

East Gwillimbury Active Transportation and Trails Plan Network Update

Land Acknowledgement

The Town of East Gwillimbury recognizes and acknowledges the lands originally used and occupied by the First Peoples of the Williams Treaties First Nations and other Indigenous Peoples, and on behalf of the mayor and council, we would like to thank them for sharing this land. We would also like to acknowledge the Chippewas of Georgina Island First Nation as East Gwillimbury's closest First Nation community and recognize the unique relationship the Chippewas have with the lands and waters of this territory. They are the water protectors and environmental stewards of these lands, and we join them in these responsibilities.

It is vital that municipal planning processes related to the land, including transportation and trail plans, are informed by the Town's treaty responsibilities and commitments to Truth and Reconciliation. The Town of East Gwillimbury is situated within the territory of the Gunshot Treaty (1787-1788) and the Williams Treaties of 1923. The rights bestowed by these treaties were reaffirmed in 2018 in a legal settlement between the Williams Treaties First Nations (WTFN), Canada, and the Province of Ontario.

The Town of East Gwillimbury is located within the shared traditional and Treaty territory of the seven Williams Treaties First Nations, which include:

- Mississaugas of Scugog Island First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Alderville First Nation
- Chippewas of Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation

The Town respectfully acknowledges that the WTFN are land rights holders and the collective caretakers of these lands and waters. The Town also recognizes that Indigenous Peoples of Canada have “Aboriginal rights” enshrined in Section 35 of the Constitution Act, 1982, which constitute broad, inherent rights such as rights to cultural practices and rights to hunt, fish, and harvest.

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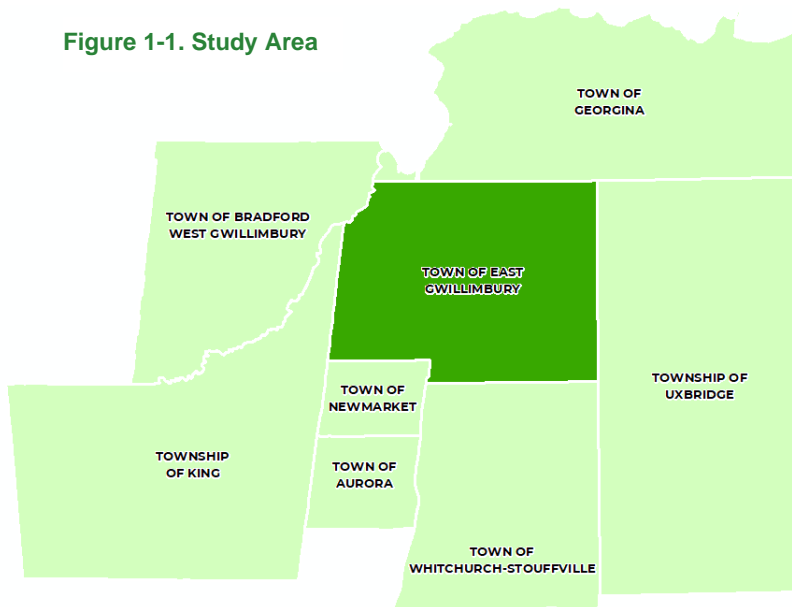
C 2012 ACTIVE TRANSPORTATION AND TRAILS MASTER PLAN

1 Introduction

Located between Toronto and Ontario cottage country, the Town of East Gwillimbury is comprised of connected urban areas and communities, surrounded by protected countryside. The Town has over 30 km of trails through picturesque green spaces and parks, including the Nokiidaa Trail.

The Town of East Gwillimbury completed its first Active Transportation and Trails Master Plan in 2012. This Plan provided recommendations for a connected active transportation and trail network and also included design considerations for off and on-road trail and active transportation facilities, policies related to trail planning, potential education and promotion programs that support healthy living and a phased implementation strategy over 25+ years.

Figure 1-1. Study Area



Defining Active Transportation (AT)...

Active Transportation refers to any form of human-powered transportation, walking, cycling, in-line skating, skateboarding, moving with mobility devices, and other non-motorized modes, including e-bikes and e-scooters.

What is an Active Transportation and Trails Plan (ATTP)?

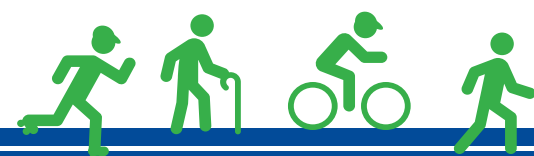
The ATTP is intended to be a long-term guiding document that provides the Town and its partners with the tools and strategies to enhance infrastructure, policy and programming for active transportation in East Gwillimbury.

1.1 Why Update the Active Transportation and Trails Network

The active transportation and trail network component of the 2012 ATTMP is now being updated to reflect the growth that has occurred within the Town since 2012, as well as lessons learned, wise practices, new legislation and policies, as well as current design guidelines. This Active Transportation and Trail Network Update Report is intended to be read in conjunction with the 2012 ATTMP and supplement the recommendations.

This Update Report focuses on non-motorized travel modes in East Gwillimbury including:

- Reviewing the current standards, by-laws, and programs for trails, cycling and walking;
- Identifying essential projects over the next 25 years and beyond; and
- Determining a strategy for maintaining the ultimate active transportation and trail network.



1.1.1 The Study Process

The Active Transportation and Trails Plan Network Update study was initiated in 2021 by the Town of East Gwillimbury. WSP Canada Inc. was retained by the Town to review and update the active transportation network component of the previous 2012 Plan. The approach for the study is summarized in **Figure 1-2**.

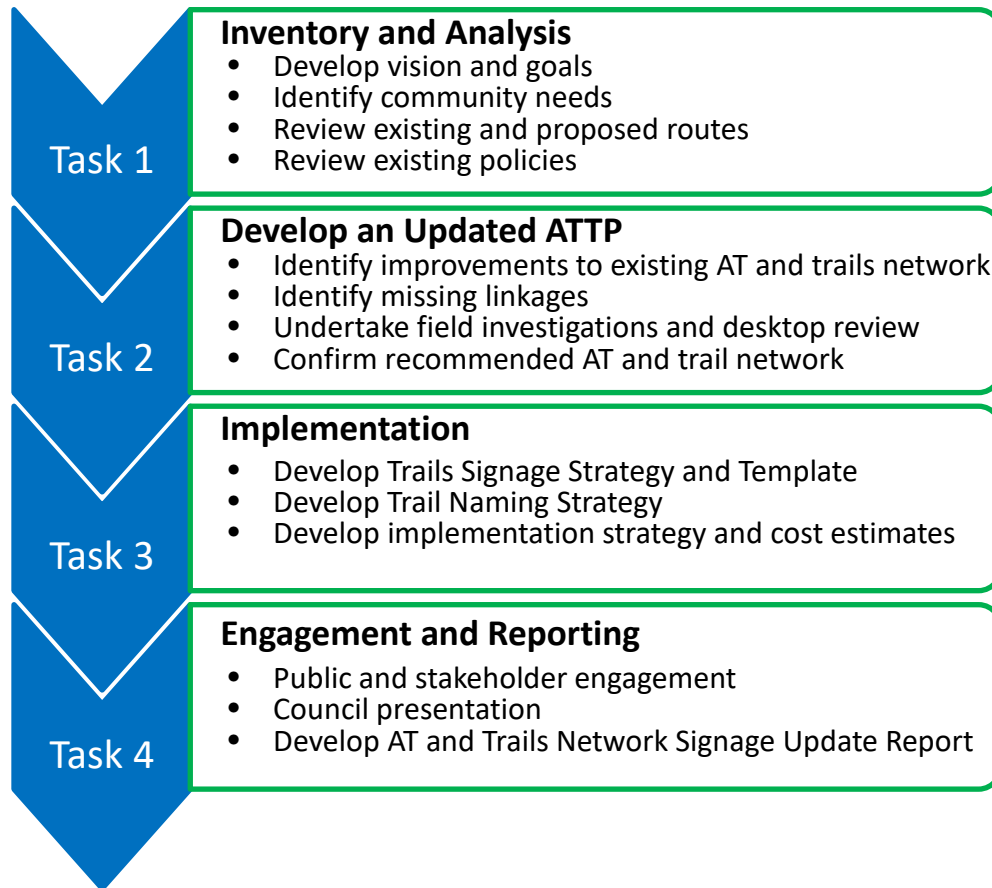
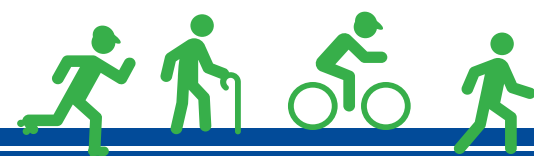


Figure 1-2. ATTP Network Update Study Approach



1.2 Vision and Objectives

As part of this network update report, the vision and objectives from 2012 were reviewed and updated to reflect current strategic goals and wise practices. The following vision statement was adapted:

“The Town of East Gwillimbury recognizes the benefits of active transportation and supports active transportation as a means to promote **healthy lifestyles**, encourage **sustainable land management**, foster more **environmentally friendly community design**, and reduce the number of single occupant motor vehicle trips.

The Town achieves this by promoting a **safe and comfortable** pedestrian, trail, and cycling system that accommodates **people of all ages and abilities**, connects **new and existing communities**, and provides access **to natural features** and other **key destinations**.”

The objectives for this update study that support the vision include:

- **Continue to engage** with East Gwillimbury residents, Council, York Region, Lake Simcoe Region Conservation Authority, and other partners that could have a role in facilitating and promoting active transportation and trail use in East Gwillimbury and the surrounding area;
- **Build upon, enhance and improve connections** to existing and previously proposed active transportation and trail facilities in the Town, including those proposed in Secondary Plans and draft plans of subdivisions approved or in the approval process at the time of the ATTP study;
- **Identify potential future trail corridors** that are currently on private property as “desire lines” that might be considered in the future if opportunities arise;
- **Develop an implementation strategy** that identifies priorities and estimated capital costs; and
- **Identify wise practices in trail signage strategy** that can be implemented in the Town of East Gwillimbury, including a potential project.



1.3 Existing Policies and Initiatives

This section builds on previous federal, Provincial, Regional, and local documents to provide a high-level, overarching guidance to the ATTP. It sets the policy context to ensure that the plan will contribute to the goals and vision previously established by different levels of government.

1.3.1 Federal



The Government of Canada has recently begun supporting active transportation initiatives through various policies and funding programs to guide and assist municipalities in their transitions to sustainable modes of transportation. **The Transport Canada Departmental Plan (2021)** and **Transportation 2030 Strategic Plan (2016)** included actions for improving safety, accessibility, efficiency, and environmental sustainability in Canada's transportation systems, with a particular emphasis on promoting the shift towards sustainable transportation methods. In addition, the **National Active Transportation Strategy (2021)** established a \$400 million Active Transportation Fund to assist municipalities in creating active transportation facilities and education and outreach programs. Municipalities must demonstrate that their planned projects support active transportation initiatives in order to qualify for the fund.

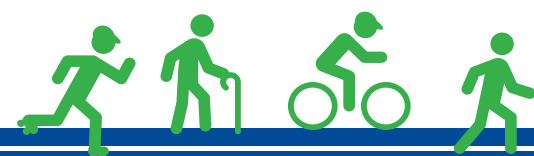
1.3.2 Provincial

The Provincial policies and documents in Ontario provide a comprehensive framework for promoting and supporting active transportation. While the emphasis is on guidance and support rather than legislated requirements, these policies offer suggestions and recommendations to local municipalities. The reviewed documents include various key resources such as the **Accessibility for Ontarians with Disabilities Act (2005)**, the **Ontario Province-wide Cycling Network (2018)**, and the **Ministry of Transportation Ontario Bikeways Design Manual (2014)**, among others. The policy considerations highlight the importance of collaborations for developing cycling tourism, the need for an equitable distribution of recreational spaces, adherence to design standards, and the promotion of active transportation and transit in different areas. Additionally, the **Growth Plan for the Greater Golden Horseshoe (2020)** emphasizes the development of active transportation infrastructure, complete streets, transportation demand management, and integration within existing transit corridors to enhance connectivity and accessibility.



1.3.3 Regional (York Region)

York Region has a range of regional policies in place that directly influence the development of active transportation facilities along regional roads. These policies, including the **Regional Municipality of York Official Plan (2022)**, **York Region 2023 to 2027 Strategic Plan (2023)**, and **Pedestrian and Cycling Planning and Design Guidelines (2018)**, provide specific guidance for AT projects. The policies highlight the importance of addressing air quality and climate change, improving AT options and sustainability, promoting community health and safety, improve connectivity by increasing the number of sidewalks and bike lanes, integrating AT in urban areas, and considering transportation equity. The updated **Transportation Master Plan (2022)** emphasizes safety, equity, reduced car travel, and environmental sustainability. The aim is to develop a continuous and connected network of sidewalks and cycling facilities, establish promotional and educational programs, and enhance the integration of AT within the transit network.



1.3.4 Local (Town of East Gwillimbury)

Policy documents at the local level will significantly influence the ATTMP and the future pattern of development for the Town. These documents include the Town's **Official Plan (2010)**, **Transportation Master Plan (2025)**, and the previous **Active Transportation and Trails Master Plan (2012)**. The considerations are summarized in this section.

Official Plan (2010)



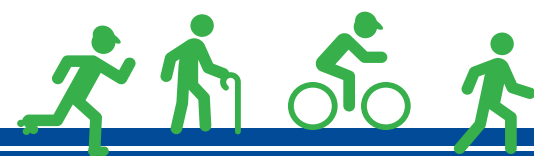
The Town of East Gwillimbury Official Plan establishes a policy framework that provide specific guidance on community linkages and active transportation decisions, with the goal of building sustainable infrastructure. The Town aims to maximize opportunities for the use of active transportation and efficient energy modes of travel that reduces motor vehicle energy consumption, creating a well-connected system of Active Transportation and Community Trails between communities and throughout the Urban Planning Area. The Official Plan emphasizes the need to plan centres and corridors that encourages pedestrian movement, as well as transit and vehicular access. This should include resting and recreation

spaces as part of the active transportation infrastructure. A high level of connectivity in the street and sidewalk system of these areas shall be provided to improve active transportation. The plan encourages the implementation of a complete streets approach for collector and local roads, supporting reduced travel times and alternative modes of travel. Community Design Plans are expected to identify routes that wise connect origins and destinations, while prioritizing the integration of local street network and reducing roads widths where active transportation connections and improved transit can safely accommodate people of all ages and abilities.

