

6 ACTIVE TRANSPORTATION: CYCLING AND WALKING

6.1 General Objectives and Goal of Active Transportation

Municipalities across Ontario are implementing initiatives to encourage active transportation as a viable alternative to private automobile for short-distance trips and as a method of promoting a more active and healthy lifestyle. The following section discusses some of the key health and fitness, transportation, environmental, economic and tourism benefits associated with active transportation.

6.1.1 Health and Fitness

Walking and cycling provide an enjoyable, convenient and affordable means of exercise and recreation. Research suggests that the most effective fitness routines are moderate in intensity, individualized and form part of our daily activities. Studies such as the one undertaken by the National Collaborating Centre for Environmental Health (NCCEH) in 2010 have shown that people who use active transportation are, on average, more physically fit, less obese and have a reduced risk of cardiovascular disease. Some key facts and information about the health and fitness benefits of active transportation include:

- In 2001, approximately \$2.8 billion was spent on health care due to physical inactivity in Canada. This could be reduced by \$280 million if physical activity were increased by 10% (Business Case for AT, Go for Green, 2004).
- Improved cycling facilities lead to increased bicycle use. Increased physical activity such as walking, cycling and other trail-related activities can help reduce the risk of coronary heart disease, premature death, high blood pressure, obesity, adult-onset diabetes, depression and various types of cancer.
- The most visible effect of physical inactivity is obesity, and there has been a sharp rise in cases across Canada in recent years. Almost half of Canadians aged 12 and over report being physically inactive and 26% of youth between the ages of 2 and 17 years old are overweight or obese (Statistics Canada 2005).
- The proportion of overweight and obese adolescents aged 12-17 doubled from 14% to 29% between 1979 and 2004, and today only 12% of children and youth get adequate levels of physical activity.
- Exploring different modes of active transportation can enhance one's mental outlook and well-being, improve self-image, social relationships and increase self-reliance by instilling a sense of independence and freedom.
- A recent report from the World Health Organization (WHO) concluded that a significant shift from private motorized vehicles to walking, cycling and public transit could also reduce:
 - Cardiovascular and respiratory disease caused by air pollution;
 - Traffic-related injuries;
 - Noise and noise-related stress; and
 - Chronic diseases such as type 2 diabetes, heart disease and cancers that are associated with physical inactivity.



These benefits may be achieved by making strategic investments in both infrastructure and outreach initiatives. The City of Greater Sudbury can support the incorporation of active transportation into people’s daily commuting habits, fitness and recreational routines by:

- Providing educational information and promotion in schools, businesses, and community centres;
- Implementing pedestrian and bicycle facilities that offer feasible transportation alternatives to automobile use;
- Creating a pleasant and safe environment with less noise and air pollution; and
- Including health and equity impacts in cost-benefit assessments that are directed at transportation projects and planning.

6.1.2 Transportation

Aside from being popular recreational activities, walking and cycling are also efficient, affordable, environmentally-friendly and accessible means of transportation. The wider benefits of walking, cycling and other active transportation modes include: reduced road congestion and greenhouse gas emissions; cheaper infrastructure, including lower maintenance costs; road safety improvements; and lower user costs compared to motorized vehicles (NCCEH, 2010). In many cases, for distances up to 10 km in urban areas, cycling can be the fastest of all modes from door to door.

Canadians make an average of 2,000 car trips per year over distances of less than 3 kilometres. Surveys show that 66% of Canadians would like to cycle more than they presently do. A 2005 survey by the Ministry of Health Promotion of Ontario indicated that seven in ten Ontarians would cycle to work if there “were a dedicated lane which would take me to my workplace in less than 30 minutes at a comfortable pace”. These facts clearly demonstrate the potential for increasing the number of bicycle trips in the City of Greater Sudbury.

Typical roadway funding requirements include maintenance, safety and enhancement costs plus the addition of roadway capacity through lane widening or additions. These are usually paid for by road users through property and gas taxes. An emphasis on walking, cycling and other active transportation modes can result in a reduction in roadway costs. Bicycles are lightweight vehicles that take up little space and cause minimal wear and tear on a road surface.

A roadway could carry 7 to 12 times as many people per lane per hour if they were travelling by bicycle as opposed to motor vehicle in urban areas operating at similar speeds. It is also much less costly to provide paved shoulders on a road for cyclists than to provide additional motor vehicle travel lanes. A small portion of a municipality’s transportation budget, if well targeted, can have a significant impact on facilitating bicycle use.

It is important to develop integrated active transportation networks. The greater the connectivity and reach of a network, the more potential it has to encourage cyclists and pedestrians to use it. While it may be convenient or cost-efficient to implement facilities in sections, their effectiveness will be compromised if potential cyclists feel that the provisions are not adequate or safe along the entirety of their route. The period over which the links in a network are implemented should therefore be as short as possible.



6.1.3 Environment

Active Transportation modes of travel are clean and energy-efficient. Motor vehicle trips over a short distance are the least fuel efficient and generate the most pollution per kilometre. These trips have the greatest potential of being undertaken by walking or cycling alone, or integrated with transit.

Reducing the number of motor vehicles on the road decreases the quantity of pollutants released into the atmosphere by motor vehicles. The effects of climate change can be reduced by encouraging drivers to use other modes. Motor vehicles, roads and parking facilities are major sources of water pollution and hydrologic disruptions due to such factors as road de-icing, air pollution settlement, roadside herbicides, road construction along shorelines, and increased impervious surfaces.

Motor vehicles generate various types of unwanted noise that cause disturbance and discomfort to residents. These include engine acceleration, contact between tires and the road, braking, the use of horns and vehicle theft alarms. Bicycles make little noise and are not disruptive to local residents. Automobile-dependent communities require more land for road rights-of-way and parking than those that are more sustainable. Reducing car dependence by providing infrastructure for alternative transportation modes, such as walking, cycling and public transit, results in more compact subdivisions that make more efficient use of available land.

6.1.4 Economic

A study published by Go for Green in March of 2004 establishes a convincing Business Case for Active Transportation in the report entitled 'The Economic Benefits of Walking and Cycling' (BEST, 2004). These benefits include reductions in:

- Road construction, repair and maintenance costs;
- Costs due to air pollutants and greenhouse gas emissions;
- Long-term health care costs;
- Fuel, repair and maintenance costs to users;
- Collision-related expenses; and
- Lost productivity due to traffic congestion.

