulations was limited. In their work on planning in rural communities Markey, Connolly and Roseland, (2010) note that an implementation gap often arises where rural communities attempt to undertake complex projects or planning exercises. Often the situation arises when policy and political support may be in place in support of an initiative but finances or expertise to realize the action may be absent (Markey, Connolly and Roseland, 2010).

None of the participants took a strong advocacy role in applying health-oriented planning to their work. Participants noted both in the survey and in the interviews that pressure to complete core work tasks left them with little time to pursue larger issues, like health. This time constraint is tied to the fact that most rural planners work alone or in very small groups and can be responsible for several responsibilities simultaneously.

8.4.2 OPPORTUNITIES

Several participants cited the Community Health Boards (CHBs) as great partners in addressing community health issues. However, participants saw the relationship as a way to share information, not as an opportunity to work collaboratively. Those participants that had been involved with a CHB indicated a greater awareness of health issues, than those who had not engaged with CHBs. The CHB acts as the eyes and ears of the community, identifying and making recommendations to the District Health Authorities on health issues that are relevant to that community. The CHBs are volunteer based and, as such, do not often contain individuals who are experts in population health or in any particular health related field. CHBs do not allocate resources[12] or adopt policy that effects spending on health programming and thus are limited in what they can achieve. These limitations of the CHBs were apparent to some participants.

8.5 IMPLICATIONS FOR PLANNING THEORY

Research on planners attitudes has shown support for health-oriented planning internationally (Allender at al. 2009; Hollander e al. 2008), in Canada (CIP, 2012) and in the Atlantic region (Grant and Manuel, 2011). Despite consensus from planners that health is a planning issue, and the extensive research on planning and its impact on health, it is still unclear to many planners how health fits into planning practice (Barr, 2011; CIP, 2012). This study found that Nova Scotia planners also found it difficult to identify how health could be integrated into their practice. This suggests that a gap exists in how theory and research are being adopted and translated into practice. Laurian (2006) suggests that health-oriented planning carries similar assumptions to the positivist modernism and environmental determinism ideas found in planning of the 1950s and 60s. The slum clearance and redevelopment programs of the 1950s and 60s in the US and Canada were premised on the idea that, through the alteration of the

[12] CHBs do allocate small grants called Wellness Initiative Funds ($500-$1,500) to support the health promotion activities of non-profit community groups (E.g. afterschool soccer programs). CHBs do not influence spending on health services or public health programs.

physical conditions in which people lived, their community and social problems would somehow be ameliorated (Barton, 2010; Laurian, 2006). Caution must be taken in drawing a causal relationship between planning interventions and health outcomes (Grant and Manuel, 2011; Barton, 2010; Corburn, 2009; Handy et al. 2006). Participants in this research were very supportive of health-oriented planning; suggesting that in the Nova Scotia context health-oriented planning could serve as a unifying framework for planning practice.

Conceptual frameworks for linking health to the physical, social and economic environments have been available for many years (Morrison, 2006). Using health as a theoretical lens for planning reinforces the historical and recent trends towards addressing spatial, economic, environmental, and social inequities through planning (Corburn, 2009). As health-oriented planning supports action to address inequities it is especially relevant for areas such as rural communities whose needs are often peripheral to provincial or federal government decision making (Markey, Connolly and Roseland. 2010; Halseth and Ryser, 2006). Health-oriented planning blends communicative, participatory, and advocacy planning approaches to generate regulations, assess impacts and facilitate continued improvement in planning practice. Planners engaged in health-oriented planning will need to consider engaging in transdisciplinary action that melds knowledge of health, planning, and lay persons to address community health issues will be required (Barton, 2010; Capon and Thompson, 2010; Corburn, 2009). I use the definition of transdisciplinary used by Capon and Thompson (2010):

> *Transdisciplinary refers to a fusion of disciplinary knowledge with the know-how of practitioners and lay people to create a new hybrid which is different from any specific component part. It requires an ingredient referred to as "transcendence". This implies the giving up of sovereignty over knowledge, the generation of new insight by collaboration and the capacity to consider the know-how of practitioners and lay people.*
> (Capon and Thompson, 2010, pg. 111)

The findings from this research suggest that municipal planners in Nova Scotia are not readily adopting explicitly health-oriented planning theories. While all participants expressed support for health-oriented planning principles, the underlying themes of advocacy and equity and addressing roots causes of ill health were not, with on exception, discussed. Participants' main interest was in application of theory, i.e. practice. Based on this thesis research the idea that current health-oriented planning theories have not meaningfully addressed the challenges of planning in a rural context is raised. Of particular concern is the lack of political influence that rural areas have in terms of provincial services and infrastructure decisions. As research participants pointed out, planning in Nova

Scotia is not always viewed positively and is often considered suspect (Section 7.3.6). Underlying suspicion of land-use planning and the capacity limitations of rural planning departments, at least in Nova Scotia, suggest that collaborative and transdisciplinary frameworks will need to be central in any theory to support health-oriented planning in rural contexts from a capacity and perhaps a legitimacy perspective.

8.6 Implications for Planning Education

Based on this research there are three knowledge and skill areas that should be reinforced or developed through planning education to support health-oriented planning:

a) encouraging the development of communication, facilitation, and negotiation skills,
b) emphasizing generalist training in planning education, and
c) identifying and supporting the development of the necessary competencies for transdisciplinary work, such as professional network development.

In his examination of planning core curricula Friedman (1996) emphasized the importance of negotiation and communication skills for planners. Planners spend much of their time communicating with different stakeholder groups. Adding public health professionals as stakeholders in development as would only increase the need for planners to be able to communicate, negotiate, and translate knowledge effectively.

Planning, particularly in the rural context, often encompasses a very broad scope of activities beyond land-use and development control (Gordon and Hodge, 2008, Caldwell, 2010). The need for rural planners to often address a broad spectrum of policy and development issues relates to the financial and human resource constraints found in rural municipalities, but also to the multifarious nature of rural planning where environmental, livelihood, and cultural traditions overlap in the use of land. Similarly public health practitioners are often simultaneously dealing with multiple and overlapping issues due to the complex nature of community and population health work (Moore, 2011). In terms of establishing a knowledge base for planners a broad scope of study would be useful, to address both the constraints of planning in rural contexts, and to address the complex nature of health.

In order to collect information and work effectively with limited resources, planners adopting a health-oriented planning approach will need to be good network builders (Botchewey et al., 2009; Barton and Tsourou, 2000). In a transdisciplinary context planners must also become adept at knowing how and when to combine

professional methods in order to build strategies and plans to address health inequities (Moore, 2011; Capon and Thompson, 2010; Corburn, 2009, Barr and Much, 2009).

8.7 IMPLICATIONS FOR PLANNING PRACTICE

> *Of course, planners cannot control all of these elements that contribute to community health, and are limited by local and provincial policy. Despite those limitations, planners can play a powerful role to advocate for policy and practice change to meet community health goals, especially when they act in partnership with public health and other community leaders.*
> (Barr and Much, 2009, pg. 41)

The basic tools of planning practitioners include land-use and development control, zoning and urban design. Research participants were knowledgeable in applying these tools to physical activity. In terms of other health issues, such as food security there was an apparent lack of knowledge in how to apply planning tools to address these types problems. The reason for this lack of knowledge is unclear, however, given that only one of the participants was aware of the *Taking the Pulse* survey distributed by CIP, despite nearly all participants being members of CIP, suggests that planners in Nova Scotia may not have a strong connection to the professional organization. CIP has developed much information about the theory and practice of health-oriented planning through its national Healthy Communities program. Rural planners in Nova Scotia are not at the time of this research reading the Healthy Communities material.

Numerous studies recommend that public health and planning staff need to collaborate (Grant and Manuel, 2011; Rehman, 2010; Royal Town Planning Institute, 2009; Bhatia and Wenham, 2008; Barton and Tsourou, 2000). In the literature the recommendation to collaborate is often open ended and little guidance on the practice of collaboration is provided. While this is problematic in the sense that it does not provide a meaningful road map to collaboration, it does recognize tacitly that collaborative efforts can and will take many shapes depending on the context. Barton (2010) argues for much more local control of land-use and infrastructure decisions in order to address health effectively in our communities. This perspective is supported in Nova Scotia given the barriers to health-oriented planning practice identified in this study, i.e. lack of local influence over major transportation and public service decisions. There is disconnect between health-oriented planning theories and the reality of rural communities and the capacity of rural planners and administrators.

Collaborative relationships in health-oriented planning practice have to be carefully managed as there could be some push back from planners as was noted in the UK (Allender et al., 2009). Allender et al. (2009) noted that

some planners who received advice on health-oriented planning practice from public health departments felt: a) they were being pressured/criticized in how they practiced planning by those who don't fully understand planning, and/or b) disregarded the input as they felt they were already doing the best they could to shape communities. Community health research is highly complex in that it deals with the interface between social, economic, and environmental influences and biological outcomes. Planners should look to build on the experience of those already working on health issues (Moore, 2011; Barton and Tsourou, 2000). In the case of Nova Scotia, social and economic legacies, such as the decline of resource-based industries, have resulted in each community having its own unique health issues and built form (Jones, Terashim, and Rainham, 2009). Consequently, adopting a blanket approach to health issues such as focusing only on physical activity may not be relevant or useful in all circumstances. As Ding and Gebel (2012) and Curran, Grant, and Wood (2006) note, well designed built environments that support positive health behaviour cannot ensure positive health outcomes alone, nor can promotional or health literacy initiatives (Coutts, 2008). There is a need to develop initiatives that can be supported by the time, resources, and expertise of multiple stakeholders. To tackle the complex issues of community health programs, public health education, and the built environment need to be mutually reinforcing, with each supporting similar outcomes, such as improved health through increased physical activity, healthier diets, or improved housing (Blacksher and Lovasi, 2012; Rehman, 2010; Salens and Glanz, 2009; Curran, Grant, and Wood, 2006).

