

CHAPTER 5 IMPROVING FACILITIES FOR WALKING AND CYCLING IN YORK REGION

Pedestrian and cycling facilities, whether they are located in boulevards, on streets or within green space corridors should reflect and accommodate residents' needs and desires. This will encourage more people to walk and cycle in York Region.

The two primary goals of the York Region Pedestrian and Cycling Master Plan Study (PCMP) are to improve conditions for walking and provide a comprehensive cycling network in both the urban and rural areas. This chapter presents the proposed long term pedestrian system and cycling network strategy. It identifies the types of cycling facilities envisioned for the network, suggests locations where missing sidewalk links on Regional roads should be completed, recommends other strategies for improving conditions for walking in York Region, and details the steps through which the proposed network was developed.

The proposed pedestrian and cycling network is planned as an integrated system of on-road and off-road facilities that implement the vision, goals and objectives of the Pedestrian and Cycling Master Plan (PCMP).

The primary objectives of the York Region Pedestrian and Cycling Master Plan, as it relates to infrastructure, include the following:

- To promote the safe and comfortable year round operation of pedestrian and cycling routes through design, signage, enforcement and maintenance;
- To identify a continuous and connected regional-scale cycling network and enhanced pedestrian system that

can build upon and connect existing and proposed local municipal routes and facilities that support walking, cycling and the use of public transit;

- To identify missing sidewalk links on Regional Roads in urban areas and recommend strategies to improve on and off-road pedestrian connections to transit stops and terminals, employment centres, schools, recreational/leisure and commercial destinations; and
- To encourage people to walk and cycle more often for both utilitarian and recreation/health purposes.

5.1 REGIONAL PEDESTRIAN SYSTEM

The proposed Regional pedestrian system will consist primarily of sidewalks on Regional roads and linear off-road multi-use trails. The pedestrian component of this Master Plan Study has focused on identifying missing sidewalk links on Regional Roads in urban areas as well as identifying pedestrian “zones” where enhanced pedestrian infrastructure should be provided consistent with policies in the Region's Official Plan, Transportation Master Plan and Transit Oriented Development Guidelines. The range, type and density of recommended pedestrian infrastructure will vary depending on the location, density and range of land uses within each zone and implementation will be dependent on local municipalities as they have jurisdiction.

Although local municipalities are responsible for implementing sidewalks, trails and encouraging pedestrian friendly land

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Regional centres and urban areas should have an extensive sidewalk system located primarily on regional, arterial and collector roads with sidewalks on both sides where feasible. Additionally, off-road trail links should be provided, to promote walking and to provide direct connections to YRT, Viva and GO transit stations in the Region. Consideration (during detailed design) should also be given to pedestrian friendly streetscapes, site plan designs and related features such as pedestrian level lighting. Transit facilities, major employers, schools and other key destinations should have direct sidewalk access in all pedestrian zones.



Viva bus accessibility

Almost every transit trip in York Region begins and ends with some form of a pedestrian or cycling trip.

In suburban areas, the primary pedestrian system consists of arterial, collector and local roads, but it may not be necessary to have sidewalks on both sides of the street on local roads. Sidewalks should be designed to meet the local municipality's standards.

In rural areas, the pedestrian system will primarily be located along rural arterial roads. Where pedestrian demand exists, sidewalks should be provided. In rural areas with lower pedestrian demand, a paved or granular shoulder will normally serve as the pedestrian facility.

5.2 CYCLING FACILITY TYPES

The cycling network is proposed to consist of three facility types, each with its own set of minimum design parameters that should guide their implementation. Detailed recommended design practices and suggested guidelines for each facility type are located in the Pedestrian and Cycling Master Plan Planning and Design Guidelines, provided under separate cover. All designated

cycling routes proposed in the Master Plan consist of one or more of these cycling facilities. In some cases, one cycling route may consist of different facility types due to changing road geometry, motor vehicle traffic-speeds or volumes or when a road changes from an urban to rural cross-section. General descriptions of the cycling facility types proposed for the PCMP cycling network are presented in the following subsections.

5.2.1 MULTI-USE TRAILS

A multi-use trail or path is a facility that is completely separate from the traveled portion of a roadway, and may take the form of an in-boulevard trail in a public road right-of-way or an off-road multi-use trail within a greenway/abandoned rail corridor, or utility/hydro corridor. These types of trails are typically designed to support the widest range of users including pedestrians, cyclists, in-line skaters and skateboarders where trail surfaces permit such activities. Multi-use trails located in parks primarily serve recreational pedestrians and cyclists but can also be used for commuting. These can include trails along valley lands, river

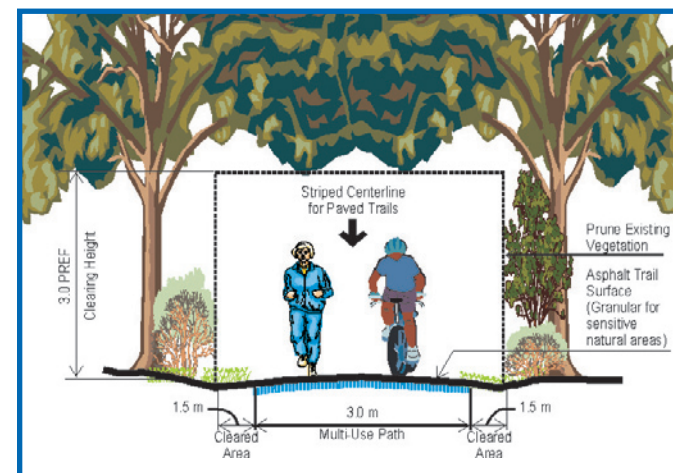


Figure 5-1: Multi-use path

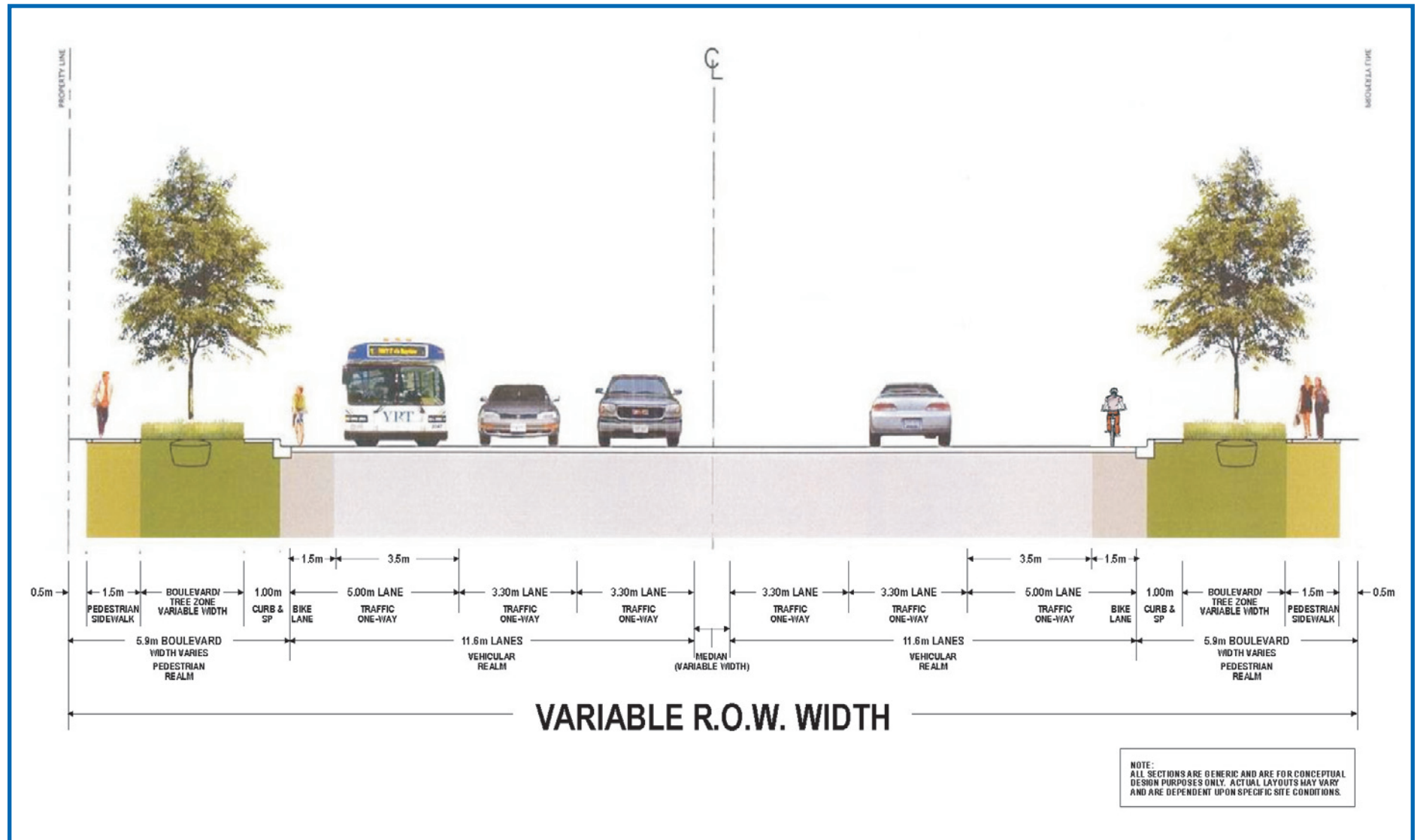


Figure 5-2: Example of an urban road cross section with 1.5 m bike lanes

Source: Towards Greater Regional Streets - A Pathway to Improvement Study; (Draft Report 2006)



In-boulevard multi-use trail in Newmarket



Rural road with paved shoulders

and canal corridors, active or abandoned rail lines, hydro corridors and other linear routes that serve the needs of both recreational and utilitarian cyclists. Multi-use trails that form part of the proposed Regional network should include appropriate signing to inform users that this trail segment is also part of the Regional system.