There is ample evidence that on and off-road active transportation facilities provide significant economic benefits for adjacent landowners and local businesses. The wider economy also benefits, during both construction and operation, in the form of demand for materials and jobs associated with their installation. Following construction, commercial and retail outlets connected to the active transportation network will benefit from expenditure related to pass-by pedestrian and cycling trips.

Reduced car use may also decrease the number of parking spaces required for residential and retail complexes as well as places of employment. For new developments, less space may need to be dedicated to parking in areas where bicycle usage is high. In existing buildings, bicycle parking facilities may be provided in a surface or underground parking lot at minimal cost.

In addition, bicycle manufacturers, sales and repairs, as well as bicycle tourism, recreation and delivery services contribute to the economy with little to no public investment or subsidy.



Finally, trail systems can attract tourists, either as travel destinations in themselves, or as recreational facilities that will encourage visitors to stay in the area longer. This will result in additional nights' lodging and meals, a direct benefit to local businesses.

6.1.5 Tourism

It has been shown that there is a growing demand for cycling and eco-tourism throughout Ontario and North America. The demand stems from an increasing desire to explore new areas through an active mode of transportation and experience one's natural surroundings. In all cases the increase in cycling and active tourism has a direct impact on the economy of a Municipality, County or Region.

When looking at pedestrian, cycling and trail related tourism, one must consider all expenditures associated with these trips, including hospitality-related costs which may accrue over time. Though tourism-related benefits from Active Transportation facilities provide an injection into the local economy, there are also a wide range of social, environmental and health benefits associated with AT and trail tourism. As people become increasingly more aware of the benefits of trail use and other pedestrian and cycling activities, there tends to be a continuous increase in the number of cycling tourists.

Over the last ten years, the concept of active transportation and the development of pedestrian and cycling networks has been gaining popularity because the health, social, environmental, economic and tourism benefits are so substantial. There is clear evidence of benefits associated with active transportation, cycling and pedestrian friendly communities and encouraging people to be more active by walking and biking more often for both recreational and utilitarian purposes. Promoting active transportation through the development of an integrated on and off-road system can encourage people to reduce their use of the personal automobile and create sustainable, livable, safe and active communities.

6.2 Network Planning Guiding Principles for Active Transportation

One of the key inputs into development of the recommended AT route network for the City of Greater Sudbury was the following set of network planning guiding principles, shown in **Table 26**. These were developed by the study team and reviewed with the public as well as key stakeholders in the initial stages of the study. The principles guided the initial stages of the route selection process. They should be reviewed in the future as part of the detailed feasibility assessment on a route by route basis, and also when any future network changes are being contemplated.



Table 26: Network Planning Principles

VISIBLE	Active transportation routes should be a visible component of the transportation system.
CONNECTED / LINKED	The Active Transportation network should link important destinations throughout the City such as commercial, employment and residential areas, community centres, leisure, recreation and tourist destinations, parks and schools. The City-wide network should link existing and planned Active Transportation and trail facilities and should be seamlessly connected to neighbouring municipalities. Active Transportation routes should cross major barriers such as railways, highways, major arterial roads, valleys and rivers.
INTEGRATED	The network should be integrated with other modes of transportation, particularly public transit. Routes will provide access to existing and planned future transit stations and hubs.
ATTRACTIVE & INTERESTING	Routes should take advantage of attractive, scenic areas and vistas. They should provide users with the opportunity to experience and appreciate the natural and cultural heritage of the Greater Sudbury area.
FACILITY TYPE VARIATION	The bicycle facility network should appeal to the full range of user abilities and interests by including an equally wide variety of facility types.
ACCESSIBLE	Off-road routes should be accessible at as many points as is practical. Routes should be appropriately signed to communicate the level of accessibility so that users can make their own decision about use based on their personal level of mobility. Routes should be easily accessible from local neighbourhoods within Greater Sudbury.
SUSTAINABLE	Sustainability should be a key consideration in the alignment, design and selection of materials for on and off-road Active Transportation facilities.
CONTEXT SENSITIVE	Facility design for individual routes should follow widely accepted guidelines but may also be modified to respond to the immediate surroundings. For example, off-road routes should be appropriately located when associated with natural heritage features; each site's characteristics should be carefully considered when the alignment and design details are being developed for routes in natural heritage areas.
COST EFFECTIVE	Proposed facilities should be affordable and appropriate in scale for the City. The cost to implement and maintain the facilities and supporting amenities should be phased over time. User safety must not be compromised in the interest of minimizing initial construction or ongoing operational costs. Opportunities for partnerships with other levels of government and outside organizations should be pursued wherever possible.



6.3 Existing Active Transportation Policies and Initiatives

This section identifies and discusses key Federal, Provincial and Local policies that directly influence active transportation in Greater Sudbury. This provides an understanding of the current policy framework and establishes a base for the active transportation component of the City of Greater Sudbury Transportation Study Report.

Federal

In 2005, Transport Canada released a report entitled ‘Strategies for Sustainable Transportation Planning: A Review of Practices and Options’. The purpose of this report is to provide a foundation on which to build a set of guidelines for incorporating sustainable transportation principles into municipal transportation plans. Some of these principles include the creation of policies related to walking and cycling that can be used to develop effective, realistic transportation plans that promote sustainable transportation on a federal level. Some of the key objectives are listed below:

Integration with Land Use Planning

- Encourage desirable land use form and design (e.g. compact, mixed-use, pedestrian/bike-friendly) through transportation plan policies.

Environmental Health

- Identify strategies to mitigate the air impacts of transportation activities;
- Identify strategies to mitigate the noise impacts of transportation activities;
- Identify ways that transportation systems influence the achievement of the community’s economic and social objectives. Provide support in the plan’s strategic directions;
- Recognize the importance of ensuring access to opportunity for disabled and low-income persons, recent immigrants, youth and the elderly. Set goals and objectives for reducing the need to travel, improving transit mobility, and preserving minimum levels of service on roadways. Identify related strategies;
- Address the transportation needs of persons with disabilities, notably with regard to public transit service and barrier-free design in public rights-of way;
- Recognize the public health impacts of transportation activity arising through road safety, pollution and physical activity levels. Identify effective strategies to strengthen positive impacts and lessen negative ones;
- Recognize the impact of transportation related death and injury on quality of life and the economy. Set goals and objectives for multimodal road safety; and
- Identify effective road safety strategies.

Modal Sustainability

- Identify strategies, policies, facilities and services to increase walking, cycling, other active transportation modes, transit, ridesharing and teleworking;



- Recognize synergies and tensions among different modes (e.g. potential for multimodal cycling-transit trips, potential for modal shift from transit to ridesharing). Address possible implications for transportation objectives; and
- Include objectives, strategies, policies, facilities and services to make transit operations more sustainable.