Transportation Master Plan (2025)

This Plan will serve as a blueprint for the Town to advance the development of its transportation network and support its vision for a safe, accessible and liveable community. The goals and objectives of the plan are to:

- Review the short-term action items identified in the Town's 2010 Master Plan and York Region's 2022 Transportation Master Plan;
- Assess the current transportation network;
- Identify gaps and opportunities for all travel modes, including the consideration of Provincial, Regional, and adjacent municipal plans and emerging transportation trends;
- Assess current travel conditions and the impacts of growth to define a problem and opportunity statement;
- Identify and evaluate alternative solutions to address the problem and opportunity statement and select a preferred alternative for a sustainable, multimodal transportation network that decreases auto dependency and is accessible to all;
- Reach out to the public and partners through public engagement process;
- Identify policies that support the recommended multimodal network; and
- Manage travel demand in peak periods.



Town Policy, Facilities and Parks Naming Policy (2011)

Trail naming is a thoughtful and creative process that reflects character, history and natural features of a location. Naming of active transportation and trails facilities will follow the Town's Facilities and Parks Naming Policy, to promote wayfinding, easy navigation and to foster civic pride. A name can tell a story, whether it honours nature, commemorates historical events, or pays tribute to Indigenous cultures. Additionally, names can foster community engagement, encouraging locals and visitors alike to appreciate and protect the landscapes our trails traverse. As outdoor enthusiasts explore these paths, the names often evoke a sense of place and adventure, inviting exploration and connection with the environment. The use of names honouring Indigenous Cultures is encouraged where appropriate and will be determined in consultation with the Chippewas of Georgina Island First Nation.

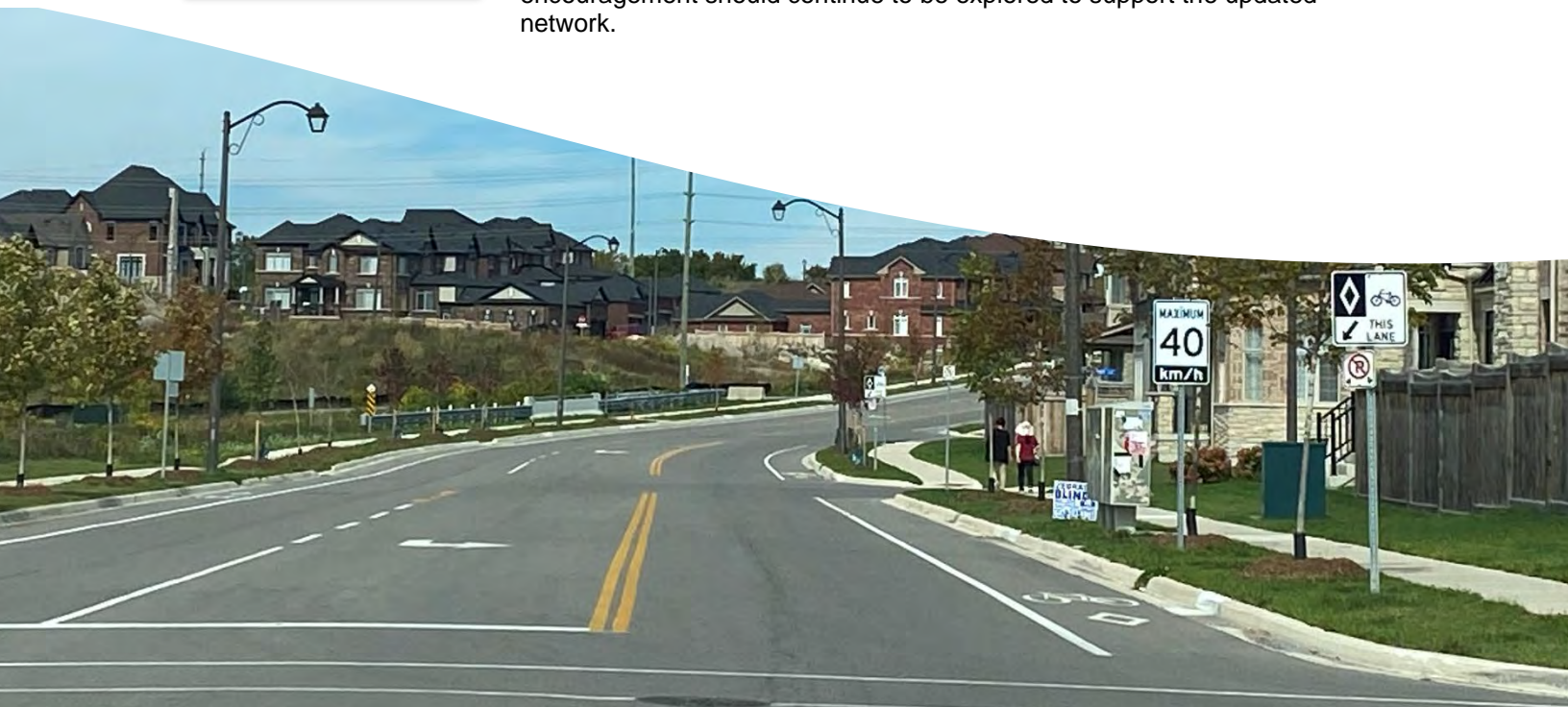
As part of the Truth and Reconciliation Commission's Calls to Action, revitalizing Indigenous place names supports the reclaiming of spaces historically erased or renamed through colonization. It acknowledges Indigenous sovereignty and validates the presence and contributions of Indigenous communities. Indigenous trail naming is a meaningful act of reconciliation, cultural recognition, and environmental stewardship. By restoring Indigenous names to trails and natural landmarks, communities honor the deep-rooted connection between Indigenous peoples and their traditional territories. These names often carry rich histories, ecological knowledge, and spiritual significance that reflect the landscape. Trail users learn the original names of places, often in Indigenous languages, fostering respect for the language, culture, and identity of the First Nations peoples. For example, using names like "Nibi miikana" (Water Trail) helps keep Indigenous languages alive and relevant in everyday use.

Active Transportation and Trails Master Plan (2012, Including this Network Update)



The Active Transportation and Trails Master Plan outlines vision and strategies for developing a sustainable and interconnected active transportation network. The plan focuses on promoting walking, cycling, and other non-motorized modes of transportation. Key policies include the development of a well-connected trail network, incorporating various trail types, adopting a complete streets approach for road design, integrating active transportation with the transit system, promoting education and awareness, and fostering collaboration with partners. By implementing these policies, the plan aims to enhance active transportation options and create a more livable and accessible community in East Gwillimbury.

This Network Update Report is intended to be read in conjunction with the ATTMP. Recommendations on programming, education and encouragement should continue to be explored to support the updated network.



Environmental and Climate Alignment

In April 2023, EG Council unanimously declared a Climate Emergency, formally recognizing the need to address the impacts and risks of climate change. This declaration contributed to the development of the EG Thinking Green Environmental Strategy which Council unanimously approved in 2024.

The ATTP is more than a mobility plan; it is an opportunity to operationalize and advance Council-declared environmental and climate action commitments and long-term sustainability vision. The ATTP directly supports the Climate Emergency Declaration and the EG's Thinking Green Environmental Strategy by connecting service delivery with environmental protection.

The Climate Emergency Declaration commits the Town to reducing emissions, integrating a climate lens into all decisions, and building community resilience. The ATTP is one of the Town's most effective tools for delivering these commitments because it reduces transportation-related greenhouse gas emissions, promotes climate-resilient infrastructure, and integrates natural assets and climate considerations into municipal planning, aligning with Council's direction to apply climate lens in decision-making, and reinforcing adopted environmental stewardship values.

The Environmental Strategy identifies five thematic areas: Land, Water, Air, Biodiversity, and Empowerment. The ATTP advances each of these by:

- Reducing emissions and improving air quality through expanded walking, cycling, and micromobility options, consistent with the Strategy's Air objectives to promote low-carbon transportation.
- Supporting nature-based and low-impact design, improving stormwater management, and protecting natural heritage areas through trail design that integrates trees, buffers, and green infrastructure, contributing to land and water protection and restoration.
- Enhancing connections to green spaces and biodiversity corridors, supporting the Strategy's goals for habitat and biodiversity protection and ecosystem health.
- Encouraging education and stewardship, reinforcing community empowerment by connecting residents with nature and promoting sustainable behaviour.

By embedding sustainability, resilience, and low carbon mobility into the Town's growth, the ATTP can also ensure that EG continues to advance the commitments Council has made to protect the environment, safeguard residents, and build a healthier, more sustainable future for generations to come, while meaningfully engaging and empowering the community. To ensure this, trail planning and construction will intentionally engage and consult with interested parties and groups, including advisory committees and Williams Treaties First Nations. In this way, the ATTP translates Council's climate and environmental commitments into meaningful, on the ground actions that support a resilient, connected, and sustainable community.



Indigeneity, Inclusion, Diversity, Equity, and Accessibility (IIDEA) 2024-2027

Transportation and trail systems across Canada have historically included barriers in their design that result in marginalized groups having less access to transportation. These groups may include Indigenous Peoples, Black people, racialized communities, women, 2SLGBTQIA+ communities, older adults, persons with disabilities, migrant workers, and people facing economic or language barriers.

Transportation equity is an approach that strives to ensure that transportation and trails are created with the needs of all users in mind, with an intentional process of incorporating the feedback of marginalized groups. This equity-based approach considers factors such as users' comfort level, safety, path of travel, level of usage, required resources, accessibility, type of employment, and more.

To ensure an approach that is informed by IIDEA (2024-2027 Indigeneity, Inclusion, Diversity, Equity, and Accessibility) principles, ATTP-related projects will apply an equity-based approach to seeking feedback. This will include engaging interest-holders by intentionally reaching out to marginalized communities to offer targeted and accessible feedback opportunities. The Town's People and Belonging Accessibility, Indigeneity, and Equity Coordinator will support the application of an IIDEA lens to interest-holder engagement processes for projects related to the ATTP.

To uphold Indigenous treaty rights and inherent rights, the Town will meaningfully include Indigenous engagement and consultation processes for all relevant* Town owned capital projects related to the ATTP. These processes will invite the WFN as land rights holders and Indigenous Peoples of Canada more broadly as inherent rights holders to provide feedback. These processes will be informed by the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), including the principle of Free and Prior Informed Consent (FPIC). The Town's People and Belonging Accessibility, Indigeneity, and Equity Coordinator will support Indigenous engagement and consultation processes for projects related to the ATTP.

(* The Town performs Trail Impact Studies including heritage and archeological assessments which can result in Indigenous engagement and consultation.)

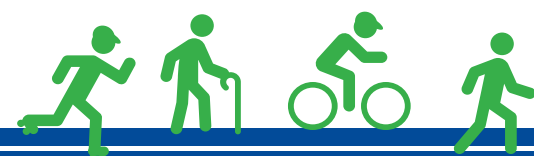
The Town of East Gwillimbury's [2024-2027 Indigeneity, Inclusion, Diversity, Equity, and Accessibility \(IIDEA\) Action Plan](#) contains the following initiative which relates to the ATTP:

Initiative #4.03: Engage in Placemaking Actions to Support Indigenous Language Revitalization and Sharing Indigenous Knowledges.

This initiative includes the deliverable of adding where practical and relevant, Indigenous teachings and/or language to key nature trail signage. To action this initiative, the ATTP will include a review of key transportation paths and trails that may be ideal for the incorporation of Indigenous placemaking. Indigenous communities will be engaged to ensure that Indigenous placemaking efforts are meaningful and relevant. Where practical, potential interpretive trail routes will be created to share Indigenous knowledge. Williams Treaties First Nations and urban Indigenous Peoples will be engaged on any Indigenous placemaking and/or Indigenous interpretive signage.

To support equitable implementation of the ATTP, a set of IIDEA-related metrics may be considered and reported on, as appropriate:

Factor	Metric
Geographic Distribution of ATTP-Related Infrastructure	The lengths of ATTP-related active transportation infrastructure implemented across different neighbourhoods in EG, with potential comparisons across factors such as income levels, newcomer population levels, and older adult population levels within EG neighbourhoods.
User Surveys	Online surveys will be distributed to active transportation and trails users to capture relevant demographic data, perceptions of the active transportation infrastructure, and perceived comfort and safety.



The Town designs trails and active transportation and takes into consideration The Accessibility for Ontarians with Disabilities Act, 2005 (AODA). This includes consulting with the public, people with disabilities, and the EG Accessibility Advisory Committee when building or making major changes to recreational trails. Consultations will include collecting feedback on:

- the trail's slope
- the need for and location of ramps on the trail
- the need for, location and design of rest areas, passing areas, viewing areas, amenities and other features of the trail

The AODA also requires that the Town post the required signage at the start of trails. Related signage, brochures, web sites and other media will include:

- the length of the trail
- the type of surface of which the trail is constructed
- the average and minimum width of the trail
- the average and maximum running slope and cross slope
- the location of amenities, where provided.

Universal Trail Design is a beyond compliance approach to creating accessible trails that prioritize the needs of all users regardless of disability status. Although it is not feasible for all trails within the ATTP system, trails will be designed to be accessible to all users where possible and practical. Designing trails to have a slope of equal to or less than 5% where possible will contribute to universal access. Trail designers will consult the most current accessibility standards. Rick Hansen Foundation Accessibility Certification (RHFAC) accessible Trails and Pathways Standards will be applied and implemented where possible.

Where a trail may be designed with an accessibility solution that is above and beyond general designs, EG's Accessibility Advisory Committee to Council (AAC) will be engaged for feedback early on in the process. The ACC will also be consulted regarding the development of trail signage and content to clearly indicate trail accessibility conditions. Trail accessibility information will also be shared on the Town's related webpages.



2 What You Told Us

An important component of the active transportation and trails network update was engaging with Town and Regional Staff and Council, residents, the Active Transportation and Trails Committee and other partners and agencies. The involvement of these different partners helps foster a community for active transportation and build momentum for the plan.

2.1 Consultation Strategy

The consultation strategy for the update was led by Town staff, with support from the consultant teams. The first stage of the project was to focus on facilitating discussions with Town staff, Councillors, residents and partners about the purpose, approach and findings of the ATTP. The primary consultation techniques that were undertaken throughout the study are summarized in this section.

Active Transportation and Trails Committee

The AT and Trails Network Update team met with the Town's Active Transportation and Trails Committee at the start of the project to review the scope of the study and to identify preliminary opportunities and constraints.



