

Greenspace and Ecohealth Toolkit

Improving Health and Wellbeing through Greenspace Provision, Design and Access

MARCH 2017



Foreword

The inherent value of the natural environment, greenspaces and places, and their connections to community health and wellbeing are increasingly recognized as essential components of a healthy human habitat. They play a critical role in community and individual health and wellbeing.

Just as eating greens provides us with essential nutrients, seeing and being in green places nourishes our bodies and minds. The physical, spiritual and psychological benefits of greenspaces are increasingly being recognized along with their ecological and ecosystem benefits. Greenspaces provide shade and cooling, improve air quality, and mitigate the impacts of climate change including extreme temperatures. Drawing the connections between greenspace, community health and ecosystem resilience is important for our own sustainability and wellbeing.

Municipalities, public health units, environmental non-governmental agencies (ENGOs), conservation authorities and others, through the development of policy and the delivery of programs, have an incredibly important role to play in realizing positive community health outcomes through greenspace provision, design and access.

It is against this backdrop of greenspace value that this Greenspace and Ecohealth Toolkit has been developed.

This Toolkit includes a series of profiled case studies drawn from municipalities, public health and conservation agencies that have begun to make the connections between greenspace and community health. There are numerous examples across Ontario where municipalities and their partners have recognized the need for a healthy built environment. There are many opportunities to expand that scope and advance ecohealth in ways that systemically address greenspaces and ecological systems in our communities.

The purpose of this Toolkit is to provide resources, guidance and assistance to those interested in making lasting improvements in community health through greenspace provision, access, and design. Specifically, the Toolkit:

- Introduces the importance of ecohealth
- Profiles examples where ecohealth is being applied through policies and programs to enhance greenspace provision, design and access
- Advances ecohealth thinking and action at the local level by supporting the achievement of health-based outcomes through effective greenspace policy

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About EcoHealth Ontario

EcoHealth Ontario (EHO) was formed in 2014 as a collaborative of professionals in the fields of public health, medicine, education, parks, planning and the environment. EHO is building a shared agenda to increase understanding of the relationships between environment and health. The goal is to foster improved health and wellbeing outcomes for Ontarians through the provision of better ecosystem quality, increased greenspace, and enhanced access to nature. EHO's Steering Committee has established three working groups to focus on research, policy, and communications (see below). This Toolkit is a project of the Policy Working Group. It incorporates information generated by the Research and Policy Working Groups and will provide a foundation for future education and outreach activities by the Communications Working Group.























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1. Introduction

1.1. Ecohealth and the Toolkit

Greenspaces of all forms add structure and character to our communities. They help to define the socio-cultural, economic, environmental and political priorities, fabric and functions of our communities. From an ecological perspective, we have long understood the benefits that greenspace offers to the environment by buffering noise, cleaning the air, moderating temperature and wind, and offering shade. Greenspaces also contribute to ecosystem resilience and, as nested systems within our urban areas, support biodiversity conservation. They are, by their very nature, sustaining life on the planet. Who would have thought that the neighbourhood park, hiking trail or golf course was contributing to the achievement of such critical global goals?

What is Greenspace?

For the purpose of this toolkit, greenspace is broadly defined as any natural or landscaped feature in rural or urban areas that is held in either public or private ownership.

It includes a range of open spaces and features such as parks, natural areas, urban forests, street trees, front and back yards, playgrounds, green infrastructure (including green roofs, swales) school grounds, golf courses, cemeteries, linear facilities (e.g. hydro rights-of-way) and other green corridors.

The connections between healthy ecosystems and the health of people and communities are recognized by ecohealth practitioners. Actively connecting ecology and the key determinants of health is part of a growing repertoire of approaches to research, practice and policy that is being supported by EcoHealth Ontario. This Toolkit is aligned with a philosophy and promotes an approach that advances the linkages between people and their biophysical, social and economic environments.

Chronic diseases (e.g. cardiovascular disease, diabetes, cancer and respiratory diseases) are the leading



- •Parks & open space
- Natural areas
- Urban forests & street trees
- •Green infrastructure (e.g. green roofs, swales)
- •Golf courses, cemeteries, hydro corridors

Capacity to recover from disturbance and the risk of unexpected change

- •Improved mental and physical health
- More social interaction
- Opportunity for physical activity
- Livable communities

cause of death worldwide, according to the World Health Organization (WHO). In Canada, deaths due to chronic diseases are increasing at a rate of 14% each year, while 3 out of 5 Canadians over the age of 20 have a chronic disease and 4 out of 5 are at risk (Elmslie, 2012).

Treating chronic diseases consumes 67% of all direct health care costs – \$190 billion annually (Elmslie, 2012). As a recently released report by Public Health Ontario and Cancer Care Ontario cites "environmental cancers are responsible for a significant number of new cancer cases each year – between 3,540 and 6,510 new cancers each year result from exposure to environmental carcinogens which represent twice the cancer burden from alcohol consumption and half from smoking..." (Cancer Care Ontario & Public Health Ontario, 2016). Importantly, 80% of all heart disease, diabetes and respiratory disease, and 40% of all cancers are preventable by eliminating four common risk factors: tobacco use, unhealthy diets, harmful use of alcohol, and physical inactivity (World Health Organization, 2015).

A growing recognition of the linkages among ecosystem resilience, community health and greenspace provision, access, and design is encouraging planners, ecologists, foresters, engineers, researchers and public health and conservation professionals to work together to promote the design and development of environments that support community health.

How we build and manage our communities affects health. Greenspace makes us feel good but it does more than that... it actually improves health. For instance:

- Greenspaces reduce human exposure to air pollutants, thereby reducing risk factors for cardiovascular and respiratory diseases (Berry, 2014)
- Regular use of natural areas for physical activity can reduce the risk of mental health problems by 50% (Kardan, 2015)
- A daily walk in nature can be as effective in treating mild cases of depression as taking an antidepressant (CO_Step_Infographic_Sheet, 2013)
- One tree has the cooling effect of 10 air conditioners (City of Toronto, 1998)
- Walking outside has been proven to provide physical health benefits such as increased weight loss and fitness; increased immunity; reduced risk of diabetes, heart disease and high blood pressure; improved balance and coordination; and a decreased risk of osteoporosis (Toronto Public Health, 2015)
- Increased greenspace and urban parkland can provide shade, dissipate heat and improve stormwater management and the quality of life for urban residents (Health Canada, 2015)

Healthy people make less use of health care services and in turn live longer and better. Health promotion policy plays an important role in increasing healthy behaviours, improving health outcomes, enhancing quality of life and decreasing health care costs. Simply put, supportive environments make it easier to make healthy choices.

This Toolkit focuses on the important role that greenspace plays in improving health protection and encouraging healthy behaviours. This is an important focus given that there is compelling evidence to suggest that communities can be built in ways that encourage or discourage healthy behaviours and moreover, that community planning and design can strengthen the connection between the natural and built environment, ecosystem resilience and health outcomes.

1.2. Purpose of the Toolkit

The Healthy City and Livable Communities movements have brought walkability, livability and active transportation to the forefront of planning practice. Similarly, the environmental health and health protection component of greenspace is gaining momentum with current attention to climate change and air quality. Despite the emphasis on active living and a growing awareness of the links between health and the environment, the nexus between greenspace, ecosystem resilience and community health remains, for the most part, in the formative stages.

EcoHealth Ontario is working to promote the "adoption of policies at local and provincial levels that reflect and support healthy ecosystems for healthy communities." In keeping with this commitment, EcoHealth Ontario and its partners developed this Toolkit to promote the important role that greenspace can play in improving community health and wellbeing.

For the purposes of this Toolkit, greenspace is broadly defined as any natural or landscaped feature in rural or urban areas that is held in either public or private ownership. Public access to greenspace is a key element but it is important to recognize that private greenspace provides health benefits through visual access, contributions to landscape beauty, and provision of habitat for wildlife.

The topic of land use planning in relation to community health and wellbeing is broad and multi-faceted. At a macro level, healthy communities focus largely on smart growth, on promoting increased physical activity, on health protection and on advancing community and neighbourhood connectivity. Considerable work in this area has already been done and is not a primary focus of this Toolkit.

At the same time, there are many topics relating to community health that are critically important but are addressed through regulatory and legislative means (e.g. regulations pertaining to hazardous materials and waste, water quality, air quality and natural hazards). This is important but not the subject of this Toolkit.

¹ Government at all levels is taking action to address air quality concerns. See Section 4.4 Lessons Learned for more information.

This Toolkit was developed to achieve the following key objectives:

- To draw the connections between greenspace, ecosystem resilience, and community health and wellbeing
- To profile a diversity of existing policies, programs, and practices that are beginning to act upon the connections between greenspace and health
- To provide a practical framework to either develop new or strengthen existing policies, programs, and practices to advance ecohealth policies and outcomes

This Toolkit is not intended as a step-by-step guide but rather as an introduction and overview to support the development of policies, programs and practices that advance ecohealth thinking from the lens of community health and greenspace.

1.3. Who Should Use The Greenspace and Ecohealth Toolkit?

This Toolkit has been developed primarily for municipal planners, public health practitioners, and conservation agencies that are responsible for policies, programs, and practices. This can include policy makers and analysts, program managers, evaluators and service providers looking for innovative approaches to improving community health through greenspace provision, design, and access. Others who may be interested in this Toolkit include:

- Elected officials seeking opportunities to address health concerns through local greenspace
- School boards looking to increase the linkages between community health and greenspaces at schools and within the surrounding neighbourhood
- Commenting agencies that review development applications
- Other professionals and subject matter experts including urban designers, parks planners, stormwater and municipal engineers, and horticultural staff
- Community groups interested in exploring how to improve community health through greenspace planning
- Academic partners who are looking for approaches to advance community health through research and curriculum-specific initiatives

Municipal Roles That Promote Positive Health Outcomes

Planning and Growth Management

- Parkland provision
- Natural heritage protection
- Watershed planning
- Landscape elements through urban design
- Complete streets
- Planning compact communities
- Engineering design standards

Operations

- Street trees and urban canopy
- Stormwater management ponds and other treatment train measures (bioswales, etc.)
- Parks and trails maintenance

Community Services

- Recreation programs
- Connecting with nature programs
- Day camps for children

1.4. How to Use the Toolkit

The information contained in this Toolkit can be used for a variety of purposes:

- To assess the effectiveness of existing greenspace policies, programs, and practices from the lens of community health to:
 - o Address an emerging need/issue
 - o Identify policy gaps and/or unintended negative effects or consequences
- To guide the development of new strategic level plans, policies, and programs
- As an education tool to build awareness about the relationship of greenspace policies and community health outcomes
- To build a shared understanding about the factors that influence community health and wellbeing

Section 1 sets the context for the development of this Toolkit.

Section 2 shows how greenspace factors prominently in the key determinants of health and provides an overview of the importance of greenspace policy to community health and wellbeing.

Section 3 introduces some of the public health and municipal tools that can advance ecohealth and greenspace policies at the local level.

Section 4 profiles a number of case studies that demonstrate promising policies and programs.

Section 5 provides a playbook for advancing ecohealth and greenspace policy using a collective impact lens.

Section 6 includes conclusions and next steps.

2. Drawing the Connections between Health and Greenspace

2.1. The Key Determinants of Health

According to the WHO, health is "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (World Health Organization, 1948). It has long been recognized that many factors in addition to inherited characteristics and access to health services impact human health. These factors are referred to as the environmental and social determinants of health. The Public Health Agency of Canada (PHAC) has identified twelve key determinants of health:

Key Determinants of Health (Public Health Agency of Canada, 2013)

- 1. **Income and Social Status**: ability to access appropriate and safe housing, food, and health resources
- 2. **Social Support Networks**: support of family, friends, and community
- 3. Education and Literacy: level of education influences job opportunities and income
- 4. **Employment / Working Conditions**: job security in terms of having a steady job and a safe working environment
- 5. Social Environments: refers to the strength of social networks within a particular community
- 6. Physical Environment: includes both the natural and human built environment
- 7. **Personal Health and Practices and Coping Skills**: refers to a person's knowledge and behaviours (lifestyle habits) that may affect resilience to change
- 8. **Healthy Child Development**: includes factors that may influence early childhood development, including safe, positive pregnancies and parenting, and child-friendly neighbourhoods
- 9. **Biology and Genetic Endowment**: genetic endowment contributes to predisposition to certain diseases; biology may influence response to sources of stress whether physical or mental
- 10. **Health Services**: access to appropriate services to restore, maintain, and promote health, and prevent illness
- 11. **Gender**: level of gender equality
- 12. **Culture**: language and beliefs influence people's behaviours, access to health information, and interaction with health system

It is crucial to understand that these factors do not exist in isolation. The health of a community is a function of the interactions among all these factors over time. Figure 1 provides a visual map of the key determinants of health in a broader context.

Many of the key determinants of health and health inequities have social, environmental, and economic origins that extend beyond the health sector and health policies. Public policies and decisions made at all levels of government can have a significant impact on community health and wellbeing.

Municipalities are integral and essential to the successful development of community health and wellbeing policies in Ontario. Municipalities provide infrastructure to support healthy communities including greenspace, as well as cultural and recreational amenities. Municipalities are frequently significant landowners of public open space and importantly, are providers and conveners of services to the public that relate directly to healthy and active living.

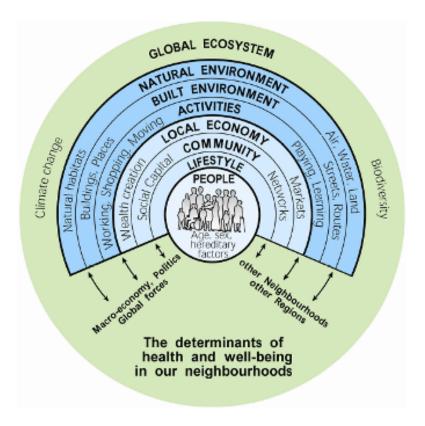


Figure 1: The Key Determinants of Health (Barton & Grant, 2006)

2.2. The Ecological Determinants of Health

The physical environment influences health in many ways. The built environment includes land use, street and neighbourhood design, sidewalks and trail systems, transportation including active transportation, recreation, and the shape and morphology of our communities. The structure of the broader built environment in which we live – including housing, community design, land use, and transportation – has a major influence on community health. For example, factors such as the distance between school and home and between work and home, access to parks and greenspaces, and availability of recreational facilities and trail systems, affect the choices that are made to walk, cycle, take public transit, or drive.

The natural environment also makes important contributions to health. In fact, life would not be possible without the earth's life-supporting systems, including ecological processes and natural resources (Canadian Public Health Association, 2015). These ecological determinants are critical to community health and wellbeing and require the preservation and enhancement of natural systems. The relationships among the ecosystem, the services it provides, and health are illustrated in Figure 2.

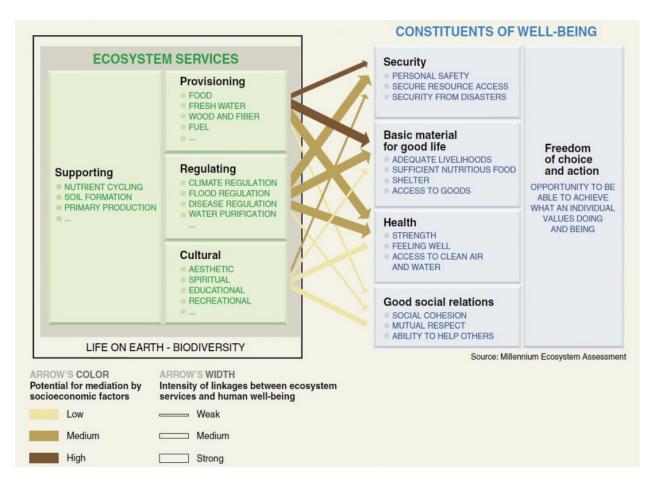


Figure 2: Ecosystem Services and Human Wellbeing (Covalan, Hales, & McMichael, 2005)

2.3. Overview of the Health Benefits of Greenspace

There is a growing body of knowledge suggesting that the natural environment should factor more prominently in the community health and wellbeing equation, given the role that the natural environment plays in supporting the ecosystem services that support life and health.