9. RECOMMENDATIONS

The following section outlines recommendations intended to support health-oriented planning in rural Nova Scotia and address the findings of this research. Recommendations will be outlined and the individuals or organizations needed to operationalize the recommendations will be identified. There are three primary ways that have been identified in the literature to approach health in planning practice (CIP, 2012; Barr, 2011; Barton, 2010; Corburn, 2009).

- Policy;
- Infrastructure, urban design, and land-use;
- Collaboration and transdisciplinary action;

The following recommendations are organized under these three approaches.

9.1 POLICY APPROACHES

The most significant policy barrier identified by research participants was the lack of meaningful consultation between municipal and provincial government departments on policy and planning, specifically the location and site requirements of facilities and the design of infrastructure standards for the departments of Education, Transportation and Infrastructure Renewal and Health and Wellness.

There is ample literature on why health is an important planning issue along with supporting evidence and best practices but there is no single accepted planning framework on how to integrate health into practice. As Markey, Connolly and Roseland (2010) point out the sustainability agenda took many years to develop effective planning frameworks such as the *Natural Step* and the *Local Agenda 21* to apply sustainability at the local municipal and community level. Health is no different. Capon and Thompson (2010) suggest responses to address health through planning should reflect *local histories, geographies, cultures, values and economic circumstances* (pg. 112). Some have suggested that an audit based tool would provide room for health to be considered in development without requiring the user to have extensive knowledge in the determinants of health or complex theoretical frameworks (Forsyth, Slotterback, and Krizek, 2010 B; Mindell, Boltong, and Forde, 2008). Health Impact Assessments (HIAs) have been recommended as a possible tool to incorporate health into land-use and development practice (Forsyth,

Slotterback, & Krizek, 2010 B). Currently there is no policy supporting the use of health impact assessments in Nova Scotia.

- **Recommendation:** That the province of Nova Scotia investigates the ramifications of adopting policy requiring the use of Health Impact Assessments (HIAs) for projects of similar scale to those that currently require Environmental Impact Assessments.
- **Responsible Agents:** The Nova Scotia Departments of Health and Wellness, Environment, and Service Nova Scotia and Municipal Relations.

This research indicated provincial government policies and decisions regarding infrastructure, facilities, and service provision complicated or negated municipal level planning goals and objectives.

- **Recommendation:** The government of Nova Scotia should adopt a policy that all decisions regarding infrastructure and built assets within municipal boundaries (not crown land) should give consideration to municipal government strategic plans, municipal planning strategies, and Integrated Community Sustainability Plans. Additionally, the provincial government should provide time for official submissions from municipal government and the public on the potential impacts of the development, removal, or modification of infrastructure and built assets.
- **Responsible Agents:** The Government of Nova Scotia with participation of the Union of Nova Scotia Municipalities.

Planners advise and help to administer the policy set by municipal councils. However, all planning and land-use decisions must be in accordance with the Statements of Provincial Interest in Nova Scotia.

- **Recommendation:** That the province of Nova Scotia adopts a Provincial Statement of Interest to support land-use practices that promote incidental physical activity and food security.
- **Responsible Agents:** The Government of Nova Scotia and Service Nova Scotia and Municipal Relations.

9.2 INFRASTRUCTURE, URBAN DESIGN, AND LAND-USE

It was apparent from this research that rural Nova Scotia planners face financial and human resource capacity limitations that hinder them in developing policy that supports health-oriented planning. Additionally participants were not well informed regarding research connecting health and planning.

- **Recommendation:** Direct information and research from CIP, the British Columbia Provincial Health Services Authority, and Nova Scotia on the health impacts of planning to Nova Scotia planners. Additional steps include:

(a) Identifying a Champion to facilitate the dissemination process and bring attention to the wealth of knowledge available.
(b) Creating an Office for Healthy Communities in the Union of Nova Scotia Municipalities, similar to the Sustainability Office.

- **Responsible Agents:** Nova Scotia Department of Health and Wellness, Service Nova Scotia and Municipal Relations and the Union of Nova Scotia Municipalities.

The reluctance of the Department of Transportation and municipal civil engineers to incorporate active transportation infrastructure or to leave space for future active transportation infrastructure was a point of frustration for participants. This reluctance to consider active transportation suggests a need for improved communication with civil and transport engineers and a change in the current mentality of the provincial department of transportation. Providing the infrastructure to make active transportation accessible and safe is a large component of supporting increased physical activity and providing access to retail and health and social services for those unable to use or afford an automobile. In her report to the Union of Nova Scotia Municipalities on active transportation in Nova Scotia, Rehmen (2010) reported that municipal administrators (planners, CAOs, Town Clerks) all felt the Union of Nova Scotia Municipalities should enter into discussions with the Department of Transportation and Infrastructure Renewal on how to best use provincial and municipal resources (financial and human) to support active transportation investment.

- **Recommendations:**

(1) Develop a toolkit for municipal civil engineers on active transportation, for urban, suburban, and rural environments.
(2) Undertake research to examine the long term cost savings/expenses across provincial government departments based on the inclusion of cyclist/pedestrian right of ways on Trunk highways.
(3) Review Department of Transportation and Infrastructure Renewal policy to explore options for establishing sharing the responsibility of roads between provincial and municipal government along populated sections of provincial Trunk highways.

- **Responsible Agents:** Union of Nova Scotia Municipalities and the Department of Transportation and Infrastructure Renewal.

Providing the infrastructure to make active transportation accessible and safe is a large component of supporting increased physical activity and providing access to retail and health and social services for those unable to use or afford an automobile. Consequently, it would be useful to build on the steps currently made and continue to have the

Union of Nova Scotia Municipalities act as a unified voice to the province in support of active transportation (Rehman, 2010). Additionally, it would be useful to have a similar discussion between the Union of Nova Scotia Municipalities the Department of Health and Wellness, and the Department of Education to also encourage landscape design and building standards that support accessibility and safety for those unable to drive.

9.3 COLLABORATION AND TRANSDISCIPLINARY ACTION

The need for collaboration and transdisciplinary action between public health and planning professionals and others has been a strong and consistent message in grey and academic literature on health-oriented planning. Botcheway et al (2009) have suggested that a joint curriculum on planning and public health should be developed that would have planners and public health practitioners share core classes on theory and professional practice. Shared academic courses may foster dialogue both within the academy and professional circles that could support better relationships in the future between administrators and staff at the municipal and provincial level.

- **Recommendation:** Through CIP's Healthy Communities Committee, encourage accredited planning programs to include a unit or course on the health impacts of planning, health statistics, and social determinants of health. Also, through the Atlantic Planners Institute and CIP disseminate information on current practice on health and planning to graduate level public administration program directors, specifically Dalhousie University. Additional sources for dissemination could include transportation and civil engineering programs.
- **Responsible Agents:** Healthy Communities committee at CIP and Association of Canadian University Planning Programs

At the community level, particularly in rural communities, building on the resources present rather than bringing in external expertise will ensure that information is specific to the local context, and that a base of local support for health-oriented planning will be established. Developing networks of engaged community organizations and individuals to support health-oriented planning through advisory committees and boards has a long tradition in Nova Scotia. Advocates of health-oriented planning recommend taking an ecosystems view of health (Barr, 2009; Corburn, 2009; WHO, 1992).

- **Recommendation:** Have local planning departments or municipal administrators foster relationships with local organizations addressing health related issues to share information, communicate with the wider community, apply for grants and collaboratively develop land-use practices that explicitly acknowledge health disparities in the community. Collaboration would be done in a committee format. Size and composition would be based on local context and should be

incorporated into local Planning Advisory Committees rather than creating a separate committee. The committee would also be charged with developing policy and fostering good relations with provincial agencies.

- **Responsible Agents:** Local municipal administration and planners, (if present) in partnership with community health boards and district health authorities.

As no single accepted framework exists for this type of collaboration, and as the planning capacity to deal with complex health and land-use modeling in rural areas in Nova Scotia is limited, I recommend that an action based research agenda be developed to explore how health-oriented planning could and should function in rural areas.

- **Recommendation:** Develop a multiyear action research agenda to explore the following issues from a health-oriented planning perspective:
    (1) Developing appropriate guidelines and indicators for health-oriented planning in rural areas.
    (2) Explore regulatory options to integrate health issues into development and planning.
    (3) Explore models for multi-stakeholder decision making that take into account rural constraints.
    (4) Development of a Nova Scotia based core curriculum for planners, public health professionals, and municipal and provincial government administrators, on health-oriented planning.
    (5) Create an Office for Healthy Communities in the Union of Nova Scotia Municipalities, similar to the Sustainability Office to allow municipalities to share experiences with health-oriented planning and related initiatives.