Study Webpage

An informational page on the Town of East Gwillimbury's website was developed and maintained exclusively for the Active Transportation and Trails Plan Network Update. Study purpose, updates and available materials were posted to the Town's site over the course of the project. A snapshot of the project webpage is shown in **Figure 2-1**.

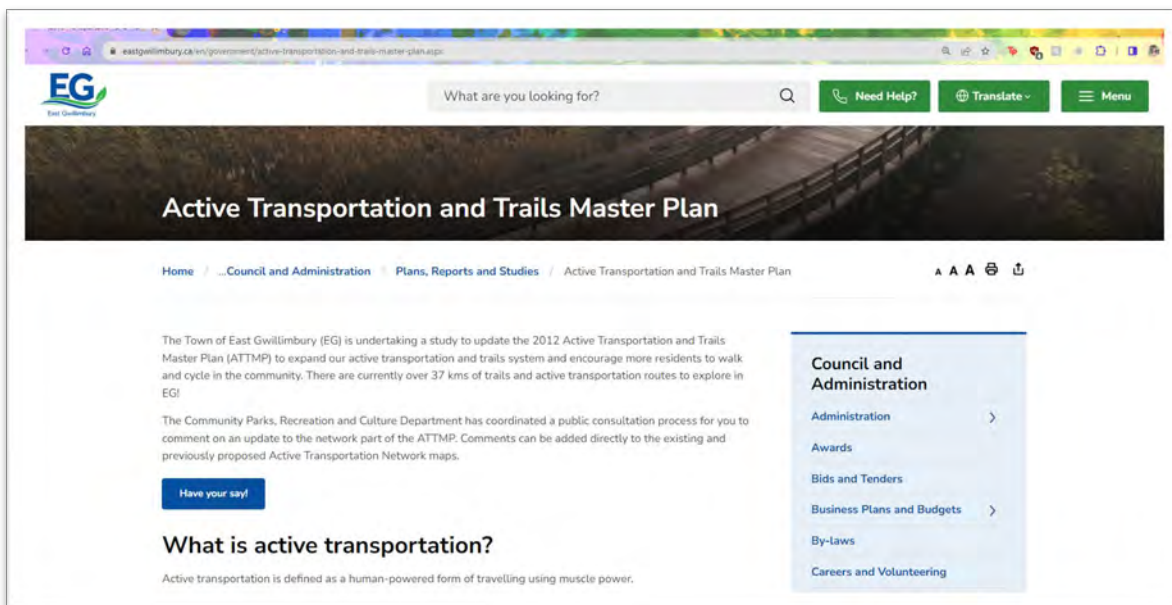
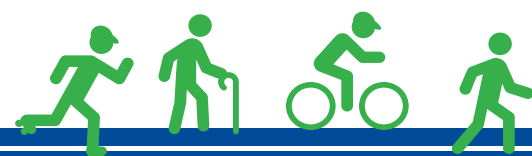


Figure 2-1. Project Webpage



Online Tool

A digital whiteboard tool called Miro was used to collect feedback from the public. Residents and partners were able to access the online tool from the study webpage and review the existing and previously proposed pedestrian and cycling and multi-use network maps. Sample images of the comments received is provided in **Figure 2-2**.

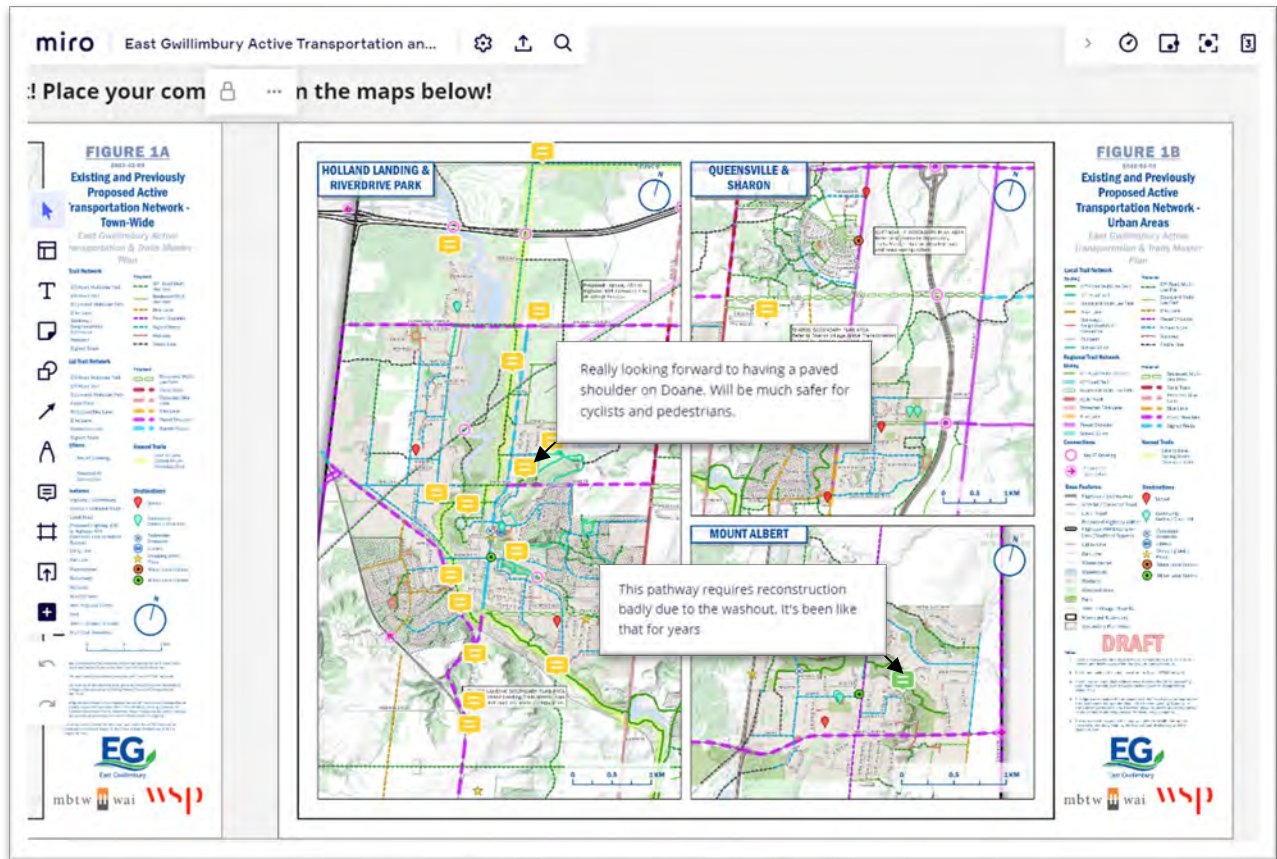


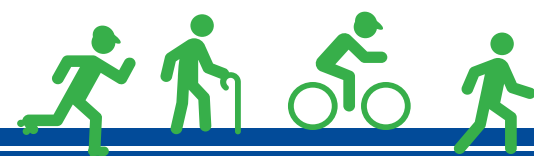
Figure 2-2. Sample Comments from Miro

2.2 Public Information Centre

Three in-person Open Houses were organized to allow residents to provide public feedback on the Active Transportation and Trails Plan. The main objectives of the Open Houses were to update on:

- The Plan development process, key findings, and next steps;
- Planned ATTP projects for short-term, medium-term, and long-term implementation;
- Proposed changes and modifications to the ATTP

Altogether, there were 38 residents who participated in these open house events. The details of the three open houses are summarized below:



- **Open House #1: September 14, 2023**
 - Time: 5 – 8 p.m.
 - Location: East Gwillimbury Civic Centre
 - Number of Participants: 14 participants
- **Open House #2: September 20, 2023**
 - Time: 5 – 8 p.m.
 - Location: Holland Landing Community Centre
 - Number of Participants: 12 participants
- **Open House #3: September 21, 2023**
 - Time: 5 – 8 p.m.
 - Location: Mount Albert Lions Community Centre
 - Number of Participants: 12 participants

Figure 2-3. Pictures of Open House #1 at East Gwillimbury Civic Centre

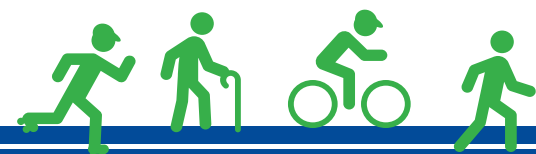


Figure 2-4. Pictures of Open House #2 at Holland Landing Community Centre

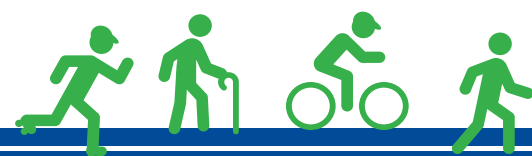


2.3 Summary of Public Input

Documenting the feedback, comments and ideas gathered throughout the consultation and engagement process provided valuable insights that have shaped and informed the ATTP and helped inform the development of recommendations that reflect the values and interests of the community. The input gathered at the open houses was documented and summarized below.

- The need for creating "loops" or "exits" in trails to make them more walker-friendly, as some trails are quite lengthy.
- Add bike lanes near schools, so children can bike to school safely.
- Consider the addition of a connection or bridge to provide new residents in the Holland Landing development with access to the Nokiiidaa Trail.
- Create safe trail connections to each town within East Gwillimbury – Holland Landing, Sharon, Mount Albert, Queensville, and to neighbouring towns.
- Create connection to new community centres being built.
- Strong desires from multiple residents to improve safer connections to Foodland and Home Hardware by Highway 48 and Princess St.

Network Connections



Route Improvements



- The desire for safe, separated multi-use trails for pedestrians and cyclists rather than sharing and crossing roadways.
- Expedite completion of trails and linkages that connect to the Lake-to-Lake Trail.
- Strong desire for Yonge Street to be made safer for pedestrians and cyclists.

Safety Concerns



- Improving safety for trail users and cyclists by adding instructional signs and reminders.
- Corner by Mount Albert Road and Warden Ave is very dangerous. Consider adding shoulders or other barrier treatments to enhance safety for cyclists.

Signage



- Requests for various signs, including those for passing on the left, warning signals for cyclists coming from behind, speed limits, and keeping paths free from snow and ice.
- The importance of signage encouraging pet owners to clean up after their pets and not allowing leash-free pets on trails.

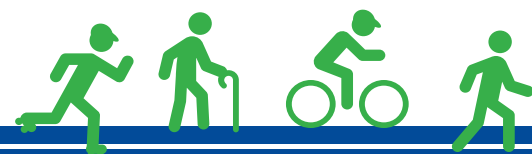
Phase Implementation



- Want to see trails connecting to nearby towns and regional trails to be considered in the short-term phase.
- Give priority to trail routes leading to the new community centers, such as the Health and Active Living Plaza and the Holland Landing Community Centre, by including them in the short-term phasing of trail development.

Others

- Suggestions for adding drainage measures and improving trail surface pavements on Vivian Creek Trail, especially by the gate entrance (located by Samuel Harper Court)
- Ensure that the trail passing through Oriole Park is adequately prepared for regular flooding, considering the area's specific conditions.
- Integrating e-bikes safely onto the trails.
- Interest in seeing the winter maintenance plan.



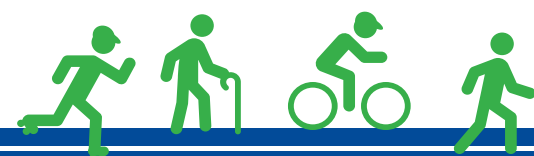
3 Updating the Network

3.1 The Network Development Approach

The network development process for updating the Town’s active transportation and trails network is a combination of technical assessments and consultation with partners, residents and Town Staff. This process is also consistent with the Ontario Traffic Manual Book 18: Cycling Facilities (2021) approach. The overview of the process and the outcomes from each step are summarized in **Table 3.1**.

Table 3.1. Network Development Approach

Step		Outcome
1	Identify existing conditions and routes that have been proposed in the past planning documents, including the 2012 Active Transportation and Trails Master Plan and 2022 York Region Transportation Master Plan.	Section 3.2 Existing Conditions Review Figure 3-1. Existing Pedestrian Network Figure 3-2. Existing Cycling and Multi-Use Network
2	Identify a list of route selection criteria to help select, assess and refine potential new routes and prioritize future investments.	Section 3.3 Route Selection Criteria
3	Identify candidate routes to be included in the Town’s active transportation and trails network.	Section 3.4 Candidate Routes Figure 3-3. Proposed Candidate Pedestrian Network Figure 3-4. Proposed Candidate Cycling and Multi-Use Network
4	Conduct desktop and field work to verify the candidate routes’ existing conditions and facilities. Local surroundings and key destinations are also captured in proximity to the candidate routes.	Section 3.5 Route Investigations
5	Verify candidate routes with Town Staff, partners and the public.	Section 3.5 Route Investigations
6	Confirm the Town’s preferred active transportation and trails network including the proposed facility types.	Section 3.6 The Proposed Active Transportation and Trail Network Figure 3-8. Recommended Pedestrian Network Figure 3-9. Recommended Cycling and Multi-Use Network



3.2 Existing Conditions Review

Designing an active transportation and trails network that appropriately reflects the current context of East Gwillimbury requires a thorough understanding of local conditions.

What was done?

Digital spatial data was gathered from the Town of East Gwillimbury, York Region and Land Information Ontario to develop a Geographic Information System (GIS) database. The GIS database was updated on an on-going basis to reflect the iterative network development process.

How was it informed?

- GIS data of existing and proposed routes from approved planning documents such as the East Gwillimbury Active Transportation and Trails Master Plan (2012) and Region’s Transportation Master Plan (2022);
- Plans of subdivisions;
- Feedback from Town staff, York Region staff, the public and other key partners; and
- Input from the East Gwillimbury Transportation Master Plan (2025) Project Team.

What is the outcome?

The routes and information collected as part of this step was used as a starting point for the network development process. The existing network encompasses all trails within East Gwillimbury, including those not owned or maintained by the Town, such as Regional, Conservation Authority, and Provincial trails. These routes are intended to be further investigated throughout the study. The existing conditions for the pedestrian and cycling and multi-use networks are provided in **Figure 3-1** and **Figure 3-2**, respectively. A summary of the existing routes is provided in **Table 3.2**.

