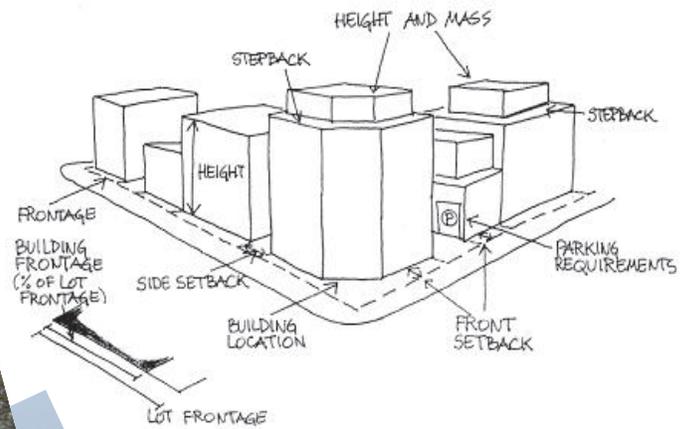


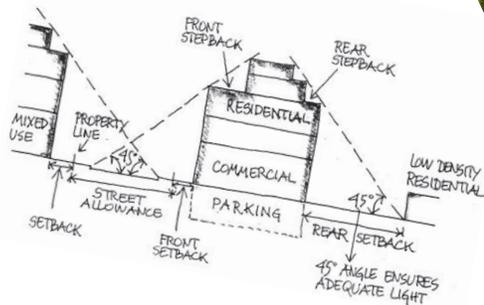
# PLANNING BY DESIGN: a healthy communities handbook



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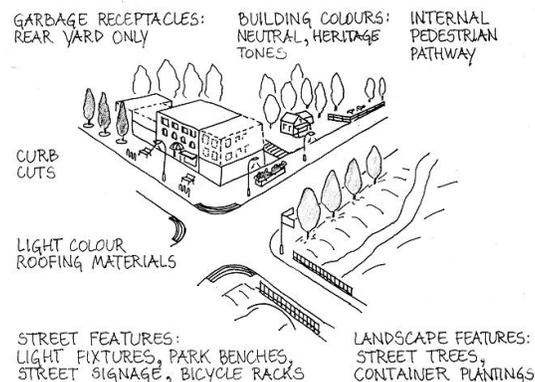
## Foreword

Land-use planning decisions shape us in ways that we are only just beginning to appreciate – obesity, heart disease, mental health, social isolation, nutrition and air quality. At the 2006 Ontario Professional Planners Institute (OPPI) Symposium called ***The Shape of Things to Come: Improving Health Through Community Planning***, OPPI members made clear their commitment to creating and fostering healthy communities throughout Ontario.

OPPI's position paper, ***Healthy Communities Sustainable Communities***, 2007, on the importance of urban design, active transportation and green infrastructure, made links between public health and land-use planning and explored strategies for collaborating on tangible actions for healthier communities.

Healthy communities remain the focus of OPPI and we continue to work with planners, stakeholders and the public on this critical matter. In keeping with our ongoing commitment to healthy communities, we joined with the Ministry of Municipal Affairs and Housing to produce ***Planning By Design: a healthy communities handbook***, so that together, we can facilitate and advance discussions and understanding on the impacts of land-use planning and design on people's health.

**Ontario Professional Planners Institute, 2009**



### Note to Users:

This handbook should not be relied upon as a substitute for specialized legal or professional advice in connection with any particular matter. Independent legal or professional advice should be obtained when determining the interpretation and application of Planning Act tools and when planning and designing for communities. Responsibility for decisions remains with the user of this handbook.

Produced by the Ministry of Municipal Affairs and Housing  
in partnership with the Ontario Professional Planners Institute  
777 Bay Street, 14th Floor  
Toronto, Ontario M5G 2E5

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**A sustainable community means many things to the different people who live there.**

Building Healthy Communities: A Rural Action Publication  
[www.ruralaction.org](http://www.ruralaction.org)

## The Link Between “Bugs and Drugs” and “Mains and Drains”

Over the past few decades, urban planning has moved beyond thinking primarily about ‘mains and drains’ and public health has moved beyond thinking primarily about ‘bugs and drugs’. These changes highlight common interest about the impact of built environments on health, and the role good urban design policies play in creating positive health outcomes at the population level.

Johnson, S.A., Marko, J., **Designing healthy places: Land use planning and public health**, Edmonton, Alberta, Population Health – Capital Health, 2007, [www.capitalhealth.ca](http://www.capitalhealth.ca)



## CHAPTER 1: The Context

Sedentary lifestyles, poor dietary habits and reliance on cars are significant contributors to serious health problems that include:

- respiratory ailments
- coronary heart disease
- non-insulin dependent diabetes (Type II)
- overweight and obesity
- high blood pressure and stroke
- osteoporosis
- cancers
- stress and depression
- injuries and fatalities (e.g., falls or traffic related)

Many of these preventable diseases and conditions are at chronic levels, placing enormous pressure on families, caregivers, health/public health and social care professionals, the policing system and private and public sector productivity.

In a number of Canadian provinces, health-related spending is consuming 40% or more of provincial budgets. According to the Canadian Institute for Health Information, health-care spending is growing faster than Canada’s economy and spending on prescription and non-prescription drugs is growing faster than spending on hospitals and physicians. This rising trend is also reflected in Ontario.

Studies show that engaging in regular, moderate to moderately intense physical activities, such as walking and cycling, can yield a range of benefits for people of all ages and capabilities – from improved physical and mental well being to reductions in health-related private and public costs.





## Living Conditions of The Past

In front of C Perry Smith shop a pool of stagnant water pile of Dung &c on Judge Campbells land near a house occupied by Mr. Lennan & owned by Judge Campbell a privy overflowing & causes much offence & inconvenience to the neighbours. Nearby in front of J Perrys Smith shop & next his house, a deposit of Stagnant water, water courses on both sides of the Street wants repairs.... The Inspectors request a barrel of Lime sent to each of their houses for distribution.

**Inspector's Report, 1831, 7th Ward from New Street to Caroline Street, Toronto**  
Ontario History Quest: Board of Health Papers relating mainly to the 1832 cholera epidemic, Toronto Public Library, Baldwin Room, Manuscript Collection, [ohq.torontopubliclibrary.ca](http://ohq.torontopubliclibrary.ca)

Building on existing health and social-related strategies, municipal planning, design and development policies and programs can guide the development of our ***built environments – buildings, transport networks, green spaces, public realms, natural systems and all the other spaces that make up a community*** – towards results that:

- increase participation in physical and social activities
- reduce the social risks and costs of preventable diseases, injuries and fatalities
- decrease soaring direct and indirect public and private health-care spending
- shift health-related savings to other community priorities

## The Past

The link between the built environment and people's physical and psychological health is rooted in 19th century industrial cities. Unsanitary and overcrowded slum conditions facilitated the transmission of air and water borne diseases such as cholera, typhoid, influenza and tuberculosis. In Ontario, professions emerged calling for reform: town and country planners, public health professionals, parks and playground advocates, architects and landscape architects.

Each had a different perspective – separating noxious uses from residential living, clean water and sanitary conditions, recreational and open space, functional beauty and land stewardship, well-ordered streets and improved infrastructure – all to promote public health and social well being.

By the mid-20th century, many of Ontario's settlements were characterized by improved living conditions, dispersed suburban communities and the expansion of car ownership. For rural and urban areas, planning became less about public health concerns and more about separating incompatible land uses, coordinated land subdivision, consistent building standards, housing availability and affordability and road construction to accommodate automobile travel.



## A Moderate-Intensity Workout

The San Diego State University has worked out a simple formula:

**100 steps / 60 seconds x 30 minutes = 1 moderate-intensity workout**

**Small Doses**, Paul Taylor  
Globe & Mail, Friday, March 20, 2009





## Standard Building Environmental Impacts

Houses and apartments account for 17 per cent of all energy consumed within Canada. Heating and cooling these buildings, providing their hot water and ventilation, and powering their lights and appliances produces a staggering 80 mega tonnes of greenhouse gas (GHG) emissions annually, which translates to 16 per cent of Canada's total output.

How Research in Ottawa will Reduce Greenhouse Gas Emissions in New York  
Carleton University, [www.carleton.ca](http://www.carleton.ca)

## The Present

Today, the link between health and the built environment is being reconnected. This linkage matters because the arrangement and design of the built environment affects people's health and the way they physically and psychologically relate to and interact with their community and the wider world around them.

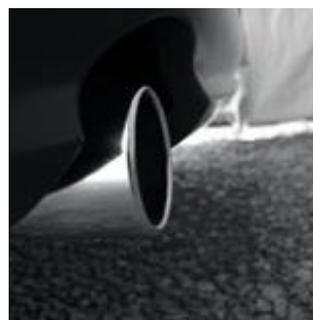
Growing research points to a number of land-use components that influence human activity, facilitate health and mental well being and promote social interaction and inclusion, including:

- layout, design, connectivity and maintenance of sidewalks, roads and non-motorized transportation, paths and trails
- land uses that might include some combination of homes, stores, businesses, institutions, community and cultural facilities and industries
- compactness, density and accessibility of built areas
- access to recreational facilities and green spaces
- connected networks of motorized and non-motorized transport systems
- safe, comfortable and attractive streets, public spaces, buildings and structures
- healthy and resilient natural environments and biodiversity

## AIR POLLUTION IMPACTS ACROSS ONTARIO Ozone (O<sub>3</sub>) and Particulate Matter (PM<sub>2.5</sub>)

Health Effects	Ontario	National
Acute Premature Deaths	1,178	2,682
Hospital Admissions	4,597	10,966
Emergency Department Visits	39,575	92,690
Minor Illnesses	10,383,000	22,542,500
Doctor's Office Visits	262,315	623,369
Economic Costs (2006 dollars) expressed in millions		
Lost (Work) Productivity	\$349	\$688
Health Care Costs	\$222	\$438
Quality of Life	\$194	\$379
Loss of Life	\$2,878	\$6,552
<b>Total Economic Costs</b>	<b>\$3,643</b>	<b>\$8,057</b>

No Breathing Room National Illness Costs of Air Pollution  
Canadian Medical Association, August 2008





**...while social, individual, and policy factors all play a role in health promotion, a supportive built environment is fundamental to enabling increased levels of certain types of physical activity, especially walking and cycling.**

Indicators for Community Health: Built Environment and Community Health,  
Andrew Curran et al, Journal of Rural and Community Development, 2006, p. 61

## Benefits of Activity

Physical Activity is one of the most cost-effective ways to achieve the objective of having a healthier population, physically and mentally.... If Canadians were to become more active, it is estimated that there would be: 26% fewer deaths from type II diabetes; 20% fewer deaths from colon cancer; and 22% fewer deaths from cardiovascular disease.