5.2.2 PAVED SHOULDER / BIKE LANE

A paved shoulder/bike lane is a facility located in the traveled portion of the roadway and is designed for one-way bicycle traffic. Bike lanes are typically located on urban streets. Paved shoulders are often used to accommodate cyclists on rural road cross-sections. Even when paved shoulders or bike lanes are provided, cyclists are not required to use them. Because a bicycle is considered a “vehicle” under the Highway Traffic Act, cyclists are legally permitted to travel with mixed traffic in a standard motor vehicle travel lane.

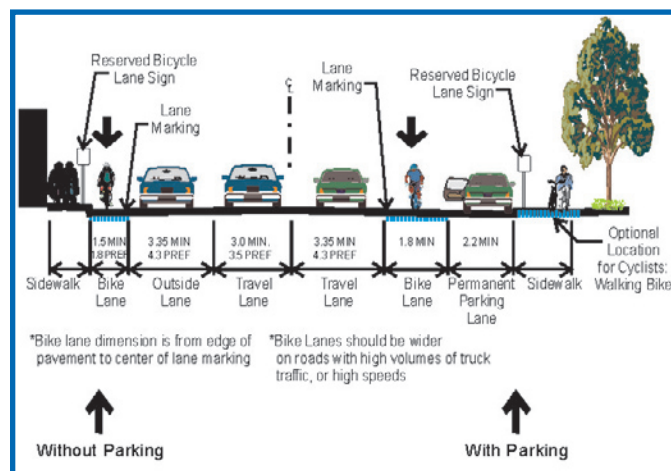


Figure 5-3: Typical bike lane with and without on-street parking

Bike lanes and paved shoulder bikeways are normally denoted by pavement markings and signage that identifies the facility as part of the Regional network.

The bike lane marking through bus stop zones should be a dash with a broken line consistent with the Transportation Association of Canada (TAC) Bikeway Traffic Control Guidelines. Current legislation requires vehicles to yield to buses, as indicated by markings on the rear of all buses.

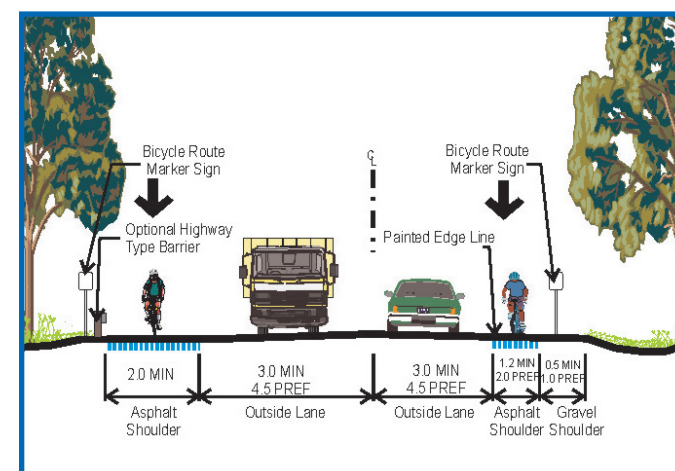


Figure 5-4: Typical paved shoulder

5.2.3 SIGNED-ONLY ROUTE

A signed-only route is an on-road bicycle route denoted with bicycle route signage and optional sharrow pavement markings and requires no other physical changes to the roadway. Cyclists share the pavement and travel lane with motor vehicles. There are no special lane designations. The purpose of designating a signed-only bicycle route is to promote a road for cycling because it is deemed to be well suited for cycling and/or because it provides an important connection to where cyclists want to travel.

In urban areas on multi-lane roads, or where traffic volumes exceed the suggested thresholds for a signed-only route and where a bike lane is not feasible, a wide curb lane is often implemented. In rural areas, an edge line and paved shoulder is preferred. Edge lines located less than 1.2 m from the edge of pavement are not recommended on urban roads with curbs due to the risk of cyclists striking the curb and “bouncing” back into the motor vehicle travel lane and potentially colliding with a motorist. Existing urban cross-section roads with edge lines less than 1.2 m from the face of curb should not be signed as bike lanes. Should a cycling route be preferred on this type of road, consideration should be given to providing a signed-only route.

Signed-only cycling routes can be located on roads with standard curb lane widths or wide curb lane widths. In this situation, the travel lane is still shared by motorists and cyclists.

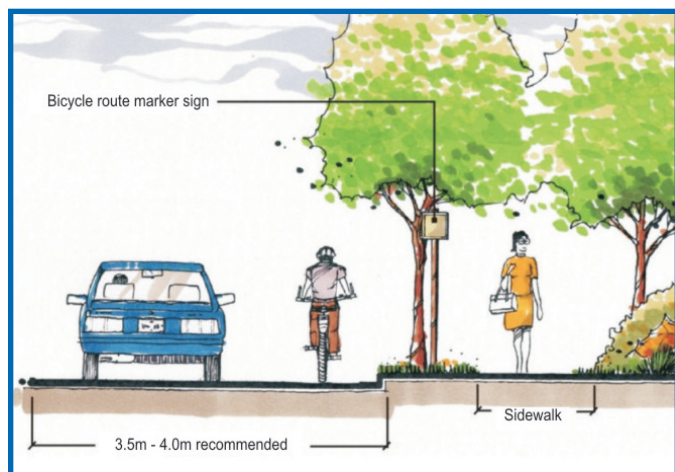


Figure 5.5: Signed-only cycling route along a wide curb lane

5.3 NETWORK AND SYSTEM DEVELOPMENT APPROACH

The approach to developing the recommended pedestrian system and cycling network involved a number of iterative steps:

1. Developed a set of route selection principles;
2. Reviewed and updated the Region's inventory of existing conditions;
3. Identified major attractions and destinations;
4. Identified barriers to walking and cycling;
5. Mapped existing conditions;
6. Developed a more detailed set of route evaluation criteria to guide the selection of candidate cycling routes and identify areas where pedestrian improvements should be considered; and
7. Identified, field investigated and assessed a set of candidate routes and then reviewed these with both the public and stakeholders.

The following sub-sections describe each of these steps.

5.3.1 ROUTE SELECTION PRINCIPLES

The following is a list of guiding principles that were used to develop the York Region Pedestrian and Cycling Master Plan. These principles were reviewed and confirmed by the study team based on observations of existing conditions, input obtained from public consultation and from the review of the background documents.

A signed-only route is an on-road bicycle route denoted strictly with bicycle route signage and requires no other physical changes to the roadway.



Example of a signed-only cycling route



IB-23

450 mm x 450 mm

Bicycle Route Marker sign

Source: TAC, Bicycle route Traffic Control Guidelines, 1998

Pedestrian and cycling routes should be easily accessible from local neighbourhoods within the region, and every effort should be made to integrate these routes with local area networks.



A pedestrian friendly streetscape, Main Street, Town of Newmarket

- **Attractive and Scenic:** Cycling and pedestrian routes should take advantage of attractive and scenic areas, views and vistas and promote natural and cultural heritage.
- **Diverse Experience:** The pedestrian system and the cycling network should provide a diverse on and off-road walking and cycling experience.
- **Visible:** The pedestrian and cycling routes should be a visible component of the transportation system.
- **Direct / Connected:** All routes should be connected to form an overall pedestrian system and cycling network.
- **Easily Accessible:** Pedestrian and cycling routes should be easily accessible from local neighbourhoods within the region, and every effort should be made to integrate these routes with local area networks.
- **Reduce Risk:** The system should be designed to improve the safety of all users. The confidence and acceptance of the network can be instilled in users by reducing real and perceived risks.
- **Destinations:** Pedestrian and cycling routes should provide access to major destinations in the region including natural, cultural and service facilities, as well as routes to schools, community and neighbourhood parks and shopping facilities.
- **New Rights-of-Way:** New rights-of-way should be designed where feasible to accommodate both pedestrians and cyclists.
- **Integration with other modes:** The pedestrian system and the cycling network should be integrated with other modes of transportation, particularly public transit. Routes should be selected to provide access to transit stops and stations.
- **Broad Based:** The cycling network should appeal to a range of cycling abilities and interests. This requires the design of a variety of route types.
- **Supporting Services and Facilities:** Supportive services and facilities such as benches and bicycle parking should be available along routes and at destinations. Routes should be selected that provide opportunities to develop supporting facilities.
- **Sustainable:** Cycling and pedestrian routes should protect and enhance natural heritage wherever possible. Route design and planning should not only take into consideration minimized environmental disturbance, but also future use of trails with a mind to minimizing disturbance of the environment through design and signage.