Table 3.2. Summary of Existing Active Transportation and Trail Routes in East Gwillimbury

Facility Type	Existing Length (KM)
Multi-Use Trail	63.3
Multi-Use Path	8.6
Protected Bike Lane	0.0
Cycle Track	4.1
Bike Lane	6.1
Paved Shoulder	36.2
Signed Route	2.9
Sidewalk	150.0
Walkway	11.6
Footpath	8.2
Desire Line	0.0
Regional Proposed	0.0
Total	291.0

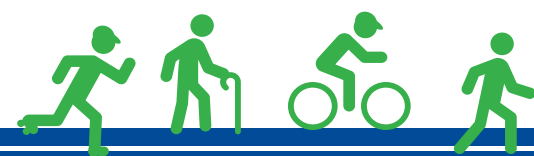
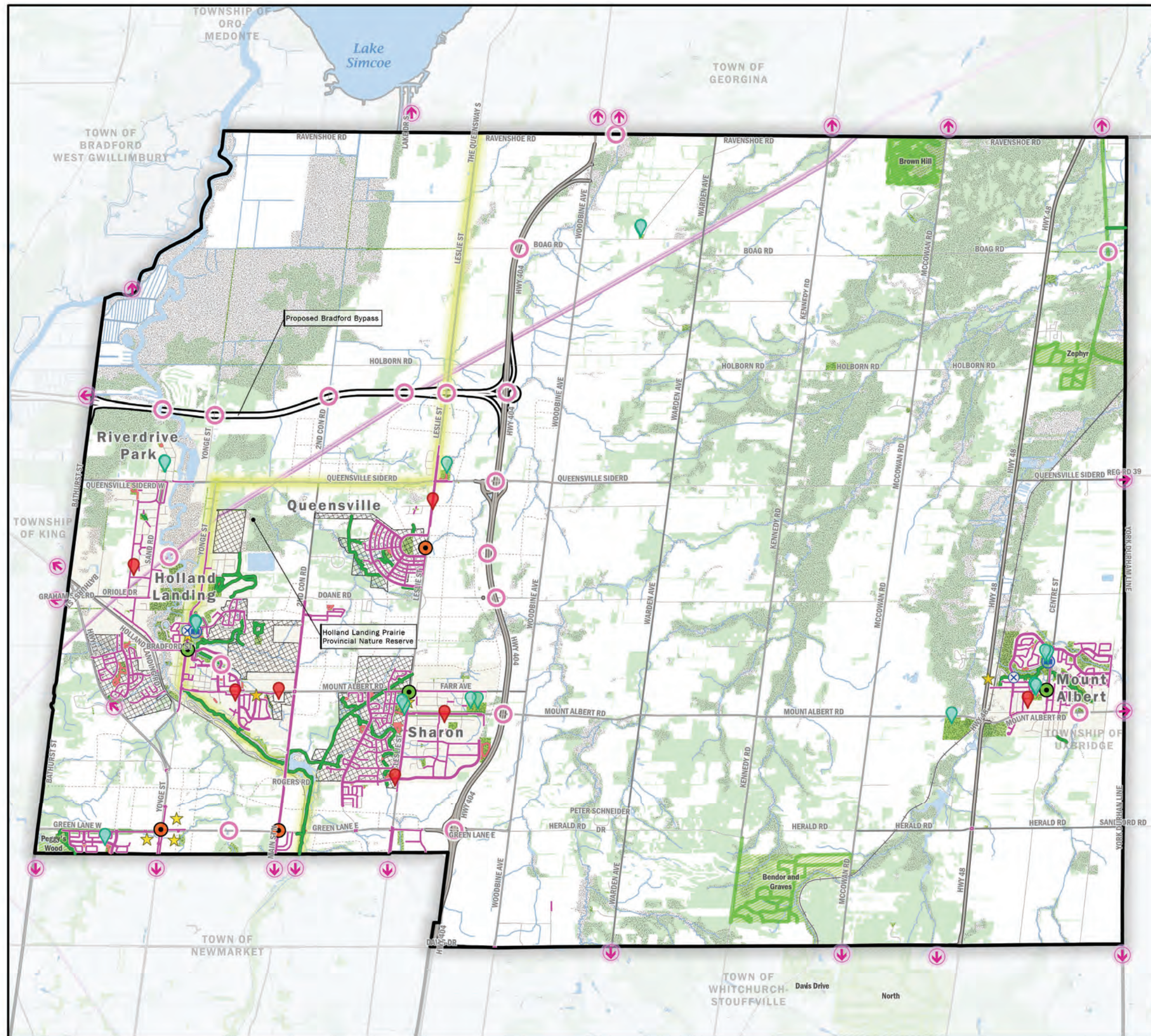


FIGURE 3-1A

2026-04-17

**Existing Pedestrian Network -
Town-Wide**

*East Gwillimbury Active
Transportation & Trails Plan*



Local Trail Network

- Existing**
- Off-Road Multi-Use Trail
 - Boulevard Multi-Use Path
 - Walkway / Neighbourhood Connector
 - Footpath
 - Sidewalk

Regional Trail Network

- Existing**
- Off-Road Multi-Use Trail
 - Boulevard Multi-Use Path

Connections

- Key AT Crossing
- ➔ Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokilidaa Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- York Regional Forest
- Park
- Town / Village / Hamlet
- Municipal Boundary

Destinations

- School
- Community Centre / Civic Hall
- ⊗ Pedestrian Crossover
- Ⓛ Library
- ★ Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

Notes:

1. Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
2. The thinner solid lines form the Town's ATP network.
3. The thicker solid present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
4. The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.

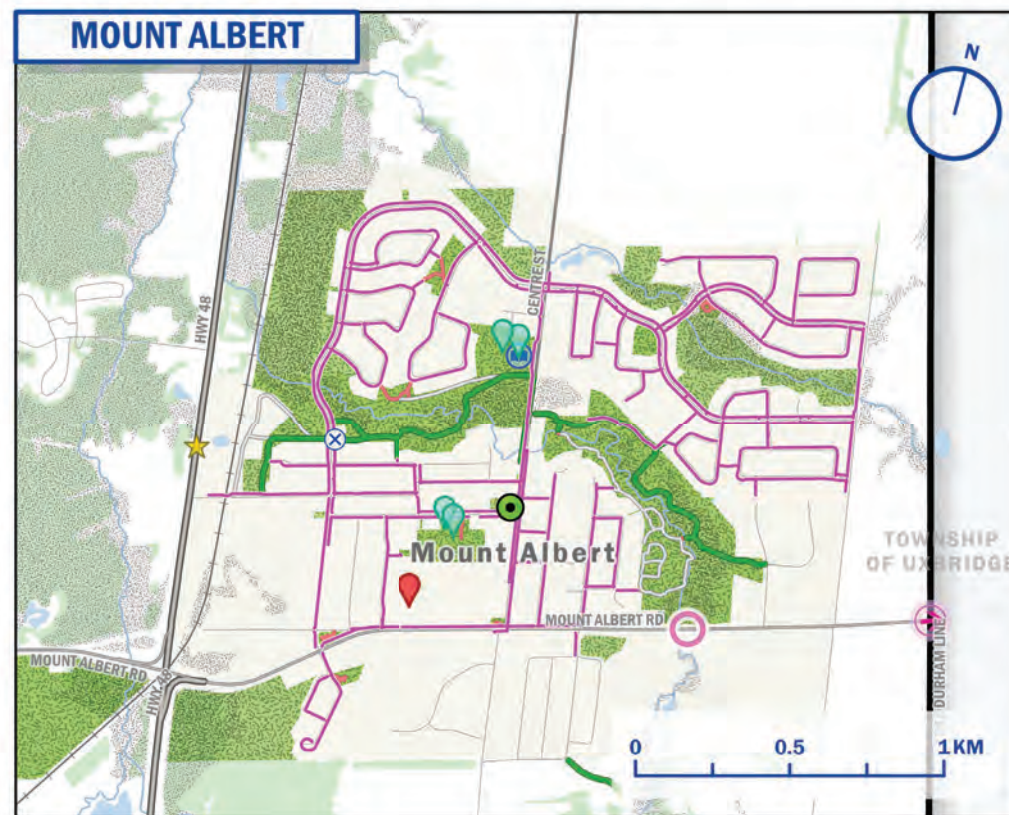
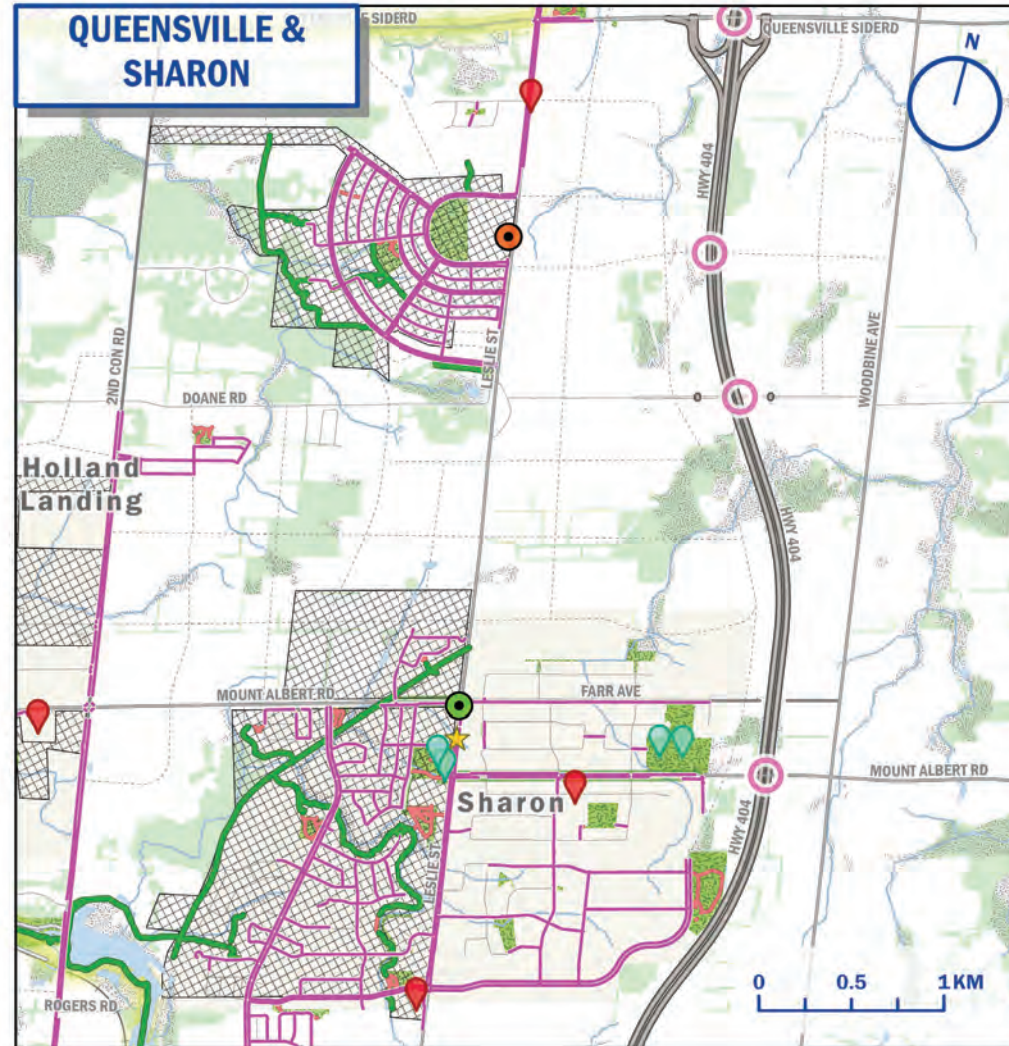
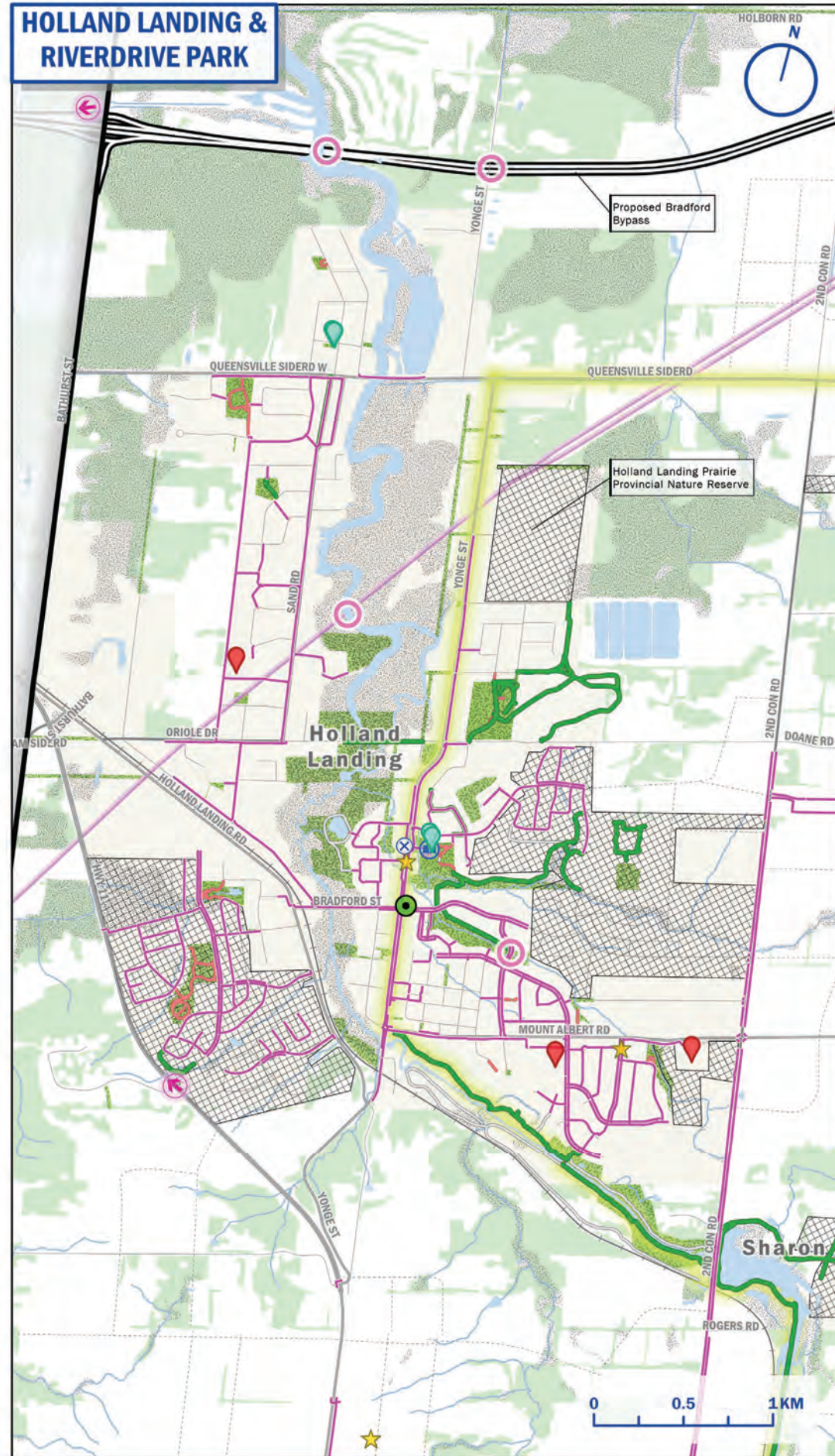