**Cost of Physical Inactivity, Physical Activity: Health benefits and costs to health care system,** Canadian Fitness and Lifestyle Research Institute, [www.cflri.ca](http://www.cflri.ca)



## CHAPTER 2: Planning by Design

A community's health and long-term economic prospects is influenced by the state of its built environment. Chapters 2 and 3 are intended to help municipalities consider how their communities might be planned and designed so that the risks and costs of preventable diseases, injuries and fatalities are decreased through changes to the physical landscape that produce:

- streets, paths and trails that are well-connected, maintained and able to safely accommodate different modes of transportation
- neighbourhoods that are safe, accessible, aesthetically pleasing, well-serviced and inclusive
- natural environments that are resilient, provide ecosystem services (e.g., clean water, crop pollination and food production, climate and disease control, nutrient cycles), support wildlife and their habitat and are better connected to where people live



## Injury Prevention

Canadians do not need to spend \$8.7 billion to treat nearly two million injuries that largely could have been prevented in the first place...preventing falls for children and the elderly, and preventing motor vehicle crashes are two examples where significant savings could be achieved.... Poorly designed or poorly maintained built environments cause injuries.

**The Built Environment, Injury Prevention and Nursing: A Summary of the Issues,** CNA Backgrounder, p.1-2, October 2005, [www.cna-aiic.ca](http://www.cna-aiic.ca)



### Sustainability Features For Your Community

If you are starting out or need to reinforce existing official plan policies, zoning by-laws, development standards, design guidelines and incentive programs, the following table lists key sustainability characteristics used by many jurisdictions to assess built environments of all scales and types.

Depending on resource availability, location, community characteristics and preferences, some or all may apply. These components help to focus communities on what they want to achieve, their strengths and weaknesses and potential solutions for achieving health-related land-use goals based on sustainable characteristics.

Sustainability Characteristics	Description
Density	number of people, services or jobs per unit area (e.g., hectare, acre, square kilometre)
Mix of Uses	combinations of compatible/synergistic land uses that may include commercial, residential (including live-work), institutional, cultural, retail, recreational, public and natural spaces or industrial within a geographic area or across several geographic areas
Mobility Options	quality of walking, cycling and public transit, including convenience, safety and comfort; sidewalk presence and condition; street design for safety and barrier-free travel; attractive, useful and well-situated street furniture, street lighting, rights-of-way, building set backs and orientation to facilitate function and accessibility for pedestrians of all types
Connectivity	degree to which roads, pedestrian walkways, trails and cycling paths are connected so that moving from point A to point B is relatively easy (i.e., directness of travel and availability of mobility choices); proximity to well-serviced public transit (i.e., frequency and reliability of service); degree to which natural heritage and hydrological systems are connected to where people live; block length (e.g., shorter blocks in a street grid system result in more intersections and better connectivity); degree to which natural/wilderness areas remain intact
Concentrated Uses	degree of concentration of businesses, residential, institutional and other activities in main areas (e.g., core areas, downtowns, main streets, business improvement areas, transportation nodes and corridors and employment areas)
Street Design and Management	scale and design of sidewalks and roads and how they are managed for various uses (e.g., narrower streets, traffic signalling and calming designs that regulate speed and volume); street networks that support and balance a variety of transport modes (e.g., public transit, walking, cycling and motorized vehicles); street-specific bicycle-friendly design; street lights that reduce night-time glare, uplight and light trespass (i.e., reduce night-light pollution in rural and urban areas)
Building Design	scale and design of buildings in relation to street, neighbourhood or community character, barrier-free access, energy and water efficiency, set backs, solar orientation, adaptability for future reuse and ability to accommodate all stages of life, and durability of building materials
Green Infrastructure (natural and engineered green elements)	infrastructure that improves energy efficiency, supply of renewable energy, promotes groundwater recharge, reduces storm water run off, mitigates heat island effect, drought, heavy precipitation and high wind conditions and supports green spaces, biodiversity and wildlife habitat (e.g., district energy and geothermal systems, recycling depots, street trees and vegetation, permeable surfacing, rain absorbent landscaping and harvesting systems, wetlands and marshes, green/cool roofs, agricultural lands, urban gardens/farming, water and energy-efficient buildings and structures and non-fragmented natural/wilderness areas)





## What If...?

**What if...**we plan and design our communities to better connect people, places and the natural environment?

**What if...**we plan for increased access to healthy foods and improved food security in our urban centres?

**What if...**we design energy-efficient homes that can be adapted for people of all ages?

**What if...**we plan for rural transportation systems that provide reliable services and strengthen the option for living and working in rural areas?



**What if...**we design our streets, boulevards and sidewalks to increase safety and attractiveness while balancing the needs of pedestrians, cyclists and motorists?

**What if...**we plan to protect and enhance our natural capital – green spaces, biodiversity and wildlife habitat?

**What if...**we design neighbourhoods so that a variety of services and facilities are within reasonable walking and cycling distances?

**What if...**we plan and design our communities with significantly smaller ecological footprints?



**The physical environment is an important determinant of physical and mental health for everyone. Creating supportive environments, including age-friendly outdoor spaces and building design, can enhance physical well-being and quality of life, accommodate individuality and independence, foster social interaction and enable people to conduct their daily activities.**

Age-Friendly Rural and Remote Communities: A Guide,  
Federal/Provincial/Territorial Ministers Responsible for Seniors, p. 11, 2006  
[www.phac-aspc.gc.ca](http://www.phac-aspc.gc.ca)

## Municipal Influence

Health practitioners are urging people to become more physically active. Incorporating exercise into daily trips must surely be one of the most efficient ways of increasing it. It is also an area where local authorities can have a significant influence on health.

I&DeA – Building Health, Improvement and Development Agency for Local Government, [www.idea.gov.uk](http://www.idea.gov.uk)



## CHAPTER 3: Municipal Leadership

Planning for sustainable communities can happen in a variety of ways. This chapter presents three key planning components that can help municipalities of all types, as they consider how they might reframe their built environments in a health-friendly manner.

**The Municipal Checklist – Ideas to Execution** supports and adds detail to the general descriptions provided for these key planning components. The checklist should be revised to reflect community focus, needs, preferences and sustainable development experience.



### 1. An Integrated Planning Process

Many municipalities start with a broad stakeholder base in order to increase their potential for balancing environmental, economic, social and cultural needs and to increase their ability to manage and coordinate the planning and design of their communities. This approach recognizes an increasingly complex and interdependent world where goals can be better attained through the pooling of resources – time, staff, funding, skills, knowledge and experience – and through the development of cooperating networks that can cross sectoral, geographic and political boundaries.

Achieving cooperation and agreement from multiple interests and conflicting needs is challenging. However, municipal experience indicates that this process can reduce time wasted on conflict, while securing negotiated solutions that address a common vision and produce actions needed to implement that vision.

In brief, sustainable development from a healthy-community perspective is best served with participatory approaches that actively engage others in discerning problems and developing solutions. In doing so, meaningful and inclusive bases for community-wide priority setting and actions are developed, along with long-lasting support for changes to the built environment.



## Aging in Place

As people age their housing needs change. Building a house for people who wish to age in place requires designs that anticipate mobility issues that homeowners and their guests might encounter....

A good design will be flexible enough to adapt to the changing needs of its occupants. Proper planning will identify the multitude of obstacles that await those with limited mobility.

**A View to Aging in Place** – Pedro Arrais, Times Colonist, [www.househunting.ca](http://www.househunting.ca)



## 2. Community Assessment

Undertaking a community assessment in conjunction with stakeholders and partners helps to map and define existing community conditions. With this information municipalities can:

- establish a baseline from which progress can be measured
- determine barriers, limits and opportunities
- set priorities for recommended changes
- focus on actions to be taken
- consider resource capacity
- identify partners and champions to build and maintain community commitment and momentum

## 3. Action Planning

Actions taken after an assessment is completed provide the momentum to publicly promote an initiative and to continue to build public awareness and support over the long term. Actions may take several forms, including **short-term actions** and **long-term planning**.

### Short-Term Actions

Community momentum and relatively quick, visible results may be achieved through smaller steps (e.g., five years or less). These projects not only allow for change on a more manageable scale, but they can also be catalysts for other initiatives. They need not be the highest priority or represent the most urgent need, but ideally they should:

- address an identified health-related matter
- be driven by an identified principle (e.g., active living, clean air, energy and water conservation)
- build on community resources and preferences
- be achievable in a relatively short time frame
- represent opportunities for partnerships
- represent a stepping stone within a healthy-community agenda

### Examples of short-term action planning:

- targeted **trail upgrading** through repair and maintenance, better lighting and clear signage (safety and activity)
- targeted **public space improvement** through sidewalk presence, pedestrian-level street lighting, public seating, tree plantings, cycling paths, traffic calmers, textured rights-of-way and guiding pathways and public art (access, comfort, safety and culture)
- **playground development or refurbishment** of neighbourhood activity spaces for young children, including seating to accommodate supervising adults (safety and social interaction)





## Long-Term Planning

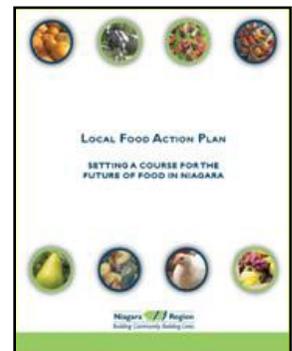
Long-term planning establishes goals, strategies and actions that anticipate longer time horizons for implementation and completion of projects (e.g., 10 to 20 years or more). In these instances, an integrated planning process at the outset will contribute to the creation of deeper stakeholder and public commitment to health-related and sustainable agendas, along with fostering an increased sense of community responsibility and ownership of the issues at hand. These established commitments can also help to attract business investment and skilled workers and their families to your community.