The publication of this document and the recommended policies and strategies identified within it illustrate the federal initiatives currently being undertaken to develop national standards and practices to improve conditions for walking and cycling across Canada.

Provincial

There are a wide range of provincial policies that influence Active Transportation in Ontario. The following summary highlights the most relevant provincial policies.

Bill 51 – Planning Reform, 2006

Bill 51 includes reforms to the Planning Act, which provides the legislative framework for land use planning in Ontario. Bill 51 includes changes to the planning process that are intended to support intensification, sustainable development and protection of green space by giving municipalities greater powers, flexibility and tools to use land, resources and infrastructure more efficiently.

Bill 51 is in line with Ontario’s recent policy shift towards sustainable land use development and planning. For instance, Bill 51 permits municipalities to require that individual buildings and entire neighbourhoods be designed to be environmentally sustainable. It also adds sustainable development as a provincial interest in the Provincial Policy Statement.

Provincial Policy Statement, 2014

The Provincial Policy Statement (PPS) sets the foundation for regulating land use and development within the Province and supports Provincial goals. The PPS provides for appropriate development and protects resources of provincial interest.

The PPS promotes transportation choices that facilitate pedestrian and cycling mobility and other modes of travel. The term “transportation systems” under the PPS means a system consisting of corridors and rights-of-way for the movement of people and goods and the associated transportation facilities, which include cycling lanes and Park ‘n’ Ride lots. Policies pertaining to transportation, such as cycling, pedestrians and transit are dispersed throughout the PPS.

Municipal Act, 2001

The Municipal Act, 2001 provides municipalities with broad flexibility to deal with local circumstances and to react quickly to local, economic, environmental or social changes. It recognizes municipalities as responsible, accountable governments with respect to matters within their jurisdiction. The Act provides policies relating to a municipality’s jurisdiction over municipal highways and the maintenance of those highways, which has an impact on cycling.



Highway Traffic Act, 1990

Bicycles are recognized to be vehicles as defined in the Highway Traffic Act (HTA). This means that bicycles can operate on public roadways with the same rights and responsibilities as motor vehicles. However, bicycles are not permitted on controlled access highways such as the 400 series highways or on any roadway where they are prohibited by a municipal bylaw.

The Highway Traffic Act contains a number of policies relating to bicycles, including bicycle lanes on municipal roadways, vehicles interacting with bicycles, bicycles being overtaken and the regulation or prohibition of bicycles on highways.

Accessibility for Ontarians with Disabilities Act, 2005

The Accessibility for Ontarians with Disabilities Act was passed on June 13, 2005. It is a provincially legislated policy which calls on the business community, public sector, not-for-profit sector and people with disabilities or their representatives to develop, implement and enforce mandatory standards. Ontario is the first jurisdiction in Canada to develop, implement and enforce accessibility standards, which apply to both private and public sectors.

These accessibility standards are the rules that business in Ontario should follow to identify, remove and prevent barriers to accessibility. The Accessibility Standards for Customer Service were the first to come into effect; however, Ontario is also developing requirements related to the built environment, employment, information and communications and transportation.

Planning By Design – Healthy Communities, 2009

In 2009, the Ontario Ministry of Municipal Affairs and Housing, in conjunction with the Ontario Professional Planners Institute, developed 'Planning by Design: A Healthy Communities Handbook' to promote sustainable development across the province. The handbook explores the connections between sustainable community building and health; it highlights the critical role that the built environment can play in shaping the health of individuals and communities throughout Canada. The handbook also outlines ways in which the current state of the built environment is detrimental to individuals and communities; it details changes that, if implemented, could result in noticeable improvements. Promoting safe and healthy mobility throughout communities is paramount to improving the overall health of Canadians. In order to reduce the incidence of disease, injuries and fatalities, the handbook recommends that municipalities should:

- Create streets, paths and trails that are well-connected, properly maintained and able to safely accommodate different modes of transportation;
- Produce neighbourhoods that are safe, accessible, aesthetically pleasing, well-serviced and inclusive; and
- Develop natural environments that are resilient, provide ecosystem services, support wildlife and their habitats and are better connected to where people live.



The Ontario Trails Strategy, 2005

The Government of Ontario has developed the Ontario Trails Strategy in response to the popularity of trail infrastructure and related activities, the desire of trail organizations for government leadership, the need to protect provincial investment in trails and the significant challenges that confront them. The Ontario Trails Strategy is a long-term plan that will establish a strategic direction for government and stakeholders on the planning, management, promotion and use of trails for a healthier and more prosperous Ontario. Developed in collaboration with other ministries and a wide range of stakeholders in the community, the strategy supports continued cooperation between governments, not-for-profit organizations and the private sector. There are five strategic directions that comprise the Ontario Trails Strategy:

- Improving collaboration among stakeholders;
- Enhancing the sustainability of Ontario’s trails;
- Enhancing the trail experience;
- Educating Ontarians about trails; and
- Fostering better health and a strong economy through trails.

A number of goals and strategies have also been identified to support each of the five strategic directions. The Ontario Trails Strategy recommends that trail organizations should formulate common standards to guide the development and use of trails. This will help the trail system evolve to meet the particular needs of new users. Trail organizations also need more effective tools and better ways of distributing information which allow them to reach a greater number of Ontarians. As these challenges require coordination between all stakeholders, there should continue to be collaboration regarding priorities, roles and responsibilities, timeframes, and methods to strengthen and enhance existing and future trails in Ontario.

#CycleON: Ontario’s Cycling Strategy

In November 2012 the Ministry of Transportation Ontario (MTO) published the Draft Cycling Strategy. The strategy acknowledges the importance of developing cycling infrastructure to help reduce GHG emissions, ease gridlock, enhance the economy, increase tourism and increase quality of life for Ontario residents. The strategy was developed based on increasing demand from local municipalities for direction from the province on the development of cycling facilities and responds to recommendations in the Coroner’s report published in 2012.

The province’s vision is to ultimately “develop a safe cycling network that connects the province, for collision rates and injuries to continue to drop, and for everyone from the occasional user to the daily commuter to feel safe when they get on a bicycle in Ontario”. The strategy outlines recommended cycling infrastructure, legislation changes and enhancements including a set of proposed changes to The Highway Traffic Act.



In August 2013 the final version of the Ontario Cycling Strategy – #CycleON was released by the MTO. #CycleON Action Plan 1.0 has since been released and includes a set of actions divided into the following five theme areas:

- Design healthy active and prosperous communities;
- Improve cycling infrastructure;
- Make highways and streets safer;
- Promote cycling awareness and behavioural shifts; and
- Increase cycling tourism opportunities.