- **Responsible Agents:** The Union of Nova Scotia Municipalities, Atlantic Planners Institute, Nova Scotia Planning Directors Association and the Nova Scotia Department of Health and Wellness in partnership with CIP, Dalhousie University's School of Planning and the Heart and Stroke Foundation of Nova Scotia.

9.4 Recommendations for Future Research

The results of this research indicate a need to identify common language and meaningful and functional frameworks to integrate health in planning. More so, these issue need to be considered from a rural perspective that recognizes the specific challenges of these areas.

More research needs to be done that includes rural residents in identifying issues and establishing planning and community design tools that reflect their understanding of their rural environments in relation to physical activity, food, housing, development policy and stakeholder engagement. Future research should address the gaps

associated with having limited planning and community design tools that are appropriate for rural residents and would also include resident perspectives on what health-oriented planning practices work, and in what context.

In terms of collaboration, this thesis research has emphasised the importance of connecting planners with public health workers to address community health issues. Something that was not discussed was the role of the public in this discussion. To have meaningful public input it is important to create and embed systems for broad based information collection and analysis, which includes the public, into development decisions Defining the exact method for utilizing local knowledge in health-oriented planning especially in rural areas may result in lasting positive outcomes as it has in other contexts (Blacksher and Lovasi, 2012; Clark et al. 2010).

A key challenge for the future will be to develop planning frameworks which can incorporate public health concerns into a spatial policy context, such as land use and urban design. The adoption of any planning and development policy related to health-oriented planning will also need to be supported by private sector development. Future research should also address the role of the private sector in the adoption of health-oriented planning.

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APPENDIX A: RECRUITMENT LETTER AND CONSENT FORM

UNIVERSITY OF WATERLOO

Alan Howell, a3howell@uwaterloo.ca

MA Candidate University of Waterloo T. 902-542-1443

Dear Potential Participant, Date;

This letter is an invitation to consider participating in a study I am conducting on the role of health in decision making in municipal planning in Nova Scotia. This letter is being sent on behalf of myself, Alan Howell, through the Planning Directors email listserv of Mr. Gregg Morrison, Director of Planning for the Town of Wolfville. This study is being conducted as part of my M.A. in Planning under the supervision of Dr. Roger Suffling of the School of Planning, University of Waterloo. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

Planning for healthy communities has been an increasingly popular subject in planning literature over the last ten years. This has been largely due to the rise in chronic disease in the general population throughout North America, Europe and Australia and the recognition that they way our communities are planned impacts on the ability of individuals to engage in healthy behaviour. Also increasingly public health professionals are recognizing the importance of physical environments in influencing behaviour that can maintain good health. There has also been recognition from professional planning organizations that planning has an impact on health; the Canadian Institute of Planners recently launched a national survey on how planners integrate community health issues in their practice and planning healthy communities was the focus of the Nova Scotia Planning Directors Conference this past May, 2011. Despite this focus there remains some ambiguity around, what a healthy community means, who is responsible for community health concerns and how to best approach these complex issues within the framework of planning activities. A particularly large gap in the research is how these questions can be addressed in small and rural communities. Nova Scotia can serve as a valuable place to study these questions for two main reasons because a) depending on the definition used, the majority of the municipalities in Nova Scotia can be defined as non-urban, if not rural and b) historically Nova Scotia has shown poorly in many key health indicators, such as levels of physical activity and mental health.

The purpose of this study is to highlight the gap in research on small and rural areas and seek input from planners responsible for planning in small and rural areas in how they understand health as it relates to their practice. In particular to understand if and how they are currently addressing health issues in their communities, what they perceive as barriers and opportunities to doing so, and how they utilize, if at all, resources and expertise from the health sector.

Participation in this study is voluntary.

The first stage will involve completing an online survey (estimated completion time of 10-20 minutes). The study will focus on understanding how planners in Nova Scotia view the role of health in their practice and what specific activities they have engaged in to look at health in their communities. The survey uses Survey Monkey(TM) whose computer servers are located in the USA. Consequently, USA authorities under provisions of the Patriot Act may access this survey data. If you prefer not to submit your data through Survey Monkey(TM), please contact the primary researcher, Alan Howell so you can participate using an alternative method (such as through an email or paper-based questionnaire). The likelihood of data from this survey being accessed by US authorities is assumed to be slight.

The second stage is an interview of approximately 30-45 minutes in length to take place either in person at a mutually agreed upon location or via telephone. The interview will look to understand how your municipal planning context (small town, rural) influences decision making around planning and health issues and what you see as barriers and opportunities to addressing health in your practice. You may decline to answer any of the survey or interview questions if you so wish. Further, you may decide to withdraw from this study at any time by contacting

me by telephone at (902) 542-1443 or email a3howell@uwaterloo.ca and indicating verbally or in writing your wish to no longer be involved in the study.

With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a summary of our interview to give you an opportunity to confirm the accuracy of our conversation. All information you provide is considered completely confidential. Your name, or your municipalities name, will not appear in any report resulting from this study; however, with your permission anonymous quotations may be used.

Additionally response data from the survey portion of the study will be linked with demographic data such as population size, this data will be summated to avoid direct identification. Due to the small number of municipalities in the province it may be possible to identify specific municipalities despite all names and other direct identifiers being removed from the data. Data collected during this study will be retained for 1 year in a locked office and only I and Dr. Roger Suffling, also of the University of Waterloo will have access. The interview recordings will be destroyed after 1 year. Electronic data that comes out of this research will be kept for 2 years on a secure server at the researcher's home office. There are no known or anticipated direct benefits or risks to you as a participant in this study.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at ***902-542-1443*** or by email at **a3howell@uwaterloo.ca**. This study is being undertaken as part of a Master's Thesis under the supervision of Dr. Roger Suffling, who can be reached at **519-888-4567 ext 33184** or by email at **rcsuffli@uwaterloo.ca**

I would like to assure you that this study has been reviewed and received ethics clearance through the Office of Research Ethics at the University of Waterloo. However, the final decision about participation is yours. If you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes at 519-888-4567 Ext. 36005 or via email at: ssykes@uwaterloo.ca

As a participant in this study, you will be able to receive a copy of the findings of this study when the study is complete, should you wish to have them.

To complete the survey please go to www.surveymonkey.com/s/PlanningHealthyCommunitiesNS At the end of the survey you will be asked whether you wish to participate in the interview portion of the study. Should you wish to be part of the interview process you will be provided a consent form via email to review prior to the interview. If you wish to complete the interview in person you will be provided a hard copy consent form to fill out prior to the interview. If the interview is done over the phone you will be asked for your verbal consent prior to the interview. I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely

Alan Howell, MA Candidate
Student Investigator

CONSENT FORM

I have read the information presented in the information letter about a study being conducted by Alan Howell of the School of Planning at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in report to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Director, Office of Research Ethics at 519-888-4567 ext. 36005. ssykes@uwaterloo.ca

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

☐YES ☐NO

I agree to have my interview audio recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any report that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

APPENDIX B : TAKING THE PULSE SURVEY

Appendix B

Taking the Pulse: Benchmarking Planning for Healthier Communities.

The influence of the built environment on human health is one of the factors that gave rise to planning itself as a profession. Our communities are complex systems - the kind of community we live in is determined by the many decisions, large and small, that individuals and groups make every day. How can planners play a role and what information do they need to promote a community where a strong relationship is established between human health and the built environment?

CIP would like to understand how practitioners are addressing the built environment as related to community health: what information needs they have and what best practices can be shared. Your information will help your colleagues address this most fundamental issue.

The Healthy Communities Sub-committee, the group that has initiated this survey, will assist a communications specialist in translating the survey findings into resource materials that planners across the country can use in their work. The Sub-committee's mandate is to facilitate a national initiative that will promote the planning and development of healthy communities across Canada. The Sub-Committee reports to CIP's National Affairs Committee, a standing committee of CIP. The Healthy Communities Sub-committee is partnering in this project with the Heart and Stoke Foundation of Canada, which is co-funding 11 other related research projects.

This survey will take you only 10 to 15 minutes to complete. All responses to the survey will be held in confidence.

Please be candid and forthright. Your responses will not be shared with the CIP, other than in summary form, and the surveys will be destroyed following data analysis.

If you have questions, please contact Victoria Barr, Healthy Communities Consultant, at Victoria_Barr@telus.net.

1. I am aware of the impacts of the built environment on health in my community. / Je suis conscient des impacts du milieu bâti sur la santé dans ma collectivité.
   Please indicate the degree to which you agree with this statement. / Veuillez dire dans quelle mesure vous êtes d'accord avec l'énoncé ci-dessus.

- **Strongly Disagree / Pas du tout d'accord**
- **Disagree / Pas d'accord**
- **Neutral / Neutre**
- **Agree / D'accord**
- **Agree Strongly / Très d'accord**
- **Don't Know/NA / Ne sait pas, sans objet**

2. In your opinion, what are the most urgent community health needs in your area? / Selon vous, quels sont les problèmes de santé les plus urgents dans votre région?