Connected greenspace systems provide healthy habitats for humans, as well as flora and fauna. Urban forests, natural woodlands, wetland areas, and street trees provide many services to natural and built environments that in turn benefit community health and wellbeing.

In the U.S., an evaluation of the largest 85 cities in the country (population of 57.2 million) found the health cost savings from parks was an estimated \$3.08 billion. The savings related to ecosystem services are also significant. For example, trees and other vegetation in urban parks offer lower cost, natural solutions for addressing storm water runoff and air pollution. One major city, Philadelphia, experienced \$16 million in annual public cost savings as a result of storm water management and air pollution reduction, according to a 2008 report by the Trust for Public Land Centre for City Park Excellence. (Healthy Parks Healthy People Central)

From a social wellbeing perspective, greenspace provides enormous benefits to neighbourhoods, communities and individuals by improving social cohesion and security while enhancing the enjoyment of the local environment and creating a sense of place.

Linear greenspaces make compact living both attractive and viable. Trail networks link parks, making them easier to access for a range of passive and active recreational use including cycling, walking, and experiencing nature. Green infrastructure, such as green roofs, rain gardens, and living walls, contributes to both environmental protection and community heath by reducing energy consumption and greenhouse gas emissions, controlling stormwater run-off, moderating urban heat island effects, improving air quality, and creating new amenity spaces.

According to the World Health Organization, physical inactivity is a major health risk. Improving access to greenspace has the potential to increase levels of physical activity and to have mental health benefits, and reduced healthcare and other costs.

Green City: Why Nature Matters to Health – A Literature Review summarized the evidence for the impacts of greenspace on physical health, mental health and wellbeing (Toronto Public Health, 2015). The presence of greenspace is associated with reduced mortality, obesity, depression, anxiety, cardiovascular disease, and small gestational age births. It also provides places for stress reduction, mental restoration, and social interactions. The Green City review led to four key conclusions:

- Greenspace improves physical health, mental health and wellbeing of urban residents
- Frequent access to nearby greenspace is important, especially for children
- Nearby greenspace provides added benefit in low-income neighbourhoods
- Greenspace that is perceived as unsafe and poorly maintained does not provide health benefits. (Toronto Public Health, 2015)

Greenspace can also improve air quality, provide relief from extreme heat and lessen the urban heat island effect, all factors that contribute to better health. These benefits were documented by the David Suzuki Foundation in a report that explored the role of urban greenspace in providing cooling and reducing air pollution. It was determined that urban greenspaces — from trees and parkettes to green roofs and large natural spaces — generally provide significant health benefits for residents and the community (David Suzuki Foundation, March 2015).

Others have documented the correlation between ecological benefits and the size, quality, and density of the greenspace (David Suzuki Foundation, March 2015). As Toronto Public Health aptly summarized, "there is good evidence that greenspace is associated with better health. Increased greenspace density is associated with several positive health outcomes, including healthier births, reduced all-cause mortality and decreased stress" (Toronto Public Health, 2015).

3. Public Health and Municipal Planning Tools

3.1. Different Communities...Different Approaches to Policy Development

Policy development is not a linear process and municipalities approach it in various ways. In some cases, municipalities have developed a broad vision that includes a healthy community, healthy environment, and healthy population. Others have adopted goals that pertain specifically to the protection of natural heritage or greenspace. Some have supporting policies — contained in Official Plans, Official Plan Amendments, Recreation and Parks Master Plans, Trails Master Plans and other documents — that advance the notion of healthy community design. Others have developed policies that call for the preparation of Health Impact Assessments. Figure 3 demonstrates how some municipalities are integrating the requirements of Health Impact Assessments with the planning process:

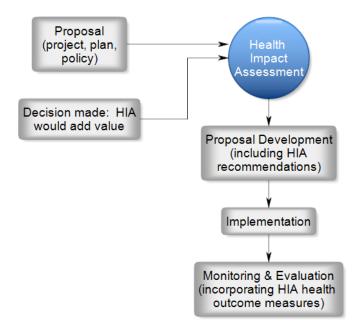


Figure 3: Integration of Health Impact Assessment into the Planning Process (EcoPlan, 2015)

Regardless of the approach, developing policies that draw the intricate connections among greenspace, healthy ecosystems and community health is vital to creating healthier communities and realizing positive health outcomes. Healthier communities depend on well-planned decision making processes that seek to address specific objectives relating to the public good. Good policy is evidence-based and brings about change through a variety of tools including legislation, regulation, by-laws and organizational practices.

Supporting a healthy physical environment through ecohealth policies can bring about positive change in many ways; the key objective being to create a physical environment that enables people to lead healthy lives. Selecting the right policy option will depend on the community involved and the specific objective (e.g. to increase the amount of greenspace; improve the quality and/or diversity of greenspace; and/or enhance access to greenspace).

3.2. Public Health Tools to Advance Ecohealth through Greenspace

Actions to address ecohealth can be supported by the mandates and tools of public health units (Boards of Health) under the *Health Protection and Promotion Act*, and by the Ontario Public Health Standards (OPHS). Figure 4 illustrates the public health and OPHS mandates and tools that can be used to promote ecohealth. The OPHS and related protocols outline Board of Health requirements across a variety of public health topics that are linked to greenspace including: air quality, climate change, exposure to radiation, physical activity and healthy environments, both natural and built. A modernization of the OPHS is currently underway, with updated standards and protocols expected to be in place by January 2018.



Figure 4: Public Health Tools that Support Greenspace and Ecohealth

Public health units work to improve health outcomes by using evidence and best practice in the areas of health protection, disease prevention and health promotion. The OPHS mandates public health units to increase public awareness of health protection and prevention activities that relate to health hazards and conditions that create healthy environments. This is based on the knowledge that chronic diseases can be prevented if populations live, work, and play in healthy environments. The OPHS also requires Boards of Health to work with community partners to support healthy public policy.

The OPHS protocols identify the built environment as an area that Boards of Health are required to address. Boards of Health are required to collect or access various types of population health data and information through various protocols. Data collected includes traditional data sets (e.g. morbidity and mortality), but also emerging areas such as factors in the physical environment (e.g. regarding air and water quality, waste management, other sources of harmful substances, radiation, housing and other buildings, open spaces, natural areas and natural phenomena). Boards of Health are required to stay informed about available resources and expertise for investigating health hazards in the environment,

including resources to support investigations where health hazards in the environment are linked to land use planning and development proposals.

In addition, the Population and Public Health Division of the Ministry of Health and Long-Term Care (MOHLTC) has developed an *Environmental Health Climate Change Framework for Action* to meet the public health challenges of a changing climate in Ontario. This framework is designed to support an adaptive and resilient public health system. The Ontario Climate Change and Health Vulnerability and Adaptation Assessment forms part of the Framework and is designed to enable public health units to identify vulnerabilities within their communities; identify and implement local mitigation and adaptation strategies; raise awareness about the health hazards of climate change; and reduce public health vulnerability to climate change. (Jaclyn Paterson, 2016)

Finally, the MOHLTC has developed Health Equity Impact Assessment (HEIA) to support improved health equity, including the reduction of avoidable health disparities between population groups. HEIA supports improved targeting of health care investments—the right care, at the right place, and at the right time. (Ontario Ministry of Health and Long-Term Care, 2008)

3.3. Planning Tools to Advance Ecohealth through Greenspace

The *Planning Act* provides the legal framework for Ontario's land use planning system. The Act establishes the legislative authority for land use planning and outlines the planning process. It calls for municipalities to adopt Official Plans and planning policies to guide future development. It describes a range of tools that municipalities can use to facilitate future planning and it establishes a streamlined planning process that is driven by a policy-led system at the provincial level supported by local level decision-making. Figure 5 illustrates the land use planning framework and tools.

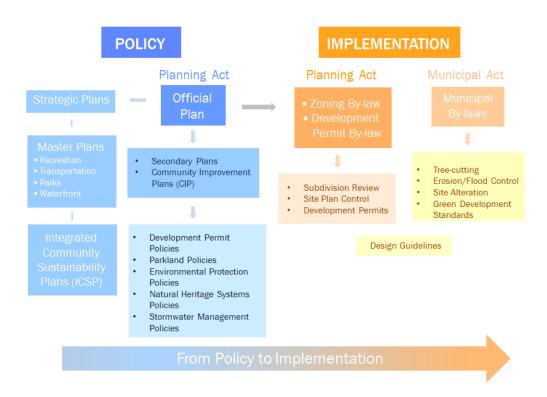


Figure 5: Municipal Planning Tools that Support Greenspace and Ecohealth (V.Doyle, 2016)

Under the *Planning Act*, the Province articulates its planning interests in the form of a Provincial Policy Statement (PPS). The PPS provides direction on matters of provincial interest related to land use planning and development. Issued under the authority of Section 3 of the *Planning Act*, the PPS contains policies on key issues that affect communities such as:

- Building strong healthy communities
- The wise use and management of resources
- Protecting public health and safety (Ministry of Municipal Affairs and Housing, 2014)

The Province also prepares provincial level plans and of late, these provincial plans have been geography-specific. *The Greenbelt Plan* and the *Growth Plan for the Greater Golden Horseshoe* are two examples. The Province provides a one-window planning service to municipalities through the Ministry of Municipal Affairs (MMA) and protects provincial interests, including natural resources and the environment. Municipalities make local planning decisions that will shape the future of their communities and prepare planning documents including the Official Plan and Zoning By-laws. Municipalities are responsible for ensuring that planning decisions are consistent with the PPS and do not conflict with provincial plans.

A number of planning tools are available to municipalities interested in promoting ecohealth or advancing the connection between greenspace and community health. Some of these include:

- Strategic Plans
- Official Plans, Secondary Plans and Community Plans
- Integrated Community Sustainability Plans

- Park Dedication Policies
- Subdivision Review Processes
- Design Guidelines
- Zoning By-laws
- Environmentally Sensitive Area Designations
- Development Permit Process
- Environmental Protection Policies
- Master Plans for Recreation, Parks, Natural Heritage, Urban Forestry, Culture, Trails and others
- Tree By-laws and policies that restrict tree cutting
- Flood and Erosion Control By-laws

The relevance of some of these tools from a greenspace and community health perspective is summarized in Table A-3 included in Appendix B.

4. Case Studies – Effective Connections between Community Health, Wellbeing and Greenspace

This Toolkit profiles 18 case studies from communities across Ontario, as well as national and international examples of policies and approaches that can be used to advance ecohealth at the community level. The communities profiled vary in size from towns and major urban centres to rural landscapes. Policies range from "first-step" actions to more ambitious and comprehensive platforms that are multi-program, multi-faceted, and multi-sectoral. The case studies that are showcased in this document are not intended to be an all-inclusive list, but rather a sample of a range of approaches being used across Ontario and elsewhere. As a living document, the Toolkit can be supplemented with case studies of other innovative examples as they become available.

4.1. The Process of Selecting Cases Studies

The case studies presented provide a broad cross-section of interesting and innovative policy examples that are advancing ecohealth objectives and were chosen based on the following criteria:

- Geographic range across the province
- Municipal status (i.e., upper-tier, lower-tier or single-tier)
- Municipal types (i.e. urban, rural, small and large
- Partner agencies
- A selection of examples that are multi-faceted, integrated, multi-dimensional and showcase different tools
- A balance of examples that adopt an ecohealth at different levels vision, goals, strategies and programs
- Transformative nature

EcoHealth Ontario established a Policy Analysis and Toolkit (PAT) Advisory Group in Spring 2016 to assist in the development of the Toolkit. Invitations were extended to an array of partners, organizations, and agencies with an interest in greenspace and community health. Along with this invitation to be part of the Toolkit development process, EHO issued a call for exemplary policies from network contacts. A web-based analysis of additional jurisdictions was completed. A long list of potentially promising policies was shared with members of the Advisory Group and a shortlist was compiled. Table 1 identifies the case studies profiled and the key policy tools used by each community.

Municipality/Organization	Upper Tier	Lower Tier	Single Tier	Conservation Authority	Health Unit	Official Plan	Strategic Plan	Sustainability Strategy	Greening Strategy	Environmental Master Plan
Region of Peel	Х					Х	Х			
Region of York	Х					Χ	Χ		Χ	
County of Huron	Х					Χ				
City of Brampton		Χ				Χ	Χ			Χ
Town of Aurora		Χ				Χ	Χ			Χ
Town of East Gwillimbury		Χ				Χ		Χ		
City of Kingston			Χ			Χ	Χ	Χ		
City of London			Χ			Χ				
City of Ottawa			Х			Χ			Χ	Χ
City of Toronto			Χ			Χ				
City of Thunder Bay			Χ				Х			
Municipality of Chatham-Kent			Χ			Χ				
Simcoe Muskoka District Health Unit					Х	Х				
Prince Edward and Hastings Health Unit					Х	Χ				
Credit Valley Conservation				Х						
Toronto and Region Conservation				Х			Х			
City of Vancouver, British Columbia			Х						Х	
Stockholm, Sweden			Х			Х				

4.2. Good Practices from Ontario

4.2.1. Region of Peel

The Region of Peel is committed to supporting the development of environments that promote the health and wellbeing of its communities. Collaboration between Health Services and Planning staff in the late 2000s highlighted the need to promote healthy and active lifestyles through evidence-based neighbourhood planning and design. Ongoing partnership and interest in this area has led to the development of a suite of plans, background studies and innovative tools that work together to create a Healthy Peel by Design.

The **Region of Peel's 2015 -2035 Strategic Plan** outlines the long-term vision for the Region as a Community for Life – a community where people choose to live and work for their entire lives - and contains strategic actions to guide Council and staff to achieve this vision. Environmental, economic and social sustainability are integrated across the plan's three strategic directions – Living, Thriving and Leading. The plan also establishes short-term and long-term action-oriented goals in each strategic area.

The **Region of Peel Official Plan** (2014) reflects the vision of the Strategic Plan with the overall objective of promoting sustainable development by managing land use. Several policies in the current Official Plan also raise awareness of the connection between planning and public health, and provide that the Region may require a health assessment as part of a complete planning application.

Excerpts from The Region of Peel Official Plan (2014)

- 7.9.2.9 Prepare, jointly with the area municipalities, an assessment tool that will allow
 evaluating the public health impacts of proposed plans or development as part of the
 approval process.
- **7.9.2.10** Work jointly with the area municipalities to raise awareness of public health issues related to planning through partnerships with all levels of the public and private sector.

New Official Plan policies proposed through the current Official Plan review update the policies noted above, as well as other policies to strengthen the connection between health and the built environment, and will also require conducting a health assessment as part of a complete planning application for both private development and on Regionally and Municipally-owned and operated public spaces applications. They include the following:

"7.4 Healthy Communities and the Built Environment The Region of Peel is committed to creating pedestrian, cyclist and transit supportive infrastructure, which are key components of a healthy community. The outcomes of a healthy community are increased rates of active transportation, improved air quality and greater social connectivity. Healthy communities are impacted by the following interconnected elements of the built environment: Density, Service Proximity, Land Use Mix, Street Connectivity, Streetscape Characteristics, and Efficient Parking. Health assessments take such elements into consideration when determining the health promoting potential of a community.