A key part of the first action plan is the launch of a three-year cycling infrastructure funding program that will commence in the fall of 2014 and requires projects receiving provincial funding to be completed by March 2017. One of the eligibility requirements for this program is that a municipality have a council approved active transportation master plan that identifies a specific project for which funding is sought.

Local

The active transportation component of the City of Greater Sudbury Transportation Study builds upon three main local policy documents: The City of Greater Sudbury Official Plan (2006), the Sustainable Mobility Plan 2010 and the most recent Bicycle Technical Master Plan for the City of Greater Sudbury 2011. The following text provides an overview of the AT and cycling policies, programs and potential initiatives outlined in each of these policy documents.

The City of Greater Sudbury Official Plan (2006)

Table 27 below highlights policies and programs from The City of Greater Sudbury Official Plan (2006) that consider active transportation and area trail systems. Please refer to Section 9 for more information on how these can support the preferred transportation alternative.



Table 27: City of Greater Sudbury Official Plan (2006) AT policies and programs

<p>PRESERVE ASPECTS OF THE DOWNTOWN</p>	<p>“It is policy of the City of Greater Sudbury Official Plan to preserve those aspects of the Downtown that contribute to the image, character and quality of life in the City, including natural features, landmarks, design attributes, heritage resources, linkages to existing trails, pedestrian walkways and other desirable elements of the built environment.” (Section 4.2.1.2, Policy 1)</p>
<p>REZONING APPLICATIONS</p>	<p>“When considering rezoning applications for new or expanded employment uses in Regional Centres...pedestrian walkways will be included, with linkages to transit stops and other modes of active transportation including sidewalks and trails.” (Section 4.2.2, Policy 2d)</p>
<p>PARKS AND OPEN SPACE</p>	<p>“It is the objective of the Parks and Open Space policies to...provide parks, trails and leisure facilities that are aesthetically pleasing, multipurpose, multi-season and appeal to all ages and skill levels in order to attract and retain residents, especially young adults and families, and to enhance local tourism development.” (Section 7.1e)</p> <p>“Publicly owned lands designated Parks and Open Space include a variety of lands used for active and passive recreational uses.” (Section 7.2.1)</p> <p>“A comprehensive multi-use trail system that is linked to major civic facilities, educational institutions, employment areas, water bodies and tourist attractions will be developed, utilizing the development approval process with a view to developing these linkages for passive and active recreational uses as appropriate.” (Section 7.2.1, Program 1)</p> <p>“Private lands designated Parks and Open Space are not necessarily accessible to the public; however, the municipality will continue to seek arrangements with landowners to provide public access to privately-held lands in order to expand the open space network including the trail system.” (Section 7.2.2, Program 1)</p>
<p>TRANSPORTATION NETWORK & INTEGRATION</p>	<p>“Sidewalks, bike lanes, bike paths and walking trails need to be fully integrated components of the overall transportation system, providing safe access for pedestrians and cyclists supported by good urban design principles. Opportunities to engage in recreational and leisure activities are also tied to the transportation network.” (Section 11.0)</p> <p>“It is the objective of the transportation network policies to... promote all travel modes, including public transit, walking and cycling.” (Section 11.1e)</p> <p>“Pedestrian walkways, intersections of major roads, and pedestrian access systems are to be integrated with transit stops, and wherever possible, connected to trail systems.” (Section 11.3.2, Policy 6).</p>
<p>NON-RAIL USES OF RAIL LANDS</p>	<p>“When reviewing proposed non-rail uses of railway lands, Council will...maintain railway corridors in public ownership and encourage linear uses such as trail linkages and transit corridors.” (Section 11.6.1, Policy 1a)</p>
<p>PEDESTRIAN AND BICYCLE NETWORK</p>	<p>“Protecting and expanding the existing pedestrian and bicycle network in the City is essential to creating quality of place. Trails promote healthy lifestyles and provide an alternative transportation network. Existing and proposed components of the trail network, including the Trans-Canada Trail and Rainbow Routes are indicated on Schedule 5, Trail Route Map.” (Section 11.7)</p>



PEDESTRIAN AND BICYCLE NETWORK
(continued)

“The existing pedestrian and bicycle network will be maintained and expanded through the creation of additional pedestrian walkways, trails and bikeways with adequate signage throughout the City.” (Section 11.7, Policy 1)

“Development proposals will be reviewed to ensure that there is adequate pedestrian access in new developments. The City may acquire lands to provide pedestrian facilities or cycling as a condition of approval. Wherever possible, the provision of adequate bicycle facilities will be encouraged.” (Section 11.7, Policy 2)

“Bicycle facilities for all new road links and road widening projects will be considered based on an assessment of safety, potential usage, cost, and linkages to major employment, educational, or recreational centres.” (Section 11.7, Policy 3)

“The maximum level of separation of pedestrians and bicyclists from motor vehicle traffic will be achieved through good road design practices.” (Section 11.7, Policy 4)

“Sidewalks facilitate active living and are an essential component of good neighbourhood design, providing a safe pedestrian environment and access to other transportation linkages such as transit stops and trails. Curbs and sidewalks in neighbourhoods also encourage walking and provide safety for children. It is policy of this Plan to provide the following on new and reconstructed roads, when feasible:

- a. Sidewalks on both sides of urban Arterial, Collector and Local Roads;
- b. High quality pedestrian connections to transit;
- c. Pedestrian connections between neighbourhoods; and
- d. Pedestrian linkages to major attractions/generators.”

(Section 11.7, Policy 5)

“Sidewalks are to be built and maintained to a standard that facilitates the mobility of persons with disabilities.” (Section 11.7, Policy 6)

“Barrier-free design of pedestrian facilities will be required through site plans.” (Section 11.7, Policy 7)

“The City will update the Bicycle Advisory Committee Reference Manual and undertake a bicycle network plan.” (Section 11.7, Program 1)

“The existing bicycle and pedestrian network will be expanded, with special emphasis on major generators such as community centres and educational institutions, as well as enhanced linkages between communities, neighbourhoods and schools.” (Section 11.7, Program 2)

“Pedestrian and bicycle safety programs within the City will be supported and coordinated.” (Section 11.7, Program 3)

“Appropriate bicycle storage facilities will be provided at City-owned buildings and parks. Other public and private sector development will be encouraged to provide such facilities, especially in areas adjacent to transit corridors, institutional uses, mixed use areas and other Employment Areas.” (Section 11.7, Program 4)

“Public awareness of the convenience, health and economic benefits of commuter cycling and walking will be promoted.” (Section 11.7, Program 5)



Sustainable Mobility Plan, 2010

In 2010, the City of Greater Sudbury completed a Sustainable Mobility Plan with a vision to move the community forward in terms of active transportation strategies and initiatives. The Plan recognizes that developing a sustainable transportation system means building a city where people have the option to walk, cycle or use public transit as their preferred means of moving from place to place. One of the objectives set out in this plan is “to create a safe, cycle-friendly community.” Recommendations shown in **Table 28** were outlined in the Sustainable Mobility Plan in terms of policy development, investment, public awareness & education, as well as future considerations and potential initiatives.