Please check all that apply. / cochez toutes les cases qui s'appliquent

- Poor quality housing / Piètre qualité des logements
- Our community requires a car to access most services / Besoin de posséder une voiture pour avoir accès à la plupart des services
- Urban design is unsafe for seniors or people with disabilities / L'aménagement urbain n'est pas sécuritaire pour les aînés et les personnes handicapées
- It can be difficult to access healthy foods / Il peut être difficile d'avoir accès à des aliments sains
- Unaffordable housing / Logements inabordables
- Loss of agricultural land / Perte de terres agricoles
- Lack of public transportation / Manque de transport en commun
- Poor water quality / Mauvaise qualité de l'eau
- Urban design is unsafe for children / L'aménagement urbain n'est pas sécuritaire pour les enfants
- Poverty/unemployment / Pauvreté/chômage
- Poor air quality / Mauvaise qualité de l'air
- I don't know/not applicable / Ne sait pas/sans objet
- Other:

3. Over the last two years, how often did you consider the potential impacts of community health issues in your planning practice? / Au cours des deux dernières années, combien souvent avez-vous tenu compte des impacts potentiels des problèmes de santé communautaire dans votre travail comme urbaniste?
   Please select one. / Choisir une seule réponse.

- Never / Jamais
- Rarely / Rarement
- Occasionally / À l'occasion
- Frequently / Fréquemment
- Always / Toujours
- Don't Know / Ne sait pas

4. Over the last two years, which community health components have you addressed in your professional practice? / Au cours des deux dernières années, quelles composantes de la santé communautaire avez-vous abordées dans l'exercice de votre profession?
   Please check all that apply. / Cochez toutes les cases qui s'appliquent.

- Physical activity/active transportation / Activité physique/transport actif
- Access to healthy foods / Accès à des aliments sains
- Mental health / Santé mentale
- Pedestrian and traffic safety / Sécurité routière et des piétons
- Opportunities for people to connect with each other/build social networks / Occasions de rencontrer d'autres gens, de construire des réseaux sociaux
- Affordable housing / Logement abordable
- Security and crime prevention / Sécurité et prévention du crime

- Water quality / Qualité de l'eau
- Healthy housing / Logements salubres
- Access to healthy natural environments / Accès à des milieux naturels sains
- Age-friendly urban design / Aménagement urbain convivial pour les aînés
- Air quality / Qualité de l'air
- Child-friendly urban design / Aménagement urbain convivial pour les enfants
- Don't know/not applicable / Ne sait pas/sans objet
- Other:

5. Over the last two years, what type of planning tools have you used when addressing the community health impacts of the built environment? / Au cours des deux dernières années, quels types d'outils de planification avez vous utilisés pour aborder les questions d'impacts sur la santé du milieu bâti?
   Please check all that apply. / Cochez toutes les cases qui s'appliquent.

- Policies designed to improve health / Politique visant à améliorer la santé
- Revisions to official plans / Révision de plans officiels
- Health impact assessment / Étude d'impact sur la santé
- Environmental impact statement / Énoncé des incidences environnementales
- Subdivision / Lotissement
- I haven't used any planning tools (Proceed to question 7) / Je n'ai utilisé aucun outil de planification (passez à la question 7)

6. Of the planning tools you have used to address the community health impacts of the built environment, please tell us how you used the most important of those tools: / Parmi les outils de planification utilisés pour aborder les questions d'impacts sur la santé du milieu bâti, dites-nous comment vous avez utilisé ces principaux outils :

7. Over the last two years, how often did you consider community health in preparing your planning reports? / Au cours des deux dernières années, combien de fois avez-vous pris en compte la santé communautaire dans vos rapports et projets d'urbanisme?
   Please select one. / Cochez une seule case.

- Never / Jamais
- Rarely / Rarement
- Occasionally / À l'occasion
- Frequently / Fréquemment
- Always / Toujours
- Don't Know / Ne sait pas

8. What, in your opinion, are the greatest barriers to including a more in-depth discussion of community health in your planning practice? / Quels sont, selon vous, les principaux obstacles à une discussion plus poussée de la santé communautaire dans l'exercice de votre profession?
    - Please check all that apply. / Cochez toutes les cases qui s'appliquent.

- I don't have enough knowledge about community health issues / Je ne possède pas une connaissance suffisante des questions de santé communautaire
- I need more tools / J'ai besoin de plus d'outils
- I don't have enough time / Je manque de temps
- There is not enough government or political support for this issue / Il y a un manque de soutien gouvernemental ou politique à cette question
- There are competing issues which also demand my attention / Il y a des enjeux concurrents qui nécessitent aussi mon attention
- Community health issues have just not come up in my area / Les problèmes de santé communautaire ne se sont pas manifestés dans ma région
- The results of this work are not measurable / Les résultats de ces efforts ne sont pas mesurables
- There is little support to address community health among developers / Les promoteurs sont peu encouragés à aborder les questions de santé communautaire
- The residents in my area do not support this approach / Les résidants de ma région n'appuient pas cette approche
- I am not sure how to approach issues of community health in my area / Je ne suis pas certain de l'approche à adopter face aux questions de santé communautaire dans ma région
- Community health is the responsibility of other sectors - not planning / La santé communautaire relève d'autres secteurs, et non de l'urbanisme
- The health-oriented planning resources available do not apply to my community / Les ressources disponibles en urbanisme axées sur la santé ne peuvent s'appliquer dans ma collectivité
- I don't know/not applicable / Je ne sais pas/sans objet
- Other:

9. In your opinion, what would help you to address community health issues in your planning practice? / Selon vous, qu'est-ce qui pourrait vous aider à aborder les questions de santé communautaire dans votre pratique de l'urbanisme?

10. CIP is partnering with the Urban Public Health Network and the National Collaborating Centre for Environmental Health to develop a repository of information on built environment. We would welcome your suggestion or tools, documents and resources that you have found helpful in acknowledging and addressing community health impacts of the built environment in your work. Please list your suggestions here: / L'ICU s'associe au Réseau canadien pour la santé urbaine et au Centre de collaboration nationale en santé environnementale pour mettre sur pied une banque de références sur le milieu bâti. Nous aimerions que vous nous fassiez part de vos suggestions et que vous partagiez avec nous les outils, les documents et les ressources que vous avez trouvé utiles dans vos travaux pour reconnaître et aborder les impacts du milieu bâti sur la santé communautaire. Faites-nous part de vos suggestions ici :

11. In which geographical region do you do the majority of your planning work? / Dans quelle région géographique effectuez-vous la plupart de vos travaux d'urbanisme?
    Please select one. / Cochez une seule case.

- Alberta / Alberta
- British Columbia / Colombie-Britannique
- Manitoba / Manitoba
- New Brunswick / Nouveau-Brunswick
- Newfoundland and Labrador / Terre-Neuve-et-Labrador
- Northwest Territories / Territoires-du-Nord-Ouest
- Nova Scotia / Nouvelle-Écosse
- Nunavut / Nunavut
- Ontario / Ontario
- Prince Edward Island / Île-du-Prince-Édouard
- Quebec / Québec
- Saskatchewan / Saskatchewan
- Yukon / Yukon
- United States of America / États-Unis d'Amérique
- I prefer not to respond. / Je préfère ne pas répondre.

12. In what type of community do you do the majority of your work? / Dans quel type de collectivité effectuez-vous la majorité de vos travaux?
    Please select one. / Veuillez ne cocher qu'une seule case.

- Major city (over 1,000,000) / Métropole (population de plus de 1 000 000)
- Large urban (300,000 – 1,000,000) / Grande ville (de 300 000 à 1 000 000)
- Medium urban (50,000 – 300,000) / Ville moyenne (50 000 à 300 000)
- Small urban (under 50,000) / Petite ville (moins de 50 000)
- Region / Région
- Rural community / Collectivité rurale
- Remote community / Collectivité éloignée
- First Nations community / Collectivité des Premières nations
- I prefer not to respond. / Je préfère ne pas répondre.

13. How long have you worked in the planning field? / Depuis combien de temps travaillez-vous dans le domaine de l'urbanisme?
    Please select one. / Veuillez ne cocher qu'une seule case.

- Under 5 years / Moins de 5 ans
- 5 to 10 years / De 5 à 10 ans
- 11 to 15 years / De 11 à 15 ans
- 16 to 20 years / De 16 à 20 ans
- Over 20 years / Plus de 20 ans
- I don't work in the planning field. / Je ne travaille pas dans le domaine de l'urbanisme.

- I prefer not to respond. / Je préfère ne pas répondre.

14. Please tell us which statement best describes your current job: / Quelle description correspond le mieux à votre emploi actuel?

- I am in management / Membre d'une direction
- I am a senior-level planner / Urbaniste principal
- I am a mid-level planner / Urbaniste de niveau intermédiaire
- I am a entry level planner / Urbaniste débutant
- I am an academic/researcher / Universitaire/chercheur
- I am a consultant/entrepreneur / Expert-conseil/entrepreneur
- I am retired/not currently practicing / Retraité/je ne pratique actuellement pas
- I am a student / Étudiant
- I prefer not to respond. / Je préfère ne pas répondre.

15. Please tell us in which sector you currently work. / Dites-nous dans quel secteur vous travaillez actuellement.

- Please choose all that apply. / Cochez toutes les cases qui s'appliquent.
- I am a consultant/in business sector / Expert-conseil/secteur des affaires
- Municipal/Regional government / Gouvernement municipal/régional
- Provincial government / Gouvernement provincial
- Federal government / Gouvernement fédéral
- Academia / Milieu universitaire
- Non-profit/Non-governmental organizational sector / Secteur des organismes sans but lucratif/non gouvernemental
- I am a student / Je suis étudiant
- I am retired/not currently practising / Retraité/je ne pratique actuellement pas
- Not applicable / Sans objet

16. What most closely describes your specialty? / Quelle description correspond le plus à votre champ d'activité?
    Please select one. / Veuillez ne cocher qu'une seule case.