- Health assessments will be incorporated into the development and review process. To achieve this, the Region will partner with area municipalities to:
 - Identify appropriate health assessment tools
 - Operationalize the implementation of such tools
 - Monitor, evaluate and report on assessment results

7.4.1 Objective

To create built environments that facilitate physical activity and optimize the health promoting potential of *communities*.

7.4.2 Policies

It is the policy of Regional Council to:

- **7.4.2.1** Approve the *Healthy Development Framework*, which supports the implementation of the policies in this plan, Section 7.4. This Framework contains the Region's Healthy Development Assessment tool and identifies health assessment tools that were developed by the area municipalities to address their specific development contexts; in consultation with *the Region*.
- **7.4.2.2** Direct the area municipalities to incorporate policies in their official plans that endorse and align with the *Healthy Development Framework*, in consultation with the Region.
- **7.4.2.3** Ensure the Region integrates the elements as defined in the *Healthy Development Framework* into its policies, plans, standards and design guidelines to optimize their health promoting potential.
- **7.4.2.4** Direct the area municipalities to integrate the elements as defined by the *Healthy Development Framework* into its policies, plans, standards, and design guidelines to optimize their health promoting potential.
- **7.4.2.5** Direct the area municipalities to incorporate a policy in their respective official plans to require a health assessment, defined by the *Healthy Development Framework*, as part of a complete application for planning and development proposals. The area municipalities may require proposals to address the results of the health assessment to contribute to *healthy communities*.

- **7.4.2.6** Require a health assessment, as defined by the *Healthy Development Framework*, to be completed to the satisfaction of the area municipalities for planning and development proposals and that results are reported to local council in consultation with the Region.
- **7.4.2.7** Require Regional and area municipal staff to conduct health assessments as defined by the *Healthy Development Framework* on Regionally or municipally developed, owned and operated public buildings, public squares and open space project applications."
- **7.4.2.8** Work with the area municipalities to assess the community health and wellbeing of developed areas to inform development, policies, strategies and/or studies, that will ensure communities are age-friendly, walkable and contain a mix of housing options.

A *Healthy Development Assessment User Guide* is also being developed to support the implementation of these policies.

The following list includes studies that may be required to evaluate an application to amend the Regional Official Plan:

- Planning justification;
- Environmental impact statement;
- Natural heritage evaluation;
- Hydrogeological evaluation;
- Geotechnical and hydrologic/flood studies;
- Agricultural impact study;
- Landform conservation area study;
- Earth science heritage evaluation;
- Archaeological assessment;
- Municipal comprehensive review;
- Transportation study;
- Natural hazard land studies including the delineation of hazard lands;
- Human-made hazards including oil, gas and salt hazards;
- Mineral and petroleum resources study;
- Noise and/or vibration study;

- Oak Ridges Moraine Conservation Plan Conformity Study;
- Niagara Escarpment Plan Conformity Study;
- Community infrastructure needs evaluations;
- Public health impact studies;
- Mineral aggregate resource impact; and
- Functional servicing report;
- Environmental site assessment;
- Servicing feasibility report;
- Water and wastewater servicing study;
- Stormwater management report;
- Traffic impact study;
- Cultural heritage impact assessment;
- Greenbelt Conformity Study; and
- Lake Simcoe Protection Plan Conformity Study.

4.2.2. Region of York

York Region has developed several strategic documents that work together to guide the development of a complete and sustainable community, including ways to advance population health benefits through healthy greenspaces. One of the key strengths of the York Region approach is the emphasis on a broad vision and goals encapsulated in Vision 2051 and reinforced through policies that promote community health and the protection of natural heritage and greenspace.

Vision 2051 is a bold and innovative strategy to guide York Region in creating strong, caring and safe communities designed with sustainability in mind. As a key guidance document for Council, staff and the community, Vision 2051 defines a path towards a sustainable future by committing to a number of goals and actions that strengthen the importance and linkages between healthy communities and preservation of greenspaces. These include:

A Place Where Everyone Can Thrive:

- Designing communities to promote healthy and active living, and social inclusion for all life stages and age
- Fostering health and wellbeing of the population through the promotion and protection of health and the prevention of illness so that residents are able to achieve optimal physical, mental and emotional health

Liveable Cities and Complete Communities:

- Fostering sustainable communities that support a healthy natural environment and sustainable lifestyle choices
- Facilitating an interconnected and enhanced natural system through communities and urban areas that offers opportunities for recreation, urban wildlife and linkages for flora and fauna
- Designing and managing infrastructure to be context sensitive and enhance natural systems
- Valuing and supporting the ecosystem services of our green infrastructure

Resilient Natural Environment and Agricultural System objectives make an explicit connection between a healthy environment and a healthy population and aim to:

- Foster a healthy population through clean air, land and water
- Encourage recreational opportunities in the natural environment, including the ability to bike or hike from Lake Simcoe to Lake Ontario
- Reduce emissions of criteria air contaminants and greenhouse gases that contribute to poor air quality and climate change
- Promote the use of urban tree canopies and other green infrastructure to protect against extreme heat events

Living Sustainably:

 Mitigating the climate impacts of urban development through cooling measures including urban forestry initiatives and other shade promoting initiatives

- Promoting an awareness of the value and benefits of our environmental and sustainable lifestyle choices
- Providing public education and outreach to increase awareness of the health impacts associated with air quality, climate change and the built environment

The **Regional Official Plan** (ROP) is informed by and complements the vision, goals and actions found in Vision 2026 (the precursor to Vision 2051). The ROP is the Region's vision for future growth and development, and includes policies to guide economic, environmental and community land use planning decisions. The ROP framework is based on the pillars of sustainability, and also recognizes the interrelationship between human health and the natural environment from a risk-based perspective, which are expanded upon in Chapters 2 (A Sustainable Natural Environment), 3 (Healthy Communities) and 5 (An Urbanizing Region).

While Vision 2051 and the ROP function as overarching visions and plans, the **York Region New Community Guidelines** provides guidance on how to implement ROP Chapter 5 policies (An Urbanizing Region) relating to sustainable buildings and new community areas. The New Community Guidelines specifically address healthy ecosystems, outlining the sustainability benefits of the Regional Greenlands System including: "...contributing to liveable neighbourhoods, our feeling of wellbeing, our health and quality of life, community identity and sense of place; improving air quality and mitigating the impacts of climate change; and providing active and passive recreation for healthier lifestyles".

The Region also has a number of implementation plans and strategies including **The Greening Strategy** and a comprehensive **Forest Management Plan**. These complementary initiatives provide a comprehensive approach to help achieve the Region's vision for sustainable and healthy communities. Recognizing the connection between greenspace and healthy communities, they provide a framework for on-the-ground action to restore habitat, increase forest cover, secure greenlands and their linkages, and promote and protect the natural environment. Action areas and goals within the Greening Strategy include:

- Environmental Land Securement: Protect core natural areas and restore linkages;
- Enhancement and Rehabilitation: Enhance and rehabilitate the natural environment on both public and private lands;
- Leadership, Innovation and Knowledge: Seek and transfer knowledge and demonstrate leadership and innovation in the protection and promotion of the natural environment; and
- Stewardship and Education: Educate residents about the value of green infrastructure, provide opportunities to discover connections with nature and inspire action.

Excerpts from York Region Official Plan

Chapter 2 A Sustainable Natural Environment - contains policies which protect the Regional Greenlands System (green infrastructure) for the natural heritage values.

Chapter 3 Healthy Communities – contains specific policies include:

Human Health and Wellbeing: 3.1. (1,6,7)

- 1. To recognize that the design of communities is directly related to human health.
- 6. To work with local municipalities to understand the impacts of climate change on the health and wellbeing of residents.
- 7. To design communities to be more resilient to the effects of climate change.

Air Quality and Climate Change: 3.2 (5,6,10)

- 5. To require health, environmental and cumulative air quality impact studies that assess the impact on human health for development with significant known or potential air emission levels near sensitive uses such as schools, daycares and seniors' facilities.
- 6. That sensitive uses such as schools, daycares and seniors' facilities not be located near significant known air emissions sources such as controlled access provincial 400 series highways.
- 10. To work with other levels of government, agencies and stakeholders to develop climate change adaptation measures that address such issues as urban heat island effect, infrastructure resiliency, emergency preparedness, vector-borne diseases, and extremeweather event responses.

Chapter 5 – An Urbanizing Region

Building Cities and Complete Communities – contains specific policies as outlined below:

Sustainable Cities, Sustainable Communities: 5.2(34) To encourage local heat island effects mitigation in all development including:

- a. Green and/or white roofs;
- b. Locating trees or other plantings to provide shading for at least 50% of sidewalks, patios, and driveways within 15 m of the home; and,
- c. Installing light-coloured paving materials including white concrete, grey concrete, open pavers and any material with a solar reflectance index of at least 29.

Greenland Systems (5.6.14): That a Greenland System Plan be prepared that identifies how it will be managed in an urban environment including "...developing a trail system which is integrated as appropriate into the mobility system of the community".

Sustainable Cities, Sustainable Communities 5.2 (11): That development have an integrated and innovative approach to water management, be water efficient, and minimize stormwater volumes

and contaminant loads and maximize infiltration through an integrated treatment approach, which may include techniques such as rainwater harvesting, runoff reduction of solids and materials at source, constructed wetlands, bioretention swales, green roofs, permeable surfaces, clean water collection systems, and the preservation and enhancement of native vegetation cover.

Building Complete, Vibrant Communities 5.6 (15, 16): That new community areas be designed to include an integrated open space network that includes both active recreational facilities and meeting places, urban squares, parks, outdoor seating and informal gathering spaces generally within 500 metres of all residents. That new community areas be designed to reduce urban heat island effects and consider integrating green and white roofs, greening to provide shade, and light-coloured surface materials consistent with policy 5.2.35 of this Plan.

4.2.3. County of Huron

Huron County utilizes an integrated approach to advance community priorities through land-use planning tools. The County's Official Plan and Urban Design Guide work together to achieve policy objectives which aim to improve quality of life.

The **Huron County Official Plan (OP)** (2015) establishes a framework to manage the County's urban and rural growth and development over the long-term. The OP supports the County's Planning and Development Department's mission to plan with the community for a healthy, viable and sustainable future. The concept of health is therefore considered in various policy areas throughout the OP, but focusses on enhancing public health and environmental quality through mitigation and risk avoidance. Community input and values are integrated throughout the OP, highlighting the collaborative spirit in which the OP was developed and is intended to be implemented.

The **Urban Design Guide: Traditional Downtowns in Huron County Guide** (2012) provides specific details to facilitate the implementation of community values and directions outlined in the OP and emphasizes the importance of quality urban design to a community's physical, social, psychological, and economic health. The Guide includes overarching goals as well as key objectives and guidelines that should be considered in public (right-of-way design, public space and landscaping and street furniture) and private (site design, built form and priority locations) developments.

Together these municipal planning tools reinforce the need for a multi-pronged and integrated approach, as well as stakeholder and community involvement, to address complex social issues in order to improve quality of life in communities across Ontario.

Excerpts from Huron County Official Plan

Chapter 3 Community Services

3.2 Community Directions

Recreation

The community desires to provide recreational opportunities for all age groups and abilities, through a range of built and natural settings including trails, parks, community centres, playing fields and arenas.

Chapter 6 Natural Environment

Community Policies and Actions

- 9. The preservation of native plant and wildlife species is important to maintaining biodiversity and a healthy environment. The protection, expansion and enhancement of natural corridors, connections and linkages between natural features shall be maintained, promoted and improved.
- 10. Source water areas, drinking water supplies and the health of watercourses will be protected and improved as critical resources for the long-term wellbeing of residents and the environment.
- 12. The stewardship of all aspects of a healthy ecosystem including lakeshore, urban, natural, and agriculture areas will be a shared responsibility of all of the community. Education will be promoted for actions and decisions that support a healthy environment. Pollution prevention through education programs, such as proper maintenance and use of septic systems and wells, and on-farm best management practices are encouraged.

4.2.4. City of Brampton

Brampton is the second fastest growing city in Canada and the third largest in the Greater Toronto Area. To ensure that Brampton will grow in a sustainable manner, the City has taken a multi-faceted approach to planning its future. Brampton's land use and planning decisions are guided by a number of local plans, guidelines and strategies including its Strategic Plan, Official Plan, Environmental Master Plan, Sustainable Community Development Guidelines, Natural Heritage and Environmental Management Strategy and Parks and Recreation Master Plan (underway). This framework recognizes that a healthy and active city is dependent on a healthy and diverse natural heritage and open space system.

To realize this vision, Brampton's **Strategic Plan** outlines four key priorities: Good Government, Move and Connect, Smart Growth and Strong Communities. An essential goal of this Strategic Plan is the preservation and protection of natural environments.

The 2015 consolidated **Brampton Official Plan** (2006) establishes a vision for building a new kind of urban community through a focus on sustainability, city building and place-making. The vision for

Brampton is "to be a vibrant, safe and attractive city of opportunity, where efficient services make it possible for families, individuals and the business community to grow, prosper and enjoy a high quality of life". Section 4.6 Natural Heritage and Environmental Management of the Official Plan includes a suite of policies to protect, enhance, link and conserve the City's natural heritage system. The preamble of this section states that "public health and safety are fundamentally linked to environmental health".

The City's **Environmental Master Plan**, **Brampton Grow Green**, delivers an environmental framework and monitoring tool to guide and support Brampton as a healthy and livable community, to ensure that matters of environmental sustainability are considered in decisions that affect both the corporation and the community-at-large, and an ongoing opportunity to educate and engage staff, stakeholders and conservation partners, and the broader community. Managing land to sustain the natural environment is a key goal of the Grow Green Plan and recognizes the importance of providing spaces for active, healthy living. Grow Green recommended objectives, targets and actions provide the guidance for the City to achieve this important goal.

The City's **Sustainable Community Development Guidelines** and **Sustainability Assessment Tool (SAT)** (2013) provide a set of criteria for assessing development applications from a sustainability perspective. The Guidelines and SAT harness the process of urbanization as a positive force on the landscape and include policies, guidelines, metrics and targets that aim to improve and enhance the natural and built environment. Four guiding principles present a comprehensive approach to sustainable community design. They are all interconnected and must be collectively addressed to reduce the impact of development and improve the quality of life. One of the four theme areas outlined in the Guideline is *Natural Environment and Open Space*. The preservation and enhancement of the natural environment is recognized as an essential component of a healthy, sustainable community. Preserving and enhancing the natural environment and open space system not only ensures the health of the natural environment and but also ensures residents have convenient access to a connected and diverse range of open spaces, natural features, parks, and recreation facilities which offers opportunities for improved public health.

The City's **Natural Heritage and Environmental Management Strategy** (2015) provides a framework for improved protection, enhancement and restoration of Brampton's natural heritage system. The Strategy is a proactive tool to ensure Brampton's natural heritage and built greenspaces are conserved, enhanced and connected. The Strategy recognizes that a healthy natural heritage system is dependent on a well-designed and maintained built environment.

In addition to supporting the health and diversity of the natural environment, Brampton's Natural Heritage System provides the City's large urban population with a diversity of spaces for active, healthy living. The Strategy outlines public and private open spaces and recreational areas as important community spaces for organized sports, passive recreation and active transportation (Section 3.2.1).

Excerpts from City of Brampton Official Plan

Section 4.6 Natural Heritage and Environmental Management – contains a suite of policies to protect, enhance and conserve the City's natural heritage system. Example policies:

- 4.6.6.2 The City will develop environmental strategies, programs and models in conjunction
 with the conservation agencies with regard to current environmental planning, conservation
 and management approaches to support the protection, restoration, and linkage or where
 possible enhancement of the natural heritage system and ecosystem functions.
- 4.6.15.2.1 The City will develop a culture of conservation that supports the application of
 practical and progressive energy, soil, land, water and air conservation and waste
 management, within our spheres of responsibility.
- 4.6.15.2.3 The City will endeavour to protect and enhance air quality and contribute to energy
 conservation through implementing a sustainable planning framework which promotes: a
 compact sustainable city structure by consolidating growth around major nodes and
 corridors, and existing and planned infrastructure; an ecosystem approach to land use
 planning; integrated land use and transportation planning, etc.