5.3.2 REVIEW AND UPDATE INVENTORY OF EXISTING CONDITIONS

The next phase in developing the draft network plan involved preparing an inventory of existing and previously proposed on and off-road cycling and pedestrian facilities in the Region. This was crucial in order to understand where and what types of facilities currently exist in the Region, regardless of jurisdiction.

This task entailed reviewing the Regional Official Plan, the York Region Transportation Master Plan as well as Local Municipal planning documents. Information was also assembled from the Region's existing trail maps, as well as from discussions with Regional and Local Municipal staff and other stakeholders.

Regional staff provided the study team with a digital Geographic Information System (GIS) database as well as digital ortho (aerial) photography of the entire Region. Information from these and other sources provided the study team with information that

included a current inventory of sidewalks on Regional roads (2004 data), Average Annual Daily Traffic (AADT) volume data and posted speed limits for Regional Roads, where data was available.

All the information available regarding existing or planned pedestrian and cycling facilities was then consolidated and used to prepare inventory maps. The Technical Advisory Committee, as well as Regional and Local Municipal staff, reviewed these maps.

5.3.3 IDENTIFY MAJOR ATTRACTIONS AND DESTINATIONS

Major cycling attractions and destinations in the Region were identified with input from the Technical Steering Committee and other stakeholders. This stage identified some of the key recreational, commuter and utilitarian destinations for pedestrians and cyclists in the Region. These generally include all settlement areas, tourist attractions, colleges, major employment centres, civic centres including libraries, major retail centres or shopping districts and recreational facilities. In addition, major land uses and natural areas such as parks and conservation areas, public lands, water bodies, prominent vistas, roads, residential areas, publicly accessible wood lots and wetlands were included.

The inventory of major cycling attractions and destinations in York Region was then used in association with the other route selection criteria to assess and confirm existing or proposed pedestrian and cycling routes, and to identify areas where improved pedestrian and cycling access and facilities may be warranted.

5.3.4 IDENTIFY BARRIERS TO WALKING AND CYCLING

In developing a cycling network and identifying missing sidewalk links, it is important to first understand the nature of perceived or real barriers to walking and cycling. This is especially true for York Region because of the myriad of natural features and infrastructure elements that impact transportation route and travel mode choices.

There are both primary and secondary barriers to walking and cycling in York Region. Primary barriers include the 400 series highways, railways, rivers, wetlands, ravines and long travel distances. Secondary barriers are those that tend to discourage cycling for all but the most experienced riders, and include major Regional and local arterial and collector roads, mid-block crossings of major roadways, and trails with difficult terrain.

The purpose of this step in developing the cycling network and identifying missing sidewalk links was to confirm the location of major barriers so that opportunities to overcome them could be investigated in the route selection stage. This step also considered accessibility issues for persons with disabilities.

Identifying major barriers enabled the study team to develop a recommended cycling network for the Region that encourages use by moderately experienced riders and touring cyclists, not just highly experienced riders. The Planning and Design Guidelines developed as part of this study provide the tools necessary for Regional and local municipal staff to implement a region wide pedestrian system and cycling network that can be enjoyed by users of all ages and experience levels.

In developing a cycling network and identifying missing sidewalk links, it is important to first understand the nature of perceived or real barriers to walking and cycling.

Route selection was generally based on the application of the criteria, the experience of the team, observations made in the field, as well as consideration of information such as missing sidewalk links, traffic volumes, road and rights-of-way width, distance from key destinations and the nearest proposed route, and the cost effectiveness of implementing the preferred pedestrian and/or cycling facility.



Field investigating a candidate route

5.3.5 EXISTING CONTEXT

All of the existing and previously proposed on and off-road cycling facilities as well as major attractions and destinations were compiled and digitally mapped. Figures A1 and A2 in Appendix A illustrate the existing context upon which this Plan has been based.

5.3.6 CANDIDATE ROUTE EVALUATION CRITERIA

Following the review of existing and previously proposed cycling routes throughout the Region, the study team selected a series of candidate routes that best connected attractions and destinations throughout the Region and were deemed to be suitable as part of a logical, continuous and connected Regional cycling network. The candidate routes selected then had to be checked for their suitability in the field. This required the need for route evaluation criteria to assess each candidate route.

Route evaluation criteria were developed with input from the Steering Committee and public based on the route selection principles. **Table 5-1** outlines the criteria used to assist the team as they investigated candidate routes for possible inclusion in the network plan. Additional evaluation criteria may be required at the design/implementation phase (see section 6.7.5)

5.3.7 CANDIDATE ROUTES

A set of on and off-road candidate routes were identified and mapped using the information collected as part of this study. This task also included input from the Technical Advisory Committee as well as the route selection principles and criteria, Regional and Local Municipal staff and the public through the study's formal public consultation process.

The candidate routes were further refined based on public input received following a Public Open House held in October, 2006 as well as comments received from local municipal staff and stakeholders. Some route alternatives were removed or added based on comments received.

The refined candidate route alternatives were then investigated in the field to confirm their suitability for inclusion into the proposed pedestrian system and cycling network. Route selection was generally based on the application of the criteria, the experience of the team, observations made in the field, as well as consideration of information such as missing sidewalk links, traffic volumes, road and rights-of-way width, distance from key destinations and the nearest proposed route, and the cost effectiveness of implementing the preferred pedestrian and/or cycling facility. Potential cycling routes were further screened and those considered less desirable compared to a parallel route were then eliminated from further consideration. Routes that were thought by the study team to best satisfy the criteria formed the proposed draft regional pedestrian system and cycling network.

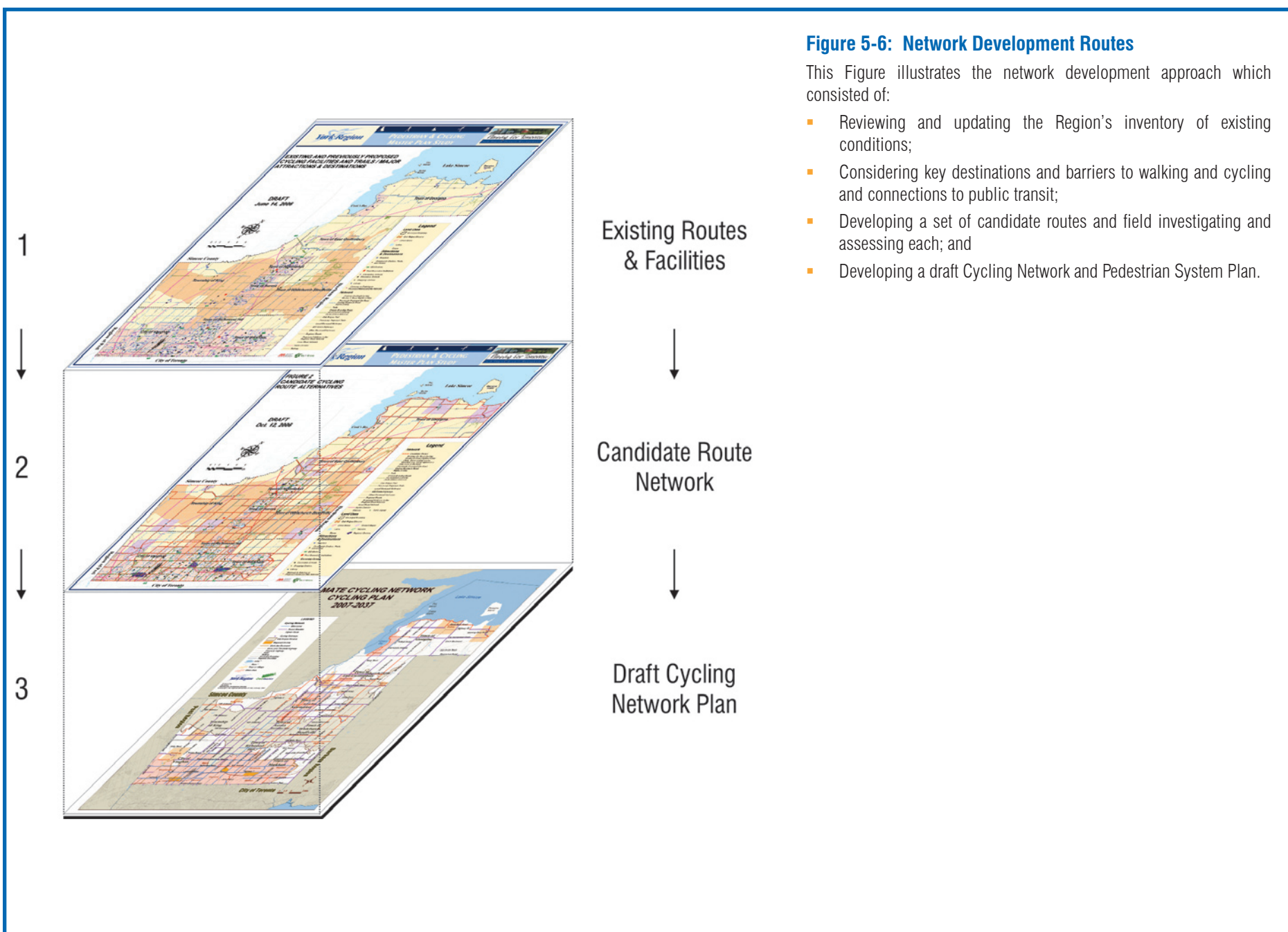
The pedestrian system component of the study focused on missing links in the sidewalk system on Regional Roads as well as developing a set of pedestrian supportive actions and guidelines for both the Region and Local Municipalities.