- Urban / Urbain
- Rural / Rural
- Regional / Régional
- Transportation / Transports
- Environment / Environnement
- Urban Design / Aménagement urbain
- Policy / Politiques
- Social/Community / Social/Communautaire

- Administration / Administration
- Not applicable / Sans objet

APPENDIX C: **PLANNING PRACTICE & HEALTH IN NOVA SCOTIA: A SURVEY OF MUNICIPAL PLANNERS (THESIS SURVEY)**

UNIVERSITY OF WATERLOO

Planning Practice & Health in Nova Scotia:

A Survey of Municipal Planners

This survey is being used as a background questionnaire in the first step of a research project which is investigating how health features in the planning practice of municipal planners in Nova Scotia. In this survey health is understood as relating primarily to human health.

This survey will ask questions about your views on how health features in your planning practice and what if any work you have done on this topic. After completion of the survey, you will be asked to participate in an interview which will take about an hour of your time.

Your responses to this survey are completely confidential. No individual level survey information will be shared or published. Information that you provide about your municipality and yourself will not be linked to the survey that you complete. Municipal employees will be unable to be directly identified

Instructions

The survey will take about 10 to 15 minutes to complete, if you feel that you do not have appropriate information on hand to answer a particular question, leave it blank and it can be addressed during the interview portion of the study should you wish to participate.

You are in no way obligated to answer any question that you do not feel comfortable answering, and you can stop the survey at any time.

For further information:

This research is being conducted by Alan Howell, MA Candidate at the University of Waterloo under the supervision of Dr. Roger Suffling. If you have any questions regarding your participation in this study please contact:

Student Investigator
Alan Howell, MA Candidate
(902) 542-1443
a3howell@uwaterloo.ca

Faculty Supervisor
Dr. Roger Suffling
(519) 888-4567 extension # 33184
rcsuffli@uwaterloo.ca

This survey has been reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. If you have any concerns or questions regarding your participation in this study please contact:

Director, Office of Research Ethics
Susan E. Sykes, Ph.D., C. Psych.
(519) 888-4567 ext. 36005
ssykes@uwaterloo.ca.

Thank you for taking the time to complete this survey!

SECTION A: General Information

The following section asks questions about the specific characteristics of your municipality. If your work covers more than one municipality please identify and focus on the one with which you are most familiar.

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

Yes ○	No ○

2. Please identify the municipal unit for which you do planning: drop down menu of all municipal units in NS
   (Will have the option of selecting more than one)

3. Are you the director of planning for your municipality/planning area?

Yes ○	No ○

   If not what is your title? _____

4. Including yourself how many people are there in your planning department /department that oversees planning activities that are full-time employees? _____

5. How would you define the current population trend of your municipality?:
   A) Growing ○, B) Declining ○, C) Stable ○

6. Did you attend the May, 2011 Nova Scotia Planning Directors Association 2011 Conference: *Planning Healthy Communities* in Halifax?

Yes ○	No ○

7. Did you complete the Canadian Institute of Planners Survey –Taking the Pulse: Benchmarking Planning for Healthier Communities?

Yes	No	Unsure
○	○	○

SECTION B: Opinions on Health and Planning Practice

8. Do you agree that the built environment has an impact on health? (Q2 & 2a)

Strongly Agree ○	Agree ○	Disagree ○	Strongly Disagree ○	No Opinion ○

9. Do you believe, in general, that Health is an issue that planners should address? (Q2 & 2a)

Strongly Agree ○	Agree ○	Disagree ○	Strongly Disagree ○	No Opinion ○

10. Do you agree that health is an issue municipal governments should seek to address?

Strongly Agree ○	Agree ○	Disagree ○	Strongly Disagree ○	No Opinion ○

11. Does the protection and promotion of health appear as an explicit objective or goal in any of your official planning documents(E.g. Municipal Planning Strategy, Integrated Community Sustainability Plan)? If so please list them below.

Yes ○	No ○

12. Below is a list of some social, economic and environmental correlates of health. Please check all that you as planner, CAO or municipal clerk address in your work. Please check all that in you as planner/or equivalent for your municipality address in your practice.

Social , Environmental & Physical Determinants	Yes	No	Unsure
Affordable Housing	○	○	○
Opportunities for social interaction	○	○	○
Access to green/natural space	○	○	○
Job opportunities for residents	○	○	○
Access to affordable transportation options (Active Transportation &/or Public Transit)	○	○	○
Opportunities for cultural expression	○	○	○
Access to healthy food options (fresh produce, etc.)	○	○	○
Working conditions	○	○	○
Injury prevention		○	
Accessibility of public areas for people with disabilities		○	
Access to social services			
Clean environment (Clean air, water & soil)			
Access to health services			

13. Below are selected barriers that have been identified as limiting planners in addressing issues such as health in practice. Please select the three most significant (1=most significant, 2=very significant and 3= significant) issues that apply to your situation. (Q 2b)

Barriers	Rating
There are competing issues that demand my time	
I don't have enough human resources to tackle this issue	
My municipality's current planning policies do not allow me to address health	
I don't have enough knowledge about community health issues.	
I don't have access to appropriate data/information to make decisions	
There is no political interest in this subject	
Resources on this topic do not provide useful guidelines	
Our community cannot afford to be too demanding of developers	
Resources on this topic are not applicable to my community	
Legislation does not allow me to address health issues	
There are competing issues that demand my time	
Other	

SECTION C: Collaborative Action on Planning and Health

15. Have you ever consulted any of the following sources about health issues in your community?

16. If you have not already consulted any of these sources would you consider doing so in the future?

	I have consulted this source	**I would consider consulting this source in the future**
Physicians/Nurses	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Department of Health & Wellness	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
District Health Authority	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Community Health Board	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Canadian Community Health Survey	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Statistics Canada	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Canadian Institute for Health Information	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Residents of Municipality	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Local School Board	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Internal (Planning department)	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Other municipal department: (please identify)	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○
Other: (please describe)	Yes ○No○	1) Definitely ○,2) Maybe ○,3) Unlikely ○

SECTION D: Small Town and Rural Nova Scotia

17) Please indicate your level of agreement with the following statements:

a) Current research on health and the built environment is applicable to small town areas.

Strongly Agree ○	Somewhat Agree ○	Neither Agree nor Disagree/No Opinion ○	Somewhat Disagree ○	Strongly Disagree ○

b) Current research on health and the built environment is applicable to rural areas.

Strongly Agree ○	Somewhat Agree ○	Neither Agree nor Disagree/No Opinion ○	Somewhat Disagree ○	Strongly Disagree ○

c) There is a need for more research on the impact of built environment on health outside of cities.

Strongly Agree ○	Somewhat Agree ○	Neither Agree nor Disagree/No Opinion ○	Somewhat Disagree ○	Strongly Disagree ○

d) Non-urban areas are limited in what they can do to plan for health compared to urban areas.

Strongly Agree ○	Somewhat Agree ○	Neither Agree nor Disagree/No Opinion ○	Somewhat Disagree ○	Strongly Disagree ○

e) Communities outside of cities cannot support the infrastructure to facilitate healthy behavior (E.g. having sidewalks on all streets)

Strongly Agree ○	Somewhat Agree ○	Neither Agree nor Disagree/No Opinion ○	Somewhat Disagree ○	Strongly Disagree ○

f) Small Town and/or Rural areas cannot risk losing development /tax revenue therefore they cannot expect too much from developers.

Strongly Agree ○	Somewhat Agree ○	Neither Agree nor Disagree/No Opinion ○	Somewhat Disagree ○	Strongly Disagree ○

SECTION E: Built Environment Features

18. & 19. The following questions will gauge how important various features of the built environment which have been linked to health are to you in considering planning the built environment in your community and to what extent you feel these factors are being satisfied in your municipality. For each factor, first circle how important it is to you on a scale of 1 to 5. Then, if you circled 2, 3, 4, or 5, indicate on the right side of the table to what extent your municipality satisfies this feature.

For example, considering the first factor Walkability, if having less people driving is important to you then you might circle '5'. Then, taking into account your actual municipality, which may have a very low population/employment density you may circle '1' in the list on the right side of the table.