Section 4.7 Recreational Open Space – includes policies aimed at promoting healthy, active communities through the provision of safe, equitable and accessible public spaces and the opportunities for pedestrian and non-motorized movement. Example policies:

- 4.7.1.12 All parks and recreation facilities will be designed and developed to accommodate a wide range of passive and active activities in accordance with assessed need.
- 4.7.1.17 The City may lease undeveloped private or public land within any land use
 designation and may contribute to site improvements for recreation facilities to address
 public demand for such facilities.
- 4.7.2.1 The City shall develop a system of parks and recreation facilities that provide a wide selection of leisure opportunities for residents of all ages, ability levels and socio-economic backgrounds.
- 4.7.2.5 The City will require developers of multiple residential developments (i.e. block townhouses and apartments) to provide on-site recreational facilities to supplement the public parkland system.

4.2.5. Town of Aurora

The Town of Aurora has demonstrated a corporate commitment to protecting and enhancing the natural environment, and supporting active and healthy lifestyle choices. The Town has taken a multifaceted "lead by example" approach that focuses on corporate initiatives and a commitment to monitoring and reporting on the implementation of these initiatives and pilot programs.

The Town's **Corporate Environmental Action Plan** (2010) provides direction on key strategic environmental initiatives to be implemented by the Town to protect and enhance the natural

environment over a five-year period. The Plan was developed based on several workshops with residents, businesses, staff, and local environmental organizations. Since the development of the Action Plan, the Town has released yearly progress reports outlining the actions and goals that were achieved that year. One particularly interesting initiative undertaken in 2015 was the **Living Wall Pilot Project**. A display with 3 inch potted plants was set up in Town Hall outside of Council Chambers for five months to raise awareness with Members of Council, staff and residents about the health benefits of plants purifying the air.

The **Town of Aurora Official Plan** (2010) outlines the long-term vision for the Town as being a healthy, strong and complete community. There is an emphasis on providing places for residents to live, work, shop, be educated and play in a manner that promotes sustainability and protects the Town's natural environment. To achieve this goal, the Plan outlines 12 overarching objectives. *Building a Greener Community* and *Establishing a Linked Greenlands System* are two of the objectives listed.

The **2011-2031** Strategic Plan reflects the vision of the Official Plan with the overall goal of being "an innovative and sustainable community where neighbours and businesses thrive". To achieve this vision, three pillars of success are identified: 1) supporting an exceptional quality of life for all, 2) enabling a diverse, creative and resilient economy, and 3) supporting environmental stewardship and sustainability.

Encouraging an active and healthy lifestyle is listed as one of four objectives under the "Supporting an exceptional quality of life for all" pillar. Implementing and updating the Trails Master Plan to improve connectivity and continuing to support and enhance community planting programs in appropriate locations are listed as two of the seven ways to achieve this objective.

Encouraging the stewardship of Aurora's natural resources and promoting and advancing green initiatives are the two objectives under the "Supporting environmental stewardship and sustainability" pillar. Promoting community involvement in environmental initiatives and supporting and enhancing community planting programs in appropriate locations are examples of two action items under this pillar.

The Town also developed **The Economic Value of Natural Capital Assets** (2013) as part of its broader Natural Assets Initiative to develop a baseline estimate of the economic benefits provided by the Town's natural assets (i.e., the ecosystem) and inform future land use decisions by considering the full environmental costs of development. The Town is currently drafting Official Plan policies that will allow the inclusion of economic valuation impacts of natural assets in pre and post development scenarios.

Excerpts from the Aurora Official Plan

Chapter 5.0 Building a Greener Community. This section establishes policies that promote green building technologies, renewable and alternative energy options, waste management efforts and other sustainable design options for development with the aim of supporting the Town's objectives for a healthy, vibrant and sustainable community

Chapter 12.0 Establishing a Linked Greenlands System. This section contains policies which protect the Greenlands System. A strong, interconnected Greenlands System provides many environmental benefits, opportunities for recreation and contributes to overall health and a high quality of life for residents and visitors. This Plan establishes a linked Greenlands System that includes policies and mapping that protects and complements key natural heritage features and key hydrologic features. This Plan also promotes a system of public parks and open spaces that are integrated and connected within the linked Greenlands System.

The Greenlands System 12.2 (a). It is a fundamental principle of this Plan that the Town promote an active, healthy lifestyle for its residents. The provision of a highly integrated system of environmentally protected lands, parks, trails and recreation facilities that are well distributed, strategically located, well maintained and diverse plays an important role in encouraging community members to have active and healthy lifestyles.

4.2.6. Town of East Gwillimbury

The Town of East Gwillimbury has adopted a sustainability approach to planning its future that considers all aspects of the community together – the social, the economic and the environmental. When making planning decisions, a number of interactions and connections are considered, such as:

- How protection of the environment leads to healthier people;
- How infrastructure decisions affect the structure and character of neighbourhoods; and
- How community form affects the walkability, success of transit, accessibility of services and vitality of neighbourhoods.

The Town takes a holistic approach to promoting integrated community design plans that foster social wellbeing, environment sustainability and economy vitality.

East Gwillimbury's **Thinking Green! Development Standards (TGDS)** (2012) is an evaluation system for all new developments designed by the Town to improve social wellbeing, enhance and protect the environment and support the local economy. The TGDS include performance standards that often exceed minimum Ontario Building Code standard requirements. The TGDS are intended to work in conjunction with the policies outlined in the Town's Official Plan and all development is subject to the Town's Official Plan and Zoning By-law policies and requirements.

A second "Thinking Green" initiative is the **Thinking Green! Sustainability Strategy** (2009), which provides direction for environmental initiatives and programs in the community. The Strategy is reflective of East Gwillimbury's overall commitment to protecting the environment, enhancing economic

prosperity and improving the health and lifestyle of the community. The Strategy focuses on four main theme areas: sustainable development, municipal operations and practices, energy conservation and natural environment. Under the 'natural heritage' theme, the importance of connecting people to the natural areas that surround them is acknowledged. As such, the objective is to not only preserve areas of significance, but also promote trail systems and other outdoor recreation areas.

As outlined in the **Town of East Gwillimbury Official Plan** (2014), the vision for the future is to "develop a complete, healthy and sustainable community that will provide opportunities for residents at all life stages to live, work, play and learn". The Town is committed to an integrated approach to planning that ensures the three elements of a sustainable community (natural environment, healthy communities and economic vitality) are applied comprehensively in all aspects of development decisions and municipal policy development. This integrated, sustainability approach to planning is reinforced throughout the Official Plan, and is listed as one of the four guiding principles: promoting community development in a manner that is respectful of the environment and sustainable for present and future generations.

The Official Plan includes policies that provide for the development of the **Thinking Green! Development Standards (TGDS)** as outlined in Section 2.4 Towards a Sustainable Community. These policies are intended to support and work in conjunction with the TGDS.

Excerpts from the East Gwillimbury Thinking Green! Development Standards

The TGDS Secondary Plan/Community Design Plan Checklist outlines a number of interesting requirements. A few example requirements are outlined below:

- Plan creates views and vistas to visible landmarks, including Natural Heritage System features, whenever possible.
- Plan ensures connectivity between natural heritage areas and enhances accessibility to natural areas.
- Within Community Areas, all new residential units are within an approximate 800m walking
 distance of at least three of the following existing or planned amenities: Publicly-funded
 educational facility, Entertainment use, Government or other civic building, Cultural facility,
 Office use, Retail/convenience commercial use, Medical facility, Institutional use (daycare),
 Recreational facilities, including parks.

Within Employment Areas, all employment buildings are within an approximate 800 m walking distance of at least two of the following existing or planned amenities: Retail use, Entertainment use, Daycare, Government or other civic building, Offices, Medical facilities, Health club or public recreational facility, Parks and open space.

4.2.7. City of Kingston

Kingston's commitment to enhancing the network and quality of greenspaces throughout the City is evidenced through the multi-pronged approach contained in several strategic documents and planning tools.

The **2015-2018 Strategic Plan** outlines the vision of "a smart and livable 21st century city". Six priority areas: create a smart economy, invest in infrastructure, plan a livable city, green the city, advance a vibrant waterfront and foster open government; and several initiatives are listed to help realize this vision. Key initiatives under the *green the city* priority include:

- Expand the trail system;
- Intensify urban forest double the tree canopy by 2025; and
- Develop policies to prevent urban sprawl and protect agricultural lands.

In keeping with Kingston's commitment to greening the city, the **Sustainable Kingston Plan** (2010) sets out the vision of being "Canada's most sustainable city". Sustainable Kingston is organized using the following four pillars of sustainability: cultural vitality, economic health, environmental responsibility and social equity. The Plan reinforces that these pillars should not be regarded as independent silos, but rather as integrated, cross-linked components of sustainable community building. Although all of the pillars have equal standing in the Plan, it is noted that the environment does have a first principle position since the other three pillars would not exist without a healthy, life-sustaining environment.

The City of Kingston also has a **Parks and Recreation Master Plan** (2010) that works in conjunction with the Strategic Plan and Sustainable Kingston to enable residents to lead healthy lives, embrace environmental stewardship and strengthen its sense of community pride and spirit.

The City recently completed a **Waterfront Master Plan** (2016) which outlines priorities to renew the City's waterfront, including parks and open spaces, and improve access and connections to the area.

The **Central Cataraqui Region Natural Heritage Study** (2004) was completed by the City of Kingston and Loyalist Township (with support from CRCA, MNR and MMAH) to identify a system of natural features and areas that supports biodiversity within the two municipal boundaries, and recommend ways in which the municipalities might protect and enhance the biodiversity of the natural heritage system. The natural heritage system is recognized as providing a healthy environment in which to live as well as the opportunity for recreational activities, such as hiking and walking. The study findings and recommendations are an important component of the City's Official Plan.

The **City of Kingston Official Plan** (2010) presents a sustainable planning approach. An Official Plan Update is currently underway and provides multiple relevant changes to policies regarding source water protection, the environment and ribbon of life, waterfront pathways, the protection of health and safety and directing growth sustainably. Recognizing that the City is subject to economic, social and environment forces that may change over time, the focus of the Plan is presenting policies and

strategies that support and encourage *sustainable development*. The goal for sustainable development is captured below:

"To protect, conserve, and strategically deploy the natural, cultural and built resources of the City in a manner that promotes compatibility between different functions; that reduces energy, land or resource consumption in order to reduce greenhouse gas emissions with the objective that all new buildings are carbon neutral by 2020; that encourages sustainable forms of energy production and the use of cultural heritage resources to benefit the public good; that limits the need for undue extension of infrastructure or reliance on the private automobile; that fosters local sources of food which are sustainable; and promotes programs and practices that will produce increasingly sustainable development in the City."

In addition to the plans listed above, the City of Kingston has also developed a **Climate Action Plan** (2014) and **Urban Forest Management Plan** (2011).

Excerpts from City of Kingston Official Plan

Section 3.8 Open Space – The Open Space Areas include public parks, private open space areas, natural reserves, and lands adjacent to Environmental Protection Area designations. This Open Space designation provides not only recreational opportunities, trail linkages, and linkages and corridors which are valuable for wildlife movement, but also provides visual relief within the urban landscape, and is a valuable context for many significant cultural heritage resources and natural heritage features and areas. Example policies:

- 3.8.1. The City will actively acquire, conserve, maintain and renew public Open Space areas and related facilities as part of an on-going program.
- 3.8.11. Municipal parks are acquired to meet the needs of the population for recreation and cultural activities in accordance with the City's Parks and Recreation Master Plan.

Section 5. Protection of Health and Safety – contains policies to minimize environmental conditions that are hazardous to human life or health. Example policy:

5.27. The City and other public agencies will have regard to means of enhancing environmental
quality through such mechanisms as pollution control, reduction of waste products,
conservation of energy, utilization of renewable energy, as set out in Section 6.2, and
promotion of energy efficient facilities in the planning and development of public works and
infrastructure expansion.

Section 6. The Environment and Energy – contains policies to protect the environmental quality of the City's natural heritage system. The protection of the natural heritage system across the watersheds is a fundamental requirement of ensuring how this City addresses climate change and still ensures its sustainability.

4.2.8. City of London

The City of London is committed to building a green and healthy city. This commitment is demonstrated through the City's focus on protecting, enhancing and managing environments that support the health and wellbeing of all Londoners. The individual and community benefits associated with a healthy environment are highlighted in several of the City's environment-focused plans, as well as in the City's new Official Plan.

London's **Parks and Recreation Strategic Master Plan** (2009) provides a long-term sustainable strategy for managing the City's parks and recreational resources through to 2027. The three key objectives set out in the Plan include fostering strong neighbourhoods, healthy lifestyles and sustainable environments. The Plan suggests that investment in parks and recreation can promote healthy lifestyles. Individuals who participate in recreational activities are said to improve their health, reduce stress, stay independent longer, and develop stronger social skills to name a few.

The City's **Urban Forest Strategy** (2014) provides direction for protecting, enhancing and monitoring the urban forest that defines London as the "Forest City" over the next 20 years. The Strategy outlines several social, health, environmental and economic benefits associated with London's urban forest. Some of the health benefits identified in the Strategy are listed below:

- Trees enhance walkable communities
 - Increased outdoor activity improves general physical and mental wellbeing and contributes to lower health care costs.
- Trees reduce sun exposure and heat related illness
 - Shade provided by canopied trees significantly reduce UV exposure which reduced sun exposure illnesses such as skin cancer.
 - Moderated temperatures during hot summer days significantly reduce heat stroke and heat-related mortality.
- Trees improve mental wellbeing
 - Trees and related greenspaces have been shown to have positive effects on depression and wellbeing.
- Trees improve social connection
 - Urban forests and greenspaces provide a focal point for community interaction
 - Urban forests give people places to recreate, experience nature, and feel a sense of wellbeing.

The London Plan (2016) is the City's new Official Plan (adopted by Council in June 2016, and awaiting Provincial approval). The Plan sets out a new approach for land use planning in London that is centered on growing inward and upward. The overall vision for London 2035 is: "Existing, Exceptional, Connected". The values, strategic directions, and city structure outlined in The Plan establish the framework to achieve this vision and promote the development of a green, healthy, and sustainable community. For instance, one of the strategic directions sets a target for *becoming one of the greenest cities in Canada*, while another direction focuses on *building strong*, *healthy and attractive*

neighbourhoods for everyone. A few of the key planning strategies listed under these two directions are listed below:

Strategic Direction: Become one of the greenest cities in Canada

- Promote linkages between the environment and health, such as the role of active mobility in improving health, supporting healthy lifestyles and reducing greenhouse gases.
- Use and ecosystem/watershed approach in all of our planning.
- Manage growth in ways that support green and active forms of mobility.
- Practice and promote sustainable forms of development.
- Continually expand, improve and connect our parks resources.

Strategic Direction: Build strong, healthy and attractive neighbourhoods for everyone

- Plan for healthy neighbourhoods that promote active living, provide healthy housing options, offer social connectedness, afford safe environments, and supply well-distributed health services.
- Integrate well-designed public spaces and recreational facilities into all of our neighbourhoods.
- Distribute educational, health, social, cultural, and recreational facilities and services throughout the city so that all neighbourhoods are well-served.
- Identify, create and promote cycling destinations in London and connect these destinations to neighbourhoods through a safe cycling network.