Figure A3 in Appendix A illustrates the candidate route alternatives. **Figure 5-6** illustrates how some of the various attributes and map layers can be viewed and also demonstrates that the York Region Pedestrian Cycling Master Plan is the result of a number of layers of information that have been compiled and developed in a particular sequence through the network development process.

TABLE 5-1: ROUTE EVALUATION CRITERIA

This figure illustrates the on and off-road route selection and evaluation criteria that were applied in the field to assist the team as they investigated candidate routes for inclusion in the draft network plan.

FACTOR	EVALUATION CRITERIA
Safety	◆ Are there numerous mid-block or railway track crossings? ◆ Is there a high volume of automobiles, trucks and transit vehicles? ◆ Is there sufficient right-of-way width to accommodate bike lanes, boulevard pathways and/or sidewalks? ◆ Does the route provide a safe crossing of major barriers? ◆ Are there poor sight-lines? ◆ What is the posted speed limit of the route, if applicable? ◆ Can the route accommodate the preferred facility type?
Connectivity/ Access	◆ Does the route provide a vital connection to existing routes and trails? ◆ Does the route provide direct access to major destinations and connect major nodes (including transit nodes) throughout the Region? ◆ Does the route connect to municipal networks, supporting services and facilities?
Convenience	◆ Is the route impeded by numerous stop signs? ◆ Is the route impeded by numerous closely spaced traffic control signals? ◆ Is the route part of the “Spine” network? ◆ Does the route provide a direct path to the destination?
Attractiveness	◆ Does the route provide access to region’s scenic routes, vistas and destinations? ◆ Is the route highly visible? ◆ Does the route provide diversity of experience?
Cost	◆ Is the route the most cost-effective solution? ◆ Is there the ability to reduce costs by combining route development with existing road works?
Route Alignment	◆ Is the location suitable with respect to adjoining land uses and environmental considerations? ◆ How can existing barriers be overcome? ◆ Is the road right-of-way width sufficient to accommodate cycling facilities, or does the roadway require widening?



5.4 IMPROVING CONDITIONS FOR WALKING IN THE REGION

Improving conditions for walking is more than just creating a network of connecting pedestrian facilities such as sidewalks and pathways. Although these facilities are important, the essential element is to create a system that “engages” pedestrians and makes them feel comfortable when using it, rather than a system that treats pedestrians as an after-thought. The concept of “every street should be viewed as a pedestrian street” is a notion that should be adopted as part of this Plan. The goals are to improve the environment for pedestrians of all age levels, create a system that is accessible for all types of users and encourage more people to walk more often.

The primary objectives of the pedestrian component of the York Region Pedestrian and Cycling Master Plan include the following:

- To improve sidewalks on Regional roads and pedestrian infrastructure connections to public transit stops and transit stations;
- To encourage and support pedestrian friendly urban design and streetscaping; and
- To improve pedestrian connectivity and accessibility.

York Region’s Transit Oriented Development Guidelines adopted in 2006 reinforce the need to have pedestrian walkways and connections to transit that accommodate people with disabilities, and promote safety for users.

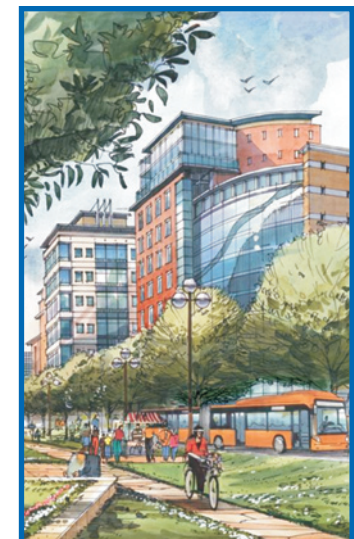
5.4.1 COMPLETE MISSING SIDEWALK LINKS

A key step necessary to help improve conditions for walking in York Region is to complete missing links in the existing sidewalk system on both Regional and local municipal roads. Sidewalks serve as the foundation of York Region’s pedestrian system and need to be continuous so they can connect people to where they want to go. Missing links act as barriers and can discourage walking. This is especially critical in urban areas (i.e. Pedestrian Zones) in the Region.

A comprehensive and connected sidewalk system is also critical to supporting public transit ridership. Since almost every transit trip begins and ends with some form of a pedestrian trip, these two travel modes should be viewed as being mutually dependant upon one another. As the jurisdiction responsible for public transit, York Region has a vested interest in encouraging local municipalities to complete and expand the sidewalk system wherever possible.

As part of the Master Plan Study, York Region’s inventory of sidewalks on Regional Roads was reviewed, and missing links were identified. In some location sidewalks are only located on one side of a road, while in other locations there are no sidewalks. Locations where transit stop hubs had no connecting sidewalks were given careful attention as part of this review.

A set of candidate sidewalk improvements were identified and investigated in the field after they were first presented to the public and stakeholders at a public open house in October of 2006. Figure A4 in Appendix A illustrates the initial set of candidate sidewalk improvements presented at the open house in October of 2006. Input received from the public combined with observations made in the field were used to map priority



An ideal pedestrian environment is accessible to various modes of transportation and user groups.



Benches and patios should be provided along pedestrian corridors, especially at major junctions between other pedestrian routes and at major attractions and destinations.



MMM GROUP

Despite the presence of sidewalks, environments with little streetscaping and pedestrian amenities discourage people from walking through them.



MICHAEL HAYNES

Improved streetscaping can help to create an inviting environment for both pedestrians and cyclists.

Drawing Credit: York Region Rapid Transit Plan, 2003



MMM GROUP

Sidewalks should be installed on all roads in urban areas that comprise part of the pedestrian network.

locations where missing sidewalk links on Regional roads should be completed. **Figure 5-7** illustrates these priority sidewalk locations and pedestrian zones.

It is recommended that the Region of York work and cooperate with local municipalities to implement the missing sidewalk links identified in this Master Plan. A component of the implementation strategy developed for the Master Plan and described in Chapter 6.0 proposes that the Region contribute towards the cost of completing missing sidewalk links on Regional Roads, particularly if improved pedestrian access to public transit would result.

5.4.2 IMPROVE URBAN DESIGN AND STREETSCAPING IN PEDESTRIAN ZONES

As mentioned previously, improving walking in York Region is more than just installing a sidewalk along a street. It is creating a street and built form that encourages walking. This can be accomplished through adopting appropriate urban design practices and streetscaping in designated pedestrian zones. Pedestrian-oriented development includes the provision of pedestrian amenities along walking corridors such as benches and patios.

Another key component associated with streetscaping is the provision of shops and residences that are located directly alongside a sidewalk. In order to make areas more pedestrian-friendly, the Region should steer-away from development patterns that cater strictly to the automobile. These types of developments are typical of traditional suburban areas, which were designed specifically with the automobile in mind and pedestrians as an after-thought.

Figure 5-8 illustrates how site layout design elements can be applied to promote sustainable transportation.

The Region of York and its partners should therefore consider the needs of pedestrians when designing new roads and developments so that an environment is created that encourages people to walk more often.

The Towards Great Regional Streets - A Path To Improvement Study which recommends new regional standards for six-lane roads also recommends the provision of pedestrian amenities and includes guidelines for pedestrian and transit-oriented development. It is vital that these street guidelines for streetscaping and urban design be followed to ensure the Vision of this Plan is implemented over the long term.

5.4.3 IMPROVE PEDESTRIAN CONNECTIVITY AND ACCESSIBILITY

In the context of the York Region Pedestrian and Cycling Master Plan, connectivity for pedestrians is very important.

Some on-road cycling routes identified in this plan utilize roads that may not provide the most direct route to a destination but have more favourable cycling conditions. This approach may be suitable for cyclists because they travel much faster than pedestrians and can therefore utilize a less-direct route with favourable cycling conditions without a significant loss in travel time. This approach, however, is not suitable for pedestrians.