FIGURE 3-1B

2026-04-17

Existing Pedestrian Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

- Existing**
- Off-Road Multi-Use Trail
 - Boulevard Multi-Use Path
 - Walkway / Neighbourhood Connector
 - Footpath
 - Sidewalk

Regional Trail Network

- Existing**
- Off-Road Multi-Use Trail
 - Boulevard Multi-Use Path

Connections

- Key AT Crossing
- ➔ Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokidaa Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 404 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- Park
- Town / Village / Hamlet
- Municipal Boundary
- Secondary Plan Area

Destinations

- School
- Community Centre / Civic Hall
- ⊗ Pedestrian Crossover
- Library
- ★ Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

Notes:

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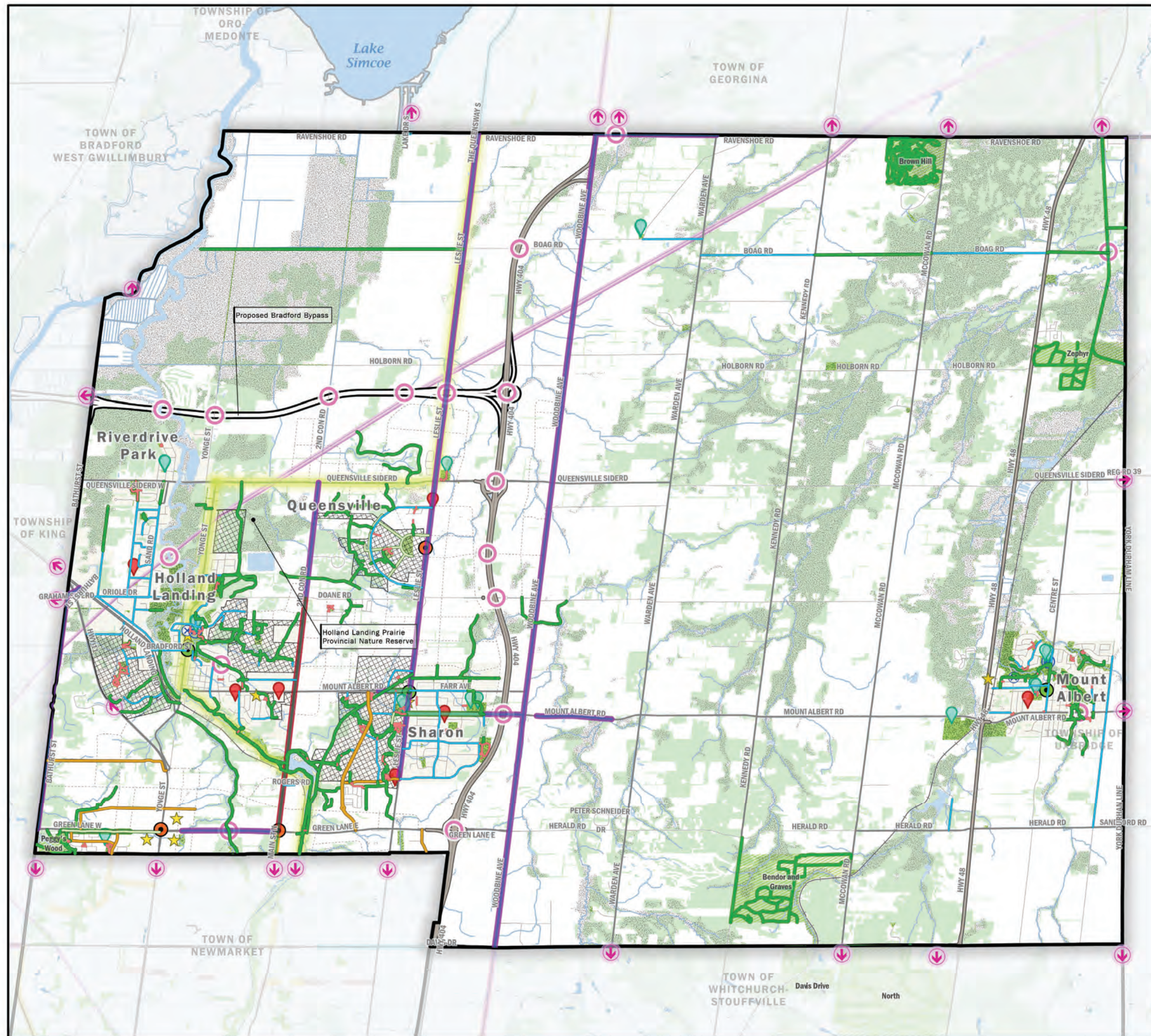


FIGURE 3-2A

2026-04-16

**Existing Cycling Network -
Town-Wide**

*East Gwillimbury Active
Transportation & Trails Plan*



Local Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Bike Lane
- Signed Route
- Walkway / Neighbourhood Connector

Regional Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Cycle Track
- Protected Bike Lane
- Bike Lane
- Paved Shoulder
- Signed Route

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokiiada Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- York Regional Forest
- Park
- Parcel
- Town / Village / Hamlet
- Municipal Boundary

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

- Notes:**
- Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
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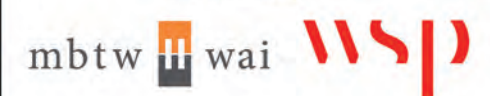
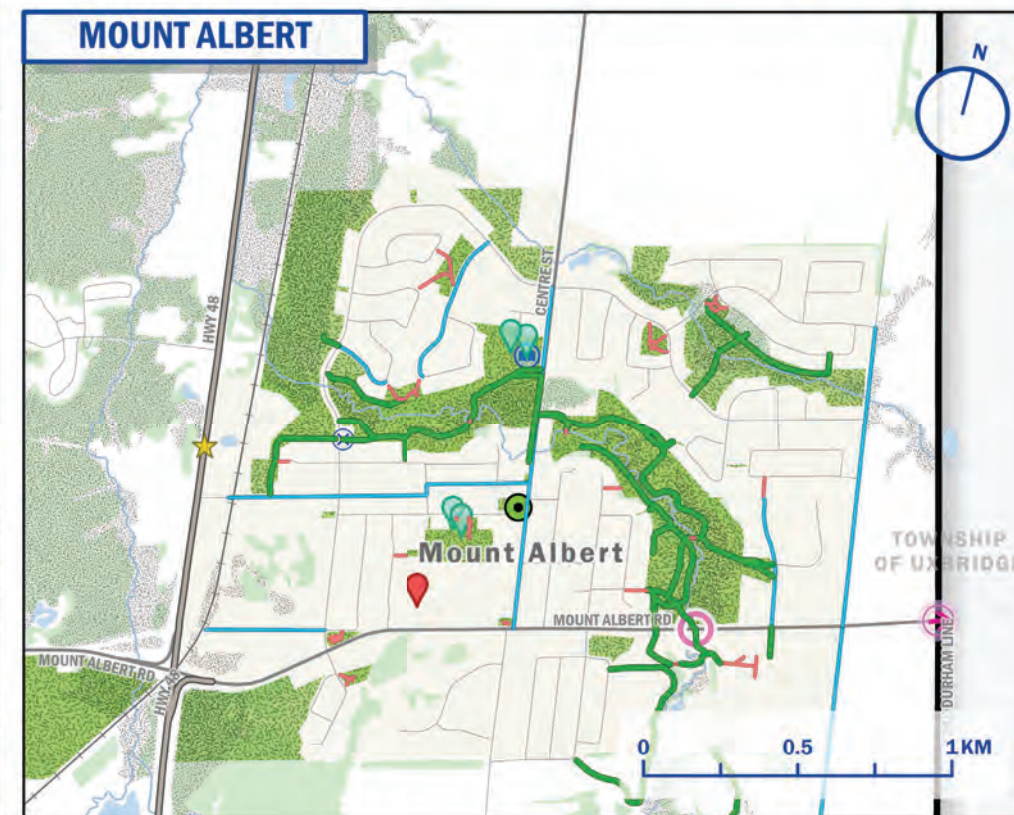
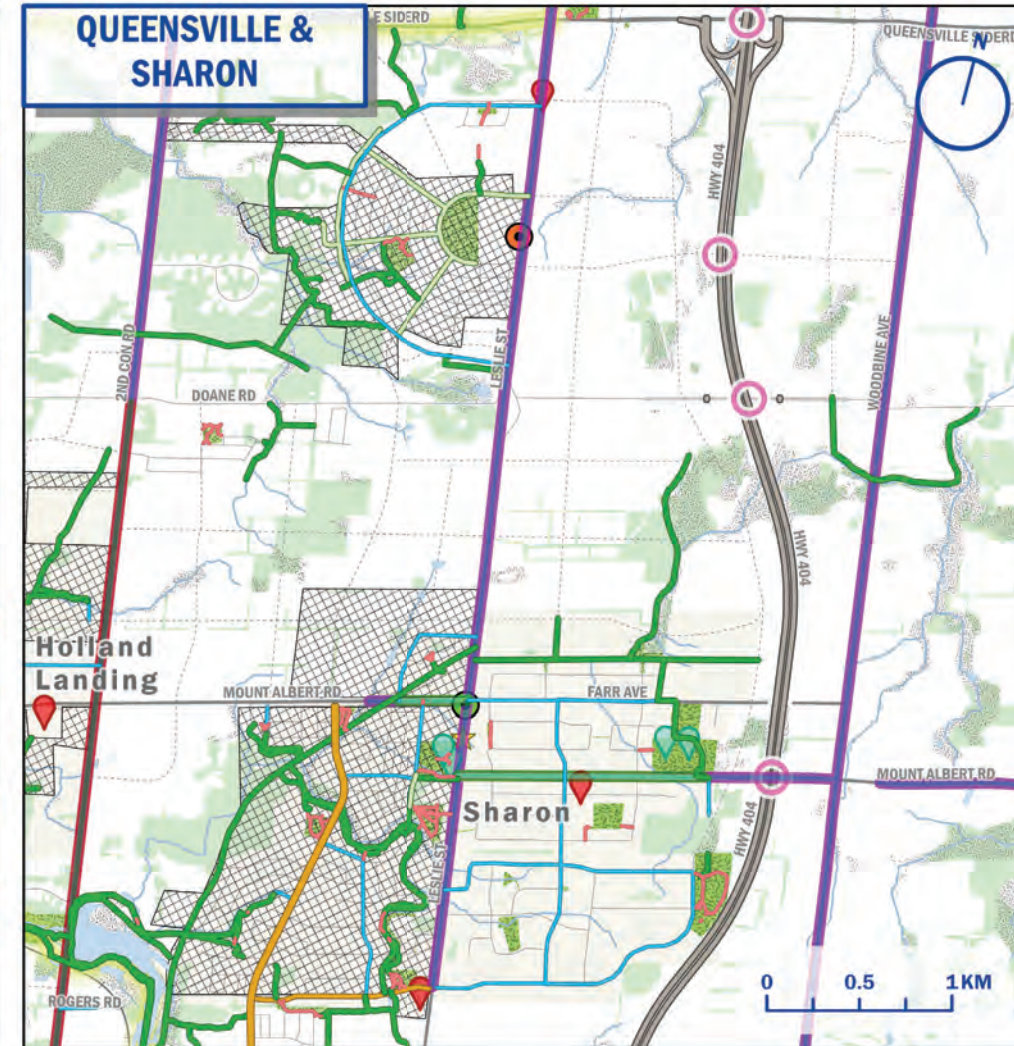
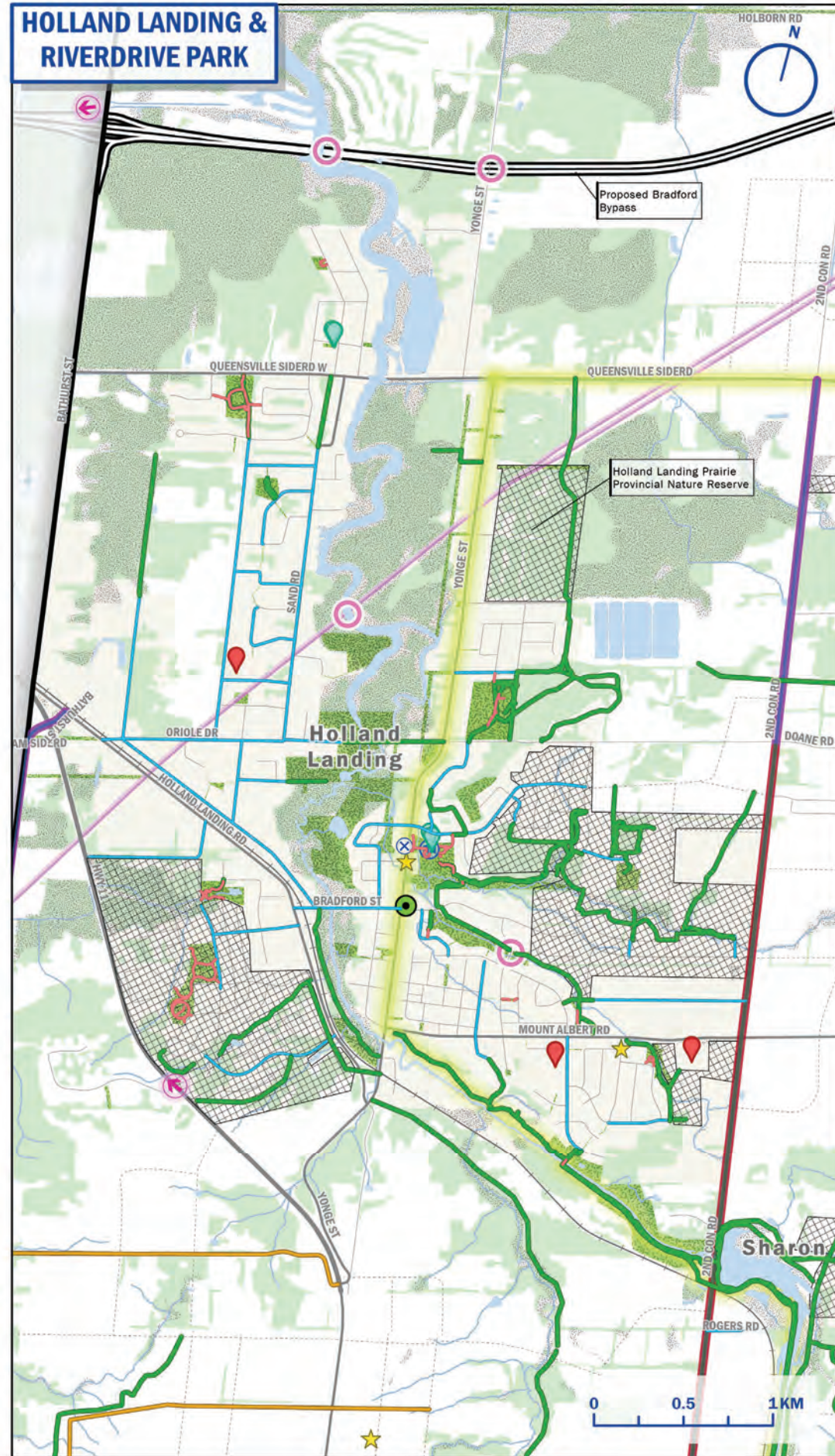


FIGURE 3-2B

2026-04-16

Existing Cycling Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Bike Lane
- Signed Route
- Walkway / Neighbourhood Connector

Regional Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Cycle Track
- Protected Bike Lane
- Bike Lane
- Paved Shoulder
- Signed Route

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokidaa Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 404 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- York Regional Forest
- Park
- Town / Village / Hamlet
- Municipal Boundary
- Secondary Plan Area

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

- Notes:**
- Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid lines form the Town's ATP network.
 - The thicker solid lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
 - The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



3.3 Route Selection Criteria

What was done?