Table 28: Sustainable Mobility Plan Recommendations

<p style="text-align: center;">POLICY DEVELOPMENT</p>	<ol style="list-style-type: none"> (1) As part of the next Official Plan review process, give equitable consideration to the needs of cyclists in the Transportation section of the Official Plan. This could include, among other matters, a set of indices, which would help set priorities for cyclists and other forms of transportation improvements. (2) Amend the Official Plan (Transportation Schedule) to include a Bicycle Route Network & Classification System using the draft Bicycle Route Network and Classifications System developed through public consultation and in conjunction with the Bicycle Advisory Panel for all existing roads as a starting point. (3) Create a Priority Indexing System for cycling to create a system that will set priorities for cyclist infrastructure improvements, installations, traffic calming and maintenance. Adopt this Indexing System into the Official Plan Review process. (4) Incorporate into the Official Plan review appropriate cycling infrastructure on all new road development. (5) Incorporate into the Official Plan Review, the mandatory requirement for commercial, retail and institutional buildings to provide bicycle parking and storage, as per a Bicycle Parking By-Law. (6) Adopt the draft Bicycle Parking Zoning By-Law which would require a minimum number of bicycle parking spaces at retail, institutional, employment, educational and residential centers. (7) Draft and adopt a by-law which prohibits the operation of motor vehicles within designated bicycle lanes or paths. (8) Ensure that the practice of incorporating wide, paved shoulders along major arterials connecting outlying communities is continued. These paved shoulders often provide optimal infrastructure for distance “Group A” cyclists.
<p style="text-align: center;">INVEST IN CYCLING INFRASTRUCTURE</p>	<ol style="list-style-type: none"> (9) Implement the Action Plan developed for the Bicycle Route Network following the Official Plan amendment process. (10) Pave shoulders along major arterial roads connecting outlying communities to the urban core to provide a safe area for Class A cyclists to commute.



<p>INVEST IN CYCLING INFRASTRUCTURE <i>(continued)</i></p>	<p>(11) Using the Priority Index System for cycling, install complimentary traffic calming measures on residential and local roads to create the safe conditions necessary to encourage individuals to choose cycling.</p> <p>(12) Expand and promote the City of Greater Sudbury Transit “Rack and Roll” program to all transit busses.</p> <p>(13) Ensure that adequate, accessible and secure bicycle parking facilities are available at all major employment, retail and educational centers, in addition to all city-owned facilities and buildings through the enforcement of a new Bicycle Parking By-Law.</p> <p>(14) Complete the Junction Creek Waterway Park as an Active Transportation Corridor in Greater Sudbury.</p>
<p>PUBLIC AWARENESS & EDUCATION</p>	<p>(15) Develop a "Cycling in Greater Sudbury" wayfinding map outlining designated routes and information.</p> <p>(16) Develop and promote educational programs for both cyclists and motorists.</p> <p>(17) Develop a user-friendly “Transportation” page on the City website to include links to all forms of transportation information.</p> <p>(18) Conduct educational blitzes at high-profile intersections in the City of Greater Sudbury.</p>
<p>CONSIDERATIONS AND POTENTIAL CYCLING INITIATIVES</p>	<p>(19) Develop a partnership in order to facilitate the movement of the Bicycle portion of the Police Auction into the Downtown Core to improve access to inexpensive bicycles for individuals earning a low income.</p> <p>(20) Develop private partnerships to establish Mobility Hubs in predetermined activity centres in order to encourage mixed-use transportation by easing the transition between modes (walk or cycle then ride public transit). Potential Mobility Hubs: Valley East Shopping Centre, Downtown, Southridge Mall, New Sudbury Shopping Centre.</p> <p>(21) Examine the feasibility and effectiveness of painting bicycle lanes a solid colour, through a pilot project on Howey Drive or Bancroft Drive.</p> <p>(22) As part of the pilot project above, implement "bike box" infrastructure at the intersections of Bancroft/Bellevue and Bancroft/Second to increase visibility of cyclists to motorists by providing a staggered stop.</p> <p>(23) Form a local partnership to facilitate the development of a bicycle library, rental system or co-operative.</p> <p>(24) Partner with a local employer to install proper end-of-trip facilities in order to determine the success and feasibility of such a project on a larger scale.</p> <p>(25) “Crossrides” for cyclists, “Crosswalks” for pedestrians.</p> <p>(26) Form a partnership with a local organization or retail outlet to provide bicycle locks either at a reduced cost or no cost to agencies that provide services for low income individuals.</p>



The Bicycling Technical Master Plan was prepared by the Bicycling Advisory Panel in 2011. It provided a summary of existing bicycling infrastructure and improvements necessary for cycling to be a safe and practical alternative means of transportation in the City. This identifies bicycling routes for implementation in the short, medium and long term which have been considered in the development of the active transportation component of the City of Greater Sudbury Transportation Study.

The Bicycle Technical Master Plan is a blueprint for a cycle-friendly community intended to build upon the Sustainable Mobility Plan's cycling component and implemented in conjunction with its pedestrian and transit components. It fulfills the recommendations of the Mobility Plan to amend the City of Greater Sudbury Official Plan using a Bicycle Route Network and Classification system. It also introduces a priority indexing system for important bicycling corridors, based on the potential benefit of each one in terms of cycling safety and practicability, as well as the relative ease of implementation.

6.4 Supporting AT in Greater Sudbury – Programming, Outreach & Support Features

By adopting the Transportation Study Report and its active transportation mandate, the City of Greater Sudbury has the opportunity to create an environment that is supportive of all modes of transportation including walking and cycling. Infrastructure such as sidewalks, trails, bike lanes, benches and sign treatments all contribute to an improved active transportation system, but these alone will not produce a fully supportive system for the City.