	Importance of this feature in planning decisions					Extent to which my municipality demonstrates this feature				
	Not Important at all	Slightly Important	Moderately Important	Very Important	Extremely Important	Not at all	Somewhat	Adequately	More than Adequate	Excellent
Built Environment Features										
Walkable	1	2	3	4	5	1	2	3	4	5
Infrastructure for Active Transportation	1	2	3	4	5	1	2	3	4	5
Public Transit	1	2	3	4	5	1	2	3	4	5
Meeting accessibility standards for people with disabilities in the built environment	1	2	3	4	5	1	2	3	4	5
Accessible public spaces for people with disabilities	1	2	3	4	5	1	2	3	4	5
Accessible public buildings for people with disabilities	1	2	3	4	5	1	2	3	4	5
Recreational opportunities	1	2	3	4	5	1	2	3	4	5
Accessible opportunities for healthy food (fresh produce and whole grain and low fat foods)	1	2	3	4	5	1	2	3	4	5
Access to green / natural areas	1	2	3	4	5	1	2	3	4	5
Affordable Housing	1	2	3	4	5	1	2	3	4	5

Mixed-use development	1	2	3	4	5	1	2	3	4	5
High quality public space	1	2	3	4	5	1	2	3	4	5
Compact built form	1	2	3	4	5	1	2	3	4	5
High levels of connectivity (trails and/or streets)	1	2	3	4	5	1	2	3	4	5

Thank you for completing this online survey. I appreciate you taking the time to share your opinions and experiences. In order to get a deeper understanding of how health figures in current planning practice in Nova Scotia, would you be willing to be contacted for a follow up interview?

Yes	No
◯	◯

If yes, please provide your preferred contact information (email or phone) and I will contact you to set up an interview date.

APPENDIX D: **RATIONALE FOR NOT USING INFERENTIAL STATISTICS**

RATIONALE FOR NOT USING INFERENTIAL STATISTICS IN MY THESIS RESEARCH ON PLANNING PRACTICE IN NOVA SCOTIA

Alan Howell, July 2, 2012.

INTRODUCTION

The following paper outlines the steps taken to a) collect and categorize data and b) analyze the data coming from an online survey of planning directors and CAOs in Nova Scotia on how and to what extent they are addressing health issues in their communities. The online survey was official closed on September 2011, after running for approximately nine weeks. The intent of the online survey was to do a quick scan of current planning practice in Nova Scotia, in terms of how planners were considering the health impacts of their work and current research on the connection between planning, land-use and health. The survey was not intended to test a single hypothesis. Rather the intent was to gather a variety of information from which focused questions for semi-structured interviews could be developed. The rationale behind this process was based on informal conversations with planners, planning directors and provincial level administrators dealing with land-use issues, where the opinion was that health was not a planning issue and that planners do not think of the health impacts of their work. The goal was to a) either confirm or deny this claim, b) discover what if anything the professional planners contacted had done related to addressing community health problems and c) to look to see if there was any significant variation in responses based on the rural character of the municipalities.

The survey carried with it a few assumptions: a) that the smaller and more rural a municipality the less likely it was that the planner or official in charge of planning and development would consider the health implications of their work and b) communities that lacked a planner would also be unlikely to have considered the health implications of development and land-use. Hence a large portion of the analysis dealt with comparing responses according to variables used to classify rural communities and differentiating between places with planning and those without.

SURVEY DETAILS

The survey was hosted on Survey Monkey™. Prior to disseminating the survey an individual for each municipality as identified through the Union of Nova Scotia Municipalities website, was selected for contact. The website contains the names, positions and contact information of most senior level municipal staff for all

municipalities in Nova Scotia (n=55). The focus was on directors of municipal planning departments; however, where there was no planning department the chief administrative officer (CAO) was selected.

The online survey consisted of eighteen questions. This excludes questions one and twenty which asked a) the participant if they agreed to participate in the study and b) whether they wanted to participate in the interview portion of the study. The questions were dived into three types, a) questions for assurance and categorization – these questions asked the respondents to answer questions that would i) help to validate whether the respondent was the specific person sought for the study and ii) provide information to categorize respondents into groups for analysis, b) rank order questions, and c) direct questions on matters of fact (E.g. did you attend the 2011 Nova Scotia Planning Directors Conference). The survey was intended to a) provide information on the variety of opinions and actions municipal planners across Nova Scotia had taken relative to incorporating community health into their practice and b) to test the two null hypothesis that rurality of a municipality had no influence on the participants responses to incorporating community health into their planning practice.

DATA SETS

Given the small number of possible respondents (n=55) and that each could be directly identified, the hope had been to receive a response from each of Nova Scotia's municipalities. The total number of responses was twenty four, however four were dropped post-test. The reasons for dropping response sets varied, some had too many questions unanswered or the identity of the respondent could not be confirmed. The remaining two response sets were dropped because the responses could not be compared to the remaining twenty response sets. The reason for the incompatibility was because these last two response sets came from planning commissions in Nova Scotia, where the responses were intended to reflect upon several municipalities at the same time as opposed to all other responses which focused on a singular case. Too many of the survey questions did not make sense when applied to multiple cases. In order to maintain validity of the analysis the two response sets from planning commissions were dropped, leaving twenty total cases. Figure 1 below illustrates the breakdown of survey responses.

SURVEY RESPONSES	
Total Responses	*24*
Total dropped due to validity and completeness issues	*4*
Total Responses used in analysis	**20**

INDEPENDENT VARIABLES USED IN ANALYSIS

Independent variables were selected based on a) their use in other studies looking at the connection between health and rurality (CIHR, 2006, Nova Scotia Food Security Network, 2008), b) their common usage in Nova Scotia, and c) how they capture residual factors such as respondents familiarity with health issues in the context of planning, the capacity of a planning department ,and population trends related to growth and decline.

The null hypothesis supposes that the rurality (population size, population density, concentration of employment) of a municipality will have no impact on whether community health issues, for example obesity, options for healthful food, and mental health are taken into consideration by planners. Defining rurality is complex and multiple methods have been developed to define rural and to develop gradations of rurality (Reimer & Bollman, 2010, Hodge & Gordon, 2008). There is a definite lack of consensus on which measure best captures rurality (Reimer & Bollman, 2010, du Plessis et al. 2001). However, the focus remains on three characteristics, population size, the density of the population and the concentration of employment within an area, usually understood as the amount of commuting that occurs to access employment. Small towns and rural areas are also characterized by declining populations and outmigration and fewer human resources in their municipal administration.

The independent variables selected were assumed to have some level of influence over the responses from the survey participants. The strength of that influence was not assumed, only that it was present. As mentioned in the introduction the underlying assumption being that the more rural the municipality the less likely the respondents would act or respond positively to community health issues, as it is assumed they have neither the time nor capacity to move beyond basic planning services, such as zoning and processing of development agreements, due to limited human resources and other issues looming larger such as population and employment decline. Figure 1 – illustrates this relationship.

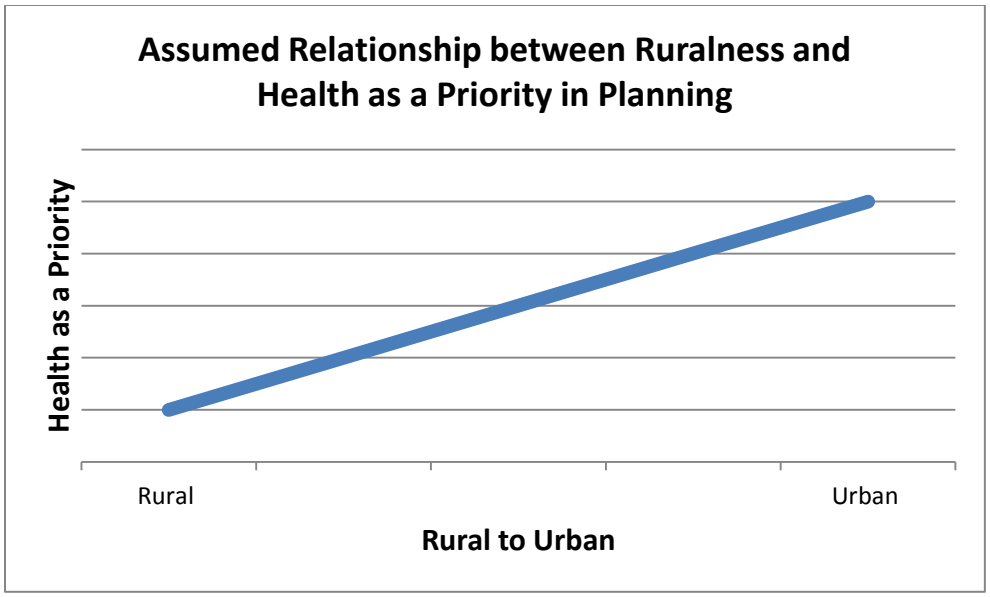

Figure 1: Relationship between Health Oriented Planning and Rurality

Table 1 below describes the independent variables used to measure rurality. Table 2 describes the variables used for planning capacity and demography.