As demonstrated above, protecting greenspace and supporting the health and wellbeing of Londoners are two important aspects of London's vision for the future. What is particularly unique about this Official Plan is the direct link made between the environment and health. The Plan includes policies to improve human health and wellbeing outcomes through the availability and design of greenspace.

Excerpts from City of London Official Plan

Values (Policy 52_6) Think sustainable – Financial, social and environmental sustainability will be an underlying consideration in all of the planning that we do.

Green and Healthy City Chapter – contains policies aimed at building both a green and healthy city. It is noted that "green cities are healthy cities, so these two goals and the initiatives required to realize them are closely linked". Example policies:

- 687. A green city is an environmentally friendly city. A green city imposes a minimal impact on the environment, minimizes consumption of water and energy, and reduces or eliminates waste outputs such as air pollution, water pollution, wastes and heat in a sustainable fashion. Green cities also have a small ecological footprint the amount of land and water area required to sustain a city's consumption patterns and absorb its wastes on an annual basis.
- 688. A healthy city is one that supports the health of those that live in it. It can do so as a result

of how it is planned and developed – offering such things as active mobility options, quality parks and recreational facilities for active and passive recreation, a clean and healthy environment, accessible health care facilities and services, protection from natural hazards, and safe and secure places. It can also do so through the culture of a city, whereby the community is conscious of health and always striving to improve it.

- 696. We will market London to the world as a healthy city.
- 697. Implementing the City Structure and City Building policies of this Plan will help us to achieve our green and healthy city goals by supporting such things as: 1) Attractive active mobility and public transit choices, 2) Vibrant, diverse, connected and safe neighbourhoods that are designed to support active mobility, 3) Abundant high-quality parks, trails, cycling infrastructure and recreational facilities, 4) Safe places and spaces, 5) A healthy Urban Forest, 6), Cleaner and more sustainable forms of energy...14) Redeveloped brownfield sites.
- 698. We will build our city to facilitate active mobility. The city will be designed to provide infrastructure such as sidewalks, bicycle lanes and pathways, to locate amenities within neighbourhoods so that they accessible, and to achieve levels of density and connectivity that minimize travel distances between destinations.
- 699. We will design our city to create safe public spaces that can be used by Londoners of all ages and abilities.
- 726. An ecosystems/watershed approach will be used for all of our planning and development.

4.2.9. City of Ottawa

The City of Ottawa is committed to building a well-connected network of communities that offer residents the opportunity to live, work, and play. Five integrated and complementary Master Plans (Official Plan, Infrastructure, Transportation, Cycling and Pedestrian) work together to set the vision for Ottawa's future growth to 2031. The City's multi-faceted approach to planning prioritizes sustainable development and encourages the "greening and cleaning" of the City.

The Greenspace Master Plan – Strategies for Ottawa's Urban Greenspaces (2006) sets strategic directions for managing and extending the greenspace in the urban area of the city. The Plan is structured around five objectives:

- Adequacy The City will ensure that there is enough greenspace to meet the needs of a growing and diverse community and will maintain natural systems, biodiversity and habitat.
- Accessibility Ottawa residents will have ready access to greenspaces in close proximity to their homes and communities.
- **Connectivity** Ottawa's greenspaces will be linked to provide improved access to a variety of greenspaces and recreational facilities, better connections between homes and schools or workplaces, and improved biodiversity and the movement of native plants and animals.
- Quality Greenspaces will be attractive, safe and well-designed, serving the multiple needs of
 users while defining the unique identity of communities. Where greenspaces are primarily

- natural areas, they will be preserved in a manner that maintains or improves natural features and functions.
- **Sustainability** Greenspaces will be planned and managed in a way that minimizes human intervention and public spending over time, through reliance on natural processes as well as innovative methods for protecting greenspace adequacy of supply, accessibility to all communities, quality in design and character, connectivity among greenspaces, and sustainability through management plans.

The Plan acknowledges that natural land offers both individual and community benefits, including: a sense of tranquility and wellbeing, the development of strong social and neighbourhood ties and enhanced environmental awareness among urban residents.

Fostering community stewardship to further protect and clean these natural areas is a goal of the City. The City's **Green Partnership Pilot Program** (2006-2008) was created to increase opportunities for community stewardship. Funding was provided to innovative projects aimed at cleaning and greening the City. In relation to this, the City's **Community Environmental Projects Grants Program**, which was initiated in in 1995, continues to provide small grants (on average \$3,000) to community groups to complete projects that support an environmentally sustainable Ottawa. The City also has a number of other funding programs to support environmental and community initiatives on its <u>website</u>.

Ottawa's Environmental Strategy (2003) is a growth management plan that focuses on the responsible management of all aspects of the City's environment. The Strategy outlines a process for achieving community environmental goals as well as corporate environmental commitments. The four overarching goals identified in the Strategy are: to be a green city, to develop in harmony with the environment, to focus on walking, cycling and transit and to have clean air, water and earth.

The **City of Ottawa Official Plan** (2003) was prepared within the broader context of the Ottawa 20/20 initiative, a two-year planning process to prepare the City to manage future growth and change over the next 20 years. The goal of the Ottawa 20/20 initiative is sustainable development. To achieve this goal, five guiding principles are identified. Two of the five principles are described below, followed by examples of how the Official Plan responds to each.

Principle: A Green and Environmentally Sensitive City

- A Green City Ottawa preserves natural habitats and has a network of greenspaces. Trees are an important way of maintaining environmental integrity
- **Development in Harmony with the Environment** Using land wisely, development builds within the current urban boundary and avoids outward sprawl
- A Focus on Walking, Cycling and Transit Ottawa implements policies that favour walking, cycling and public transit over the use of private motor vehicles, thereby facilitating the use of modes of transportation that are socially accessible, environmentally healthy and economically feasible

• Clean Air, Water and Earth – All people work to improve the quality of the natural environment; limit noise and light pollution; and protect natural resources and agricultural lands

Land-use and community design perspectives are outlined to address the above guiding principle:

- Planning on the basis of natural systems to protect and enhance natural processes and ecological functions (e.g., watershed planning, groundwater and surface water protection and greenspace policies) is supported
- Policies to protect natural diversity (e.g., urban and rural woodlands, wetlands, and wildlife habitat) are provided for
- Natural resources (e.g., agricultural land, minerals, and natural environment areas) are designated and protected
- Soil contamination is identified and addressed
- Focusing on alternative modes of transport and reducing the reliance on the automobile improve air quality

Principle: A Healthy and Active City

- **Recreation and Sport** Citizens have the opportunity to participate in a broad range of recreational pursuits; personal fitness and sport activities
- **Community Facilities** Recreation, arts and heritage facilities are provided to meet both local and citywide needs
- Accessibility Citizens have access to affordable and barrier-free facilities, programs and services
- **Health Protection and Promotion** Citizens have access to community-based social and health promotion services

Land-use and community design perspectives are outlined to address the above guiding principle:

- Human and ecosystem health issues are addressed through such means as reducing the reliance on the private automobile to lessen the impact on air quality
- The provision of parklands, recreational pathways and facilities, community gardens, walking and cycling provide opportunities for a healthy lifestyle
- Polices that foster the development of more compact, mixed-use development and design policies provide opportunities for walking in a pedestrian-oriented environment
- Policies to protect groundwater help to ensure potable drinking water in the rural area

Excerpts from City of Ottawa Official Plan

Section 3.2 Natural Environment – contains policies protect and enhance significant wetlands, natural environment areas, urban natural features and rural natural features. Example policies:

- Uses permitted on land designated Natural Environment Area include uses which do not
 adversely affect the natural characteristics of the area, such as open air recreation; scientific,
 educational, or conservation uses associated with the features of the environmental area;
 existing agriculture operations; or forestry as defined by the Forestry Act.
- Natural Environment Areas are designated on Schedules A and B. These lands are designated
 to ensure that the natural features and functions inherent in each area are protected and
 preserved.

Section 3.3 Open Space – contains policies related to the protection and expansion of open spaces.

Major Open Spaces are designated on Schedules A and B to protect the larger open spaces in Ottawa that are to be generally available for public use and enjoyment.

4.2.10. City of Toronto

The City of Toronto embraces a holistic and integrated approach to planning for its future. This approach requires that decisions and outcomes "demonstrate integration, balance and interdependence". One example of this approach in practice is the incorporation of public health into City planning and urban design for over a decade.

The City's **Natural Environment Trail Strategy** (2013) aims to ensure the protection of the City of Toronto's natural areas, while also offering safe recreational opportunities by creating a sustainable multi-use trail system. The Strategy outlines five benefits of the City's ravines: environmental, social, education, health and economic benefits. Environmental, social and economic benefits are often cited together in municipal plans and strategies; however, the acknowledgement of education and health benefits is unique to this strategy. By identifying the various health benefits associated with the presence of a natural trail system, the City highlights the strong relationship between public health and the environments in which we live. Some of the benefits of a healthy, active life listed include: a longer, disease-free life, decreased chance of depression, a reduced risk of developing a number of chronic illnesses, reduced osteoporosis, reduced obesity and an increased psychological wellbeing and quality of life.

Toronto's history as a 'City of Ravines' continues to influence planning decisions made today. The presence of high-quality greenspaces is a defining characteristic of the urban fabric of Toronto and the importance of the urban forest has long been recognized by the City. Toronto's **2012-2022 Urban Forest Strategy** outlines a long-term vision where, "Toronto's diverse urban forest is the vital green infrastructure that creates healthy neighbourhoods, supports habitat and biodiversity, promotes clean air and water, offers opportunities for recreation and education, fosters economic prosperity and

enhances quality of life for everyone in the city". Two of the six strategic goals in the strategy prioritize increased awareness and stewardship:

- Goal #4: Increase awareness of the value of trees, the natural environment and the sensitivity of these resources
- Goal #5: Promote stewardship and education of the multiple benefits of the urban forest and build collaborative partnerships for expanding the forest

The City is currently developing a **Ravine Strategy** that will act as a comprehensive strategy focusing specifically on the protection of ravines. The Strategy will set out a vision for the ravine system and a set of principles to guide planning and policy.

The **Shade Policy for the City of Toronto** (2007) was the first of its kind in Canada, and the model was either studied or emulated by many municipalities in Ontario and beyond who were keen to create a policy of their own. The policy states that "the provision of shade can be an effective means of reducing exposure to ultraviolet radiation (UVR) and its associated health risks such as skin cancer. Furthermore, the presence of shade can encourage physical activity, reduce greenhouse gas and air pollutant emissions, mitigate the urban heat island effect, and reduce energy costs. The provision of shade, either natural or constructed, should be an essential element when planning for and developing new City facilities such as parks or public spaces, and in refurbishing existing City-owned and operated facilities and sites. Increasing shade in Toronto contributes to a healthier and more sustainable City".

The vision of the **City of Toronto Official Plan** is "about creating an attractive and safe city that evokes pride, passion and a sense of belonging – a city where people of all ages and abilities can enjoy a good quality of life". This entails having "a wealth of recreational opportunities that promote health and wellness", "clean air, land and water", and "green spaces of all sizes" to name a few priorities.

Recent amendments to the Official Plan were made to highlight the relationship between public health and the greenspace system. The text in bold below was added and approved by City Council (pending provincial approval):

The *Green Space System* provides many benefits for the City. These lands "improve human health by offering opportunities for passive and active recreation, community gardens and environmental education".

The Official Plan also makes mention of the spiritual value of greenspace. The City's greenspace system is said to "provide opportunities for recreation, relaxation and experiencing nature in peace and quiet", as well as "landscapes for reflection, contemplation, appreciation of nature".

Council's 2013-2018 Strategic Plan details the broadest expression of the type of city envisioned for the future: A city that is caring and friendly; clean, green and sustainable; dynamic and invests in a high quality of life.

Excerpts from City of Toronto Official Plan

* The bolded text below has been approved by City Council for addition to the Official Plan (Provincial approval pending).

Section 2.3.2 Toronto's Green Space System and Waterfront – contains policies to protect, improve and add green space whenever feasible.

The Green Space System provides many benefits for the City. These lands:

- Form the core of the City's natural ecosystems providing habitat for flora and fauna and including most of our significant natural heritage features and functions;
- Help sustain our natural environment by cleaning the air, recharging groundwater, cleaning
 our watercourses and limiting damage that might arise from flooding and soil erosion;
- Include natural and hydrological connections that link Lake Ontario to the larger biophysical region and its ecological systems;
- **Provide a** variety of landscapes for reflection, contemplation and appreciation of nature;
- Improve human health by offering opportunities for passive and active recreation, community gardens and environmental education; and
- Offer unique tourism and entertainment destinations attracting visitors from across the region and elsewhere.

Policies examples:

- 1. Actions will be taken to improve, preserve and enhance the Green Space System by: a) improving public access and enjoyment of lands under public ownership; b) maintaining and increasing public access to privately owned lands, where appropriate; c) restoring, creating and protecting a variety of landscapes; and d) establishing co-operative partnerships in the stewardship of lands and water.
- 10. The year-round recreational use of unique regional resources such as Toronto Island Park and Rouge Park will be encouraged.

Section 3.2.3 Parks and Open Spaces – contains policies to expand, improve and maintain the City's parks, open spaces and natural areas. Example policies:

- Toronto's system of parks and open spaces will continue to be a necessary element of citybuilding as the City grows and changes. Maintaining, enhancing and expanding the system requires the following actions:
 - a) adding new parks and amenities, particularly in growth areas and maintaining, improving and expanding existing parks;
 - b) designing high quality parks and their amenities to promote user comfort, safety, accessibility and year-round use and to enhance the experience of "place", providing experiential and educational opportunities to interact with the natural world;
 - c) protecting access to existing publicly accessible open spaces, as well as expanding

the system of open spaces and developing open space linkages; and d) promoting and using private open space and recreation facilities, including areas suitable for community or allotment gardening, to supplement the City's parks, facilities and amenities.

Section 3.4 The Natural Environment – contains policies to protect Toronto's natural environment and urban forests.

4.2.11. City of Thunder Bay

The City of Thunder Bay has adopted a multi-pronged approach to advance community priorities related to community health, community design, and natural areas through a variety of strategic documents and implementation tools. This multi-pronged approach includes unique and innovative polices and strategic actions that support a shift to integrate public health, and the natural environment in existing planning, and decision-making processes.

The City's **2015-2018 Corporate Strategic Plan**, *Becoming Our Best*, features a broad corporate focus on health and the environment and envisions the development of a healthy, vibrant, connected, and strong community. This vision is reinforced through a mission, guiding principles, and strategic actions in four goal areas – *lifestyle*, *environment*, *economy*, and *governance* – to guide planning and decision-making by Council and staff. The development of the plan was informed by several other municipal strategic policies and plans (i.e., Urban Forest Management Plan, Food Strategy, The Inspire Culture Plan, Active Transportation Plan, and Climate Adaptation Plan), ensuring a mutually-reinforcing approach to achieve the City's shared priorities. These plans and policies also contain many of the actions for moving forward. An **Implementation Plan** was also developed to execute the Strategic Plan, and sets out milestones, indicators, and project leads; progress updates are communicated every four months and annually. This combined approach recognizes the need for enabling tools to support and track implementation activities, while reinforcing the direction set by the shared vision.

The important link between health and the built environment is communicated by the Thunder Bay District Health Unit in its **Working Together for Healthy Kids** (2014) strategy. The overall objective of the strategy is to enhance the health and wellbeing of the City's children and families. The strategy outlines commitments and areas for action to achieve this objective; Commitment 4 makes the connection between active living and community design, emphasizing the need for more public infrastructure to support active lifestyles that benefit children and families.

The City's **Urban Design and Landscape Guidelines** (2012) provide detailed direction to implement the policies and objectives outlined in the City's Official Plan, and complement the zoning bylaw. The guidelines aim to promote quality of life through design excellence in the built and natural environments, reinforcing broader corporate objectives. A unique feature of the document is that it includes performance standards regarding the protection, design, and connectivity of parks and open spaces in order to increase access to them throughout the City.