## Examples of long-term planning

- **community or region-wide transportation plans** to integrate multi-modal transportation networks that support long-term growth and land-use objectives
- **community energy plans** to evaluate land-use and community-design options for more efficient use and supply of energy
- **conservation plans** to protect, maintain and enhance biological and natural heritage features and ecological functions
- **reurbanization plans** to plan and design for more effective use of buildings, lands and infrastructure
- **rural sustainability action plans** to support and strengthen rural/agricultural communities while increasing social, cultural, environmental and economic opportunities
- **rural village design guidelines** to preserve and enhance village character, and identity, function, scale and built form, as well as to improve connections to the natural environment

In the process of developing your plans and projects, it is important to reflect your:

- **vision** – what are you doing? why are you doing it? who are you doing it for?
- **mission statement** – what are your ideal outcomes?
- **goals** – do they connect to your vision?
- **objectives** – how are your goals going to be achieved?
- **strategies** – how can your objectives be accomplished?
- **action plans** – what will be done? by when? by whom?
- **performance indicators** – are your goals being met?



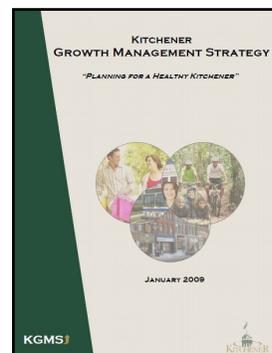
Niagara Region Local Food Action Plan



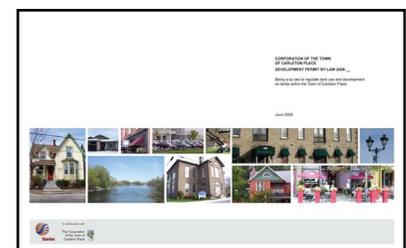
Thunder Bay Comprehensive Environmental Action Plan



Waterfront Toronto Best Practice Guide: Parks and Open Space Design



Kitchener Growth Management Plan



Town of Carleton Place Development Permit By-Law 2008-50



## Municipal Checklist – Ideas to Execution

### 1. An Integrated Planning Process

#### Have you...

- developed a list of people and organizations who can advise, support and facilitate your healthy-community initiative?** For example,
  - health/public health, social and law enforcement professionals
  - local businesses, including home-based (rural, agriculture and urban)
  - community groups and private citizens
  - developers with residential, institutional, commercial or industrial focus
  - architects, landscape architects, designers and engineers
  - transportation agencies, parks and recreation departments and community centres
  - non-profit organizations and government representatives.
  
- identified potential partnerships and methods of outreach?** For example,
  - public, private and non-profit organizations.
  
- developed communication strategies along with key messages that convey the rationale for a healthy-community initiative?**
  
- developed agreed upon rules of conduct/terms of reference with your stakeholders?** For example,
  - respectful listening, learning and sharing.
  
- considered developing a set of guiding community principles with stakeholders, partners and the community, as a starting point for understanding and addressing your local concept of a healthy and sustainable community?** For example, principles might establish:
  - a definition of healthy community that goes beyond the absence of disease or infirmity
  - a shared community vision based on cultural, historical, environmental, social and economic considerations
  - a focus on land-use change based on the planning and designing of buildings, streets and neighbourhoods in ways that are conducive to improved physical and psychological human health
  - expectations for inclusive community participation and partnerships
  - priority for investment in community assets and resources; enhancing health and reducing resources spent fixing preventable health problems; supporting local rural, agriculture and urban businesses; regional cooperation and coordination to maximize and share resources
  - a direction for clean, green and connected natural environments to improve air, water and soil quality and to promote sound environmental practices by individuals, households and businesses
  - a commitment to develop performance indicators, report cards, or dashboards to assess and monitor whether goals are being achieved and to provide timely, frequent and accurate information to partners, stakeholders and the public.
  
- considered forms of public engagement that are likely to be effective for your area?** For example,
  - small workshops, kitchen table meetings, town hall meetings, online/door-to-door surveys, e-dialogues, social media (Facebook, YouTube, wikis), webcasts, design charettes (for adults, youth or children), think tank sessions.



- considered effective times for public engagement in your area?** For example,
  - day time, early evening or weekend.
- identified approaches for inclusive participation?** For example,
  - forming small, diverse discussion groups versus large, like-minded discussion groups
  - consider including community members, partners or stakeholders in the delivery or facilitation of workshops
  - outreach strategies that focus on expanding ethno-cultural inclusion.
- developed a consultation schedule in cooperation with your partners and stakeholders?**
- ensured decisions flowing from this process reflect input from your partners, stakeholders and community?**
- developed strategies for reliable communication, follow ups and information distribution to participants and the community?**

## 2. Community Assessment

### Have you...

- considered the spatial level to be focused on?** For example,
  - lot, building, block, street, neighbourhood, community, region or county.
- decided on when to collect community input?**
- identified sources for data collection?** For example,
  - census data
  - land-use mappings and inventories, geographic information system mapping, satellite imagery
  - air, water and soil quality data
  - community knowledge and memories
  - traffic collision, injury and fatality reports
  - crime reports
  - health information collected by governments and non-profit organizations
  - academic studies and peer-reviewed literature.
- identified web-based sources of information on how various organizations and local governments are assessing their communities and charting their progress?** For example,
  - carbon footprint measurement tools
  - checklists for walkability, age-friendly features, active neighbourhoods and sustainable development
  - spread sheet models , such as transportation analyzers
  - health assessment tools.



- identified limits or barriers to change?** For example,
  - existing legislative and regulatory regimes
  - community sentiment or attachments
  - resources (funding, staffing, volunteers)
  - resistance to change
  - language
  - limited natural resources (water supply and arable land).
- identified potential funding sources to help support your healthy-community initiative?**
- evaluated local land-use planning policies, regulations, guidelines, programs and operations to determine if they support or inhibit your healthy-community goals?**
- identified community strengths, weaknesses and opportunities?**
- considered possible areas of focus, including demonstration initiatives?** For example,
  - mobility for all ages (walkways, cycling paths, buildings)
  - community safety (sidewalks, lighting, roads and road shoulders, traffic calming, traffic lights)
  - community amenities (street furniture, public art, public spaces)
  - environmental health (low-impact storm water design, cleanup of contaminated lands)
  - improved housing choices (targeted areas in need and energy efficiency)
  - transit corridor development (intensification of avenues, corridors and nodes)
  - children and youth activity (public playgrounds, cultural and recreational facilities)
  - main street improvements to support local businesses
  - infrastructure to support ultra-high speed communications (rural, agricultural and urban)
  - support for rural cycling (pothole repairs and paved road shoulders along identified routes)
  - policies and design guidelines that strengthen ethnic neighbourhoods
  - green procurement guideline for goods and services relating to municipal operations
  - healthy food access and security (urban gardens/farming, food market venues).
- made decisions on what, when and how information and recommendations flowing from this process will be made known to the community?**
- identified local champions to help with and support the promotion and maintenance of a health-friendly community agenda?**

### 3. Action Planning

#### Have you...

- built on current community strengths and assets?**
- built on community trust, capacity and engagement?**



- identified your community's priorities?** For example,
  - better air quality through energy-efficient building design
  - greater range of housing types to accommodate people of all ages, incomes and capabilities
  - improved safety and visual attractiveness of public areas and park spaces
  - intensification of avenues and corridors served by public transit
  - increasing physical activity through sustainable transportation programs (walking, cycling, rollerblading, skateboarding, public transit)
  - reasonable access to shops and services (walking distance)
  - improve community streetscape and design (street furniture – benches, bus shelters, bicycle racks, public washrooms, newspaper boxes, waste/recycling bins)
  - waste management/diversion through reuse, recycling and composting
  - vegetable gardening as a component of public parks landscaping
  - protect wilderness spaces from being fragmented
  - maintenance or restoration of natural environment connections to rural settlement areas
  - renewable energy sources (reduced reliance on fossil fuels)
  - preservation of agricultural lands.
  
- identified opportunities for cross-jurisdictional coordination or policy alignment?**
  
- ensured a voice for those who may be or are most likely to be affected by changes to the built environment or who do not normally participate in community affairs?** For example,
  - those who do not speak the predominant language in your area
  - children and youth.
  
- connected people and resources that help solidify and increase partnerships?** For example,
  - volunteer workers and community groups
  - local businesses including home-based (rural, agricultural and urban)
  - non-profit organizations and public health agencies
  - institutional (schools, community centres, cultural facilities and libraries).
  
- reflected the values of your community in projects and plans?** For example,
  - desired growth scenario and extent of built-form compactness (density)
  - where development should and should not take place (getting development right)
  - sustainable requirements for new construction (green building requirements, waste and demolition management rules, drought-resistant landscaping)
  - maintenance and enhancement of natural heritage connections and biodiversity
  - improved transportation choices (walking, cycling and public transit)
  - cleanup and redevelopment of former industrial lands
  - increased energy and water efficiency for new and existing buildings
  - protection of water quality and quantity.
  
- identified areas of focus for the projects and plans?**





**The way we build our communities appears to affect how much people walk, how much they weigh and their likelihood of having high blood pressure. These findings are in line with a growing body of research which shows that community design influences how people travel and how physically active they are in the course of the day.**

Measuring the Health Effects of Sprawl,  
McCann, Barbara et al., Smart Growth America, Sept. 2003, p. 28

## Rural Communities

... health was identified as the “number one” asset of rural and remote Ontario, as well as the “number one” challenge.

Thinking Rural and Remote,  
Government of Canada,  
[www.rural.gc.ca](http://www.rural.gc.ca)



## Sharing Traffic Pain

Traffic congestion in Ontario has spread from the largest urban centres to many smaller and medium-sized communities. No longer just a “big city” problem it contributes to lost productivity, rising costs, increased health and safety risks and a reduced quality of life for commuters....

Municipal Roads and Traffic  
Congestion, [www.orba.org](http://www.orba.org)

## CHAPTER 4: Planning Act Tools

Municipalities face a number of policy challenges that impact land-use planning, including:

- urbanization and growth management
- rural population retention, attraction and servicing
- an aging population
- changing housing needs
- economic development and diversification
- air, water and soil quality
- ecosystem restoration, conservation and enhancement
- transportation planning
- infrastructure renewal
- severe weather impacts

The nature and priority of these matters differ, depending on a community’s size, location, character and history.

**Ontario’s Provincial Policy Statement, 2005** and other provincial plans that provide policy direction for specific geographical areas (e.g., **Greenbelt, Oak Ridges Moraine** and **Growth Plan for the Greater Golden Horseshoe**), support strong, livable and healthy communities that enhance social well being and are economically and environmentally sound. In 2007, the principle of sustainable communities was incorporated into section 2 of the **Planning Act** as a provincial interest, through inclusion of the requirement to have regard to *“the promotion of development that is designed to be sustainable, to support public transit and to be oriented to pedestrians”*.