Table 1: Independent Rural Variables

Rural Measures	Classes Used	Analysis Code	Description
Metropolitan Influenced Zones (MIZ)	Ordinal Level Data • Strong MIZ: 30% or more • Moderate MIZ: at least 5% but less than 30% • Weak MIZ: more than 0% but less than 5% No MIZ: includes all CSDs that have a small employed labour force (less than 40 • people), as well as any CSD that has no commuters to a CMA/CA urban core (	Census Metropolitan A = 7 Census Agglomeration (with census tracts) = 6 Census Agglomeration (no census tracts) = 5 Strong MIZ = 4 Moderate MIZ = 3 Weak MIZ = 2 No MIZ = 1	Classes refer to the % of employed labour force who commutes to an urban core (either a Census Metropolitan Area (CMA =pop. >100,000) or a Census Agglomeration Area (CA = pop. 10,000 – 99,999). MIZ's are collections of census subdivisions (CSDs) that have comparable community patterns. A CMA has an urban core population of at least 100,000, and includes all neighbouring CSDs (municipalities) where: • 50% or more of the employed labour force living in the CSD commutes to work in the urban core, or • 25% or more of the employed labour force working in the CSD commutes to work from the urban core. The same commuting flow thresholds

			apply in the delineation of CAs. The only difference is that the urban core of a CA is smaller, between 10,000 - 99,999 people. Some CSDs that do not meet the commuting flow thresholds are included to ensure spatial contiguity and/or historical comparability of CMAs and CAs. Area that is a municipality or an area that is deemed to be equivalent to a municipality for statistical reporting purposes (e.g., as an Indian reserve or an unorganized territory).
OECD Definition	Ordinal Level • Rural = < 150 people per Km2 • Non-rural = >150 people per Km2	< 150 ppl/Km^2 = 0 > 150 ppl/Km^2 = 1	The OECD definitions are part of a territorial scheme for the collection of internationally comparable "rural" data. They were developed for the Rural Indicators Project, an initiative of the OECD Rural Development Programme, launched in 1991 to support analysis and cooperation on rural development across the OECD membership (du Pleiss et al. 2001)
Nova Scotia Municipal Classification	Ordinal Level Rural Municipality – large geographic areas with multiple cores under 10,000 people. Town – small geographic areas with centralized populations from < 1,000 - >10,000 Regional Municipality – amalgamated municipalities that have both urban cores of <10,000 to >100,000 and rural areas of <1,000.	Rural Municipality = 1 Town = 2 Regional Municipality = 3	The definition between the different types of municipality is largely based on historical legislative and subsequent service requirements. Prior to 1996 there were no Regional Municipalities in Nova Scotia, but following the trend of amalgamation at the time three were established. These new entities had new responsibilities to provide services to urban, suburban and rural residents now under these three new municipal structures. The remaining two categories Rural Municipaity and Town were defined in a series of legislative acts which defined different service requirements and taxation abilities based on the different classification. These were then all brought together under one piece of legislation called the Municipal

			Government Act. While the definitions themselves have no explicit relationship to geography the level of services tend to be different from one category to another. Regional Municipalities typically having more services than Towns and Towns providing more services than Rural Municipalities. (Provincial Department of Municipal Relations, personal communication, May, 2012).
Population SizeVariable	Ordinal Level Big >10,000 population. Small < 10,000 population.	Big = 1 Small = 0	Definition set arbitrarily to split sample as evenly as possible to test for significance.

Table 2: Planning & Demography Variables

Measure	**Classes**	**Analysis Code**	**Description**
Professional Planner Employed to do Planning for the Municipality	Nominal Level No professional Planning Yes professional Planning	No professional Planning = 0 Yes professional Planning =1	Indicates the presence or absence of land-use planning as a tool in municipal administration at the local level.
Number of Planning Staff	Ordinal Level No planning staff < 10 planning staff >10 planning staff	No planning staff = 0 < 10 planning staff = 1 >10 planning staff = 2	This variable is intended as a measure of planning resources. The more staff the greater the resources, the fewer the lower. The assumption being that places with more staff can tackle a wider variety of topics in the planning of the municipality.
Attendance at the May, 2011, Nova Scotia Planning Directors Conference – Planning for Healthy Communities.	Nominal Yes No	Yes = 1 No = 0	This variable was intended to measure the participants familiarity with the idea of viewing planning work in terms of its community health impacts as this was the focus of the 2011 NSPDA conference.
Population Trend	Ordinal Stable Declining Growing	Stable = 0 Declining = 1 Growing = 2	Classification of population trends.

CLASSIFYING THE DATA

The data collected in the online survey was recoded after the survey was official closed in September 2011. All responses were given numerical codes. The majority of data collected was ordinal. Most questions asked respondents to rank order their responses, through either a Likert scale (Strongly Agree – Strongly Disagree) or a modification of this using a similar sematic differential was used. The remaining questions asked for either a yes/no/unsure responses or a discrete value such as the number of planning staff.

ANALYSIS

Fox and Levin (2007) suggests that the human brain excels at finding patterns in series of data. However, it is not uncommon to look for or identify patterns where none exist (Fox & Levin, 2007). The use of inferential statistics helps us to avoid the problems of assuming relationships and patterns where they do not exist. However, in many instances descriptive statistics are useful for demonstrating prevalence of certain ideas or factors that influence behaviour. Both methods inform social science research and are employed in this study. The analysis utilizes a bivariate analysis as the purpose of the research is to search for relationships between two variables at a time namely the variable presented in Tables 1 and 2 above, and the response variables from the survey. The online survey data was analysed using raw score data such as raw percentages and median scores as well as analytical statistics using SPSS 19 software. Given the small size of the total sample (n=20) descriptive statistics using raw scores seemed appropriate as they were easily calculated and displayed. The use of inferential statistics was problematic due to the small size of the sample. Small data sets present problems for inferential statistics (Field, 2009; Levin & Fox, 2007). First of all it is difficult to tell if the data comes from a Gaussian or normal distribution, this reduces the validity of parametric tests. Therefore small sample sizes that do not have a normal distribution are analysized using nonparametric tests. Given the total sample size (n=20) the use of parametric tests may provide a misleading p-value that could lead to a Type 1 error. Alternatively non-parametric tests are not powerful enough with small samples inflating the p-value and possibly making it impossible to get a p-value less than 0.05 which is the standard in social sciences research. The risk is the possibility for Type 2 error, which in this case is deemed less risky than a Type 1 error. Consequently the use of non-parametric tests was chosen, given the small sample size and the relative risk of Type 1 or Type 2 error

There was however a variety of issues with the use of non-parametric tests. The most significant being the requirement for specific cell sizes for standard non-parametric tests such as Chi squared, Mann-Whitney U test and Kruskal Wallace one way analysis of variance. The use of these tests was based on the fact that the majority of data was ordinal (Likert scales and semantic differentials). In the social sciences Likert scale data is sometime chosen to be interpreted as interval data, which offers different possibilities for analysis, but requires some assumptions (Bryman & Teevan, 2009, Levin & Fox, 2007). The majority of the time the choice to treat scaled data as ordinal or interval is a matter of personal choice. My personal choice was to treat the data as ordinal as this required the least number of assumptions.

CHI SQUARED TEST

The Chi-squared test was the main one used in the analysis. The Chi squared test is the most frequently used non-parametric test for significance (Levin & Fox, 2007). The value of the chi-squared test is that multiple independent categories can be used. Tables that are standard 2X2 but also 3X4, etc. can be used. The chi-squared calculates an expected frequency to compare against an observed frequency. In this test the larger the difference between the observed and expected frequency the more likely that the difference is statistically significant. The test assumes the null hypothesis. Findings are significant at the 0.05 level in this test. One of the only assumption that is stated as being important for the chi-squared statistic is that there be at least five samples in each cell in the chi-squared table(Levin & Fox, 2007). This assumption is however, not accepted unanimously, some suggest that only most of the cells need to contain five or more cases (Levin & Fox, 2007). Most however is not defined as a percentage value, leaving it up to interpretation. There is no hard and fast rule regarding when less than five cases will result in an erroneous result (Levin & Fox, 2007). Having cells that have low expected frequencies (<5) can have dramatic effects on the results of the chi-squared test if observed frequencies are higher, possibly causing a Type 1 error. There are three other requirements of chi-squared analysis which are slightly more lax in most cases but should be noted here specifically because at least two are violated in this research. The first requirement being that the comparison done in a chi-squared test should be a comparison between two or more samples. While the survey responses are divided according to geographical and administrative categories, they do comprise one sample. They were taken at the same time, from the same main population, Nova Scotia's municipal units. The second requirement is that data need not be interval. The data is not interval. The third is that sample is drawn randomly. This entails some interpretation. The sample was purposeful, participants were selected based on a known

geographical area and the total number of possible respondents was known (n=55 possible responses), however, the number of actual respondents self-selected, in that they chose to participate and who chose to participate could be interpreted as random. But in the strict usage of the term random sample, this sample is not random. In sum even the chi-squared test which has relatively lax requirements cannot be fully satisfied based on the final sample size and the sampling technique.

Other Non-Parametric Tests: Mann Whitney U Test & Kruskal Wallace Test & Tests of Direction

Questions twelve, fifteen, sixteen, eighteen and nineteen all had multiple responses, asking the respondents to provide their opinion or experience on the use or importance of a broad range of information and sources, areas of professional work and built environment. As a numerical value (interval) for responses could be surmised from these questions the use of t-tests was attractive, but given that the sample is not assumed to be from a normal distribution the non-parametric equivalent of the independent samples t-test was employed i.e. the Mann-Whitney U test. This non-parametric test tests for statistical significance between two groups using ordinal data. It is used when the data of two samples are measured on an ordinal scale. Although ordinal measures are used with this test an underlying continuous distribution is assumed. This test is often used in cross sectional studies (Field, 2009; Levin & Fox, 2007). A problem with this test is that it assumes random selection of subjects into their groups, however, in the case of this research that was not possible.

As some of the independent variables split responses into more than two groups the Kruskal Wallace test was employed to account for this difference. The requirements and usage of the Kruskal Wallace test is similar to that of the Mann Whitney U test, but allows for the analysis of cases with more than two independent samples.

The other types of tests were to detect the type of association (positive or negative) and what variable was impacting the association specifically Eta, Kendalls tau c, Sommers d, and Lambda.