Excerpts from City of Thunder Bay Urban Design and Landscape Guidelines

Section 3.0 Performance Standards: Public Realm Performance Standard #2: Parks and Open Spaces

Parks & open spaces are focal points within the City and neighbourhoods. New development should be located, or new open spaces should be created within the development, to ensure open space is provided within walking distance of residential and employment uses.

2A - Location and Interface

- a) The majority of residents within urban areas should be located within 800 metres (10-minute walking distance) of a large park, and if possible, 400 metres of a medium park or neighbourhood parkette.
- b) Open spaces should be located along, and at the terminus of, the Image Routes and other key corridors (i.e. Waterloo Street/Balmoral Street, Junot Avenue/ Golf Links Road, and Water Street/ Cumberland Street/Hodder Avenue).
- c) Where viable, neighbourhood retail uses and cafes should face directly onto parks and open spaces.
- d) The perimeter of parks should be lined with buildings that face onto the park. Backlotted housing, or housing with the rear property line against parks or primary streets, should be avoided.

4.2.12. Municipality of Chatham-Kent

The Municipality of Chatham-Kent utilizes a multi-pronged approach to enhance community health and the quality of natural spaces. Strategic documents, plans and implementation guides inform and complement each other and highlight the need for multiple mechanisms that integrate monitoring and reporting to support the municipality's long-term development as a healthy community with quality natural areas.

Chatham-Kent's **Official Plan** (2016) *Action Toward Sustainability* functions as a multipurpose document and tool to achieve a safe, healthy and sustainable Chatham-Kent. The OP's framework expands the traditional three-pillar approach to sustainability and includes community health and wellbeing as a key policy area found in Part A, Section Two.

Part A, Section 2 of the OP acknowledges the relationship between community health and the physical form of a place, and recognizes the importance of the natural environment in this relationship, as stated in:

Part A, 2.2.1 Community Health and Wellbeing (Context) states that "....The Official Plan supports the provision of a safe, healthy and complete community through affordable housing choices and a range of safe transportation options, quality human services, schools, public spaces and local

amenities. The natural environment, including clean air, land and water, is an essential component of a healthy community".

The Policies in Part A, Section 2 are intended to work in combination with policies from other sections of the Official Plan. Policies in Part A, Section 4, *Environment* for instance, focus on the natural environment, in particular enhancing the quality of natural areas and features, and mitigating risks to human health from natural hazards.

The implementation section of the OP states that a Sustainability Review Team will be established to monitor, track and measure the outcomes of OP policies applied in practice, and ensure they align with provincial and municipal policy objectives.

A **Forest Management Strategy** was developed in 2003 and identified strategic directions for new Official Plan policies to protect woodlands and collaborate with landowners in natural heritage conservation efforts. Council subsequently adopted changes to the Official Plan in 2013 to maintain and enhance the quality of the municipality's natural heritage.

The municipality's **Natural Heritage Implementation Strategy** (2014) provides additional guidance and identifies strategic actions to realize the policy objections and recommendations contained in plans prepared by third-party consultants.

Excerpts from Chatham Kent Official Plan

Part A, Section 2 – Providing Safe, Healthy, and Complete Communities

- 2.2.1.2.4 The Municipality shall support, through the land use and transportation planning process, the provision of an accessible and affordable range of outdoor settings, including parklands, open spaces, active transportation networks and trails to enhance, encourage and enable an active community.
- 2.2.1.2.6 The Municipality shall consider the creation of an Urban Forestry Plan with particular attention to the planting of street trees, improving streetscapes, and sustaining and expanding the tree canopy to provide adequate shade provision, reduce heat exposure, and improve air quality. Development and redevelopment requiring improvements to municipal road right-of-ways shall be required to incorporate streetscaping in compliance with the Municipality's Urban Design Guidelines and in accordance with the policies contained in Sections B 2.2.7 and 7.1.6 to this Plan.

2.4.2. Road Network (context)

Active transportation is a form of travel for utilitarian purposes, which provides environmental, health and social benefits, including reduced auto dependency, reduced traffic congestion, reduced fuel consumption, improved air quality, and increased social interactions within a neighbourhood.

2.4.5.2.1 The Municipality shall develop a linked system of recreational trails and linkages comprising a

combination of sidewalks, dedicated off-road paths and road rights-of-way. The system could include linking downtowns, residential neighbourhoods, parks and open spaces, riverfronts and lakefronts.

2.4.5.2.8 As part of daily business practice, the Municipality shall recognize that trails are for more than recreation, and that they have environmental, transportation, health and economic benefits.

Part A, Section 4 – Environment

4.4.3.2.4 Chatham-Kent shall implement a Forest Management Strategy to protect existing forested areas, reforest target natural corridor areas, increase forest cover to at least 10% of total land area of Chatham-Kent, and provide for complementary uses of forested areas that would allow for greater and more practical uses for these areas, while, at the same time, maintaining the forest and the benefits that accrue from these natural areas. A combination of policy, practices, programs, regulations and enforcement shall be used to implement the Strategy.

4.2.13. Simcoe Muskoka District Health Unit

Healthy Community Design – Policy Statements for Official Plans (2014) is a trailblazing and innovative resource created by the Simcoe Muskoka District Health Unit to connect community health and wellbeing to land use plans and decision-making. The resource was developed through a collaborative process with input and consultation from professional planners. Once completed, it was widely circulated to Simcoe Muskoka municipalities and elected officials in order to advance public health through community design. The resource has also inspired other public health units to develop similar documents for their own municipalities.

The document contains policy statements that support municipalities to incorporate healthy community design policies in their Official Plans (OP) and other planning initiatives, while meeting provincial policy requirements. Example policy statements focus on goals and objectives corresponding to five key areas: environment; injury and safety; physical activity and sun safety; food access; and social cohesion and wellbeing. Many of these policy statements establish a direct link between health and the natural environment. Both public health and planning rationales are provided with the policy statements to add credibility and relevance to the resource.

In addition, the resource provides examples of short-term, medium-term and long-term activities that a municipality can consider to implement the policy objectives. The implementation activities also provide support and reasoning for municipalities to pursue community health initiatives outside of the OP review process.

This resource has been used by both public health professionals and planners. Public health professionals use the resource to frame comments and recommendations in response to municipal OP reviews, while planners consider the policies statements as they update existing OP policies.

An evaluation of the 2012 version of the resource was completed by Board of Health members, Simcoe Muskoka District Health Unit (SMDHU) staff, municipal planners and municipal elected officials. The results of this evaluation indicate that the resource is useful to key audiences. Feedback also indicates

that the resource has helped advance the implementation of healthy community design concepts in OP documents, and to some extent implementation activities to support these policies have been enacted. Further evaluation of the outcomes of this OP review process, using these policy statements, is being planned.

Excerpts from Healthy Community Design – Policy Statements for Official Plans Planning Policies (Greenspace):

EN 1.5 Design standards shall be developed that require the use of natural and/or naturalized landscapes to improve air and water quality throughout the community.

EN 1.6 A community-wide Urban Forestry Management Plan shall be developed to maximize the environmental and community health benefits of having healthy trees, with particular attention to protecting the community's stock of existing trees, supporting the growth of new trees and expanding the tree canopy in the community.

EN 4.1 Community infrastructure shall be designed to take into account the potential impacts from climate change to minimize damage, with a preference toward practices of better stewardship and protection of nature, naturalized areas, greenspaces and water resources.

4.2.14. Hastings and Prince Edward Health Unit

Building Complete and Sustainable Communities: Health Policies for Official Plans (2012) is an innovative document and tool, developed by Hastings Prince Edward Public Health (formerly Hastings and Prince Edward Counties Health Unit) to facilitate the design of healthy communities. The document begins with the premise that community health is in part a function of the availability of public features and infrastructure that support physical activity. As statutory documents that direct and guide land-use planning and decision-making, Official Plans are required to consider the complex inter-relationships of the social, economic and environmental conditions pertaining to land use, including community structure and design. The intent of the document is to provide example policies and strategies that can be incorporated in municipal Official Plans to advance the development of complete communities that support healthy behaviours and choices, and make the connection between them more apparent.

The document contains five sections that correspond to broader public health objectives: sustainable and accessible transportation; access to active recreation in built environments; preservation and protection of the local food system; access and exposure to tobacco and alcohol products; and social interaction and sense of community. Each section features an integrated and hierarchical conceptual approach to enable healthy community design that includes a policy goal, rationale, objectives and example policy statements that can be applied in urban and rural settings; implementation strategies are also provided in select cases.

Two companion workbooks were also developed to assist Health Unit staff assess whether Official Plan policies support the development of healthy and complete communities, and contribute to multifaceted approach to promote public health: **Building Complete and Sustainable Communities: Healthy**

Policies for Official Plans (Rural Area Checklist) and Building Complete and Sustainable Communities: Healthy Policies for Official Plans (Urban Area Checklist).

Together these documents reinforce the need for a holistic and integrated approach to address the complex conditions that crossover public health and the built environment.

Excerpts from Building Complete and Sustainable Communities: Health Policies for Official Plans

Planning Policies

- 2.1.3. The Parks Master Plan and Recreation Master Plan shall include guidelines to plan and provide for a full range and equitable distribution of publicly-accessible built, and natural settings for recreation, including facilities, parklands, public spaces, open/green space areas, trails and linkages, and where practical, water-based resources with particular interest to meet the needs of vulnerable populations. This includes providing an appropriate supply and distribution of community facilities and programs to meet the social, health, and recreation needs of existing and future residents in a manner that maximizes accessibility regardless of age, physical ability, and financial means.
- 2.1.4. Municipal parks, parklands, public spaces, open/green spaces, trails and linkages shall be designed to provide protection from sun exposure.
- 2.1.9. Development standards for new development should encourage the provision to provide residents with access to open/green space.

4.2.15. Credit Valley Conservation

Credit Valley Conservation is advancing the linkage between human health and greenspaces through strategic planning processes as well as innovative programming. This multi-pronged approach acknowledges the need to address complex, inter-related issues such as ecohealth through multiple channels and tools and by involving internal and external audiences.

Our Future to Shape is CVC's Strategic Plan 2015-2019. The plan establishes a shared corporate vision for a thriving environment that protects, connects and sustains, as well as an accompanying mission and set of values to guide operations. Eight goal areas with associated outcomes and directions are also included in the plan, and make connections between watershed health and the health and wellbeing of residents. The plan is being embedded into Department and project business plans for 2017 and beyond. Annual report cards will be produced to provide a progress update and outline directions that are underway or that have been accomplished. The results will be used to refine business plans and work plans going forward, giving rise to a dynamic and iterative approach to improve watershed and human health.

The CVC **Health and Wellness Program** is a unique program that offers clients of health sector organizations in the Region of Peel and surrounding areas with guided outdoor experiences in local parks and Conservation Areas, promoting the relationship between nature and human health, wellness, and recovery. Program participants benefit from:

- Direct experience in nature, including guided outdoor activities to foster an appreciation of the value of nature and reflection on the benefits of spending time in nature
- Increased knowledge and understanding about local conservation areas, including their purpose and where and how to access them
- Enhanced skills and confidence to seek out and spend time in nature

The program is exceptional as it places considerable focus on connecting residents who are facing a variety of health challenges with the natural environment as a means of improving their wellbeing. As of December 2016, eighteen organizations and 2,868 participants have been benefited from the program. In Brampton, CVC has partnered with diabetes outreach staff at the William Osler Health Centre to deliver joint programming about health, exercise, and nature to visitors to Terra Cotta Conservation Area. Also in Brampton, CVC is working to promote the health benefits of nature through the "Healthy Communities Initiative," a group led by Peel Public Health and the Central West-Local Health Integration Network focused on tackling obesity and diabetes in children.

Excerpts from Credit Valley Conservation Strategic Plan

Our Vision

A thriving environment that protects, connects and sustains us.

Our vision is our desired end-state for our local environment and communities. It guides every aspect of our work by describing what is required to sustain our quality of life.

Goal Five

Connect Communities with Nature to Promote Environmental Awareness, Appreciation and Action

The most powerful force for environmental protection is an informed and mobilized community. Connecting people with nature is the first step in demonstrating how a thriving environment is vital for their health, safety and well-being. Those connections build capacity and advocacy for our work in the community.

Outcomes – Where we will be in 10 years

- 1. An informed and connected community of environmental stewards that take action to protect and enhance the local environment.
- 2. Enhanced environmental literacy among residents.
- 3. Conservation areas that provide accessible natural spaces and unique environmental experiences for all to enjoy.
- 4. Residents with a strong sense of place, a deep connection to the land they call home and an appreciation for the connection between nature and their well-being.

4.2.16. Toronto and Region Conservation

The TRCA is recognized as a leader in advancing the principles of sustainability through its vision for *The Living City*, a community where human settlement can flourish forever as part of nature's beauty and diversity. To achieve this vision, the TRCA utilizes a multi-pronged and comprehensive approach that comprises corporate level strategic documents, innovative programming, projects and partnerships with a diversity of groups and organizations.

Building The Living City® outlines the strategic directions the TRCA will focus on over a 10-year period to achieve The Living City vision. The strategic plan affirms the TRCA's commitment to protecting and enhancing the health and wellbeing of residents through the protection and restoration of the natural environment. The connection between greenspace and human health is highlighted frequently throughout the document, and particularly in the guiding principles and strategic directions. As an example the objectives of *Strategy 3 below*:

Excerpts from Toronto Region Conservation Building the Living City

Strategy 3 – Rethink Greenspace to Maximize its Value

- 1. A network of greenspace and green infrastructure that weaves through every community to connect a healthy and resilient landscape
- 2. More people engaging with nature more often
- 3. Improved protection of Toronto region's natural system

The actions under this strategic area are implemented through a variety of innovative programs, projects, and partnerships. For instance, volunteer and stewardship activities (e.g., terrestrial monitoring, tree plantings, community clean-ups, educational workshops, etc.) bring community members together to learn about and improve their local environment, while curriculum-based programs engage elementary and high school students in educational experiences outside the classroom (e.g., multi-day workshops at field centres). Projects such as pollinator plant restoration also involve community groups and organizations in the creation, enjoyment and appreciation of natural habitats.

The TRCA also partners with local municipalities, other environmental departments and organizations, educational organizations, corporations and grass roots community groups to support the creation of *The Living City* through land use planning processes, the provision of services (e.g., environmental monitoring, habitat restoration, stormwater management), and promoting the use of new or alternative technologies (e.g., green infrastructure, renewable technology). The TRCA also provides a number of different recreational opportunities for people to engage with nature at its many conservation areas (e.g., hiking, canoeing, cross-country skiing, etc.).

The TRCA also tracks and reports on progress to realize its vision for *The Living City* in annual reports.

4.3. Learning from Other Jurisdictions

4.3.1. City of Vancouver

The City of Vancouver has demonstrated a commitment to enhancing the quality of life of its residents - through forward-looking initiatives designed to improve health and wellbeing. Many of these initiatives support a shift to bring health and environmental considerations to the forefront of current planning and decision-making processes, and highlight the importance of multiple entry points to achieve community priorities.