Major destinations and attractions throughout York Region are typically located on major arterial roads. Although some arterials may not provide favourable cycling conditions, pedestrians can be readily accommodated on major roads through the provision of designated pedestrian facilities along road rights-of-way. Pedestrian connections should be provided to and along main

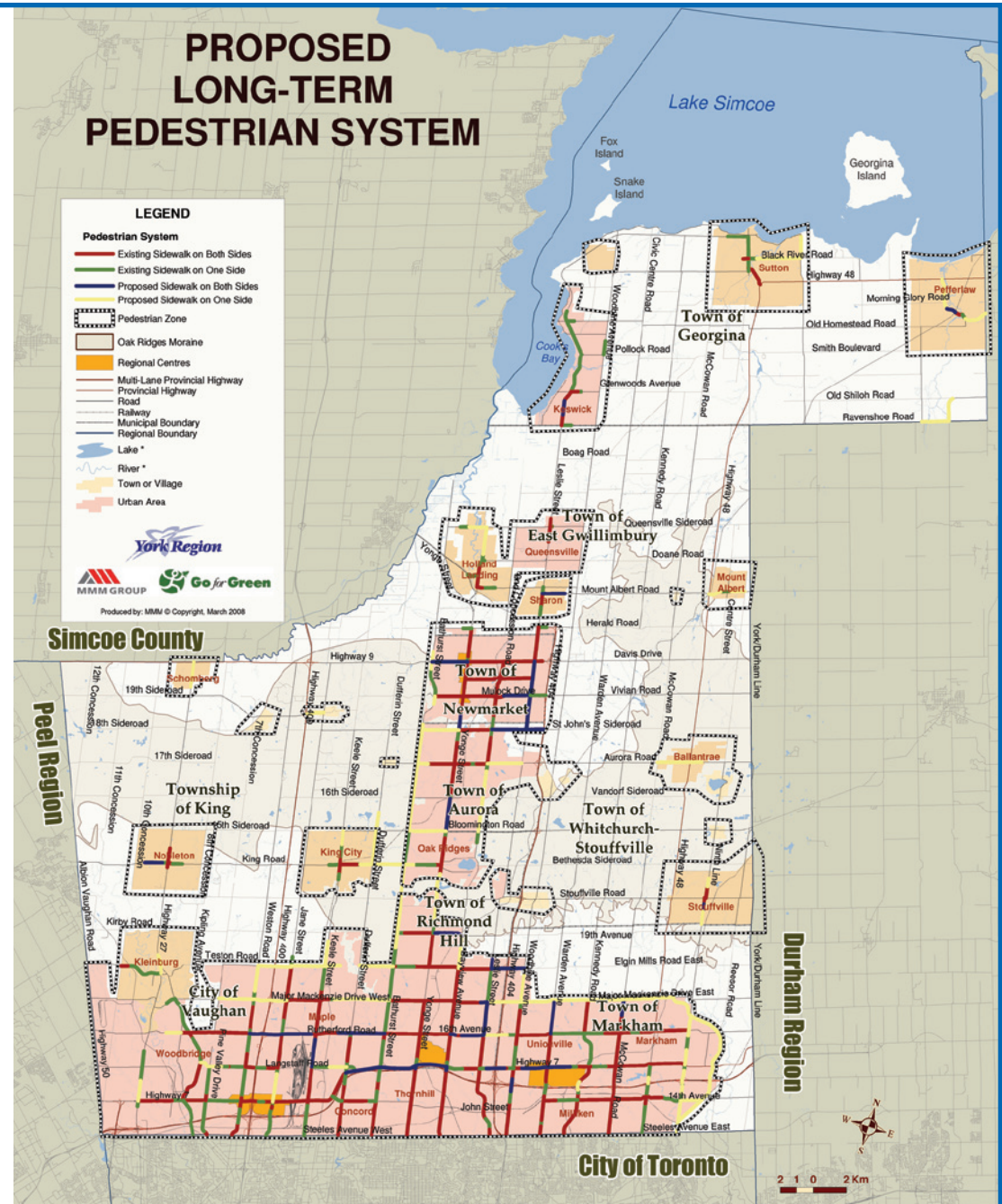
Figure 5-7: York Region Pedestrian System Strategy

This figure illustrates the priority locations to complete missing sidewalk links and pedestrian zones where expanded pedestrian infrastructure should be encouraged.



MICHAEL HAYNES

Sidewalks are the Foundation of the Region's Pedestrian System



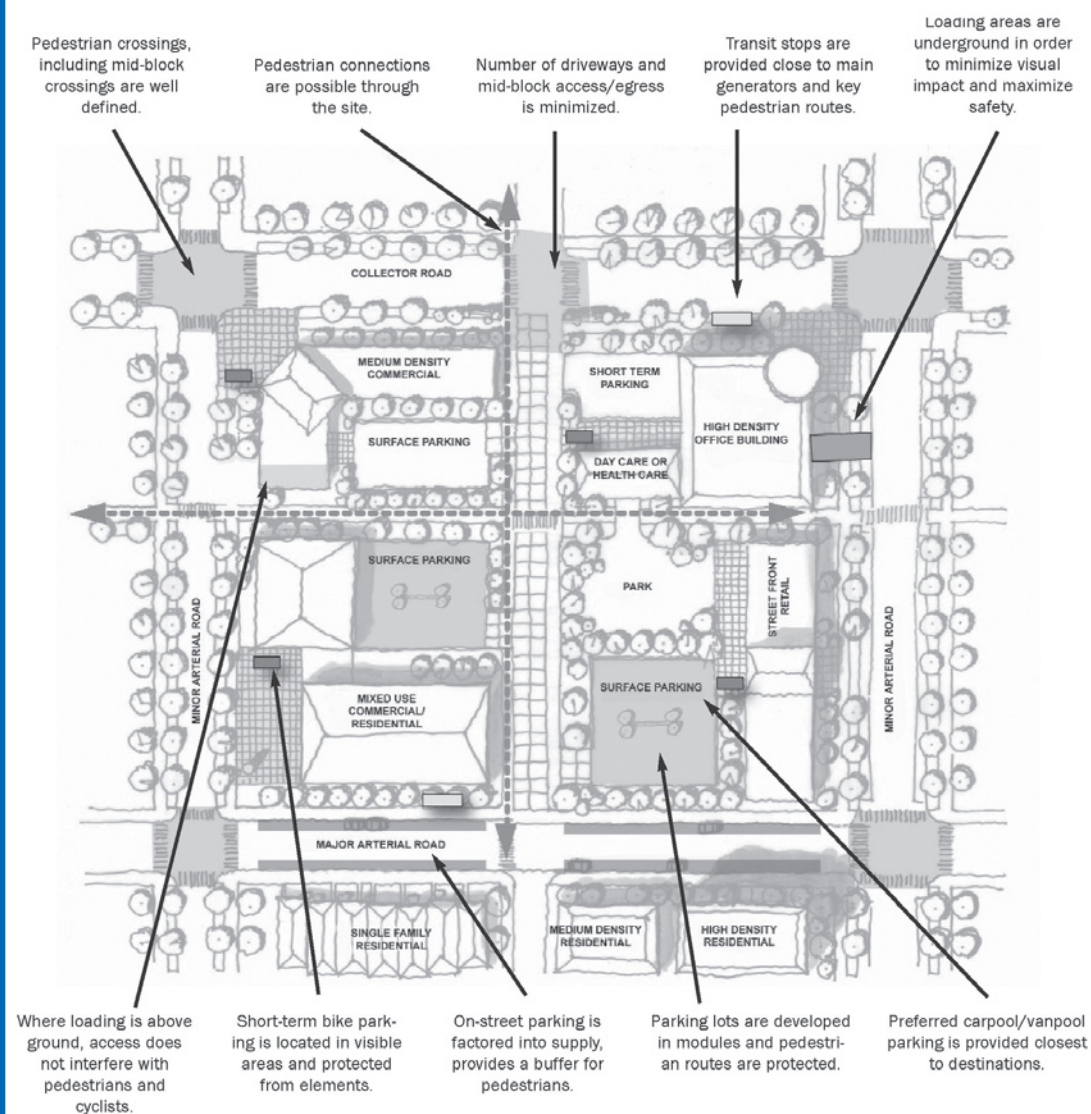


Figure 5-8: Promoting Sustainable Transportation Through Site Design

This Figure illustrates the application of site layout design elements that encourages walking, cycling and public transit access.

Source: CITE and IBI Group; Promoting Sustainable Transportation Through Site Design: An ITE Proposal Recommended Practice; 2004



Example of built form that is more pedestrian oriented

roads because that is typically where pedestrians want to go to access destinations such as shopping malls, plazas, theatres, businesses and transit stops.

On major arterial roads with heavier traffic volumes, pedestrian amenities such as barriers and landscaped boulevards can help make walking conditions more pleasant for pedestrians. The Planning and Design Guidelines details numerous pedestrian amenities that can be considered to improve the pedestrian environment and improve walking conditions for pedestrians along all roads in the Region.

Whenever possible, direct pedestrian connections should be provided to link major destinations and attractions throughout the Region, as well as to provide pedestrian connectivity throughout the network itself.

Pedestrian facilities, particularly sidewalks and connecting off-road trails in subdivisions, are crucial to providing an effective alternative to the private (single occupant) automobile for trips to and from schools, recreation facilities, community and regional shopping areas, commercial and employment nodes, bus terminals and transit hubs. The recommended distance from these destinations to public transit stops and hubs should be between 200-500 metres, in accordance with York Region's Transit-oriented Development Guidelines.

As previously noted, pedestrian connectivity includes pedestrian connections to other travel modes, specifically public transit. Every transit trip requires a walking trip to some extent. Therefore, appropriate connections to transit facilities such as bus stops and transit terminals should be provided and viewed as implementation priorities by the Region. Connectivity to transit should also include cyclists and the provision of cycling facilities.

The recently implemented Viva bus rapid transit network provides bicycle parking facilities at all of its stops.

5.4.4 PROPOSED PEDESTRIAN SYSTEM

When the priority missing sidewalk links are completed, the pedestrian system should include more than 680 linear kilometres of sidewalks on Regional Roads. This will consist of a total of 115 linear km of new sidewalks on one side of the road and 82 linear km of new sidewalks on both sides of the road. Of the total 683 linear km of sidewalks, 486 linear km exist today.