## Planning Act Tools

In addition to official plan policies that establish healthy-community policy direction, there are a number of Planning Act tools that empower local governments to plan, design and direct sustainable development over the long term. The following highlights key provisions that can be used separately or in combination to achieve municipal goals relating to healthy and sustainable communities.

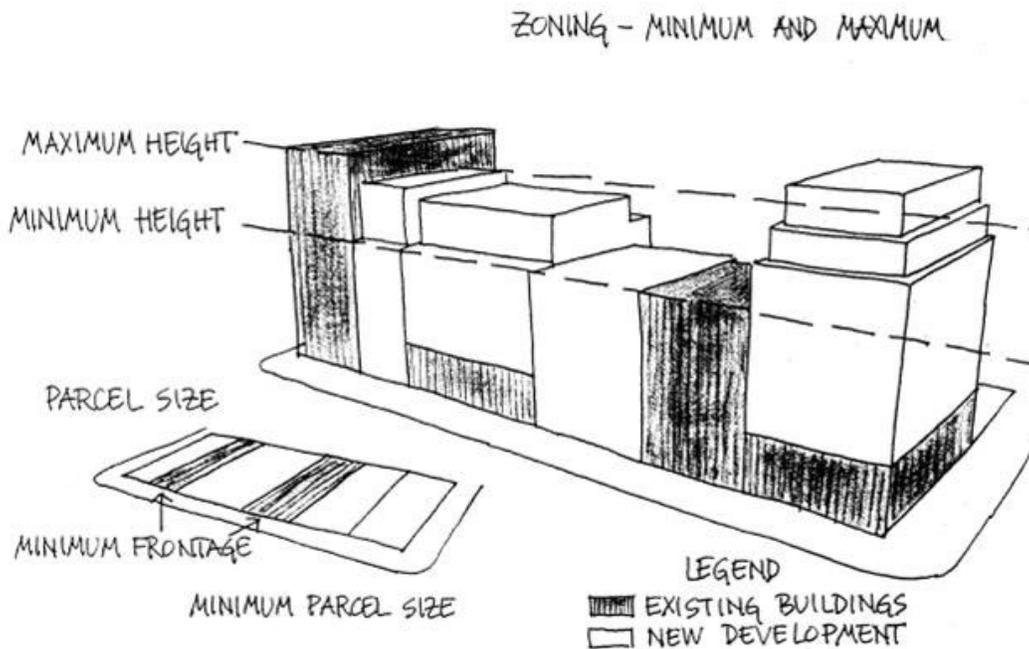
- **Community Improvement Plans – Section 28**

Lower-tier municipalities can plan for community improvement for all or parts of their communities through development, redevelopment, maintenance and rehabilitation. Broad powers are available to acquire, hold, clear, lease and sell land in designated areas and to provide grant or loan incentives for landowners and developers to undertake sustainable activities (e.g., assessing soil contamination, retrofitting existing buildings for energy efficiency, new building construction with minimum energy-performance standards and use of long-life building materials, streetscape improvements, barrier-free design of walkways, installation of renewable energy technology and adaptive reuse of industrial, commercial and historic buildings).

Prescribed upper-tier municipalities can plan for affordable housing, infrastructure and transit corridors and coordinated, inter-governmental planning may take place through lower and upper-tier municipal participation in each other's community improvement grant or loan programs.

- **Minimum and Maximum Standards – Subsection 34(3)**

Municipalities can pass zoning by-laws that guide development towards more compact, more intensified built form outcomes. By establishing minimum and maximum heights and densities of buildings and minimum lot area, community resources such as land, infrastructure and nearby services can be used more effectively.





- **Second Units – Sections 17, 22 and 34**

The ability to plan for as-of-right second units in detached, semi-detached and row houses can support municipal growth management, intensification, transit ridership, lower-cost housing and aging-in-place goals.

- **Height and Density – Section 37**

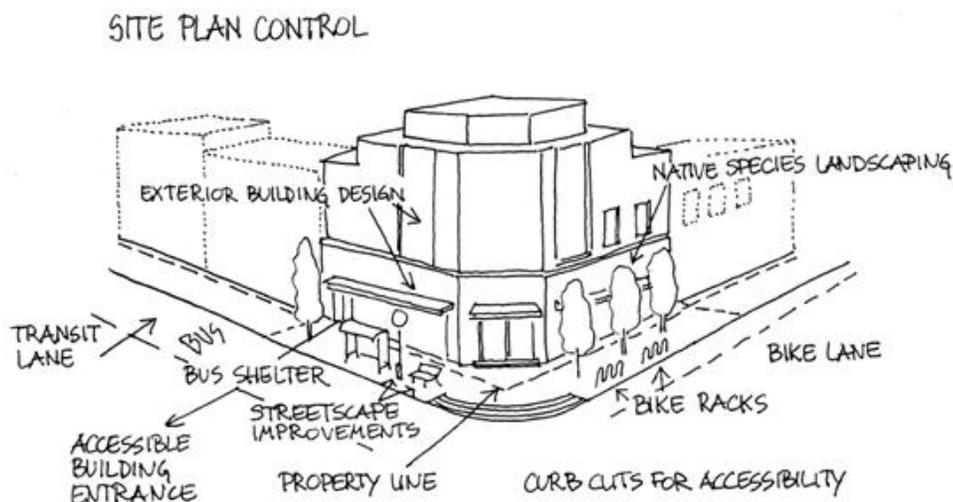
Municipalities can allow additional building height and density in exchange for facilities, services or matters as set out in a by-law.

Community benefits that may be achieved include streetscaping (e.g., transit stop shelters, tree plantings, public art, bicycle parking) and sustainable design elements that can help to offset potential impacts of compact and intensified development (e.g., street level window shadings, wider sidewalks and street furniture for pedestrian comfort, light-coloured pavement surfaces to minimize heat absorption, energy-efficient street lighting to decrease energy consumption and costs, while reducing night-time glare, green roofs for rain water capture and carbon uptake, non-slip pavement, ramp and manhole surfaces to accommodate people of all capabilities and traffic calming through sidewalk and curb design).

- **Site Plan Control – Section 41**

Site plan control allows municipalities to influence the design of development sites by creating visually attractive and functional streetscapes and landscapes. Municipalities can regulate site layout and design including the placement and orientation of buildings to maximize solar gain in the winter and shade in the summer and in relation to neighbouring parcels, local streets, internal site circulation and parking areas.

Municipalities can also consider external building design details. This includes the character, scale and appearance of a building (e.g., safety through eyes-on-the-street building design, window shading through awnings, overhangs or balconies, light-coloured building façades) and sustainable streetscape design on adjoining roadways (e.g., non-invasive and drought-tolerant plantings, bioswales, rain-absorbent landscaping, granular-based pavers, street furniture, curb ramps, and sidewalk bump-outs).



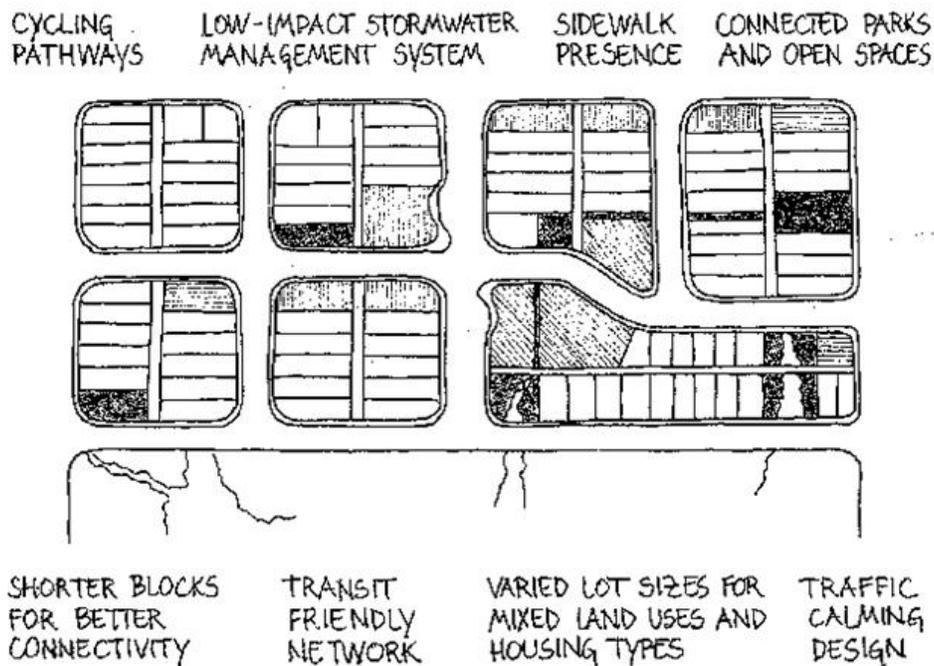


- **Parkland Dedication – Subsection 42(6.2)**

Where on-site parkland dedication cannot be accommodated, municipalities can provide for a reduction in cash-in-lieu requirements in exchange for sustainability features. These features might include green or cool roofing, external building shade structures, high-albedo (reflective) surface materials for non-roof areas, large shade-tree plantings paired with good soil, low-impact storm water management systems, renewable energy technology (e.g., solar heated water) and water treatment solutions to promote water conservation and reuse (e.g., ultra-violet water treatment).

- **Subdivision Review and Approval – Section 51**

Municipal review and approval powers can be used to assess the sustainability of street and lot layout at the lot, street and neighbourhood level, including: compact form through smaller lot sizes, pedestrian and cycling pathways with connections to off-site walkways and public spaces, lot orientation that captures solar benefits, road connectivity to support efficient public transit service, energy efficiency and conservation through lands intended for district heating and cooling and increased green spaces to offset heat island effect and rain water runoff.