The City of Greater Sudbury should continue to explore opportunities to expand upon its leadership role; it should develop, implement and promote outreach programs with local partners to help educate residents about the public health, financial and environmental benefits that participating in active transportation and trails initiatives provide.

A well-developed, properly maintained and comprehensive network of on-road and off-road active transportation facilities will not automatically achieve its potential utilization. The network has to be promoted and users need to feel comfortable and safe using it. Amenities such as parking and end-of-trip facilities should also be available at strategic locations.

6.4.1 Education

Education is one of the most important components of this plan. Active transportation facility and trail users need to understand and practice both on and off-road operating procedures to engender a safe, connected and inviting environment. The public also needs to be educated on the many health benefits of active transportation.

Making information easily available is a core element of any educational strategy. The Greater Sudbury Area should support the implementation of active transportation-related educational programs and partner with other groups and agencies where appropriate. The Greater Sudbury Area could follow the examples of other municipalities and organizations in developing a variety of educational materials for a nominal cost. Many of these publications have a host of contributing partners including: Healthy Living; the Ontario Ministry of Transportation; Ministry of Health Promotion; Transport Canada; Health Canada; the Canadian Safety Council; and private sector sponsors. This underscores the importance of cooperation and the need to share expertise and resources.



Paper or digital newsletters could focus on active transportation with information about existing and planned facilities, statistics, recommended routes and destinations, safety and training information, benefits of healthy active lifestyles and tips for pedestrians and cyclists. These could also include information about initiatives by others, for example walking and cycling events, bike racks on buses, bicycle parking at key destination points and the benefits of walking and cycling.

In addition, guide brochures could be adapted or developed for active transportation to address specific concerns related to:

- Implementation of the Active Transportation components of the Transportation Master Plan;
- Pedestrian and cyclist safety;
- Walking or cycling to school or work;
- Active transportation in winter/inclement weather conditions;
- Particular age groups, such as elderly persons or young children;
- The rules and regulations for pedestrians and cyclists, plus walking/cycling etiquette for on- and off-road routes;
- The benefits of active transportation, for example in terms of health, finances and the environment; and
- Intermodal connections, for example between cycling and transit, or walking and carpooling.

Educational information should be developed in a language and style appropriate for the group being targeted, such as children, seniors or individuals for whom English is not their primary language. Adaptation of both the content and the presentation of the information should be considered to ensure effective communication with the intended audience.

Materials could be provided to residents, employees and visitors through various methods such as:

- The City's website (<http://www.greatersudbury.ca>), ideally via specific web pages dedicated exclusively to active transportation. These should include news updates, downloadable files and links to other relevant walking and cycling-related websites.
- The production of paper pamphlets and brochures on safe operating procedures for pedestrians, cyclists and other road and trail users. These could be made available at local facilities such as libraries, community centres, arenas and City Hall, delivered as part of mailing initiatives, distributed at events and circulated through community partners.
- The implementation of education programs through partnerships between the City and other local groups looking to educate Greater Sudbury residents on active transportation and trails in general.



6.4.2 Encouragement

Residents can be encouraged to walk and cycle through various methods including community-based social marketing, leading by example, availability of active transportation maps and school programming.

Community-Based Social Marketing

People can be encouraged to adopt more sustainable transportation habits, including walking and cycling more often, through community-based social marketing such as Transport Canada's Urban Transportation Showcase Program. Community-based social marketing is a practical approach that stresses direct contact among community members and focuses on removing structural barriers that prevent people from changing their behaviour. The program involves five steps:

1. Identification of desired behaviour change;
2. Identification of barriers;
3. Program design;
4. Pilot program with a small segment of the community; and
5. Evaluation and program improvement during implementation (ongoing).

A number of community-based social marketing programs have been shown to be effective at influencing public attitudes and behaviours. Some "tools" utilized by such programs are described in **Table 29**.

Leading by Example

Expanding the utilitarian walking and cycling population will be essential to reaching future mode share targets. To achieve this, employers should be motivated to encourage and support walking and cycling among their employees. The City of Greater Sudbury can set an example for others to follow. A comprehensive approach could be put in place to encourage municipal employees to walk or cycle to work, and to combine these modes with transit for longer distance trips.

Active Transportation Maps

The Bicycling Technical Master Plan for the City of Greater Sudbury was developed by the Bicycle Advisory Panel in 2010. This plan provided a summary of existing bicycling infrastructure and improvements necessary for cycling to be a safe and practical alternative means of transportation in the City. It identified bicycling routes for implementation in the short, medium and long term; this led to the development of the Sustainable Mobility Plan in 2011, including a bicycle route classification system and five bicycle route network maps.

The Bicycling Technical Master Plan, the Sustainable Mobility plan and additional background information have been used to develop the Existing and Proposed Active Transportation Network maps presented in **Sections 3.3** and **9.3**, respectively.



Table 29: Community-Based Social Marketing Tools

TOOL	DESCRIPTION	EXAMPLE
OBTAINING A COMMITMENT	People are asked to pledge or agree to carry out a specific action.	City of Mississauga's "Towards an Idle-Free Zone" anti-idling campaign asked drivers to commit to reducing the frequency and duration of engine idling and to declare their commitment by placing a decal on their vehicle's windshield.
PROMPTS	Prompts are used to remind people to perform a particular action.	City of Ottawa's 'Walk the Talk' program provided participants with a bright yellow card and memo holder to remind them to track their walking, cycling and transit trips.
PERSONALIZED COMMUNICATION	Information is tailored to a target audience's specific needs, with particular information and images.	City of Vancouver's 'TravelSmart' program provides a forum to interested households with which they can request specific materials on select topics that suit their travel needs such as transit maps, cycling guides, trail maps and bike shop discount coupons.
NORM APPEALS	Making group standards, or the behaviour and attitudes that people observe around them, more apparent to encourage the desired behaviour.	The national 'Commuter Challenge' encourages the senior staff of participating workplaces to lead by example in adopting more sustainable transportation choices for their commute.
WORD-OF-MOUTH	Information that people hear from family, friends or colleagues. Such recommendations are highly influential as they come from a trusted source.	City of Seattle's 'In Motion' initiative provided lawn signs to participants who received information about travel options, stimulating conversation within their neighbourhoods about the program.
OVERCOMING SPECIFIC BARRIERS	Information or initiatives targeted at specific issues or groups that have been identified as significant.	British Columbia's 'Bike Smarts' program provided children with specific information about bicycle safety since this was identified as the primary concern for parents.
INCENTIVES AND DISINCENTIVES	Rewards for desired behaviour or punitive measures for the behaviour being discouraged.	The Government of Canada's change to the Canadian Income Tax Act to make the cost of monthly transit passes deductible in order to encourage regular transit use.
FEEDBACK	Demonstrating the outcomes, particularly the positive impacts or behavioural changes.	The successful elements of the City of Boulder's 'Go Boulder' program were publicized in local newspapers and on the community television channel. They shared the results of the program's initiatives aimed at encouraging residents to shift to more sustainable travel modes.