Table 5-2 identifies the number of kilometres for both existing sidewalks and proposed sidewalk links by type and ownership by jurisdiction.

5.5 THE REGIONAL CYCLING NETWORK

The primary objective of the cycling component of the York Region Pedestrian and Cycling Master Plan is:

- To identify a continuous and connected regional-scale cycling network that builds upon, connects and supports existing and planned local municipal routes and facilities, cycling as a utilitarian and recreational activity, and public transit use.

York Region's proposed cycling network should also be viewed as part of a Greater Toronto Area (GTA) cycling system. Regional and municipal boundaries are usually invisible to pedestrians and cyclists. However, a municipal boundary can sometimes become the "end of the road", simply because a proper cycling or pedestrian connection has not been made to the neighbouring region or municipality. In developing this Master Plan every effort

The Planning and Design Guidelines details numerous pedestrian amenities that can be considered to improve the pedestrian environment and improve walking conditions for pedestrians along all roads in the Region.



Almost every transit trip begins and ends with a pedestrian trip



Jurisdiction	Regional Road Sidewalk Distances (Km) ¹								
	Existing ²				Proposed ³				Ultimate Total (Km)
	One Side of Road	Both Sides of Road	Total (Km)	% of Total	One Side of Road	Both Sides of Road	Total (Km)	% of Total	
Local Municipality									
Aurora	3.7	19.4	23.0	4.7	17.4	11.6	28.9	14.7	52.0
East Gwillimbury	5.8	9.6	15.4	3.2	4.7	1.4	6.0	3.1	21.4
Georgina	11.4	7.6	19.0	3.9	10.4	2.8	13.2	6.7	32.2
King	2.5	5.2	7.7	1.6	9.3	2.1	11.4	5.8	19.1
Markham	21.1	109.9	131.0	26.9	30.1	17.5	47.6	24.2	178.6
Newmarket	5.5	54.2	59.7	12.3	1.5	9.0	10.5	5.3	70.2
Richmond Hill	18.5	67.5	86.1	17.7	12.4	13.7	26.1	13.2	112.2
Vaughan	44.1	98.2	142.2	29.2	25.0	23.5	48.4	24.6	190.7
Whitchurch-Stouffville	0.2	2.0	2.3	0.5	4.0	0.9	4.8	2.5	7.1
TOTAL (Km)	112.9	373.5	486.4	100.0	114.7	82.3	197.0	100.0	683.3

¹ Linear Kilometres of sidewalks along York Region roads.

² Based on 2006/2007 sidewalk data provided by the Region.

³ Proposed sidewalk links.

Table 5-2:
Proposed Sidewalk Links
on Regional Roads by Type and Jurisdiction

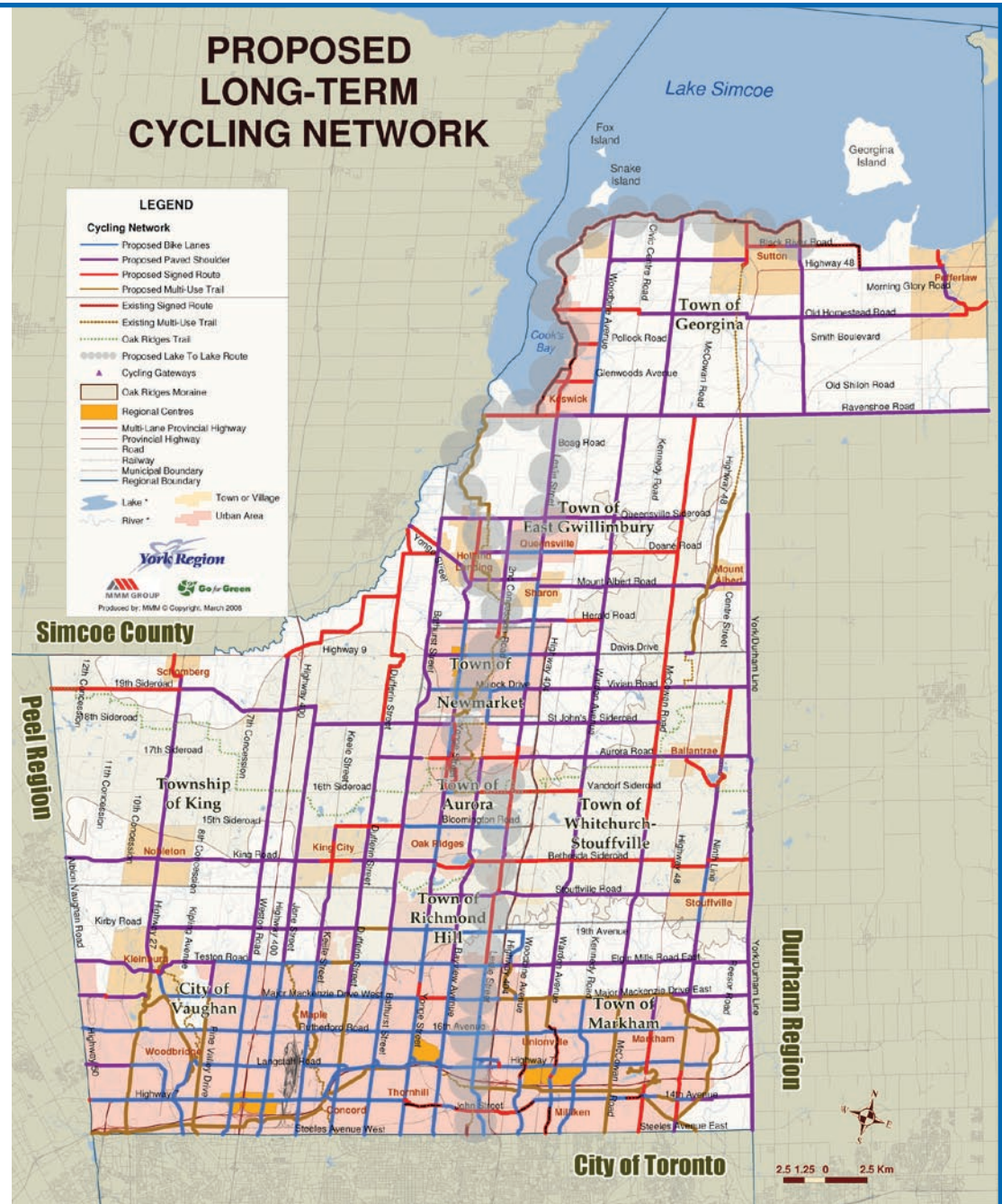


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Figure 5-9: Proposed Cycling Network

This Figure illustrates the recommended route alignment and facility types for the regional cycling network.



Jurisdiction	Facility Type [Distance (Km)] ¹												
	Existing Routes ²						Proposed Routes ³						Ultimate Total (Km)
	Multi - Use Trail ⁴	Bike Lane	Paved Shoulder	Signed Only Route	Total (Km)	%	Multi - Use Trail ⁴	Bike Lane	Paved Shoulder ⁵	Signed Only Route	Total (Km)	%	
Region of York	0.0	0.0	0.0	8.5	8.5	7.9	0.0	268.2	457.7	69.0	794.9	70.0	803.4
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	35.4	3.8	7.1	0.7	47.0	4.1	47.0
Local Municipality													
Aurora	12.3	0.0	0.0	0.0	12.3	11.4	0.3	1.9	2.1	12.1	16.5	1.4	28.8
East Gwillimbury	12.2	0.0	0.0	0.0	12.2	11.4	19.0	0.0	6.7	12.4	38.1	3.4	50.3
Georgina	9.0	0.0	0.0	27.0	36.0	33.5	0.0	0.0	0.4	4.6	5.0	0.4	41.0
King	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	35.7	35.7	3.1	35.7
Markham	4.9	0.0	0.0	9.1	14.1	13.1	47.1	10.6	13.8	7.8	79.2	7.0	93.3
Newmarket	6.3	0.0	0.0	0.0	6.3	5.9	2.7	0.0	0.0	0.4	3.1	0.3	9.4
Richmond Hill	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.1	0.0	6.1	8.6	0.8	8.6
Vaughan	15.1	0.0	0.0	0.0	15.1	14.1	40.6	8.1	16.4	0.2	65.3	5.7	80.4
Whitchurch-Stouffville	3.0	0.0	0.0	0.0	3.0	2.8	0.2	0.0	6.2	36.4	42.8	3.8	45.8
TOTAL (Km)	62.9	0.0	0.0	44.6	107.5		145.6	294.7	510.5	185.3	1136.2		1243.7
Oak Ridges Trail ⁶	87.6	--	--	--	N/A	N/A	--	--	--	--	N/A	N/A	N/A
Surrounding Areas ⁷	--	--	--	--	N/A	N/A	--	21.2	24.4	--	N/A	N/A	N/A

¹ For on-road facilities, distance shown represents the length of the road with two-way bike facilities on it. For example, 1.0 km of roadway will have a Bike Lane on both sides of the roadway.

² The distances shown represent only bikeway facilities that currently exist on parts of the draft route network that has been proposed for the Region of York.

³ Roads yet to be built, were not taken into consideration when developing the network.

⁴ Distances for Multi-Use Trails in Region Road right-of-ways have been assigned to the Local Municipality or agency/ organization in which the trail exists or is proposed.