Analysis Results

The tests used in this analysis utilized primarily three types of tests. The two main tests were non-parametric tests of significance specifically Chi-squared and the non-parametric tests Mann-Whitney U (for up to two categories)& Kruskal Wallace (for more than two categories) were used. The other types of tests were to detect

the type of association (positive or negative) and what variable was impacting the association specifically Eta, Kendalls tau c, Sommers d, and Lambda.

A central assumption for all of the tests of significance were that each cell size would contain at least five cases per cell. Given the small number of responses (n=20) and the ways in which the independent variables were split from two to four categories, in many instances cell size was below five, often zero. In order to attempt to mitigate this and to supply additional options for searching for possible relationship a population variable was created with split the respondents by population size <10,000 and >10,000 people.

As is standard in analysis used in the social sciences the level of statistical significance was held at $p<0.05$ or 95%confidence interval. All questions were analyzed using either a chi-squared or either Mann-Whitney U or Kruskal Wallace tests depending on the independent variable or the type of response (nominal, ordinal or interval).

Each question was analyzed using at least one of the test of significance and direction mentioned previously. Nearly none of the results returned a p-level that would suggest significance. However, some of the responses did return significant results. Table 3 at in the Appendix provides a breakdown of these results, showing the survey question, independent variable, significance level and cell size and directional measures.

None of the results that had significant results (n=37) met the basic assumption of having at least five cases per cell. Only eight times did the required cell size meet at least 50%. In many of the significant results, directional measures using Lambda, Somer's d and Eta, suggested that the independent variable was in fact the dependent variable, for example that the survey responses were predictive of whether a respondent was a planner or the size of the respondents municipality. This is of course not logically sound. Only three of the significant results (n=37) had at least 50% of cells meet the required size and demonstrated a relationship that was logically plausible. However, as the 50% of the cells did not meet the required cell size these results may not be reliable. These were only for question twelve of the survey.

12. Below is a list of some social, economic and environmental correlates of health. Please check all that you as planner, CAO or municipal clerk address in your work.

Population Variable - Big >10,000 population - Small < 10,000 population.

P = Affordable Housing – 0.035
P = Crime Prevention - 0.035

Did the respondent attend the 2011 Nova Scotia Planning Directors Conference, Planning Healthy Communities,

P= Affordable Housing – 0.015

In fact for question twelve Crime Prevention and Affordable Housing both came up several times in the statistically significant results for nearly all independent variables, suggesting that there may not be an actual relationship between any of the independent variables or that there is a spurious relationship and I have not accounted for an underlying variable.

Given that the overwhelming majority of tests came back as not significant the level of statistical significance was altered to $p<.1$ and the confidence interval to 90%. The expectation was that the tests may return more results if the accepted threshold for significance was lowered. Results were similar with the majority of tests returning results that were not significant.

SUMMARY

In summary the results from this survey are unable to be analysed in any meaningful way using inferential statistics. This is largely due to the sample size (n=20). Some independent variables, specifically Metropolitan Influenced Zones (MIZ), Nova Scotia Municipal classes, Population trends and planning staff sizes split the responses into too many groups to allow for minimum cell size requirements. However, other measures allowed for minimum cell sizes to be met, such as the OCED definition of rural and the Town Size Population size variable. Regardless, results either did not return statistically significant results, the cell sizes were not large enough or directional measures indicated an illogical relationship between independent and dependent variables. Consequently, descriptive statistics will comprise the bulk of the survey analysis within this study.

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APPENDIX

This table shows all the analysis results that had p-values of 0.05 or less.			
Blue = more than 50% of cells have less than 5 responses. Green = Directional measures (Lambda, Somer's d or Eta) indicate that independent variable is dependent.			
Survey Question	**Independent Variable**	**Dependent variable & p-values**	**Directional Measures/Cell size violations.**
8. Do you agree that the built environment has an impact on health?	Is the respondent a planner?	1. P = .024	Assumes independent is dependent – 50% less than 5.
12. Below is a list of some social, economic and environmental correlates of health. Please check all that you as planner, CAO or municipal clerk address in your work.	OCED definition of Rural	2. P =(H -Working Conditions – 0.043,	Directional measures suggest that the dependent has more influence than the independent. – case has 50% of cells with less than 5
		3. I Injury Prevention - 0.035)	Same as above
	MIZ categories	4. P =(H -Working Conditions – 0.018,	Same as above - 66.67% have less than 5
		5. P = Crime Prevention 0.059	Same as above – 83.3% have less than 5
	Nova Scotia Municipal Class	6. P = (Healthy Food – 0.011)	Suggests that independent has influence over dependent – positive relationship with Nominal measures – negative with Ordinal Measures – 100% of cell have less than 5
	Population Variable >10K - <10K	7. P = Crime Prevention - 0.035	Independent has an effect on dependent – positive for Nominal – negative for ordinal – no effect for Ordinal/Interval – 50% have less than 5.
		8. P = Affordable Housing – 0.035	Stronger effect of independent on dependent – positive for Nominal and Ordinal measures – 50% have less than 5.
	Population Trend	9. P=(H -Working Conditions – 0.025)	Dependent effect Independent – 100% have less than 5.
	Is the respondent a	10. P=(H-Working	Assumes dependent is

	planner?	Conditions – 0.024	the independent - positive for Nominal – negative for ordinal– 50% less than 5.
		11. P= I-Injury Prevention – 0.017,	Same as above.
		12. P= Crime Prevention – 0.032	Same as above – 75% have less than 5.
		13. P= Affordable Housing – 0.005	Assumes independent is independent - positive for Nominal and Ordinal– 75% of cells have less than 5
	Did the respondent attend the 2011 NSPDA Conference on Healthy Planning?	14. P =(I-Injury - 0.007	Assumes dependent is independent – positive for Nominal- negative for Ordinal – 50% have less than 5.
		15. P= Crime Prevention – 0.017	Directional tests suggest that neither is dependent – 75% of cells have less than 5.
		16. P= Affordable Housing – 0.015	Assumes independent is independent – positive for Nominal and Ordinal – 50% of cells less than 5
	Number of planning staff – none, <10, >10	17. P = (I-Injury Prevention – 0.037	Ordinal suggests that Independent is independent, Nominal suggest that the dependent is independent – both positive – 83.3% of cells have less than 5.-
		18. P =Affordable Housing – 0.018	Same as above.
15. Have you ever consulted any of the following sources about health issues in your community?	OCED definition of rural	19. P = CHB – 0.042,	Nominal suggests that independent is independent – Ordinal suggests the opposite – 66.7% have less than 5.
	Population -Town >10K - <10K	20. P =(Physicians – 0.051	Same as above – 83.3% have less than 5
	Population Trend	21. P = (Physicians – 0.046	Assumes independent is independent – Nominal positive – Ordinal negative – 100% of cells have less than 5.
	Is the respondent a	22. P =(Internal –	Assumes independent

	planner?	0.005)	is dependent – all positive – 66.7% have less than 5.
	Did the respondent attend the 2011 NSPDA Conference on Healthy Planning?	23. P =Internal – 0.026	Nominal assumes that independent is independent – Ordinal assumes dependent is independent – 66.7% have less than 5.
	Number of planning staff – none, <10, >10	24. P =Statistics Canada .038,	Ordinal assumes that independent is independent – Nominal the opposite – all positive – 88.9% have less than 5.
18. The following question gauges the importance of characteristics and features of the built environment which have been linked to health. Please indicate generally how important each item is to the municipal unit(s) for which you work. On a scale of 1 to 5. 1 being Not at All Important - 5 being Extremely Important	OCED definition of rural	25. P = Provision of outdoor space - .041	Ordinal assumes dependent is independent – opposite for Nominal – 90% have less than 5.
	MIZ Categories	26. P =Infrastructure for AT - .029	Same as above – 100% have less than 5.
	Nova Scotia Municipal Class	27. P =Provision of space for community gardens – 0.052	Same as above – 100% have less than 5.
	Population Trend	28. P =Public transit – 0.053	Same as above – 100% have less than 5.
19. Please identify to what extent generally, you believe the following list of built environment characteristics and features are present in the municipal unit(s) you work for	OCED Definition of rural	29. Affordable Housing – 0.011,	Assumes independent is independent all positive -83.3% have less than 5.
		30. Compact built form – 0.006	Nominal assumes independent is independent – Ordinal opposite – 100% have less than 5.
	Nova Scotia Municipal Class	31. P =Compact built form – 0.035	Same as above.
	Population -Town >10K - <10K	32. P =the community being walkable - .026	Nominal assumes independent is independent –Ordinal the opposite – all positive – 83.3% have

			less than 5.
		33. P=Compact built form – 0.050	Nominal assumes independent is independent – Ordinal opposite – 100% have less than 5.
	Population Trend	34. P =Public space outdoor – 0.055,	Independent is independent – 100% have less than 5.
		35. P = Recreation opportunities (indoor) – 0.027	Directional tests suggest that neither is dependent - 100% less than 5.
	Is the respondent a planner?	36. P =Access to Green/Natural areas – 0.047	Assumes that independent is dependent – all positive – 83.3% have less than 5.
	Number of planning staff – none, <10, >10	37. P =Compact built form - 0.019	Nominal assumes independent is independent – Ordinal opposite – 100% have less than 5.