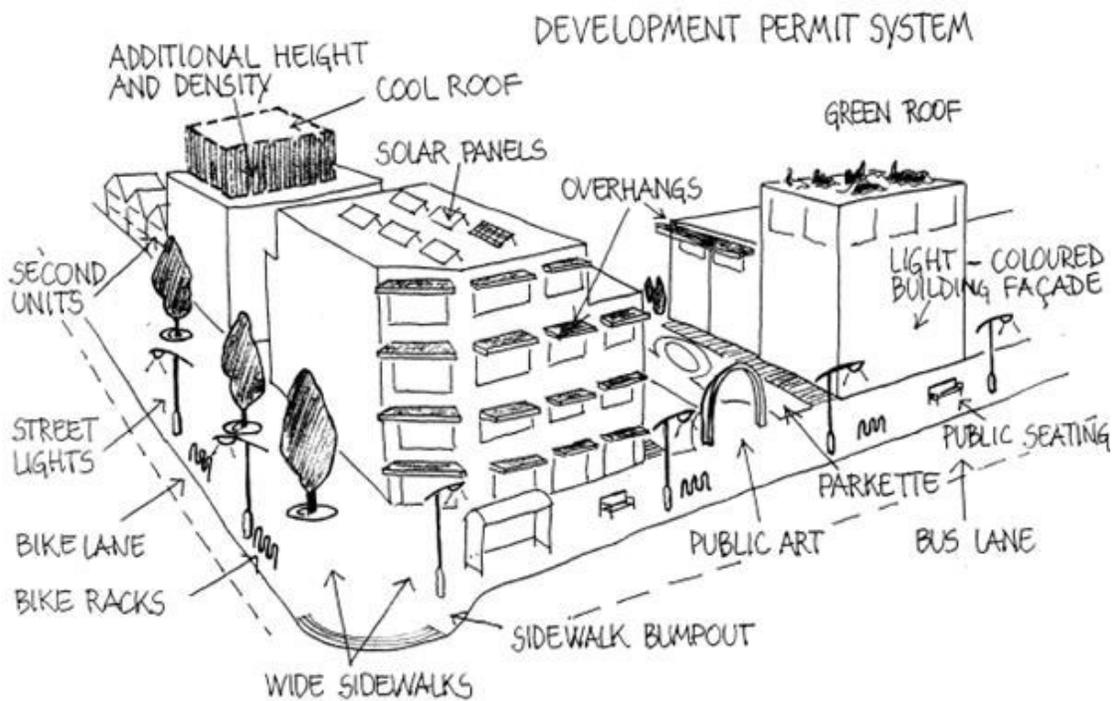




- **Development Permit System – Section 70.2 and O. Reg. 608/06**

Municipalities can apply this tool to all or parts of their communities. This system allows for variations from minimum and maximum standards for height, density and lot area and permits a range of conditions to be imposed on the issuance of a development permit, including those related to vegetation removal, site alteration, placement of fill and ongoing monitoring of ground water and soil conditions of remediated properties, to ensure public health and safety and the protection of the natural environment.

Municipalities can also identify discretionary uses subject to specified criteria, such as development conditions in areas adjacent to environmentally sensitive areas (e.g., vegetative protection and restoration, enhancement and protection of natural heritage or hydrological features and their connections) or for new construction (e.g., development design that provides for energy conservation and sustainable design features on building exteriors).





**It is at the level of local community that “the rubber really hits the road” in terms of quality of life. Communities know viscerally if they are getting safer or not, if job security is growing or not, if people in need are being cared for, if the quality of their air and water are improving or getting worse.**

The Nova Scotia Genuine Progress Index for Atlantic Canada  
[www.gpiatlantic.org/community.htm](http://www.gpiatlantic.org/community.htm)

## Climate Change Adaptation

“Adaptation” refers to changes that we can make at the individual, community and governmental levels to reduce risks to our health from a number of health hazards that climate change will make worse from floods, heat waves, air pollution and infectious diseases....

Adapting to the Health Impacts of Climate Change, Health Canada,  
[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)



## Climate Change and Risks

How people and nature adapt to climate change will determine how seriously it impacts human health. Some people and places are likely to be affected more than others.... Very young children and the elderly...will run the highest risks.

United States Environmental Protection Agency, Kids Page,  
[www.epa.gov](http://www.epa.gov)

## CHAPTER 5: Best Practices

This chapter showcases short, medium and long-term initiatives that are intended to produce improved health through:

- increased physical activity
- significant improvements in air, soil and water quality
- protected or regenerated physical landscapes that are safe, attractive, accessible, green, connected and inclusive at all spatial levels
- reduced inequalities through transportation options, improved healthy food access, increased housing choices, recreation (passive and active), socializing opportunities, green technologies and skills development

Improving health and sustainability through the built environment is challenging. It requires strong municipal leadership and vision, along with an integration of complex social, cultural, economic, environmental and health factors. However, taking up these challenges will help municipalities build and strengthen their community foundations so that they can meet public policy priorities while creating the conditions for economic resiliency over time.

## Do Your Community Investments Work For You?

### Next Steps

The next critical step is to examine whether healthy and sustainable community investments are yielding desired results. By developing clear performance indicators, municipalities can determine what works over time. Nimbleness and flexibility are injected into the planning framework, based on knowledge and experience gained, while timely adjustments can be made to ensure stated outcomes are achieved.



## Case Studies

These case studies are at various stages of planning, design, construction, implementation and completion. This showcase demonstrates that there is no shortage of innovative ways to meet the challenges of planning and designing for healthy communities.

1. **British Eco-Town Initiative**, Leicestershire, United Kingdom
2. **Community Energy Plan**, Toronto, Ontario
3. **Cornell – New Urbanism**, Markham, Ontario
4. **Constructed Wetland**, Cobalt, Ontario
5. **Don River Park**, Toronto, Ontario
6. **Eco-Industrial Park**, Hinton, Alberta
7. **Green Development Program Pilot**, Caledon, Ontario
8. **Green Phoenix Project**, Toronto, Ontario
9. **Greening City Hall**, Cambridge, Ontario
10. **LED Street Lighting Pilot**, Welland, Ontario
11. **Main Street North Redevelopment**, Brampton, Ontario
12. **Ontario Food Terminal**, Toronto, Ontario
13. **Queensway Community Garden**, Prince George, British Columbia
14. **Rapid Transit Initiative**, Waterloo Region, Ontario
15. **Rural Sustainability Policy Program**, Huron County, Ontario
16. **Strait Area Transit Program**, Port Hawkesbury, Nova Scotia
17. **Sustainable Transportation**, Peterborough, Ontario
18. **Temiskaming Shores Active Travel Program**, Temiskaming Shores, Ontario
19. **Vacuum Systems for Health Care**, Turku, Finland
20. **Waterfront Skate Park**, Thunder Bay, Ontario
21. **Wheel 2 Work Whitehorse**, Whitehorse, Yukon





2

## Community Energy Plan

Toronto, Ontario  
Lawrence-Allen neighbourhood  
Population: 3,505

### Contact

Halsall Associates  
2300 Yonge Street, Suite 2300  
Toronto, Ontario  
Tel: (416) 487-5256  
[www.halsall.com](http://www.halsall.com)  
[toronto@halsall.com](mailto:toronto@halsall.com)



### Initiative

Community energy planning as part of the revitalization of Toronto's Lawrence-Allen inner suburb

### Context

- 340 ha (800 acres) inner-city suburb was identified by the City of Toronto as a priority in 2006
- Development of the Community Energy Plan (CEP) is in process and a preferred community plan is to be selected
- Future neighbourhood density is under discussion
- CEP evaluates land-use and community-design options for more efficient use of energy – it takes into account the effects of spatial design and permanent infrastructure within a built environment and technical, regulatory and financial factors impacting energy use and supply
- CEP takes a 100-year long-range view and incorporates the City of Toronto's greenhouse gas reduction targets – 30% by 2020 and 80% by 2050

### Sustainability Features

#### Economic

- CEP evaluates economic and environmental feasibility of green industries or community-scale energy plants that can generate employment opportunities
- Energy-efficient improvements to existing and newly built forms and infrastructure to reduce building operating costs and lower the cost of living for individuals
- Reduced dependency on fossil fuels will increase energy security and maximize renewable energy development

#### Social

- CEP development is inclusive through the involvement of a wide variety of interested/impacted parties (e.g., community, decision makers, designers)
- Planning and consultation process increases environmental awareness and support for energy efficiency, conservation and design at the local level

#### Environmental

- Improved indoor and outdoor air quality through reduced greenhouse gas emissions
- Water efficient fixtures in buildings reduces the energy required to pump and treat water and to conserve water resources

#### Health

- Improved quality of life through improved air and water quality
- Active lifestyles will be stimulated through accessible public-transit systems, walking and cycling networks, high-quality public spaces and businesses and services within reasonable walking and public transit travel distances
- Enhanced quality of life through solar orientation of buildings to improve indoor natural lighting and the heating of living and work spaces



3

## Cornell - New Urbanism

Markham, Ontario  
Population: 261,570

### Contact

The Planning Partnership Limited  
1255 Bay Street, Suite 201  
Toronto, Ontario  
Tel: (416) 975-1556  
[info@planpart.ca](mailto:info@planpart.ca)  
[www.planpart.ca](http://www.planpart.ca)



### Initiative

Planning and design of a new community based on New Urbanism principles

### Context

- 600 ha (1,500 acres) master-planned neighbourhood containing a range of housing types including live-work arrangements, services, facilities, retail and areas for employment
- Transit-supported development with a transit spine linking Cornell with adjacent new development – Greensborough, Berczy, Wismer areas
- Future Bus Rapid Transit/Light Rapid Transit rapidway is being planned for Cornell
- Key policies: Master Plan 1993-94 (updated 2005), Cornell Secondary Plan (2008) and a community-wide Urban Design Guideline
- Community Design Plan is being developed using an integrated planning process

### Sustainability Features

#### Economic

- Increased density provides additional tax revenues for the municipality
- Community acceptance of the new neighbourhood design (e.g., permeable street grid system, laneways, limited setbacks, narrower lots, attractive public spaces, mix of housing types and greater densities) sets a precedent for future development projects
- Employment opportunities (up to 3,000 jobs) will enhance the town's tax base

#### Social

- Opportunities for social engagement and spontaneous social interaction through accessible public spaces and pedestrian-oriented streets
- Increase in safety through housing with eyes-on-the-street building design (e.g., homes facing the street with front porches, garages at the back of lots)
- Range of housing types allows for increased housing choices and aging-in-place options
- Vibrant neighbourhood with active social groups and strong community identity

#### Environmental

- Lower-carbon footprint through compact form, walking and cycling-friendly street design and protection of ecological and heritage assets
- Decreased greenhouse gas emissions through public transit availability, planned employment areas, proximity to retail and services (5 to 10 minutes) and walkable neighbourhoods

#### Health

- Parks, public amenities, nearby public transit, retail and services all serve to enhance opportunities for physical activity through walking and cycling
- Walkable, safe streets with green boulevards, medians and street trees, slows traffic and reduces risk of vehicle-related collisions
- Enhanced opportunities for social interaction and inclusion
- Exercise opportunities within a pedestrian and cycling-friendly setting