⁵ Portion of the distances identified for paved shoulder routes are on roads with at least 1.2 m existing paved shoulders.

As an interim solution, these routes could be designated as a paved shoulder bikeway by adding signage.

⁶ Oak Ridges Trail is primarily a pedestrian hiking trail and is unpaved and varies in width depending on location.

⁷ Facilities shown on the Draft Region Cycling Network Map that are within the City of Toronto or Region of Durham.

Table 5-3:
Proposed Length of
Regional Cycling
Network by Facility Type
and Jurisdiction



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has been made to connect to local municipalities in the Region as well as all surrounding municipalities.

Figure 5-9 presents the proposed cycling network, including the recommended facility types. Although some of the routes proposed utilize existing or previously proposed local municipal routes, the majority of the network utilizes Regional roads. A full size plot of Figure 5-9 is provided in Appendix A. Figures A5a to 5i, located in Appendix A, illustrate the cycling network identified in Figure 5-9, but are presented by each local municipality in the Region.

Over the next 25+ years, and if implemented as proposed in Chapter 6.0 (The Implementation Strategy), the recommended cycling network could include approximately 1,244 kilometres of designated cycling facilities, consisting of a total of 1,035 km of designated on-road facilities and 209 km of off-road cycling routes. Of the total 1,035 km of on-road Regional network cycling facilities, 45 km exist today, 805 km would consist of a combination of on-road bike lanes or paved shoulders and the remaining 185 km would be signed-only routes, which would only require the addition of bicycle route signing.

Many Regional Roads currently have paved shoulders that range from 0.75 m to 1.5 m in width. The preferred shoulder width for a road with moderate to high peak period traffic volumes and an 80 km/hr posted speed limit is 1.5 m to 2.0 m in width. However, cyclists are currently using many of these roads with existing paved shoulders that are below the preferred width. The Region should designate some of these roads with low or moderate traffic volumes as an existing component of the cycling network by simply adding signage. When the road is scheduled for resurfacing or construction, the preferred shoulder width of 1.5 to 2.0 m should be provided.

Table 5-3 summarizes the number of kilometres for both existing and planned cycling routes by facility type and ownership by jurisdiction.

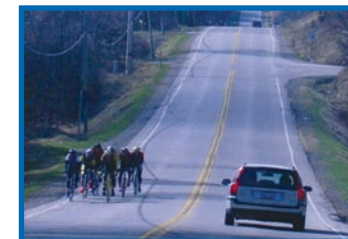
5.5.1 NETWORK OPPORTUNITIES

The proposed regional cycling network builds upon and connects local municipal cycling networks and major trail systems, links urban and rural centres as well as key attractions in the Region and creates a regional spine that will facilitate transportation by bicycle for both utilitarian and recreational purposes and support the use of public transit. In addition, parts of the network are destinations for cyclists and pedestrians. Examples of two of these include the Lake Simcoe to Lake Ontario route and the Terry Fox Bikeway concept.

Proposed Lake Simcoe to Lake Ontario Route

In developing the proposed network plan, members of the study team and the public suggested the network should include a linear on and off-road connection from Lake Simcoe at the northern edge of the Region of York through the City of Toronto to Lake Ontario in the south. The alignment proposed in the Master Plan utilizes existing and proposed off-road sections as well as a number of roads to complete the Lake-to-Lake route, and presents an opportunity to promote watershed tourism.

On-road segments of the Lake-to-Lake route in this Master Plan are proposed to consist primarily of bike lanes and sidewalks on urban cross-section roads, paved shoulders and signed-only routes on rural cross-section roads and a few existing in-boulevard multi-use trails (e.g. Vondorf Sideroad west of Bayview Avenue in Aurora).



York Region roads are regularly used by cycling clubs

Lake-to-Lake Route:

In developing the proposed network plan, members of the study team and the public suggested the network should include a linear on and off-road connection from Lake Simcoe at the northern edge of the Region of York through the City of Toronto to Lake Ontario in the south.



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Recognizing that the Lake-to-Lake route is envisioned as a major recreational “regional-trail” and is expected to be a major destination and amenity for all York Region residents, the Region may want to consider “upgrading” the proposed facility type on the on-road sections by providing an in-boulevard multi-use trail on one side of the road in place of a sidewalk. For example, one section of Leslie Street from just north of 16th Avenue north to Elgin Mills Road currently has a single sidewalk on the west side of the road. When lands along the east side of Leslie Street in this area are developed, the Region, working with the Town of Richmond Hill, could request that developers provide a 3.0 m asphalt multi-use trail in place of a sidewalk in the boulevard. Assuming sufficient right-of-way exists, the cost to construct an asphalt multi-use trail is comparable to a concrete sidewalk.

To the south, Leslie Street from 16th Avenue south to John Street (where an existing off-road trail begins) is a five lane roadway with sidewalks on both sides of the road. If this section of Leslie Street is widened in the future, the Region could consider implementing a multi-use trail in the boulevard in place of one sidewalk, instead of adding bike lanes. If Leslie is not to be widened in the foreseeable future, another option might be to implement a multi-use trail in the boulevard by converting one of the existing sidewalks by simply paving over the sidewalk and adding some additional width.

To the north, Leslie Street from Elgin Mills to Vandorf sideroad is a rural cross-section road with moderate to low traffic volumes and truck traffic, except during the morning and afternoon peak commuting hours. This section of the route should remain on road utilizing paved shoulders where feasible. In the future, if this segment of the road is ever widened, consideration should be given to upgrading to a multi-use trail on one side of the road.

Another possible option might be for the Region to investigate, as part of a future study to develop a Regional Natural Heritage Trails Master Plan, the opportunity to shift part of the on-road segment to existing or previously proposed trail segments along natural corridors. The work completed for the Pedestrian and Cycling Master Plan Study concluded that Leslie Street was the most direct and best connected corridor for the proposed Lake-to-Lake Route.

The route concept for the Lake-to-Lake route is outlined below:

- The route could start at Lake Simcoe at the north end of Lake Drive;
- West on Ravenshoe Road to its end where a new multi-use trail/boardwalk would continue south along the east side of the Holland River East Branch to Queensville Sideroad West. The alignment for the off-road part of this segment will need to be reviewed and confirmed by the Lake Simcoe Region Conservation Authority;
- The route would join the existing Simcoe Trail from Queensville Sideroad east to connect to the existing Holland River Trail to Rogers Reservoir;
- From Rogers Reservoir, the route would continue south along the Nokiidaa Trail, cross Green Lane and continue south through Newmarket;
- South through Newmarket on the Tom Taylor Trail through Mulock Drive to Yonge Street just north of St. Johns Sideroad;
- Jog on-road for a short distance and then pick-up the Holland River trail (part of Nokiidaa System) in Aurora just west of Industrial Parkway and continue south to Vandorf Sideroad;
- Jog on-road west to Leslie Street and then continue south on Leslie Street to John Street in the Town of Markham;

- Continue south both on and off-road along the East Don River parkland and trail corridor to Don Mills Road where it could jog down to York Mills Road
- Head west to the new Leaside Spur multi-use trail being constructed this year by the City of Toronto that will start just west of Leslie Street; and
- Take the Leaside Spur trail south to the intersection of Lawrence Avenue at Leslie Street where the route would then connect with the existing Don Valley Trail in Wilket Creek Park (Edwards Gardens). This trail continues south along the Don Valley to Lake Ontario.

Figure 5-10 identifies the proposed Lake Simcoe to Lake Ontario (Lake to Lake) route concept. If implemented as proposed, the Lake-to-Lake segment in York Region could span approximately 92 kms.

A recommended network implementation strategy, including a schedule for implementing the first 10 years of the Master Plan strategy is provided in Chapter 6.0 of this study.