Route selection criteria inform the selection of routes that should be a part of the Town's active transportation and trails network. They are intended to be used beyond the development of this Network Update and the ATTP to provide Town staff a tool to evaluate new opportunities as they arise or when local contexts change.

How was it informed?

- Aligns with the ATTP vision and objectives;
- Informed by existing Federal, Provincial, Regional, and Town planning documents and strategic goals; and
- Incorporates wise practices and guidelines in active transportation planning, including Ontario Traffic Manual Book 18: Cycling Facilities (2021).

What is the outcome?

The criteria identified in **Table 3.3** form the foundation for identifying candidate routes. They will also be used to inform and evaluate the phasing of the recommended AT network and its strategies. The criteria should not preclude projects that have a high level of public demand, nor those that have been identified in previous planning processes, from moving forward.

Table 3.3. List of Route Selection Criteria Applied to Identify Candidate Active Transportation Routes



Safe and Accessible

Routes should be designed to **improve safety** and enhance current conditions for **people of all ages and abilities**.



Connected and Continuous

Routes should **close existing gaps** and provide **consistent, comfortable and continuous routes** throughout the Town and to surrounding municipalities.



Support Multi-Modal Needs

Routes that support the development of a multi-modal transportation system by **providing connections to transit** facilities and other key destinations should be prioritized.



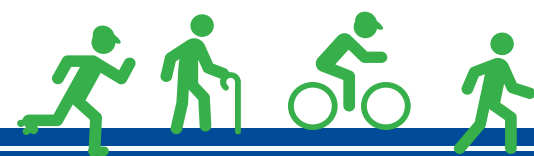
Feasible

The constructability and feasibility of the route will be based on the **level of capital investment required**, their **alignment with existing capital works projects** and if there are any constraint such as property ownership.



Integrate with Trails and other Destinations

Routes should **provide connections to the trail network, tourist destinations, parks and green spaces** to enhance opportunities for visitors and residents to engage with natural areas on a regular basis.



3.4 Candidate Routes

Candidate routes represent potential routes that could form part of the ultimate proposed pedestrian, cycling and multi-use network.

What was done?

Building off the previously proposed routes, the network was reviewed to identify a series of candidate routes which represent the key connections, missing gaps and new opportunities in the network since the development of the 2012 ATTMP. These routes were presented to Town staff, partners and the public to refine and confirm the routes at a high level prior to determining the specific facility type.


Other considerations while reviewing the potential candidate route network include:

- Connections to a potential multi-use trail along the proposed Bradford Bypass;
- Rural roads were not considered for sidewalk upgrades as it is recommended that sidewalks be implemented when the road is urbanized;
- Parallel routes are recommended for arterial roads with high traffic volumes, constrained boulevard spaces and/or conflicting with a high number of driveways;
- Opportunities for trails along hydro corridors were explored for recreational connections; and
- Potential upgrades to facility types for continuity with new proposed routes recommended as part of the East Gwillimbury Transportation Master Plan.

How was it informed?

- Route selection criteria; and
- Input from Town staff, Regional staff, other partners and residents.

What is the outcome?

Figure 3-3 and **Figure 3-4** show the locations proposed as potential new route to add to the active transportation network. Potential new routes for consideration are shown in the following candidate network maps as red dashed lines: 



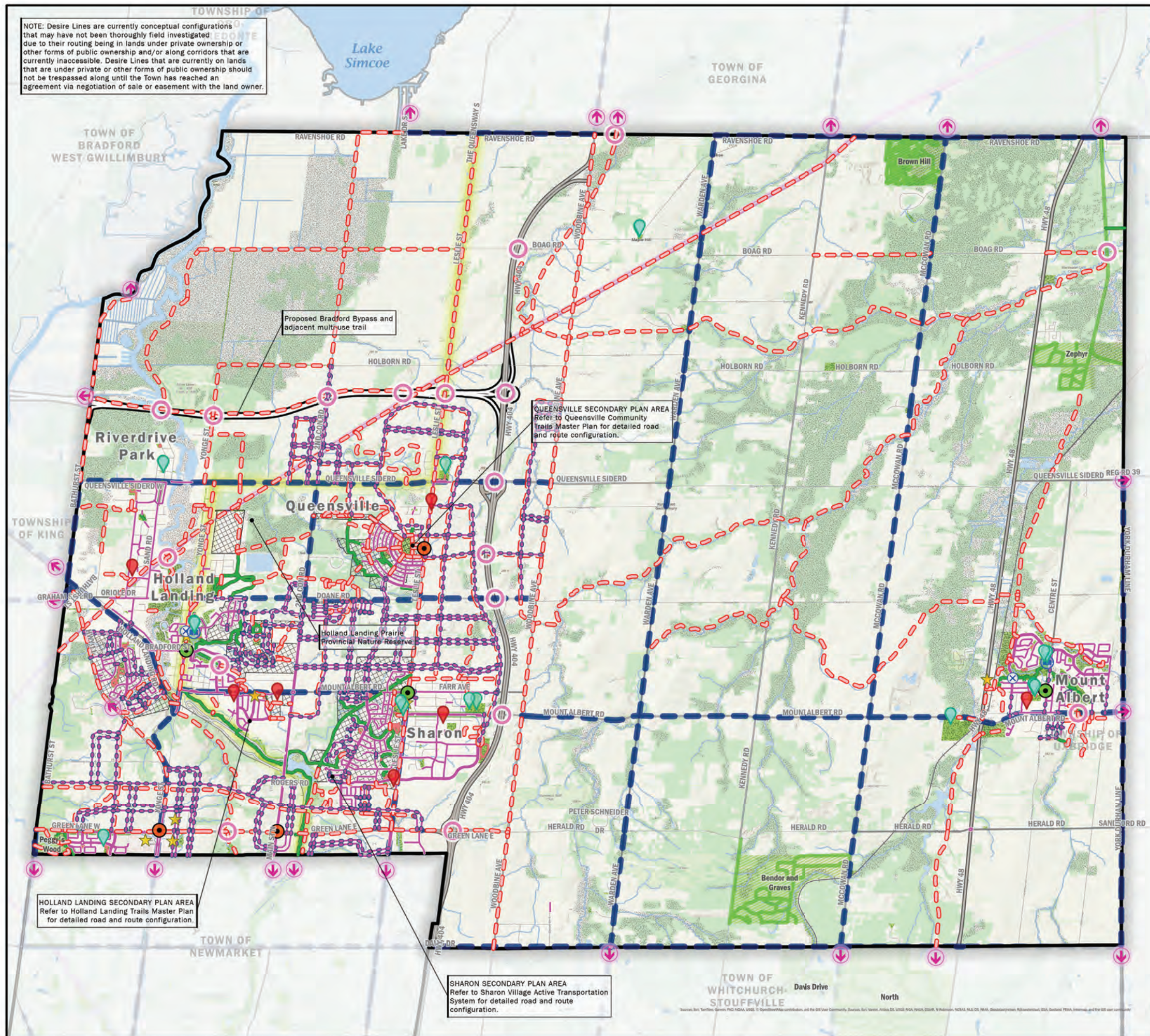
NOTE: Desire Lines are currently conceptual configurations that may have not been thoroughly field investigated due to their routing being in lands under private ownership or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.

FIGURE 3-3A

2026-04-17

Candidate Pedestrian Network - Town-Wide

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Walkway / Neighbourhood Connector
- Footpath
- Sidewalk

Candidate Routes

- Candidate Routes
- Sidewalk

Regional Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path

Proposed

- Regional Facility

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokikidaa Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 404 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- York Regional Forest
- Park
- Town / Village / Hamlet
- Municipal Boundary

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

- Notes:**
- Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid and dashed lines form the Town's ATP network.
 - The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
 - This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.
 - The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.