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## Don River Park

Toronto, Ontario  
West Don Lands neighbourhood  
Population: 11,000 proposed

### Contact

Waterfront Toronto  
Toronto, Ontario  
Tel: (416) 214-1344  
[www.waterfronttoronto.ca](http://www.waterfronttoronto.ca)



### Initiative

Green community infrastructure for pleasure and purpose – West Don Lands Neighbourhood

### Context

- 7.9 ha (19.5 acres) site situated adjacent to the Don River
- Park will be a reinvention of infrastructure – maximizing utility, function, usability, creativity and design – as well as functioning as a flood protection landform connecting the community to natural open space
- Process: A Waterfront Toronto (WT) project with technical review by the City of Toronto, Parks Department and design review by WT's Design Review Panel, against design excellence and sustainability criteria
- Key WT Policies: The West Don Lands Precinct Plan, Sustainability Framework, 2005, Green Building Requirements, Environmental Management Plan and Best Practice Guide: Parks and Open Space Design

### Sustainability Features

#### Economic

- Will increase the property value of the community and surrounding areas
- Community asset that will attract knowledge-based, creative industries, visitors and tourists
- Will create natural capital through the addition of urban prairie and marsh spaces

#### Social

- All-season gathering place that will provide passive and active recreational opportunities for people of all ages and income levels
- Will foster a sense of place and community
- A more inclusive and transparent planning framework through an integrated planning process and community consultation

#### Environmental

- Removal of land from the 100-year floodplain
- Tree and vegetation plantings will provide terrestrial habitat
- Reduced reliance on cars as the park and its recreational areas will only be accessible by foot, bicycle and public transit
- Regeneration of an old industrial area left idle and contaminated
- Water from precipitation, marsh and water play will be captured on site, disinfected with ultraviolet light and stored for irrigation

#### Health

- Connections through a trail system (including access under the Bala railway corridor) to nearby communities and amenities will provide walking and cycling opportunities
- Large urban prairie, marsh, open lawn area, water play, park pavilion, informal amphitheatre, skateboard park, playground and athletic field will encourage active living and social interaction





7

## Green Development Program Pilot

Caledon, Ontario  
Population: 58,000

### Contact

Sara Peckford  
Environmental Progress Officer  
Town of Caledon  
Caledon, Ontario  
Tel: (905) 584-2272 ext. 4269  
[www.town.caledon.on.ca](http://www.town.caledon.on.ca)



### Initiative

Green industrial and commercial development program through development charge discounts

### Context

- Spring 2008: One-year pilot program offering development charge discounts to new industrial and commercial developments that meet Leadership in Energy and Environmental Design (LEED) certification
- Discounts: LEED Certified: 20%, LEED Silver: 22.5%, LEED Gold: 25%, LEED Platinum: 27.5%
- Program status: June 2009 council approved the continuation of this program with recommendations for enhancing its effectiveness (e.g., development of educational resources such as local green building case studies that include data on cost versus benefits, risks and reliability)
- Year 1 uptake: One industrial building, targeted to achieve LEED-CS (Core and Shell) silver rating, with features that include a long-life, recyclable white cool surface roof to improve roof insulation and reduce cooling equipment capacity requirements, T5 energy-efficient lighting, recycled concrete as a granular base for the park lots, minimization of construction waste and drought-resistant plantings
- Town staff will be developing a green building case study based on the participating industrial building

### Sustainability Features

#### Economic

- Helps to offset developers' green cost premium
- Provides incentive to attract construction investment that results in lower environmental impacts
- Building life-cycle cost savings achieved from lower electricity, heating, cooling, water and waste disposal costs
- Lower building operations and maintenance
- Reduced demand on municipal infrastructure

#### Social

- Inclusive program development process through community engagement and numerous public consultations
- Municipal leadership in green building development

#### Environmental

- Reduction in greenhouse gas emissions
- Reduced water consumption through improved storm water management and water treatment
- Reduction in waste going to landfills through better waste management practices
- Protection and conservation of the natural environment through design, construction and maintenance of buildings

#### Health

- Improves quality of life through healthier work environments



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## Green Phoenix Project

Toronto, Ontario  
Parkdale Neighbourhood  
Population: 50,600

### Contact

Rod Layman  
Property Management Office  
Toronto, Ontario  
Tel: (416) 532-1191  
[green@phoenixplace.com](mailto:green@phoenixplace.com)  
[www.greenphoenix.ca](http://www.greenphoenix.ca)



### Initiative

Affordable rental units through green construction – Phoenix Place, 1335 and 1339 King Street West

### Context

- Addition of 21 units to an existing 136-unit rental apartment building
- Key funding sources: three levels of government, private foundations, fundraising, grants and loans and the Parkdale United Church Foundation
- Use of an integrated design process to involve the community and residents in master planning and designing for new construction and renovation
- Design considerations to be measured against the Green Globe™ Gold standard

### Sustainability Features

#### Economic

- Energy savings: hydronic heating and cooling (\$44,000/year), exterior insulation and finish (\$7,180/year), high performance, triple-glazed windows (\$8,047/year), solar wall (\$4,800/year), fresh air supply and exhaust (\$29,950/year), energy-efficient lighting retrofits (\$3,400/year)

#### Social

- Bachelor units available at below market rates (geared-to-income subsidies are not available) provide safe, comfortable, lower-cost housing
- Transparent and accountable planning and design framework helped to increase a sense of place and community
- Planned amenity space (e.g., laundry facility), community space (e.g., kitchen, food bank and other program space) and improved outdoor spaces (e.g., three roof gardens and public spaces) to support social cohesion
- Contributes to a neighbourhood that accommodates people of all incomes

#### Environmental

- Reduced annual CO<sub>2</sub> emissions from ground-source energy (120 tonnes), solar wall (20 tonnes), fresh air supply and exhaust (90 tonnes), energy-efficient lighting retrofits (12 tonnes)
- Storm water retention and reuse through roof gardens

#### Health

- Non-toxic, non-emitting and where feasible, non-synthetic finishes and materials throughout the building for improved indoor air quality
- Universal design principles used for barrier-free access
- Decent, safe shelter reduces stress for residents
- Roof gardens mitigate urban heat island effect and provide space for residents to relax and socialize
- Overall contribution to improved air and water quality



9

## Green City Hall

Cambridge, Ontario  
Population: 125,000

### Contact

City of Cambridge  
Cambridge, Ontario  
Tel: (519) 623-1340  
[www.city.cambridge.on.ca](http://www.city.cambridge.on.ca)



### Initiative

Canada's first Leadership in Energy and Environmental Design (LEED) Gold certified city hall

### Context

- Capital cost: \$30 million (completed in 2008 – on time and within budget)
- Leading-edge building features include: a semi-intensive, 135 m<sup>2</sup> green roof with plants and shrubs, over 3,000 plants in the building, a 10,000 L cistern to collect rainfall, an Atria Wi-Fi hotspot for visitor access to the internet, technological advancements including computer room cooling systems for network operations and 64.4 km (40 miles) of 10GX cable, 3.2 km (2 miles) of fibre optic cable for data, voice, security cameras and wireless access points, a publicly accessible computer kiosk with educational facts and statistics, natural lighting for 75% of the building, weather station on the roof, automated system to track indoor temperature and humidity, carbon dioxide sensors to help detect ventilation needs and partitions and certified open office furniture
- Bullfrog Power is supplied based on a net zero pollution basis and is produced from solar, wind, geothermal, biomass or low-impact hydro sources

### Sustainability Features

#### Economic

- Savings: estimated 41% in energy consumption or \$160,000/year (compared to a standard 85,000 sq ft building)
- Showcasing of local green company products and technologies that can stimulate employment and contribute to further development of new technologies for the market
- Natural value is built into the building through a four-storey living wall with a bio-filtering process tied into the building's ventilation system
- Municipal leadership in municipal green building construction

#### Social

- Adds vibrancy to the downtown area – the building is an integral component that joins together the Civic Square and functions as a community meeting place

#### Environmental

- Reduced energy consumption through use of natural lighting, occupancy sensors, internal open design concept and reduced reliance on air conditioning and artificial lights
- Reduced water consumption through the use of a 10,000 L cistern to collect rainwater for toilet flushing and water-efficient landscaping
- 50 tonnes/year reduction in greenhouse gas emissions (based on electricity and natural gas consumption)

#### Health

- Improved indoor air quality for a healthier workplace
- Walking and cycling to work is supported by shower facilities, change rooms and indoor bike lockers (for up to 5% of staff)
- Green roof and landscaping offset urban heat island effect



10

## LED Street Lighting Pilot

Welland, Ontario  
Population: 50,300

### Contact

David Ferguson, Manager  
Traffic and Parking Operations  
City of Welland  
Welland, Ontario  
Tel: (905) 735-1700 ext. 2202  
[www.welland.ca](http://www.welland.ca)



### Initiative

Energy-efficient light-emitting diode (LED) street lighting to meet performance and energy needs

### Context

- October 2007: first installation of 47 LED 90 W luminaires along a North American municipal road to replace high pressure sodium (HPS) light fixtures
- Municipal surveys conducted in early 2008 to assess public perception – 70% positive responses based on energy savings, cost savings, brighter light, white colour and decreased glare
- Pilot project is based on municipal council's Strategic Plan 2007-2012 focused on Asset Management and Financial Stability, the Environment and Healthy Communities, to become a green community and reduce energy/power consumption and pollution by exploring and using more environmentally-friendly products
- Program is extended to East Main, King and Cross Streets with 49 top luminaires and light engine obtained from Ontario sources
- Request For Proposal (RFP) was issued to remove and dispose of existing HPS units and to replace them with LED lighting (RFP expired in July 2009)

### Sustainability Features

#### Economic

- Reduced energy consumption (5,255 watts/day) yielded annual savings of \$1,816
- LED lights run cooler, are safer and are less fragile than the 150-watt hot burning HPS lights, reducing need for relamping (lifespan – 15 years based on Canadian cold weather conditions compared to two and a half years for HPS lights)
- Full conversion of all 6,573 street lights would yield an estimated savings of \$364,000 per year from current annual cost of \$551,629 for electricity and maintenance/capital costs
- Municipal leadership in energy-savings technology – some local businesses are exploring the benefits of using LED lighting

#### Social

- Enhanced visibility and safety for pedestrians and motorists
- LED lighting source provides directional lighting (i.e., lighting where lamps are aimed), eliminating wasteful skyward lighting and on-the-ground light trespassing (i.e., reduces night-light pollution)

#### Environmental

- Reduced consumption from a traditional source of energy by 52%
- Annual CO<sub>2</sub> savings of 10,720 kg (23,633 lbs), reduces CO<sub>2</sub> by 0.74 kg/kWh (1.64 lbs/kWh)