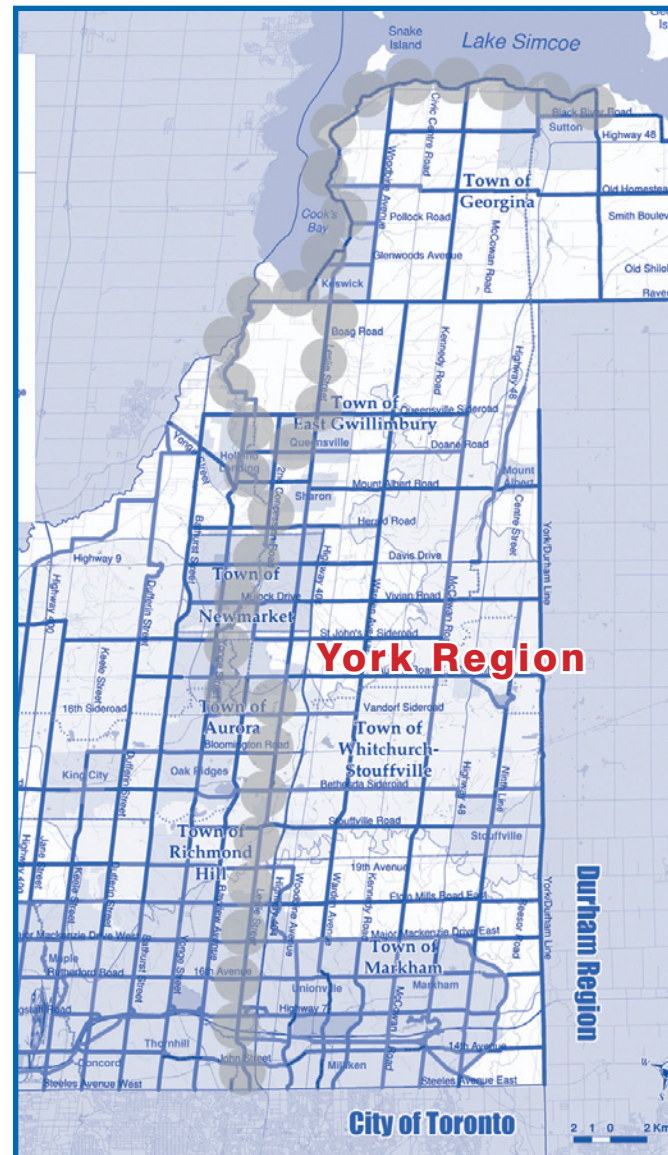


Figure 5-10: Proposed Lake-to-Lake Route - 92 kms

Recreational Circle Routes

The proposed York Region cycling network component of the Plan will allow both pedestrians and cyclists the opportunity to combine network segments to form numerous “loops” for recreational and fitness purposes. One example of this opportunity to create a recreational loop is from a proposal submitted to York Region as input to the Pedestrian and Cycling Master Plan Study on behalf of on-road cycling clubs. The proposal calls for the creation and designation of a permanent on-road cycling circle route in York Region and includes the suggestion that it be named the Terry Fox Bikeway.

■ Terry Fox Bikeway

The concept of the Terry Fox Bikeway was first developed by Joe Doria, a resident of York Region, and has since been endorsed by the Terry Fox Foundation, D’Ornellas Racing Team, Newmarket Eagles Cycling Club and the Toronto Bicycling Network. The concept for the Terry Fox Bikeway is to develop an on-road loop in York Region for road cycling enthusiasts. The proposal was formally submitted to the Region in January of 2007, was reviewed by the Master Plan study team, and has been considered in the development of the draft network. The route concept for the Terry Fox Bikeway is outlined below:

“The Terry Fox Bikeway would officially start at or near the Markham Fairgrounds (Elgin Mills Road and McCowan Road) and encompass the following roads: McCowan Road, Elgin Mills Road, St. John’s Side Road and Warden Avenue. Somewhere along the Terry Fox Bikeway a park and parking lot would be built as a general meeting place to attract cyclists from York Region and surrounding municipalities. The properties around the Markham

Fairgrounds would be an ideal location for a dedicated park and parking facilities.”¹

Figure 5-11 was part of Mr. Doria’s submission to the Region and illustrates a concept for the Terry Fox Bikeway. If implemented as proposed, the Terry Fox Bikeway loop would be approximately 38 km in length.

Figure 5-12 illustrates the location of the proposed route.

Although the Terry Fox Bikeway circle route concept is not specifically identified by name in the Region’s proposed network plan, the roads that are proposed by Joe Doria to form this circle route have been included as part of the Region’s long term network strategy.

It is recommended that following adoption of the Pedestrian and Cycling Master Plan that York Region staff investigate and establish a position and a process for working with local municipalities and interest groups who wish to designate a specific section of the Regional Pedestrian and Cycling Network as a recreational destination.

The concept for the Terry Fox Bikeway is to develop an on-road loop in York Region for road cycling enthusiasts.

¹ Terry Fox Bikeway, January 2007, Joe Doria, P.Eng.

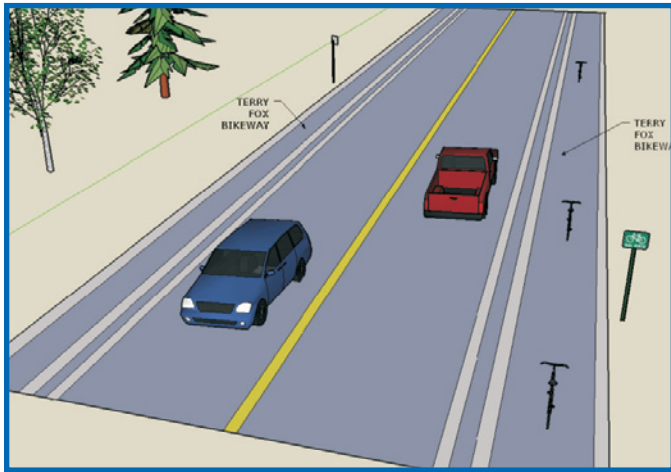


Figure 5-11: Illustrated concept of the Proposed Terry Fox Bikeway

Source: Joe Doria, Terry Fox Bikeway Implementation Proposal for the York Region Pedestrian & Cycling Master Plan to 2026, January 2007

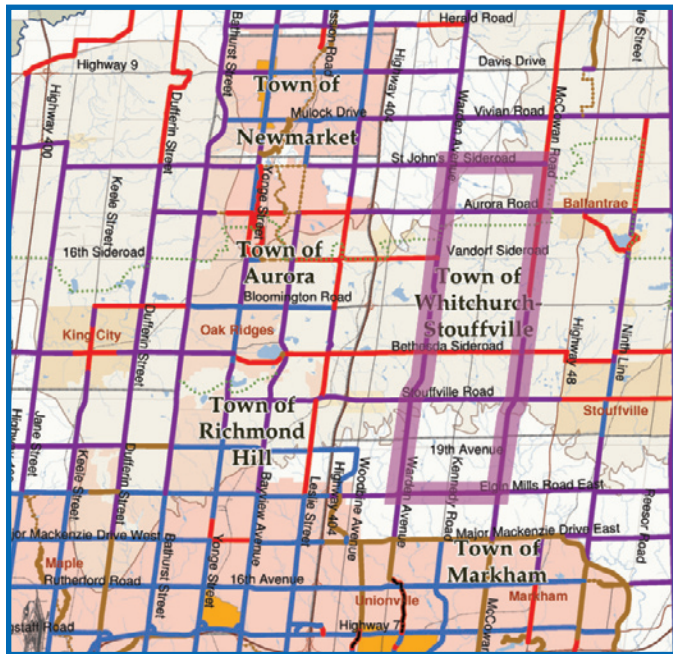


Figure 5-12 Proposed Terry Fox Bikeway Route - 38 kms

5.6 RECOMMENDED ACTIONS

The following actions are recommended to support improving conditions for walking and cycling in York Region.

- 5-1 Develop the pedestrian system and cycling network as identified in the York Region Pedestrian and Cycling Master Plan, including on-road routes, off-road routes, and multi-use pathways, for both utilitarian and recreational trip purposes. Improve and expand upon this network and add missing links through opportunities offered by unopened road allowances, hydro rights-of-way, existing or abandoned rail corridors, open green-space development and future roadway improvements;
- 5-2 Enable the Plan to be flexible to accommodate route revisions or changes in facility types, provided that continuity and functionality of the route is maintained in the same general location;
- 5-3 York Region should work to encourage pedestrian and cycling friendly streetscaping, urban design and pedestrian-oriented land development through the proposed Inter-Municipal Working Group as well as the Municipal Streetscape Partnership Policy, the Municipal Pedestrian and Cycling Partnership Policy and through planning/design studies and development review where the Region and local municipalities and conservation authorities together have a role;
- 5-4 Consider transportation operational measures as part of transportation system management to support safe and convenient cycling. These measures may include, but are not limited to:
 - Exemptions from turn prohibitions for cyclists;

- Bicycle detection at intersections;
- Management of loading zones and street parking to minimize disruption to cyclists and pedestrians; and
- Enforcing speed limits on roadways where observed speeds exceed acceptable levels.

5-5 Apply prevailing, recognized and best available guidelines and standards in the planning, design, construction, maintenance and operations of pedestrian and cycling facilities such as those documented under separate cover to as part of this study;

5-6 Complete missing sidewalks on Regional and local roads and improve connections to pedestrian destinations such as shopping malls, plazas, theatres, businesses and transit stops and terminals;

5-7 Designate some roads with low or moderate traffic volumes as an existing component of the cycling network by simply adding signage;

5-8 The Region, Local Municipalities and the Development Industry should apply the Institute of Transportation Engineers (ITE) recommended practices for the application site design guidelines that “Promote Sustainable Transportation Through Site Design”.²

5-9 Investigate and establish a position and a process for working with local municipalities and interest groups who wish to designate a specific section of the Regional Pedestrian and Cycling Network as a recreational destination.

The proposed cycling network, missing sidewalk links and pedestrian zones set out in this “network” component of the

² Promoting Sustainable Transportation Through Site Design: An ITE Proposed Recommended Practice, Canadian Institute of Transportation Engineers, 2004.

Pedestrian and Cycling Master Plan together form part of the long term strategy to improve conditions for walking and cycling in York Region. Although it will take time, coordination and resources to implement and to realize results, it will “Move York Towards Becoming a More Sustainable Region” and will improve the quality of life of all its residents.

A comprehensive strategy to guide the implementation of this Master Plan and Performance Measures for each of the recommended actions are provided in Chapter 6.0 of this study.



Walking is for all ages

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Cycling is for all ages

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Newmarket Main Street