The City of Greater Sudbury should develop maps which clearly and legibly combine all existing walking, cycling and transit facilities as well as recreational opportunities. The maps should be updated every one to two years, especially after significant additions or changes are made. The information could be made available to the public at a nominal fee to generate revenue which can be reinvested into the development of future map editions or used to fund educational initiatives. Alternatively, the maps could be provided at no cost to residents and visitors at key locations throughout the City such as community centres, local rinks, at trailheads, municipal offices and via the 'Maps Online' page of the City's webpage.

6.4.3 Enforcement

In addition to education and encouragement, enforcement is important to pedestrian and cycling safety. Its principal objective is the prevention of incidents that may cause property damage, injury and death. Enforcement should be applied to on- and off-road segments of the proposed active transportation network.

A bicycle is a vehicle under the Ontario Highway Traffic Act (HTA). This means that cyclists have the same rights and responsibilities to obey all traffic laws as motorized vehicles. The following are not considered bicycles and are subject to different rules for use:

- Limited-speed motorcycles;
- Motor-assisted bicycles (mopeds);
- Low-speed vehicles (LSVs);
- Electric and motorized scooters (go-peds); and
- Segway Human/Personal Transporter.

For more information on the rules of use for these types of vehicles please visit <http://www.mto.gov.on.ca/english/dandv/vehicle/emerging>

The responsibility for enforcement rests primarily on the Greater Sudbury Police. They are already educating the public on pedestrian and cycling safety via the following pages of their website:

- Bicycle Helmet Safety Standards
(<http://www.gspcs.ca/en/specializedservices/bicyclesafety.asp>)
- E-bikes
(<http://www.gspcs.ca/en/specializedservices/ebikes.asp>)
- Pedestrian Safety
(<http://www.gspcs.ca/en/specializedservices/pedsafety.asp>)
- Recreational Vehicles
(<http://www.gspcs.ca/en/specializedservices/recreationalvehicles.asp>)

To strengthen the effectiveness of enforcement the City, in association with Greater Sudbury Police Service, should consider the following:

- Cycling patrols and safety blitzes along walking and cycling routes to enforce safe operating procedures for all users;



- The collection of accurate data on all collisions involving cyclists, including those where cyclists hit open vehicle doors. This will help identify any potential problem areas as well as safety and enforcement priorities; and
- The development of materials to inform pedestrians and cyclists about the steps they should take if they are involved in a collision.

6.4.4 Partnerships

The City of Greater Sudbury will need the cooperation of outside agencies, volunteer groups and individuals to increase in the number of cycling and pedestrian trips being undertaken. The City should work with partners that have similar mandates to ensure that communication with the public is consistent and to avoid the duplication of efforts.

6.4.5 Support Features

The use of the pedestrian and cycling network can be encouraged by increasing user convenience through the provision of end-of-trip facilities. These meet the practical needs of users, such as locking up their bike and showering themselves after their ride. In many cases, such as office buildings where commuters must park their bicycles during the day and prepare themselves for work, these are essential to presenting walking and cycling as a feasible alternative mode of transportation and should be incorporated into building design. Support features in public spaces should be considered during the planning, design and implementation of the AT network.

Bicycle Parking Facilities

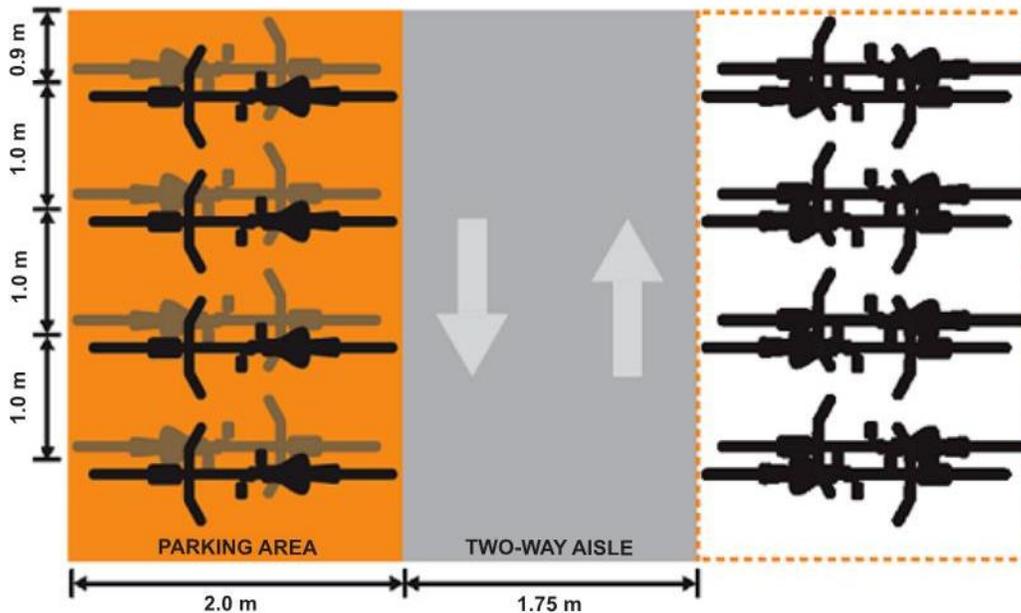
Providing bicycle parking facilities is an essential component of a multi-modal transportation system and necessary for encouraging more bicycle use. A lack of adequate bicycle parking supply can deter individuals from considering cycling as their basic mode of transportation.

Adequately designed bicycle parking facilities located in strategic areas allow cyclists to securely lock their bicycles and can contribute to more orderly sidewalks and parking areas in terms of appearance and flow. Bike racks can be provided for short term use, while bike lockers or a bike cage may be considered for longer-term storage. In any case, convenient and secure bicycle parking is a necessity for most cyclists.

Bike racks can vary from a simple post and ring stand for two bicycles to larger, more elaborate systems for multiple bikes where the current or potential demand is high. The purpose of a bike rack is to allow cyclists to securely and efficiently lock up their bicycle in a convenient location and to provide support for the bicycle frame itself. Easy and independent bike access should be provided to the bicycle rack. Inverted ‘U’ rack elements should be mounted in a row and placed 1 metre apart to allow enough room for two bicycles to be secured to each element. Racks should be arranged such that it is quick, easy and convenient to lock or unlock a bicycle, as shown in **Figure 29**.