#### Health

- Correlated colour temperature is relatively close to daylight lighting
- Evening visibility improves pedestrian and vehicle safety



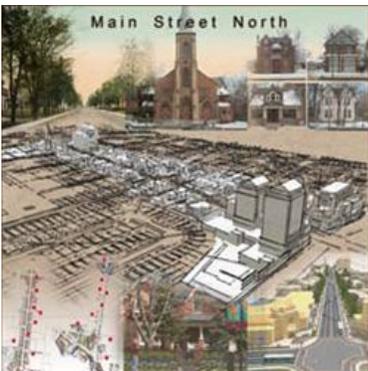
## 11

### Main Street North Redevelopment

Brampton, Ontario  
Population: 472,000

#### Contact

Alex Taranu, Manager, Urban Design  
and Public Buildings  
City of Brampton  
Brampton, Ontario  
Tel: (905) 874-3454  
[alex.taranu@brampton.ca](mailto:alex.taranu@brampton.ca)  
[www.brampton.ca](http://www.brampton.ca)



#### Initiative

Regeneration of an existing historic area

#### Context

- Regeneration through heritage preservation and integration, intensification and infill – increased intensification at each end of the redevelopment area in order to form gateways
- Retrofitting the street for pedestrians and public transit
- Public investment in infrastructure and quality streetscaping
- Private sector focused on residential development including reuse and retrofitting of heritage buildings
- Process: intensive public consultation, Urban Design Study (including heritage study) and implementation of Phase 1 streetscape enhancements
- Development Permit System is proposed to implement the community vision and to ensure quality development focused on built form control and guidance

#### Sustainability Features

##### Economic

- Intensification through a variety of residential and employment uses including mid-rise rental and condominium buildings, townhouses, live-work arrangements, retrofitted heritage buildings for employment uses (office, business, services) will contribute to managing population growth and to a wider municipal tax base
- Local businesses will be supported through on-street parking
- Existing building stock will be reused to provide small business opportunities to relocate into the area

##### Social

- Retention of the neighbourhoods historic character will help to continue the area's social stability
- Redevelopment will support a mix of social and income groups
- Public space improvements will provide opportunities for social interaction

##### Environmental

- Provision of public transit and proximity of residential and employment opportunities close to the GO Station and mobility hub will contribute to reducing greenhouse gas emissions and air pollutants through less car usage
- Reuse of existing buildings with their embedded energy will help to avoid demolition and generation of construction waste
- Low-impact development elements (trees, pervious surfaces, bioswales, green roofs) will support limited municipal infrastructure capacity, reduce heat island effect, improve air quality and reduce storm water storage

##### Health

- Higher-order transit and streets designed for speed reduction (e.g., on-street parking) will improve safety and encourage increased pedestrian activity
- Public realm improvements will create conditions for better physical and mental health for people of all incomes, ages and capabilities



12

## Ontario Food Terminal

Toronto, Ontario  
Population: 2.48 million

### Contact

Ontario Food Terminal Board  
Toronto, Ontario  
[www.oftb.com](http://www.oftb.com)



### Initiative

Regional access to healthy foods (local and imported)

### Context

- Largest wholesale fruit and produce distribution centre in Canada and the fourth largest in North America after New York, Los Angeles and Chicago
- Wholesale operation since 1954, governed by a provincially-appointed Board of Directors through the Ministry of Agriculture, Food and Rural Affairs
- Ontario Food Terminal (OFT) is a financially self-sustaining distribution centre composed of office space, a common cold storage facility (80,000 sq ft or 7,432 m<sup>2</sup>), leased warehouse space, staging area, loading docks, parking space (1.6 ha or 4 acres), centralized garbage collection, cleaning and recycling facilities and a 4 ha (10 acre) wholesale farmers' market venue (since 1954) where farmers and Ontario/Canadian dealers can sell fruit, vegetables, flowers and plants directly to registered buyers
- Key OFT principles: ensure high quality produce is provided to the Ontario consumer at competitive prices; provide a central marketplace for Ontario growers and produce wholesalers to sell their produce directly the wholesale and retail trade; foster a competitive market where buyers and sellers can freely negotiate prices and terms of sale
- Low-impact storm water management practices: a 750 m boulevard with 225 popular trees (2007) and a 120 m bio-swale at the OFT entrance (2008)

### Sustainability Features

#### Economic

- Farmers' market venue (450 leased tenants) allows producers to sell their products directly to over 5,000 registered buyers with business licenses
- A centralized, 24-hour/day market that allows the OFT to maximize economies of scale and increase market efficiency
- Space rental at less than market prices (i.e., warehouse wholesalers pay for operation costs) contributes to competitive pricing of fruits and vegetables that are sold to local grocery chains, restaurants, small family-run grocers, food service providers, florists, fruit and produce vendors, etc.
- Ontario growers can sell their fresh fruits, vegetables, plants and flowers locally and directly to retailers

#### Social

- Competitive pricing environment allows smaller retailers to establish businesses within residential areas (e.g., family-run grocers)

#### Environmental

- Farmers' market portion reduces greenhouse gas emissions through reduced long-distance food transportation
- Improved water quality and on-site irrigation or groundwater recharging

#### Health

- Contributes to a more vibrant regional healthy food economy





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## Rapid Transit Initiative

Waterloo Region, Ontario  
Population: 515,600

### Contact

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### Initiative

Strategic planning for compact, mixed-use, transit-oriented development along the Central Transit Corridor (CTC)

### Context

- Regional rapid transit system structured around nodes and corridors that connects three urban municipalities – Waterloo, Kitchener and Cambridge
- Policy framework: 2003 Regional Growth Management Strategy, Provincial Growth Plan for the Greater Golden Horseshoe, 2009 Regional Official Plan focused on the CTC
- Regional Reurbanization Community Improvement Plan supports the policy framework by allowing council to purchase key properties in the CTC as part of a program to stimulate private sector investment
- Regional Council may specify development requirements through the issuance of Request for Proposals and/or collaborations with the private sector on a site-by-site basis
- Regional government leadership in the creation of complete communities

### Sustainability Features

#### Economic

- Will encourage new investment in key urban areas while supporting existing businesses
- Will make more efficient use of lands, infrastructure and services
- Will focus growth in existing urban areas so that agricultural and rural lands can be preserved
- Will help to retain and increase employment and residential opportunities

#### Social

- Safer neighbourhoods will result in more active, pedestrian-friendly streets
- Will improve access to health, education and social services
- Creation of a range and mix of housing will increase housing choices
- Conservation of heritage properties will retain the neighbourhood character

#### Environmental

- Will reduce energy consumption resulting from an increasing use of sustainable modes of transportation per capita
- Will reduce greenhouse gas emissions through improvements to the ecological health of the community including the redirection of growth away from sensitive environmental resources
- Air quality improvements will occur through reduced vehicle use

#### Health

- Built environment will provide more opportunities for people to become more physically active and socially engaged



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## Rural Sustainability Policy Program

Huron County, Ontario  
Population: 59,400

### Contact

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### Initiative

County-wide planning and designing for rural sustainability and growth management

### Context

- Sustainable initiative responds to global trends over the next two decades
- Municipally-led action planning to build community capacity and awareness through ten themes: economy, transportation, agriculture, energy, livable communities, natural environment, population, downtowns, community needs, healthy active communities
- Public engagement: 54 meetings, 1,200 participants and 550 written submissions between 2007 and 2008
- Draft 2009 Plan includes goals, community actions, suggestions for individual actions and performance indicators

### Sustainability Features

#### Economic

- Focus is on local business retention, expansion and diversification
- Will build on local skills and resources through education and training
- Agricultural land to be preserved and agricultural industry diversification to be promoted; marginal and sensitive agricultural lands are to be reforested
- Promotion of local food products will be accompanied by marketing campaigns and signage strategies
- Growth is to be directed to settlement areas (intensification, redevelopment and infill)

#### Social

- Will create livable communities through heritage building preservation, downtown development, high standard of building and site design and naturalized streetscaping designs
- Community engagement increases social inclusiveness and makes the planning framework more transparent

#### Environmental

- Energy efficiency and reduced energy and water consumption will be achieved through means such as green buildings, low-energy replacement program for street and traffic lights, minimized outdoor lighting with sensors, wind turbine energy generation and smart meter installations in all new construction
- Will add value to the natural environment by ensuring connected natural areas, clean water and diverse flora and fauna

#### Health

- Transportation to be focused on multi-modal options: walking, cycling, carpooling and public transit, to meet and balance mobility and active living needs
- Community physical and mental health needs to be met through housing, services, recreation, education, culture and entertainment, policing services and community functions that enhance social cohesion and sense of place (e.g., school gardens, annual picnics)



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## Strait Area Transit Program

Port Hawkesbury, Nova Scotia  
Population: 14,360

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[www.strait-highlands.ns.ca](http://www.strait-highlands.ns.ca)



### Initiative

Co-operative rural regional transportation program – one-year pilot program to provide accessible, safe and affordable transportation for rural residents

### Context

- Pilot started in October 2008 – serves Richmond County, Towns of Port Hawkesbury and Mulgrave and parts of Inverness County (includes four municipal units)
- Community-based concept supported by a Feasibility Study (January 2007) and a Business Plan (January 2008)
- Co-operative, fee-for-service regional model (\$10 annual membership)
- Over 45 partnerships with many providing financial contributions – included are service organizations, municipal units, provincial and federal departments and the private sector
- Increasing ridership: 561 trips in June 2009 from 214 in November 2008
- Capital Costs: about \$191,000 (20 passenger accessible bus) and two vans
- Operational Costs: \$253,000 for year one
- Review and consideration for the extension of service at the end of the pilot

### Sustainability Features

#### Economic

- Affordable service that allows people of all capabilities to reach services, education, employment, shopping and training destinations
- Allows people to meet their obligations (many were missing appointments because of lack of transportation)
- Operational revenue: \$55,000 annual (\$1.60/capita funding formula)
- Addresses Strait Area's dispersed population, services, educational and employment opportunities

#### Social

- Inclusive service for seniors, students, persons with disabilities and anyone else living in the serviced area
- Gives rural residents the option of staying where they live