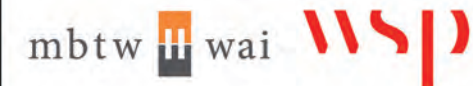
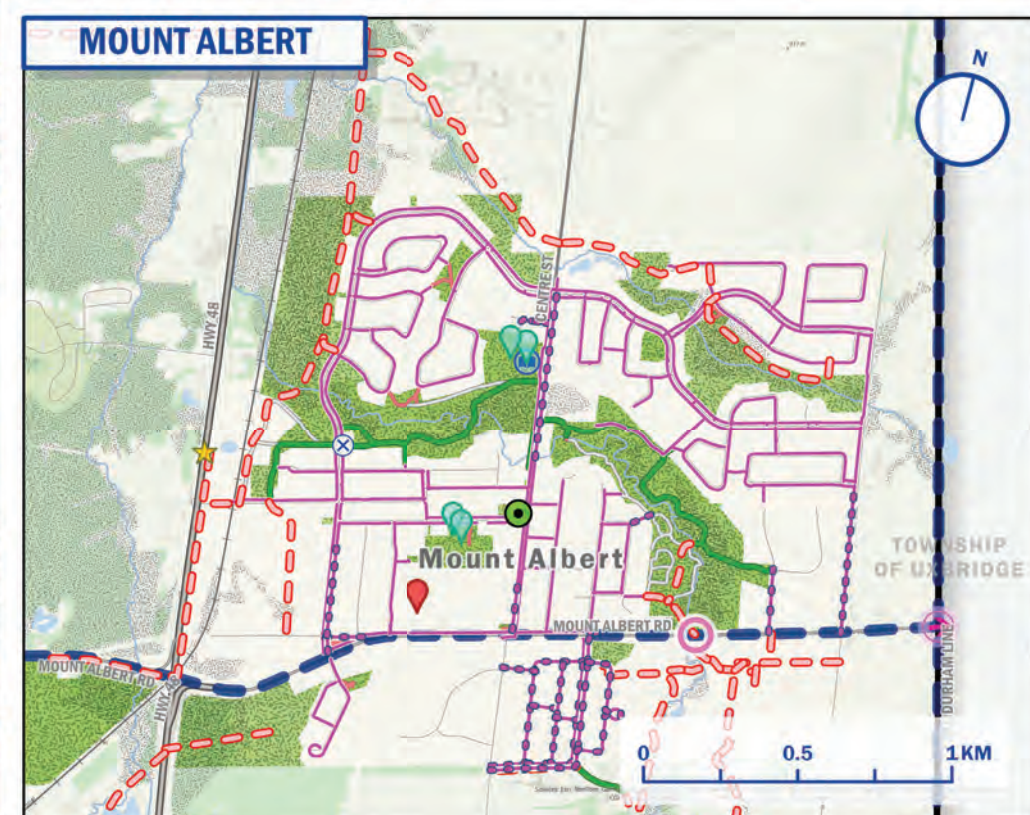
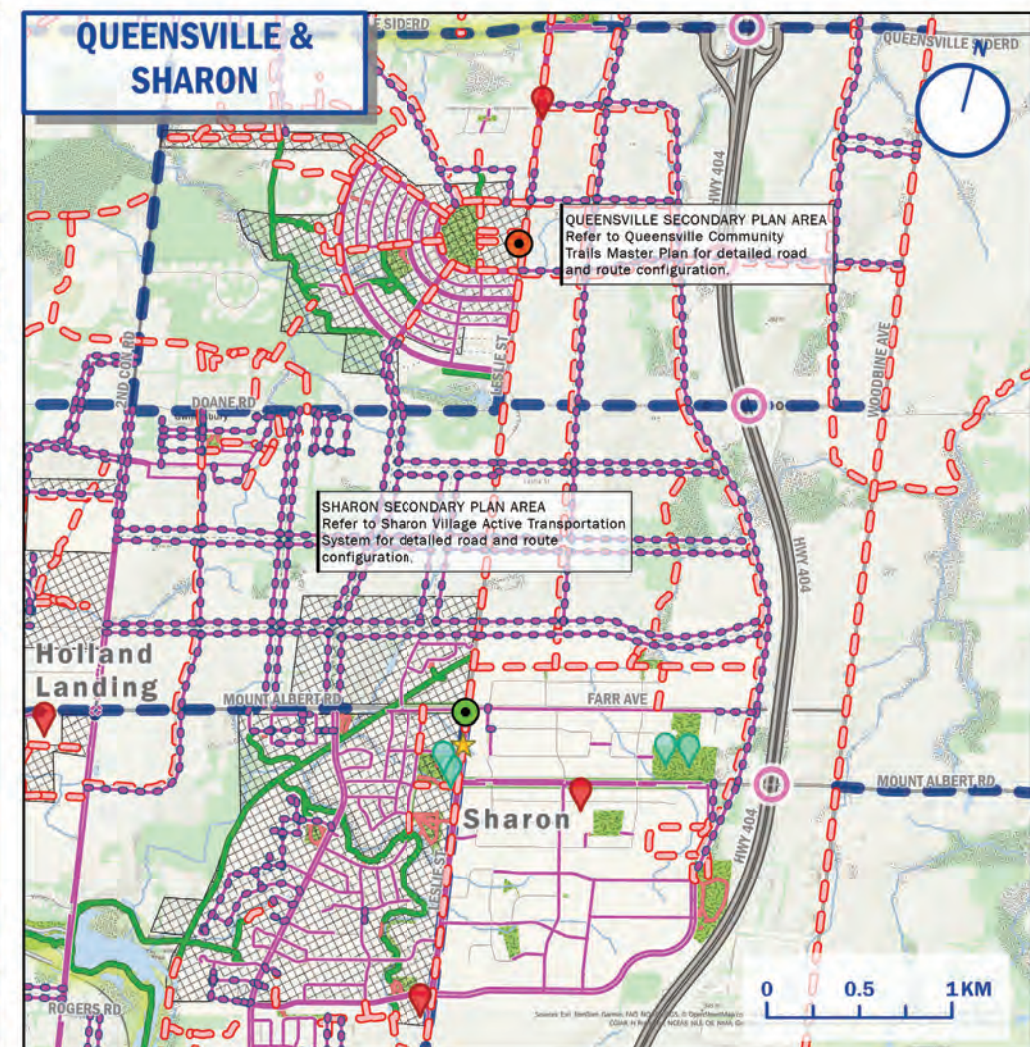
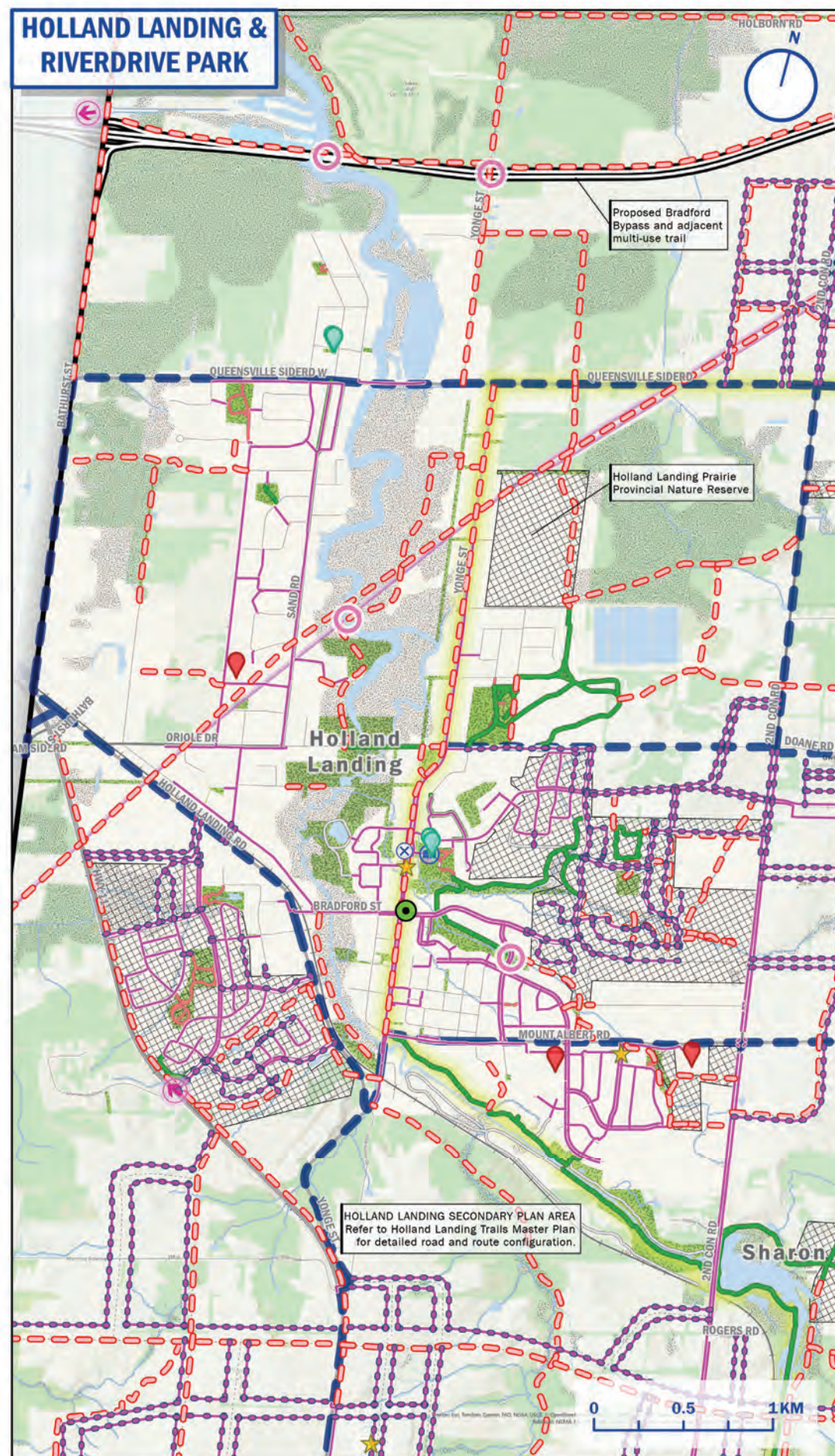


FIGURE 3-3B

2026-04-17

Candidate Pedestrian Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing	Candidate Routes
Off-Road Multi-Use Trail	Candidate Routes
Boulevard Multi-Use Path	Sidewalk
Walkway / Neighbourhood Connector	
Footpath	
Sidewalk	

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility ¹
Boulevard Multi-Use Path	

Connections

Key AT Crossing	Named Trails
Potential AT Connection	Lake to Lake Cycling Route (Nokidaa Trail)

Base Features

Highway / Expressway	School
Arterial / Collector Road	Community Centre / Civic Hall
Local Road	Pedestrian Crossover
Proposed Roads	Library
Proposed Highway 404 Extension Link (Bradford Bypass)	Shopping Mall / Plaza
Utility Line	Major Local Centre
Rail Line	Minor Local Centre
Watercourse	
Waterbody	
Wetland	
Wooded Area	
Park	
Town / Village / Hamlet	
Municipal Boundary	
Secondary Plan Area	

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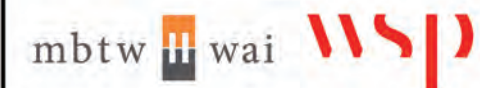


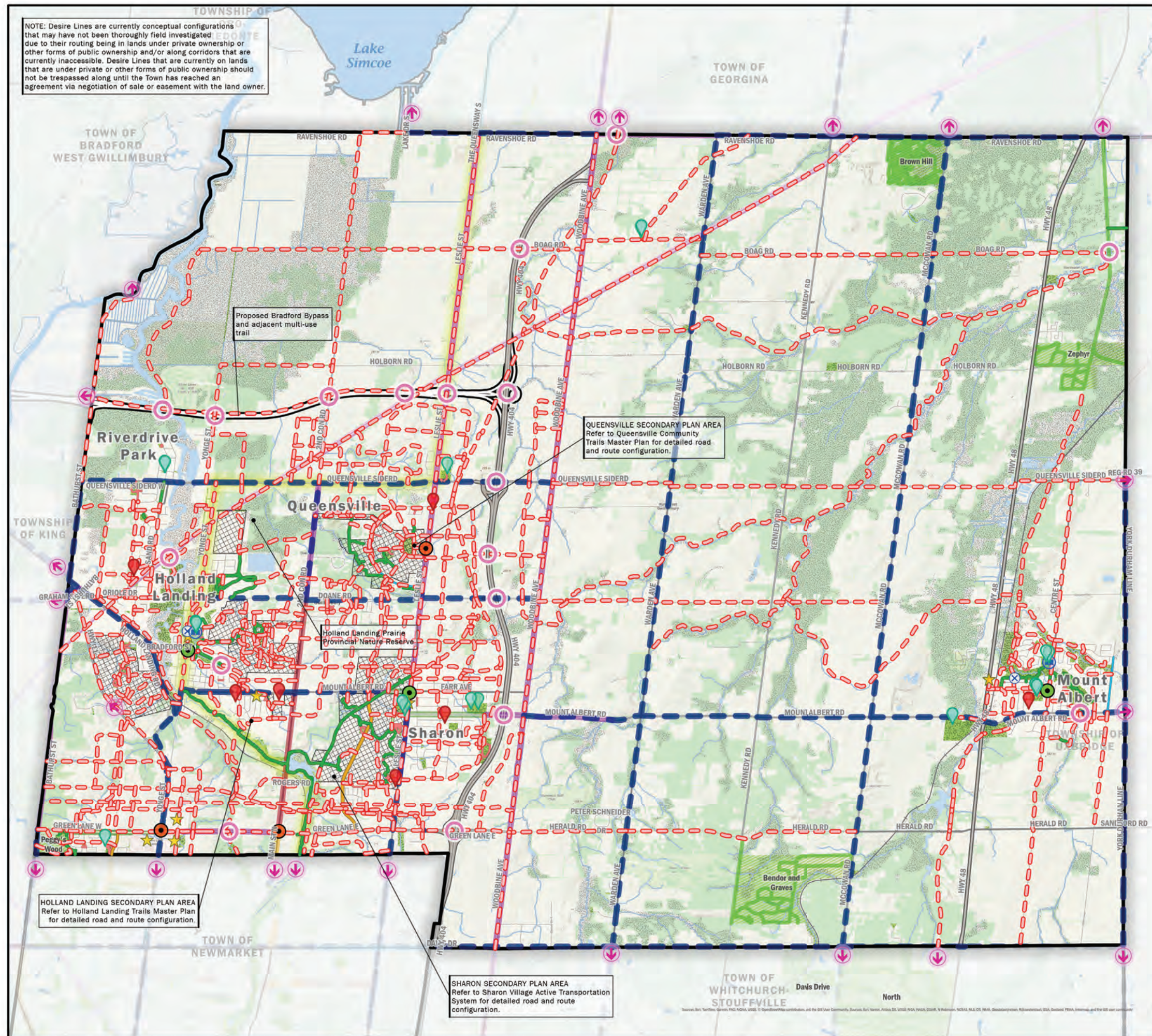
FIGURE 3-4A

2026-04-16

Candidate Cycling Network - Town-Wide

East Gwillimbury Active Transportation & Trails Plan

NOTE: Desire Lines are currently conceptual configurations that may have not been thoroughly field investigated due to their routing being in lands under private ownership or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.



Local Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Bike Lane
- Signed Route
- Walkway / Neighbourhood Connector

Candidate Routes

- Candidate Routes

Regional Trail Network

Existing

- Off-Road Multi-Use Trail
- Boulevard Multi-Use Path
- Cycle Track
- Protected Bike Lane
- Bike Lane
- Paved Shoulder
- Signed Route

Proposed

- Regional Facility*

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokiidaa Trail)

Base Features

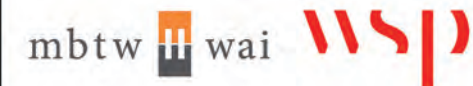
- Highway / Expressway
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- Local Road
- Proposed Roads
- Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- York Regional Forest
- Park
- Parcel
- Town / Village / Hamlet
- Municipal Boundary

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

Scale: 0 1 2 KM

- Notes:**
- Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid and dashed lines form the Town's ATP network.
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HOLLAND LANDING SECONDARY PLAN AREA Refer to Holland Landing Trails Master Plan for detailed road and route configuration.

SHARON SECONDARY PLAN AREA Refer to Sharon Village Active Transportation System for detailed road and route configuration.

QUEENSVILLE SECONDARY PLAN AREA Refer to Queensville Community Trails Master Plan for detailed road and route configuration.