Figure 29: Basic Dimensions for the Two Bicycles per Stand Perpendicular Configuration



Source: Ontario Traffic Manual Book 18, based on a Transport Canada specification

Bike lockers differ from bike racks in that they are individual storage units. They are enclosed, weather-protected and operated by a controlled access system. Access may be gained through the use of a key, swipe card or an electronic key pad located on the locker door. Locker systems set up for multiple users are often coin operated or secured with personal locks. Bike lockers require more space than bike racks to implement.

The rack area is essentially the ‘bicycle parking lot’ and refers to the space where more than one bicycle rack is installed. Bicycle racks are separated by aisles, much like a typical motor vehicle parking lot. The minimum acceptable aisle width is 1.2 metres, which provides enough space for one person to walk with a bicycle. Aisle widths of 1.75 metres are recommended in high traffic areas where many users may wish to retrieve their bicycle at the same time, such as after a school class.

Large bicycle rack areas with a high turnover rate of arriving and departing cyclists should have more than one access point, ideally with separate entrances and exits. The rack area should be sheltered to protect the bicycles from the elements by placing awnings and overhangs above the rack area.

Bicycle racks should be placed as close as possible to the building entrance they serve, but not in a location where they would inhibit pedestrian flow in and out of the building. Rack areas should be no more than 15 metres from an entrance and should be clearly visible along a major building approach line. Bicycle rack areas that are hard to find or that are located far from a building entrance are generally perceived as vulnerable to vandalism and therefore may be underutilized. To counter this, the rack site should be clearly visible and well lit.

Bicycle racks should not be placed within bus loading areas, taxi zones, goods delivery zones and emergency vehicle zones. They should be placed at least 4.0 metres away from a fire hydrant, 2.5 metres from a driveway or access lane and 10.0 metres from an intersection so as not to cause an obstruction.



Showers and Change Facilities

Showers and change facilities at workplaces help to promote walking and cycling for utilitarian purposes and are particularly important for individuals who commute to work or school. They should be located adjacent to bicycle parking facilities or in close proximity to the building entrance for easy access by users. They may contain lockers which can be used to store personal belongings such as cycling accessories, in-line skates or a change of clothing. Businesses or institutions with more than 20 employees or students commuting by foot, bicycle or in-line skates should be particularly encouraged to offer these facilities; however, all employment and educational buildings should consider providing them to increase the catchment area from which active transportation is a realistic commuting alternative.

Rest Areas

Rest areas should be provided at strategic locations along rural and urban facilities where users are expected to stop, such as at lookouts, restaurants, access points to trails and along waterfront routes. In general, rest areas should be provided at least every five kilometres on popular rural recreational routes, or at major intersections and gathering places near bicycle facilities. In urban centres, rest areas should be provided more frequently. In areas where demand is high, particularly among seniors or other users with mobility challenges, locations for sitting and resting should be more tightly spaced, typically at intervals of 100 to 250 metres.

Rest areas may contain a variety of amenities such as tables, washrooms, waste receptacles, parking for automobiles and bicycles as well as bicycle route signage. The purpose, size and location of the rest area govern the amenities that are provided.

Washrooms and Waste Receptacles

Washrooms must be provided along longer trail networks. Typically, they are located in parks and at major trailheads; they may also be located within facilities such as community centres. Washrooms should be placed where they can be easily accessed for maintenance and security purposes.

Waste receptacles are an absolute necessity throughout a trail network. Generally, they should be located at regular intervals and in locations where they can be easily serviced. Ideal locations include mid-block crossing points, staging areas and trail nodes; they may also be placed close to amenities that attract trail users such as benches and interpretive signs. They must be monitored and emptied on a regular basis to prevent unsightly overflow.

6.5 Recommendations for Supporting Active Transportation

A series of recommendations have been developed to support active transportation in the areas of:

- Education;
- Encouragement;
- Enforcement;
- Partnerships; and
- Support Features.

These recommendations are provided in **Table 30**.



Table 30: Recommendations for Supporting Active Transportation in Greater Sudbury

EDUCATION	The City should consider utilizing educational programming and materials to promote and inform people of the benefits of active transportation as it relates to community health and fitness, transportation, environment and sustainability, economy and tourism.
	Develop and distribute newsletters and educational materials to promote and educate the public on active transportation opportunities, recommendations for routes and destinations and updates on available routes.
	The City should consider the implementation of educational programs on walking and cycling and partner with interested other agencies, not-for-profit organizations and school boards.
ENCOURAGEMENT	The City should explore community-based social marketing as a means of encouraging people to adopt more sustainable transportation habits, including walking and cycling. Tools such as those outlined in Table 29 can be used to develop a community-based social marketing program.
	The City and local organizations should develop a comprehensive approach to encouraging students and employees to walk or cycle to school or work and combine these modes with public transit for longer distance trips.
	The City should explore partnerships with local public and private organizations and integrate end-of-trip facilities into active transportation and trail promotional strategies and initiatives.
	The City should further promote active transportation and multimodal activities through the production of Active Transportation maps that also include transit information. City staff should work with local cycling and hiking groups and update the maps at least every five years, in line with the updates to the Transportation Study Report, to ensure new routes and connections are shown.
ENFORCEMENT	Consider transportation operational measures in the future as part of the transportation system management to support safe and convenient AT movement and trail use. These measures may include: <ul style="list-style-type: none"> • Exempting cyclists from turn prohibitions at intersections, such as 'No Right Turn on Red'; • Installing bicycle detection at intersections such that traffic signals recognize and react to cyclists on sideroads, particularly where motorized traffic is infrequent; and • Enforcing speed limits on roadways where observed speeds exceed acceptable levels.
	Enforcement activities from the Greater Sudbury Police should focus on issues related to the misuse of bicycle and pedestrian facilities, particularly sidewalk obstruction and the inappropriate use of trails.
	The City should work with the Greater Sudbury Police in the development and delivery of cycling and walking-related safety programs.
PARTNERSHIPS	The City should develop partnerships with outside agencies, volunteer groups, individuals as well as regional representatives to promote and educate residents on active transportation use throughout the City.
SUPPORT FEATURES	The City and its respective partners should make the development of support facilities such as bicycle parking, showers and change rooms, rest areas, washrooms and waste receptacles a priority during the planning and implementation of active transportation facilities.