#### Environmental

- Go Green Policy: reduced emissions (no idling policy, use of low sulfur diesel fuel, appropriately-sized vehicles to meet passenger numbers, regular trips into remote communities to accommodate as many people as possible per ride)
- One bus equals 40 vehicles off the road, reduces air pollution by 9 tonnes per year and creates less water pollution from leakages from vehicles (e.g., brake and engine fluid)
- Studies have shown that transit travel consumes about half the energy and produces only 5% as much CO, 8% VOCs and about 50% of CO<sub>2</sub> and NO<sub>x</sub> emissions per passenger mile, relative to an average automobile

#### Health

- Independence and dignity for users who can lead productive, healthy lives
- Allows residents to stay in the rural area without becoming isolated



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## Sustainable Transportation

Peterborough, Ontario  
Population: 75,000

### Contact

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### Initiative

Active and safe transportation planning and programming for students and families – Peterborough Moves On Sustainable Transportation

### Context

- Promotes active and efficient transportation for daily trips to school, to address health, traffic safety, air quality and climate change
- Partnerships: Peterborough Green-Up, Peterborough County-City Health Unit, Transport Canada, Wild Rock Source for Adventure
- Support from Green Communities Canada and Transport Canada: information sharing, program coordination and capacity building
- Municipal Framework: Sidewalk Strategic Plan (2008), idling control by-law (2008), Crossing Guards of Peterborough Awareness Program, Transportation Plan (2002), municipal interdepartmental trails committee
- Supporting Programs: IWALK events, Shifting Gears for High School, On the Bus Workshops, Grade 8 Transit Quest, child-friendly School Travel Map Pilot Program, Adult Cycling Skills Course, Cool Captain Climate transportation show

### Sustainability Features

#### Economic

- Reduces school board and parent transportation costs
- Decreases risk of vehicular accidents
- Less vehicles on the road means less road wear over time

#### Social

- Improves social capital by promoting cooperation among parents
- Increases opportunities for children to socialize with peers while walking or taking public transit
- Encourages independence and promotes self-confidence in high school students when walking, cycling or taking public transit with their peers

#### Environmental

- Reduced vehicle emissions in the school zone where children spend a significant amount of time during the average week

#### Health

- Promotes responsible and active lifestyle habits for young people
- Reduces children's exposure to higher levels of pollutants while traveling inside cars or on diesel-run school buses
- Reduces children's level of stress through less exposure to low-level chronic traffic noise



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## Temiskaming Shores Active Travel Program

Temiskaming Shores, Ontario  
Population: 10,500

### Contact

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### Initiative

Active living through the development, management, preservation and promotion of a system of integrated activity lanes in South Temiskaming

### Context

- 19.7 km (12.25 miles) year-round activity lane/path that goes along the waterfront and connects the three neighbouring centres and a variety of city anchors – retail, museums, art galleries, sport facilities, libraries, schools, medical facilities
- South Temiskaming Active Travel Organization (STATO), a not-for-profit group was formed in April 2004 to develop an active transportation route through the city to highlight the waterfront and to connect to neighbouring Dymond, New Liskeard and Haileybury
- In 2006, the city passed by-laws to enter into a Strategic Alliance Agreement with STATO to develop a linear park system and for a Linear Park/Trail Activity Maintenance Program at a preliminary cost of \$26,300
- Supporting tools: South Temiskaming Event Calendars, Walkolution News

### Sustainability Features

#### Economic

- Supports regional tourism
- Supports growth management strategies
- Increased business investment associated with the activity lanes (e.g., cycling, kayak and canoe rental kiosks and repair shops)

#### Social

- Connection of nearby communities as a result of the linear trail
- Quality of life is enhanced for community residents
- Increased opportunity for socializing and relaxation

#### Environmental

- Protects and capitalizes on Lake Temiskaming and the area's scenic vistas, which are the area's most valuable assets
- Reduces greenhouse gases through decreased car usage

#### Health

- Increased opportunities for unstructured physical activity
- Provides choices for more active living through an accessible and safe linear park network



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## Vacuum Systems for Health Care

Location: Turku, Finland  
Population: 175,700

### Contact

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North America  
Sudbury, Ontario  
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[www.ecosir.com](http://www.ecosir.com)



### Initiative

Sustainable waste management systems in health care facilities and retirement residences – biowaste and linen tube conveyer for the Kaskenlinnan Hospital

### Context

- Small bore diameter pneumatic tube systems contained within building walls through strategically located pipe systems, with collection bins that can be located up to two km from the facility being serviced
- Used in health care facilities around the world to reduce the risk of transmitting diseases through human contact with soiled linens and other wet waste products
- Wet waste products are compacted prior to being picked up by waste haulage trucks
- Work was commissioned in Spring 2009

### Sustainability Features

#### Economic

- Will reduce the need to physically transport soiled linens and waste through facility corridors
- Savings: two full time positions at €40.000/year per employee (about \$63,100 CDN/employee)
- Capital cost of system: €350.000 (about \$552,200 CDN)
- Will reduce the need to provide space in buildings for traditional laundry and waste collection
- Will reduce wear on roads leading to and from the hospital
- Will reduce health-related costs caused by disease transmission

#### Social

- Will help to reduce the spread of microbial contaminants through physical contact (i.e., hands and airborne sources are the most common means for spreading diseases)

#### Environmental

- Will help to reduce greenhouse gas emissions and noise levels through the reduction of waste collection trucks going through the area

#### Health

- Will improve health prospects for health care and retirement facility residents, employees and visitors through reduced exposure to potential diseases
- Will contribute to improved air quality through the reduction of traffic in the area



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## Waterfront Skate Park

Thunder Bay, Ontario  
Population: 109,140

### Contact

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Recreation and Culture  
City of Thunder Bay  
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### Initiative

Designing urban public space for active living and youth recreation – Prince Arthur's Landing Skateboard/BMX Plaza

### Context

- City Master Plan and Urban Design Guidelines for Prince Arthur's Landing at Marina Park guide development and design for the waterfront
- City's vision and design principles include: priority on public art, new public amenities and attractions, projects that will transform the waterfront into a year-round destination, expansion of the range of land uses to promote economic renewal and increasing public park spaces
- Projects will be phased in over five years to minimize impacts on park users
- Youth-related public consultations identified the need for active and passive recreational opportunities
- Partnership: the Thunder Bay Skate Coalition and the city joined together to raise funds as contribution towards the cost of the \$1 million skate plaza
- Features a world class skateboarding terrain, locally inspired art installations and casual socializing space – 25,000 sq ft (2,322.5 m<sup>2</sup>) total area – three distinct areas (Bowl, Plaza and Entrance) to accommodate skateboarding styles and ability, while providing spectator opportunities

### Sustainability Features

#### Economic

- Design will attract world-class skateboarding competitions and is expected to be a draw for visitors to the city
- Skateboarding damage to public and private properties is reduced by providing an accessible facility for all skateboarders
- Relatively inexpensive sport that emphasizes creativity and physical development
- State-of-the-art facility is part of a larger waterfront regeneration plan to expand economic growth through tourism, resident retention and business attraction

#### Social

- Engagement of people in healthy, physical activity within a highly accessible and visible area and accommodations are made for spectators and parents who can relax, watch and socialize
- Aesthetically pleasing and complementary to the surrounding landscape
- Helps to strengthen a sense of community

#### Environmental

- Sustainable landscaping and built form through local and recycled materials – use of local stone work on key ledges and walls

#### Health

- Encourages healthy, active lifestyles, especially for young people
- Supports the fastest growing athletic activity for youth



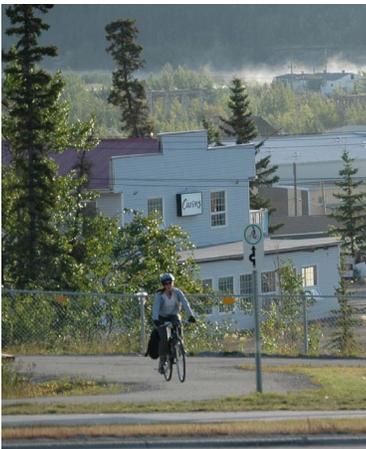
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## Wheel 2 Work Whitehorse

Whitehorse, Yukon  
Population: 21,000

### Contact

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### Initiative

Community bicycle program to promote active living and improved air quality

### Context

- Active transportation program supported by a four-month marketing campaign held in 2006 and 2007 and by incentive prizes to encourage more summer-time bicycle commuting
- Municipal infrastructure investment: \$2 million – included improved trail linkages between downtown and residential areas, a new pedestrian and bicycle bridge over the Yukon River, improved lighting, on-street bicycling lanes, staircase with a bicycle ramp, signage and new artisan-designed bicycle racks in the downtown area
- Program Purpose: To ensure that the investments made to improve the city's numerous bicycle networks were optimized through use by residents
- Key Policies: 2002 Official Community Plan, Transportation Study, 2002, the 2006 Downtown Plan, 1995 Council resolution committing Whitehorse to reducing greenhouse gas emissions, 2004 Local Action Plan to Reduce Energy and Greenhouse Gas and the Urban Transportation Showcase program
- Supporting tools/infrastructure: online bicycle route maps and safety information, bicycle maintenance and repair workshops, incentives for cycling to work, artisan-designed bicycle racks, on-street bicycle lanes and markings and improved safety signage for bicycles along major arterials
- Municipal efforts build on an impressive walk/cycle modal split of 12%, compared to other Canadian communities of similar size (2006 census)
- Good public response to the program required additional administrative resources for program continuance – discontinued after 2007

### Sustainability Features

#### Economic

- Economic support for downtown businesses through improved pedestrian and bicycling links to residential areas

#### Social

- Fostered social cohesion amongst bicycle commuters
- Improved accessibility to trails and linkages between residential areas and downtown created a supportive environment for encouraging travel behavior changes

#### Environmental

- Improved air quality: 40,000 km (24,855 miles) of bicycle travel logged in 2006 offsets approximately 4.5 tonnes of greenhouse gases equivalents

#### Health

- Increased physical activity



## For More Information



### Ministry of Municipal Affairs and Housing

Provincial Planning Policy Branch

Web Page: [ontario.ca/mah](http://ontario.ca/mah)

### Municipal Services Offices

For information and assistance, contact one of our five Municipal Services offices or visit the Ontario Regional Area Municipal Portal:

[www.mah.gov.on.ca/OnRamp](http://www.mah.gov.on.ca/OnRamp)

#### Central (Toronto)

(416) 585-6226 or 1-800-668-0230

#### Western (London)

(519) 873-4020 or 1-800-265-4736

#### Eastern (Kingston)

(613) 545-2100 or 1-800-267-9438

#### Northeastern (Sudbury)

(705) 564-0120 or 1-800-461-1193

#### Northwestern (Thunder Bay)

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