A Healthy City for All – Vancouver's Healthy City Strategy 2014-2025 (Phase 1) emerged from the need to re-connect urban planning and public heath to address the complex issues facing contemporary community development. The Strategy envisions a healthy city for all through three primary areas of focus: Healthy People; Healthy Communities; and Healthy Environments and reflects public and stakeholder input obtained through an extensive consultation process. The strategy also identifies 13 goals with corresponding targets and indicators to assess progress and outcomes. While all the goals advance community priorities pertaining to health, Goal 8, Active Living and Getting Outside, is of particular interest as it makes the connection between health and access to natural environments explicit, as described in this excerpt:

Excerpts from City of Vancouver: Healthy City Strategy 2014-2025

"Natural environments have therapeutic benefits whether we are engaging in physical activity outdoors or relaxing in a park. Contact with nature restores us, improves our mental health, and reduces mental fatigue. Spending time outdoors also contributes to healthy personal development, resilience to stress, and a love for and commitment to the environment" (p. 37)

Actions to achieve the targets in this goal area are captured in an existing strategy by the Vancouver Board of Parks and Recreation – **Park Board Strategic Framework** (2012).

The strategy is also accompanied by **Healthy City Strategy – Four Year Action Plan 2015-2018 (Phase 2)** which identities 19 priority actions to implement the vision and meet the targets set out in Phase 1.

The **Greenest City 2020 Action Plan (Part Two 2015-2020)** is bold and ambitious road map for Vancouver to say on the leading edge of city sustainability. The action plan includes 10 goal areas and 15 measurable targets that cover a broad cross-section of topics such as energy, green infrastructure, transportation, waste, local food and access to nature. Goal 5: Access to Nature is the same as Goal 8 in the *Healthy City for All* strategy. Together, these documents highlight the multi-pronged and nested approach required to transform visions and goals into reality, and the importance of partnerships and community involvement.

4.3.2. City of Stockholm, Sweden

The City of Stockholm, Sweden is regarded as a global leader in the provision of urban development featuring healthy greenspaces. This leadership is tied to a cultural norm within the planning profession to improve the quality of life for citizens and protect the natural environment. This "dual" perspective ensures that the quality of natural areas is protected and accessible to citizens.

Two documents in particular guide planning, including parks planning, in the City – **Stockholm's City Plan** and the **Stockholm Regional Plan**, and respect the geographical setting in which the City developed. Natural depressions in the landscape resulted in a radial development pattern with green "wedges" in between urban areas, creating a system of connected parks and open spaces. A key objective of both planning documents is to enhance the most valuable greenspaces inside and outside the City, and improve connections to them to promote human access and biodiversity.

These goals are achieved through complementary approaches with mutually reinforcing benefits such as promoting infill development, increasing density around transportation nodes, and outlining specific targets for greenspace and natural areas such as:

- Within 200 m: green oasis, play, peacefulness, sit in the sun, walking
- Within 500 m: flowers, lively place, picnic, soccer
- Within 1 km: nature reserve >50 ha
- Within 500 m: city district park 5-50 ha
- Within 200 m: park block 1-5 ha
- Provide open spaces <1 ha wherever possible.

The **Green Map** is a project-based initiative that complements the City's planning efforts and serves to identify and define Stockholm's greenspaces. The tool will facilitate planning efforts to preserve greenspace through urban development processes to support natural features and functions and human enjoyment of them.

4.4. Lessons Learned

Recurring themes in the case studies point to several trends and best practices that can be used to advance the connection between greenspace and community health. While these best practices are described in some detail below, it should be noted those that are truly transformative in nature are those that make a strong and direct connection between greenspace and community health outcomes, such as the Toronto, Vancouver and Stockholm examples. It is also important to acknowledge the stellar efforts that have been advanced by Credit Valley Conservation from a programmatic lens as well as the work led by the Public Health Units in Prince Edward and Hastings, and Simcoe Muskoka District, that encourages planners and practitioners to think differently about existing planning tools to draw an even stronger connection to healthy communities and in turn, population and community health.

Highlights of lessons learned from the case studies are described below.

Improving community health is a shared priority

Municipalities, public health units, and conservation authorities are all working to create healthy, green communities; many of these organizations have made the connections among the built environment and community health and wellbeing. Despite these promising trends, there are many opportunities to advance ecohealth policies and to draw even stronger and more explicit connections among the natural environment, greenspace, and community health and wellbeing.

Strategic level planning documents focus on improving community health

A strong vision and goals can be found in a variety of high level strategic documents that help focus actions to improve community health. Strategic Plans, Corporate Environmental Action Plans and Integrated Community Sustainability Plans in communities such as York Region and Aurora demonstrate that community health and the importance of greenspace can factor prominently in the vision, goals, or principles of these types of planning tools.

Protecting greenspace is one of many steps needed to improve community health

Official Plans for communities such as Chatham-Kent, Aurora, and Brampton have strong policy direction supporting protection and provision of greenspace as a foundation for community health. Official Plans from other communities such as Thunder Bay, Huron County, and Peel Region, take a stronger stance by incorporating a vision, principles, or high-level commitments to land uses that have a positive impact on community health, quality of life, and the creation of livable communities. Municipalities can also address the quality of outdoor spaces through regulation. For example, of the case studies profiled, six municipalities have enacted smoke free by-laws to address air quality and health effects associated with second-hand smoke. Policies also exist to promote smoke-free beaches for example in Kingston, Ottawa, Toronto, Thunder Bay, and Chatham-Kent.

Improving greenspace provision, design and access requires an integrated approach

Many of the examples profiled have adopted a mutually reinforcing approach that makes use of a variety of tools such as corporate strategic plans, official plans, design guidelines, by-laws, and department level strategies as entry points to advance actions that link community health and greenspace. Communities that have used this multi-pronged approach include Toronto, Chatham-Kent, Thunder Bay, and Kingston to name a few. East Gwillimbury's multi-pronged approach uses its Official Plan policies to work in conjunction with the Thinking Green! Development Standards. Peel Region's *Healthy Development Assessment User Guide* was developed as a tool to inform the review of development applications, and reinforces existing provincial and regional planning policies, regulations, and standards that promote community health and wellbeing. The strategic documents and tools used by York Region, Peel Region, Brampton, and Vancouver demonstrate the value of mutually-supportive policies that are reinforced across different departments.

Public engagement is used to build awareness about and improve ecohealth

Broad and extensive stakeholder and public engagement was a key component of the strategic and/or official planning processes in Huron County, London, Thunder Bay, and Vancouver, building support for and expanding awareness of the benefits of ecohealth to addressing community priorities. Vancouver and the Credit Valley Conservation (CVC) also provide ongoing opportunities for dialogue. Vancouver for

instance reports on the progress made through the Greenest City initiative through a variety of channels such as the City's website, and a dedicated Greenest City newsletter. The Health and Wellness Program offered by the CVC promotes the relationship between nature and health, wellness, and recovery through in-person guided tours in natural areas.

More work is needed to assess the effectiveness of current approaches to improve ecohealth

Very few of the examples profiled included a framework to measure and assess the effectiveness of the plans, policies, or programs. The exceptions were Vancouver and Thunder Bay. Vancouver's *Healthy City Strategy* – Four Year Action Plan and Greenest City Action Plan both include targets and indicators to measure the iterative progress achieved through incremental actions. Thunder Bay has committed to providing progress updates every four months and annually on implementation activities related to its corporate strategic plan.

5. Playbook – Advancing Health through Greenspace

The case studies in Section 4 profiled different approaches and tools that municipalities and other organizations are using to advance the development of healthy communities. The best practices can be streamlined into a comprehensive approach to facilitate action. This section introduces collective impact as a way to structure this playbook – or set of actions – for advancing health through greenspace provision, access, and design.

5.1. Getting Started - Thinking about Ecohealth Policy using a Collective Impact Lens

Municipal governments and their community partners are in a unique position to improve community health because of their ability to develop public policies and educate the community, factors that are vital to putting – and keeping – ecohealth on the public agenda.

As evident in Section 4, there are many examples of communities who have taken an innovative and ambitious approach to addressing greenspace and community health through policy, programs, and practices. While the case studies demonstrate the utility of the planning process and the value of a collaborative approach, the opportunity to realize health outcomes from policy remains a challenging task and one that may be particularly well-suited to the application of a collective impact approach.

5.2. Overview of Collective Impact

Collective impact is premised on the belief that no single entity, whether that is a department within an organization or an organization itself, can advance solutions for complex multi-faceted, transdisciplinary issues such as ecohealth (Kania & Kramer, 2011). The collective impact approach includes five key elements to guide progress on complex issues, as shown in Figure 6. Note that the terminology used from the collective impact approach has been adjusted to suit our ecohealth context.



Figure 6: Collective Impact Elements

A description of each element of the collective impact approach is provided below, along with an explanation of how it can be used to advance community health through greenspace provision, design and access.

Shared Agenda

The collective impact approach emphasizes the importance of developing a shared vision that begins with a common understanding of the problem and a joint approach to solving the problem through agreed-upon actions. This is particularly important when addressing a complex issue, such as ecohealth. All participants need to arrive at a shared understanding and focused approach for moving forward to ensure success.

Multi-Sectoral Actions

In the context of advancing ecohealth and greenspace, various local partners all have a role to play. A diverse group of stakeholders, typically across departments and/or sectors, should identify opportunities to coordinate a set of differentiated activities that are mutually reinforcing and ideally integrated (from a planning perspective) to contribute to achieving the collective vision.

Monitoring and Evaluation

A key step in policy and program development is for participating organizations to identify how success will be measured and reported. Monitoring and evaluation are also essential to track implementation and measure the effectiveness of efforts to promote community health through greenspace provision, design, and access. All participating departments or organizations should give consideration to ways to measure outcomes as they begin to develop actions. Evaluation results can be used thereafter to refine and strengthen polices, plans, and programs designed to advance ecohealth.

Communications and Engagement

Building solid policies and programs requires that good practices are profiled, that information is shared, and that ecohealth is a continuing priority for community leaders, practitioners, and the public. Ideally all players engage in frequent and open communication to build trust, assure mutual objectives, and create common motivation. In this context, engaging stakeholders and the public can help generate support, increase awareness and knowledge, or alleviate concerns. Meaningful engagement aims to involve many voices and perspectives in planning processes. This includes decision-makers who have the ability to shape community health outcomes, as well as those who are impacted by the decisions.

Leadership and Coordination

The ability to drive solutions forward requires leadership and coordination. Many players may be involved, for example various departments within a municipality, the public health unit, the conservation authority, non-government groups and others. Successful policy development and implementation therefore rely on collaboration among various players, which in turn requires strong leadership and effective coordination.

5.3. Advancing Ecohealth Policy using a Collective Impact Lens

This section provides guidance on how to integrate, enhance, and advance community health through greenspace using the collective impact approach. Table 2 provides a suite of suggested actions for each element, recognizing that no two organizations are exactly alike, and that efforts to advance ecohealth exist on a continuum, where some organizations are just starting to make the connection between health and greenspace, while others have already undertaken some work, and the leaders are well on their way. A self-assessment tool is provided in Appendix B to determine an organization's location on the continuum.

Table 2: Playbook for Ecohealth and Greenspace

Action	Just Starting	On Our Way	Well On Our Way	
Collective Impa	Collective Impact Element: Common Agenda			
Background	Acknowledge the	Recognize that the	Use the business case and	
Research	important roles that	building blocks of	background research	
	policy development	healthy communities	results to generate	
	and program	are the key	decision-maker support	
	delivery play in	determinants of	for policies and programs	
	realizing community	health and that these	to advance the provision,	

Action	Just Starting	On Our Way	Well On Our Way
Action	health and wellbeing outcomes Collect evidence and data about the benefits of greenspace to community health ² Become familiar with the work that others are doing to advance community health and wellbeing through greenspace	 are fundamentally connected Use evidence and data to develop a business case for enhancing the provision, design and access to greenspace Look for opportunities to integrate the linkages between the provision, design and access to greenspace 	design and access to greenspace Review policies, plans, programs and practices with a focus on continuous improvement Research additional tools to advance the shared agenda Share research results with other organizations who may be interested in taking action to better inform policy
		in policy platforms using different tools	development and policy implementation/effective ness
Form a Team	 Assemble a multi- disciplinary, multi- sectoral team of individuals to move the ecohealth agenda forward 	Develop an approach with actionable items to move the ecohealth agenda forward	 Implement the approach as a team Identify an internal champion(s) to keep moving the agenda forward
Vision	Develop a shared vision, goals and measureable targets that include greenspace as a fundamental pillar for community health	Build on an existing vision to include greenspace as a fundamental pillar for community health	Permeate the vision through all key organizational plans and programs
Create an Organizational Norm	Include the connection between greenspace and community health in organizational	Strengthen the language of existing organizational values and principles to advance community health through	Promote an aligned approach to act on the values and principles across the participating organizations (e.g., provide resources, tools,

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 $^{^{\}rm 2}$ A list of Additional Resources is provided at the end of this Toolkit.

Action	Just Starting	On Our Way	Well On Our Way
	values and principles.	greenspace • Promote the concept that health and wellbeing are everyone's business	etc.)
•	ct Element: Multi-Sectoral		
Form Partnerships	Build relationships with champions from your organization who already recognize the value of greenspace to healthy communities	 Develop relationships with other organizations and look for opportunities for collaboration Form partnerships and clarify roles and responsibilities 	 Strengthen partnerships Look for opportunities to 'widen the circle of involvement'
Develop Multi-Sectoral Actions	Review existing plans, policies and programs to identify where actions can support multi- sectoral efforts to advance greenspace provision, design and access	Develop multi- sectoral actions, for example opportunities relating to parks, greenways, natural heritage policies, active transportation, community health and neighbourhood design	 Implement the actions identified Look for further opportunities to advance health through greenspace Explore Health Impact Assessments³
	ct Element: Communication	ns and Engagement	
Develop a Communicatio ns and Engagement Plan	Determine where active participation in decision-making starts and stops	 Review existing communication and engagement strategies and refine 	Engage stakeholders and the public to determine if existing engagement strategies are working

³

³ Used increasingly in the U.S. and other jurisdictions, health impact assessments (HIAs) are employed with larger development proposals to determine their potential health impacts, including health equity considerations, and how to mitigate them. HIAs also have potential for application during the community planning process, where they could be used to better understand the health implications of land use and transportation choices. Quebec and Ontario are actively exploring their use, and new Canadian research on HIAs is emerging (Cancer Care Ontario & Public Health Ontario, 2016).

Action	Just Starting	On Our Way	Well On Our Way
	Conduct a	them to reach the	well
	stakeholder scan	target audiences	Establish a healthy
	and identify	• Leverage	communities "knowledge
	communication and	partnerships with	broker" in your
	engagement	internal and external	organization department
	platforms that work	partners to engage	of working with and
	well in the local	stakeholders and the	liaising between the
	context	public	multiple public and
	Develop a	Network with	private sector players
	communications	provincial planning	involved in health equity
	and engagement	agencies and health	and healthy community
	plan that includes	authorities who have	design
	goals, audiences,	undertaken equity-	Establish a strong record
	engagement tools,	focused community	of success as the
	key messages and	plans, projects and	recognized voice for
	reporting	policies and who	ecohealth action in your
		could support your	community
		work	
Collective Impac	ct Element: Monitoring and	d Evaluation	
Develop an	Research measures	 Investigate 	Report on the benefits or
Evaluation	used by other	measurement and	changes observed as a
Framework	organizations	monitoring tools that	result of improving
	Develop a baseline	are outcome-based	greenspace provision,
	of current	and tied to	design and access
	conditions (e.g. how	greenspace	Use the evaluation results
	much greenspace is	provision, design and	to refine and improve
	accessible in the	access	your approach to advance
	municipality?)		ecohealth
	 Develop measures 		
	that are outcome-		
	based and tied to		
	greenspace		
	provision, design		
	and access		
•	ct Element: Leadership and	Coordination	
Lead and	Identify a leading	Ensure the 'right'	Work with other
Coordinate	department or	participants are at	organizations and EHO to
	organization that	the table by exploring	advocate for stronger
	has responsibility	strategic	recognition of community

Action	Just Starting	On Our Way	Well On Our Way
	for moving the	collaborations with	health in key policy
	actions forward in	other organizations	documents including the
	collaboration with		PPS and governing
	partners		legislation

6. Conclusions

This Toolkit was developed to promote the important role of greenspace in improving community health and wellbeing. The Toolkit provides practitioners with an overview of the linkages among greenspace, ecosystem resilience, and community health and wellbeing, and presents a rationale for integrating ecohealth into greenspace provision, access and design through policies, programs and practices at the local level.

The case studies showcase how new proactive policies are complementing traditional approaches focused primarily on health protection and harm prevention by emphasizing the promotion of healthier living conditions and opportunities for healthier lifestyles. In particular, the case studies offer a snapshot of some of the approaches and innovations that are underway across Ontario, with a few examples from national and international jurisdictions. They demonstrate how the planning process and planning tools are being used creatively to address greenspace and community health, and underscore the importance of a collaborative and multi-disciplinary approach.

The playbook is designed to meet the needs of practitioners in different sectors wishing to promote the achievement of health-based outcomes through effective greenspace policy, programs and practice.

It is hoped that by providing evidence for the need to increase greenspace provision and access, case studies that demonstrate effectiveness, and specific guidance through the playbook, practitioners will be able to build a case for policies and take effective actions within their own organization or community.

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There is a wealth of information and resources available to planners interested in learning more about healthy community design and planning. For more information, or to access additional Planning Healthy Communities Fact Sheets, please visit:

- Canadian Institute of Health Information: A wide variety of resources and research studies on population health and environmental factors, including health equity. www.cihi.ca
- Public Health Agency of Canada: Implements policies and programs that enhance the public health outcomes, equity and conditions. www.phac-aspc.gc.ca
- Urban Public Health Network Healthy Canada by Design: A clearinghouse of healthy community design resources and links. www.uphn.ca/CLASP
- National Collaborating Centre for Environmental Health Healthy Built Environment Inventory: A
 searchable catalogue of healthy communities case studies, guidelines, tools and key scientific
 papers.

Appendix A – Planning Tools

Table 3: Planning tools that can support ecohealth policy

Tool	Details	Utility from a Greenspace and Community Health Perspective
Strategic Plans	Strategic Plans are typically three to five year plans that identify the critical priorities and outcomes to be achieved by a municipality over that time. It is typically tied to a longer term vision and provides elected officials and municipal staff with a common focus, priorities, outcomes and strategies to be pursued over the term of the plan.	Municipalities have the ability to develop Corporate and/or Community-based Strategic Plans that can articulate a collective vision for the future. Community health and the importance of greenspace could factor prominently in the macro-level vision, goals, objectives and strategies.
	PLANNING ACT TOOL	LS
Official Plans	As outlined in the <i>Planning Act</i> , the Official Plan (OP) shall contain goals, objectives and policies primarily to manage and direct physical change through the establishment of land use designations and policies. Official Plans allow a municipality to address planning matters within their jurisdiction in a comprehensive manner. Municipalities have the ability to incorporate policies that reflect local conditions and circumstances. In keeping with the requirements of the <i>Planning Act</i> , municipalities are required to review their Official Plans at least every five years to ensure they remain relevant and reflective of existing provincial and municipal policy.	The Official Plan offers an opportunity for municipalities to incorporate greenspace-based health promotion policies. Some Official Plans include a community-based vision as well as specific goals to be achieved. The Official Plan is required to comply with the provincial Planning Act and other applicable law. The Official Plan could be linked to the Strategic Plan and could provide strong community health leadership that focuses specifically on community health and the preservation and protection of the natural environment and access to greenspace. Official Plans can also include a number of greenspace and health related objectives including: • The protection and preservation of greenspace. • Ensuring that land uses have a positive impact on community

Tool	Details	Utility from a Greenspace and Community Health Perspective
		health and quality of life. The Official Plan can also include supporting policies that in turn advance active living, walkability, connectivity and green infrastructure. Policies can also be developed that draw the connection between greenspace and access to recreation, the importance of green canopy and shade, tree planting
Secondary Plans	Municipalities have the option of developing a Secondary Plan. Secondary Plans establish local development policies to guide growth and development in defined areas where major physical change is expected or desired. It is a tool that can be used in areas where large tracts of underutilized land exist that would benefit from suitable redevelopment; for areas where development is already occurring or is anticipated to occur and at a scale and intensity that requires existing development patterns to be reconsidered.	and connectivity to multi-use trails. Secondary Plans can be a highly effective means of ensuring that the community's vision as it relates to greenspace and community health is achieved.
Community Improvement Plans (CIP)	Community Improvement Plans enable municipalities to use, reuse and restore lands, buildings and infrastructure and offer a tool to assist municipalities in addressing local issues and challenges.	CIPs may offer an effective tool for municipalities to better address constituent needs including active living and access to greenspace.
Master Plans	Under the <i>Planning Act</i> , municipalities have the ability to undertake master planning. Some municipalities have Transportation Master Plans in place. Others have Parks, Recreation and Culture Master Plans while others have developed Waterfront Master Plans. Usually master plans develop the principles, directions and	Parks, Recreation and Culture Master Plans could play an important role in defining municipal-specific goals and strategies to address greenspace and community health comprehensively.

Tool	Details	Utility from a Greenspace and Community Health Perspective
	recommendations that are of interest and concern to the community and to community leaders. Approved by Council, many Master Plans consist of short, mid and longer term actions and recommendations to promote change.	
Integrated Community Sustainability Plans (ICSP)	A number of municipal governments have developed sustainability planning to improve overall environmental, economic, community and fiscal sustainability. Integrated Community Sustainability Plans in Ontario, where an Official Plan is already in place are not mandatory, but have become a focus of interest for municipalities who are recognizing the value of sustainability planning in the decision making process. The Community Sustainability Plans can integrate issues across municipal departments and services through the use of targeted programs.	 Establish a shared vision, goals, and principles to set direction over a longer-term planning horizon; Empower a municipality to address current and future needs and to shape the future; Ensure the protection and conservation of important natural features and greenspaces; Implement green standards and support green initiatives; Recognize and protect cultural landscapes; Provide leverage to access funding; and Establish partnerships with others levels of government, with other agencies and with stakeholders.
Ontario's Development Permit System (DPS)	Ontario Regulation 608/06 came into effect January 1, 2007, enabling all local municipalities to use the DPS, a land use planning tool intended to help promote development, enhance environmental protection and facilitate key priorities. The DPS offers a consolidated approach that combines zoning, site plan and minor	The DPS can assist municipalities in strengthening their greenspace policies in several ways: • Approval Conditions: Municipalities can impose a range of conditions on a development permit such as limiting vegetation removal,

Tool	Details	Utility from a Greenspace and Community Health Perspective
	variance processes into one application and approval process. The benefit of the DPS is that it provides a similar level of certainty as exists under zoning by-laws while also providing the convenience of one system for planning approvals.	restricting site alteration or imposing monitoring requirements, provided that these conditions are in compliance with established criteria. • Discretionary Uses: The DPS can identify "discretionary uses" that would be permitted without a zoning by-law amendment provided they meet specific conditions. The discretionary use provisions could be used to establish criteria for greenspace areas. • Broader Definition of Development: The DSP allow for a broader definition of development than that provided under the Planning Act. Under the DPS, "development" can land uses but also specific activities (e.g. site alteration). Municipalities may have greater latitude in protecting greenspaces if a broader definition of development is provided.
Zoning By- laws	Municipalities have the authority through the zoning by-law process to restrict development in certain areas and at the same time, to ensure that proper regulations are in place to protect natural features on private land. In addition to comprehensive zoning by-laws and minor variances, municipalities have a number of zoning tools available to control land uses. Some of these special	Comprehensive Zoning By-laws can specify where greenspace, parks and open space are permitted. Some municipalities have adopted zoning provisions that enable parks and greenspaces to be established on an 'as of right' basis in all zones. Municipalities can also use special zoning provisions to secure additional greenspaces and to consider the use of

Tool	Details	Utility from a Greenspace and Community Health Perspective
	 Holding by-laws can be used to allow future uses to be considered once specific conditions have been met. A holding by-law can only be used however if holding provisions are contained in the Official Plan. Interim control by-laws put a temporary freeze on some land uses while a municipality is studying or reviewing its policies. The freeze can be imposed for only a year, with a maximum extension of one additional year. Temporary use by-laws zone land or buildings for specific uses for a maximum period of three years, with additional extensions provided. Increased height and density by-laws allow buildings to exceed permitted standards, but only if a developer provides specified services to the municipality in return (e.g. provision of additional parkland). Official plan policies must be included if there is an interest in allowing increases in height and density. 	special by-laws to advance community health through the development of standards and specific requirements.
Subdivision Approval	Section 51(25) of the <i>Planning Act</i> authorizes the approval authority to impose any condition to a draft approval of an application as long as it believes the condition is reasonable, having regard to the nature of the proposed development. This can include the conveyance of land for parks or other public recreational purposes and a requirement to enter into a	Conditions of draft plan approval have traditionally included requirements for parks, public recreation, tree planting and native plantings. Municipalities have the ability to assess the impact of any proposed subdivision development on greenspace and community health. Currently, some

Tool	Details	Utility from a Greenspace and Community Health Perspective
	development agreement to address site specifics. Approval authorities may determine that the associated planning analysis supports draft plan approval of an application and may impose conditions of draft plan approval. Usually, conditions are attached to the draft approval of a plan of subdivision or condominium application to secure development requirements (e.g. water, sanitary sewers, gas, hydro, telephone and cable lines) as well as above-ground services (e.g. paved streets, concrete curbs, sidewalks, street lighting, tree planting and landscaping.) In carrying out its review of any subdivision or condominium application, municipalities can recommend specific conditions of draft plan approval be included, such as the preservation of trees and/or the use of native plantings.	municipalities are using Health Impact Assessments in connection with the development process to require all new developments to complete a Health Impact Assessment (HIA). While some municipalities require the completion of a Health Impact Assessment for all new developments (e.g.: Peel Region), there are other municipalities who simply reserve the right to require a HIA where desired/appropriate (e.g.: Town of Ajax). Municipalities may wish to work with public health and other partners as well as the approval authority to develop standard conditions of draft plan approval that would strengthen the linkage between community health and greenspace.
Site Plan Control	Site plan approval is regulated by Section 41 of the <i>Planning Act</i> and is an important component of the development review process. It is intended to implement the objectives of the Official Plan, ensure conformity with the Zoning by-law and other appropriate bylaws and regulations; ensure sufficient municipal services and on-site facilities and eliminate or reduce adverse impacts on adjacent land uses. Site plan controls are used to ensure that developments are built and maintained in keeping with Council direction; new developments meet specified standards; there is safe and easy pedestrian and vehicular access to the site; the appearance and design features of	Through site plan control, municipalities have the ability to address details of a proposed development including existing and proposed landscaping and the retention of existing spaces and places of green.

Tool	Details	Utility from a Greenspace and Community Health Perspective
	buildings and their sustainable design are suitable and satisfactory; and there is adequate landscaping, parking and drainage and finally that adjacent properties are protected from incompatible development. Site plan controls can address "matters relating to exterior design, including without limitation their sustainable design, but only to the extent that it is a matter of exterior design, and if an official plan and a by-law both contain provisions relating to such matters are in effect in a municipality".	
	MUNICIPAL ACT TOO	LS
Tree Cutting By-laws	The Municipal Act enables municipalities to prohibit the destruction of injuring of trees and by-laws enacted under the Municipal Act can require a permit for the destruction or injuring of trees. The permit may impose conditions including how trees are cut and the qualifications of persons authorized to cut. In addition, municipal by-law enforcement officers can order tree cutting to cease. There are many examples across Ontario of municipalities that have enacted tree cutting by-laws.	Municipalities interested in protecting existing green spaces may wish to consider the utility of a tree cutting bylaw to protect the existing tree canopy.
Economic, Social and Environmental Wellbeing	Under the provisions of Part II (General Powers) of the <i>Municipal Act</i> , municipalities have the authority to enact by-laws related to the 'economic, social and environmental wellbeing of the municipality', as well as for the 'health, safety and well-bring of persons.'	Given the increased recognition that community health is connected with environmental health, there may be tremendous opportunity for municipalities to explore the range of possibilities to enact by-laws to address community health and greenspace under the guise of these provisions of the Municipal Act.

Tool	Details	Utility from a Greenspace and Community Health Perspective					
	ONTARIO HERITAGE ACT						
Ontario Heritage Act	The 2005 Ontario Heritage Act radically altered a municipality's powers, responsibilities and tools to conserve heritage resources. The revised Act formalized the Municipal Register, created criteria for designation of heritage properties, provided tools to maintain heritage properties and created a formal process for the creation and conservation of Heritage Conservation Districts. In addition to protecting heritage buildings and the built fabric of communities, the Act can also be used to protect landscapes as they are often a tie to our own personal history and are worthy of protection. Understanding the contextual importance of a municipality's cultural heritage is important as a heritage building or structure may define or terminate a view or vista. An area may offer an important or distinctive shoreline view and it may be located in an area where construction would adversely impact an important view or vista.	Municipalities interested in protecting and preserving major natural features, vistas and views can be accommodated by including policies in the Official Plan to address the public realm and policies that focus on the protection of views and vistas can be included under the heritage policy provisions of the Official Plan. Municipalities who are interested may also identify a list of important views and vistas on their Official Plan map schedule. Municipal Councils also have the authority to enter into agreements with landowners and may take steps to secure conservation easements to protect both structures and areas that have particular heritage value. There are many examples of municipalities that have used the provisions of the <i>Ontario Heritage Act</i> to protect views and vistas.					

Appendix C – Self-Assessment Guide

Organizational readiness varies as a result of a number of factors, not the least of which are existing priorities and capacity. Readiness will also depend on an organization's comfort level (including political support) for change. Some municipalities strive to be on the leading edge of policy development while others are more comfortable with a 'wait and see' approach. Understanding where your organization fits is important. The following self-assessment guide may offer a place to begin.

Table 4: Self-Assessment Guide: Greenspace Provision, Design and Access to Improve Community Health and Wellbeing

Component	A Well On Our Way	B (On Our Way)	C (Just Starting)	Response (A, B. C)
Leadership around healthy natural and built environments	Is reflected by senior management commitments with dedicated resources as part of our long-term strategic vision; specific people are held accountable to deliver.	Is reflected in our vision statements and plans but no resources have been allocated.	Does not exist in our organization; there is little or no interest.	
Informing our Elected Community Leaders	Elected officials receive training to outline their role in building a healthier community through greenspace provision, design and access.	Occurs on request.	Is not done.	
Organizational Goals for a healthier community and population	Are comprehensive, measurable, and implemented in a robust and cohesive manner; are reviewed regularly as part of ongoing business and are linked to all plans corporately and the plans of partner agencies and organizations.	Exist at an organizational level but are not actively pursued, reviewed or monitored.	Do not exist at the corporate level.	

	A	В	С	Response
Component	Well On Our Way	(On Our Way)	(Just Starting)	(A, B. C)
Collaboration with external organizations and agencies	Is led by senior managers and community leaders who are working together to advance the connection between greenspace provision, design and access and community health and wellbeing.	Is encouraged by all senior managers individually.	Is not currently encouraged at the corporate level and/or is encouraged by some senior managers.	
Community Plans	Currently build community health and wellbeing into all stages of planning.	Currently have guidelines and resources that address community health but are frequently considered late in the planning process.	Do not reflect community health and wellbeing or does consider some community health and wellbeing but have not led to implemented changes.	
Guidelines or Good Practices	Are supported by education and are integrated into land use and public health planning on an ongoing basis.	Are available and supported by education on an 'as required' basis but not integrated into planning.	Are not available or developed yet.	