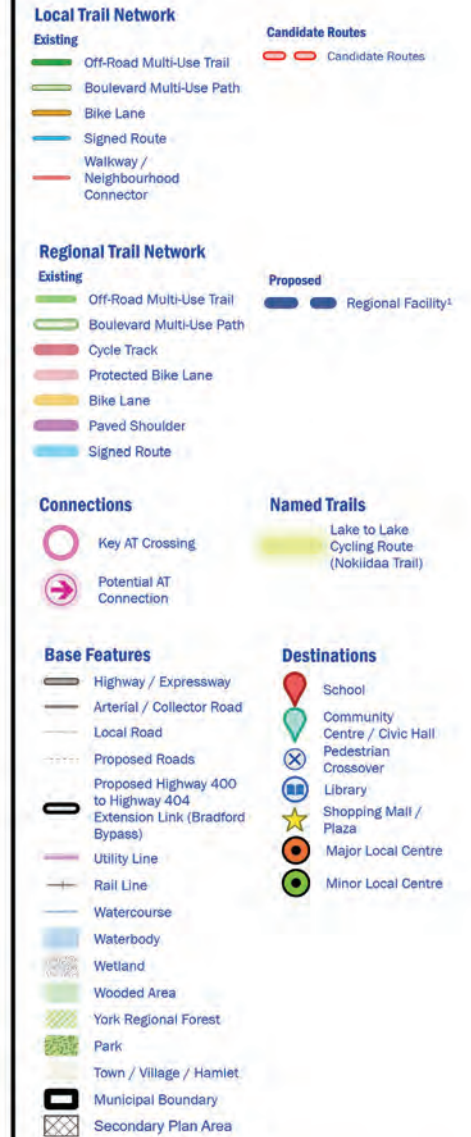
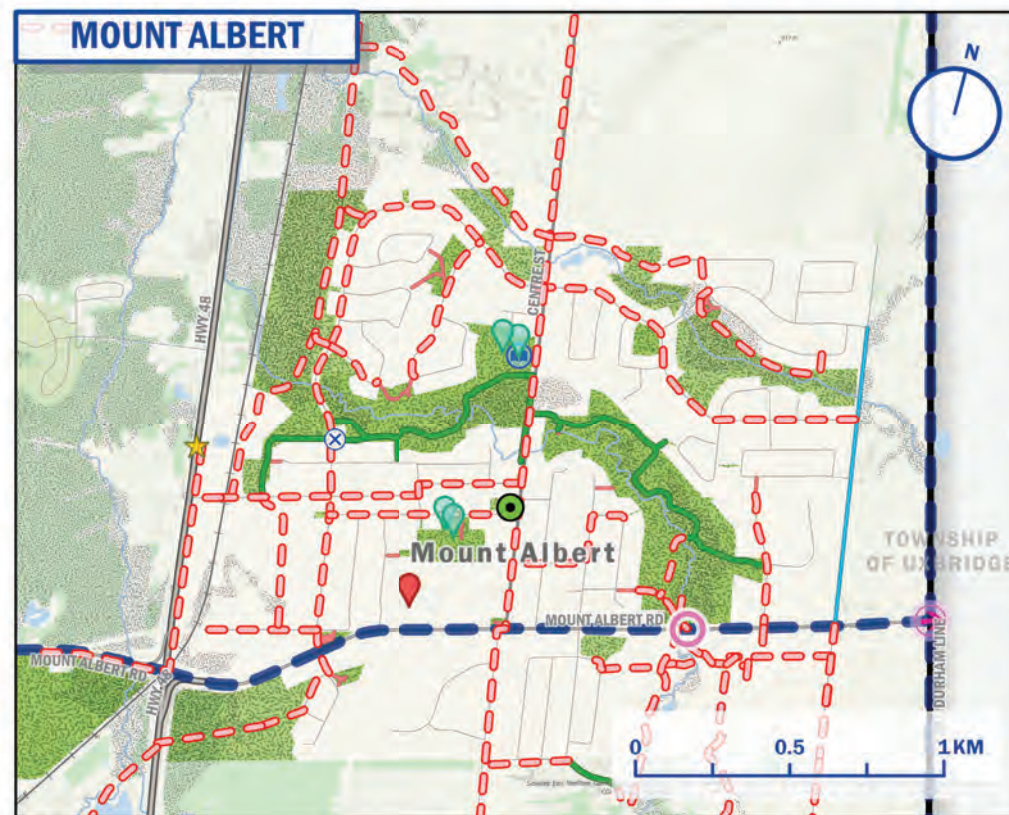
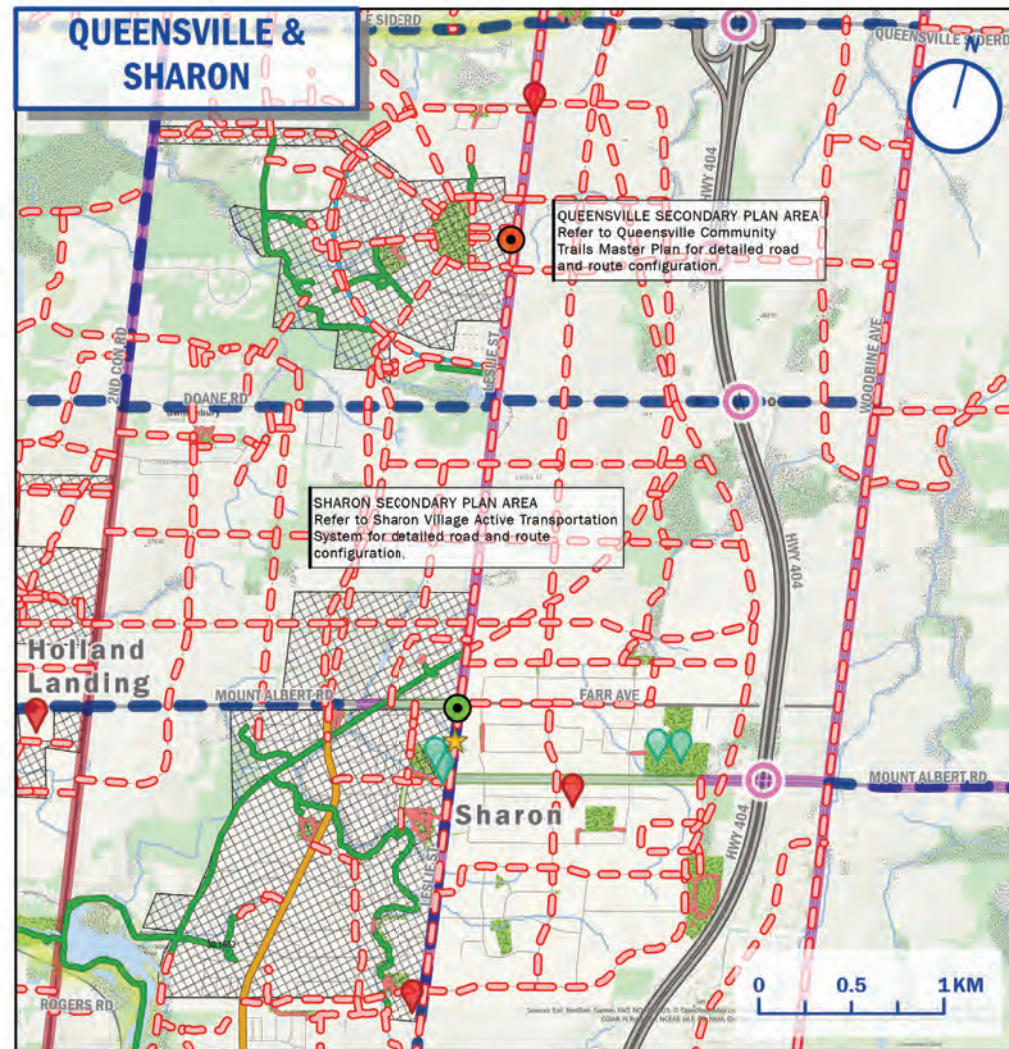
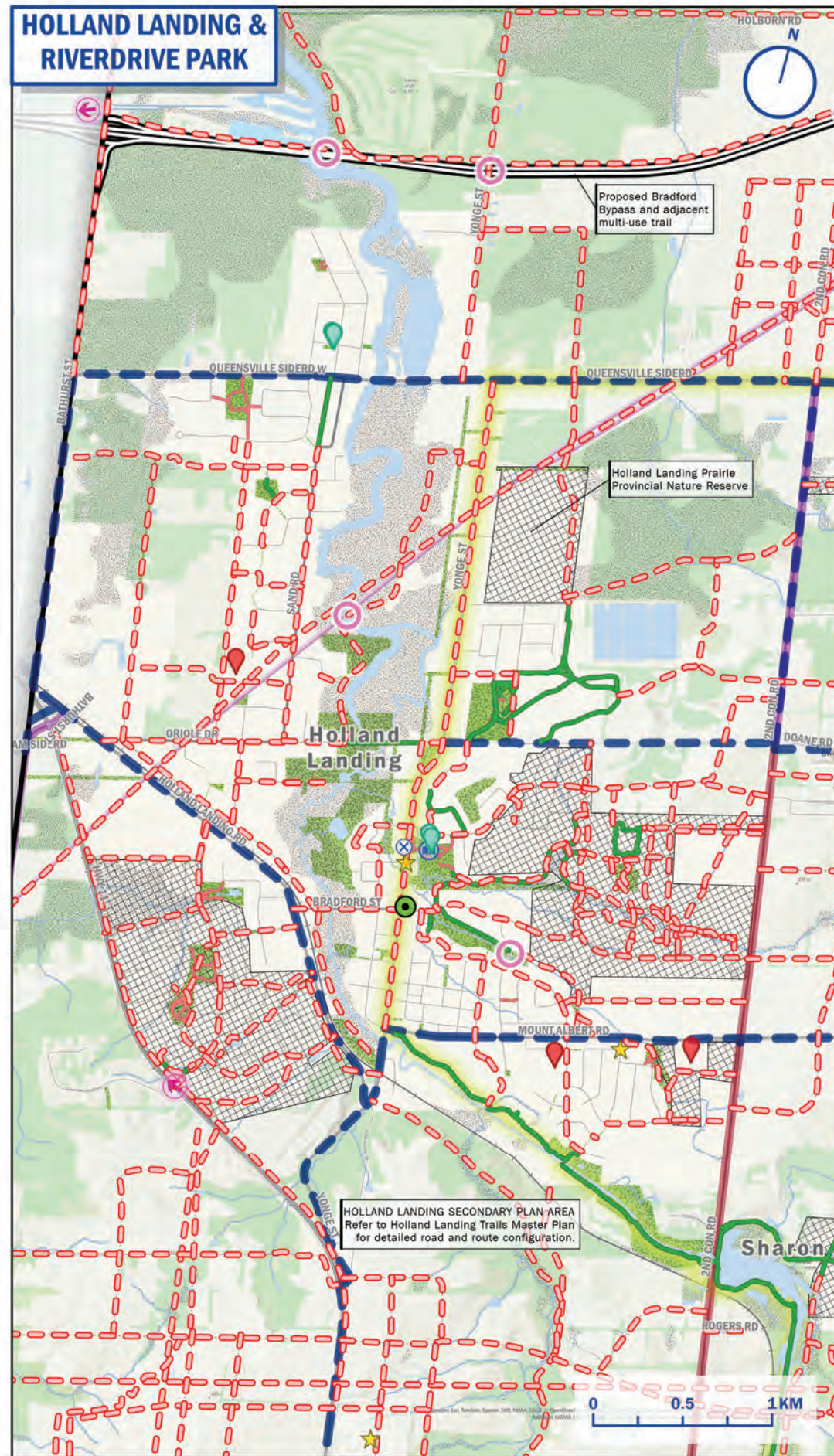
Proposed Bradford Bypass and adjacent multi-use trail

FIGURE 3-4B

2026-04-16

Candidate Cycling Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



- Notes:**
1. Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 2. The thinner solid and dashed lines form the Town's ATP network.
 3. The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
 4. This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.
 5. The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



3.5 Route Investigations

What was done?

Route conditions were assessed, including but not limited to, existing curb-to-curb width on roadways, roadway platform and road right-of-way, on-street parking, existing utilities, and other physical constraints. The existing surroundings, connections to key destinations, and existing trails are also investigated in proximity to the candidate routes. Along with the desktop analysis, select locations were chosen for field investigations to verify route conditions. Key aspects reviewed during each visit include slope gradings, surrounding land uses, road and / or trail surfacing, provision of supporting amenities (i.e. directional signage, trailheads, lighting) and lane widths.

What is the outcome?

The desktop and field investigations allowed the project team to have a better understanding of the existing conditions and the feasibility of the proposed candidate routes. This also informed the preferred facility type as the routes are being refined.

3.6 The Proposed Active Transportation and Trail Network

What was done?

With a high-level candidate route network, the next step is to determine the most appropriate facility type based on wise practices, especially the facility selection tool found in Ontario Traffic Manual (OTM) Book 18: Cycling Facilities (2021). Book 18's three-step facility selection tool is summarized in **Figure 3-5**.

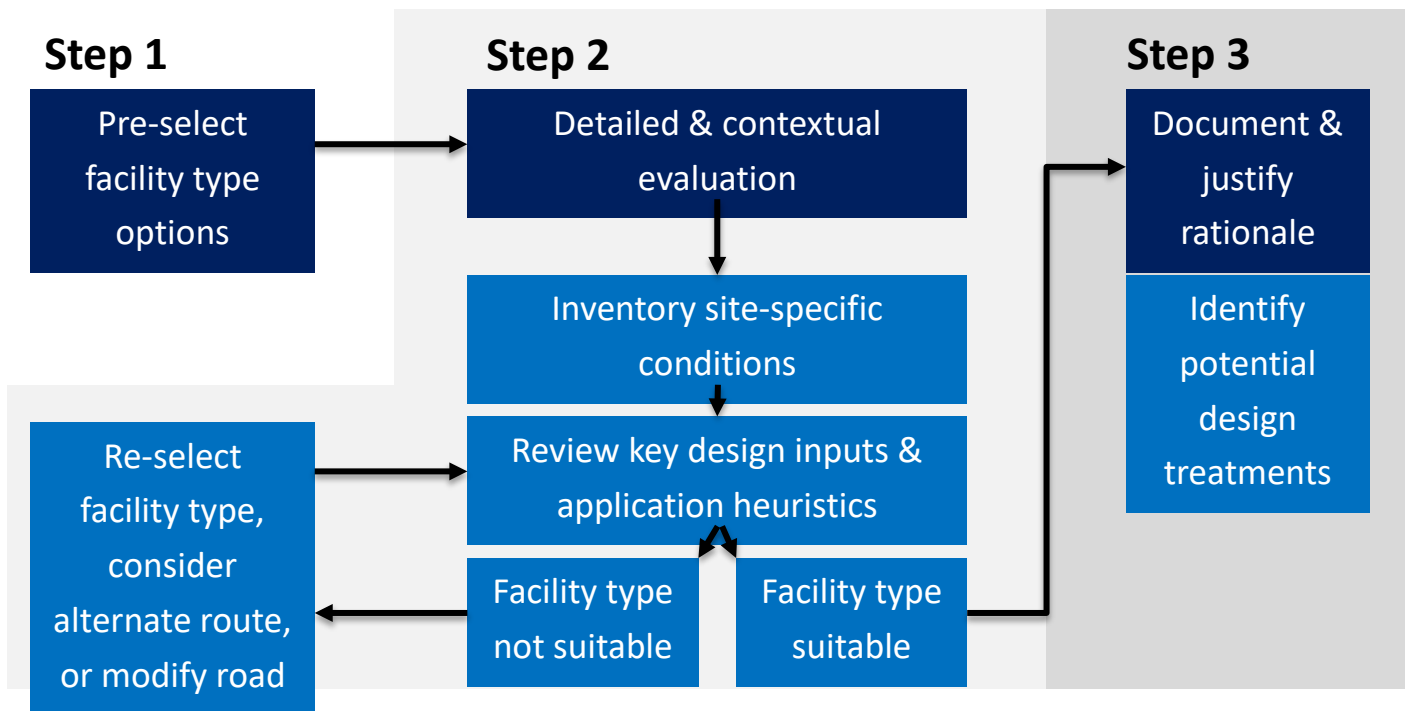
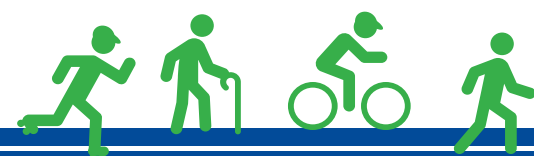


Figure 3-5. Three-Step Facility Selection Tool (Source: OTM Book 18, 2021)



Following the above approach, the nomographs for urban and rural contexts were reviewed to select a preliminary facility based on the Average Daily Traffic Volume and posted speed limit. The nomographs are provided in **Figure 3-6**.

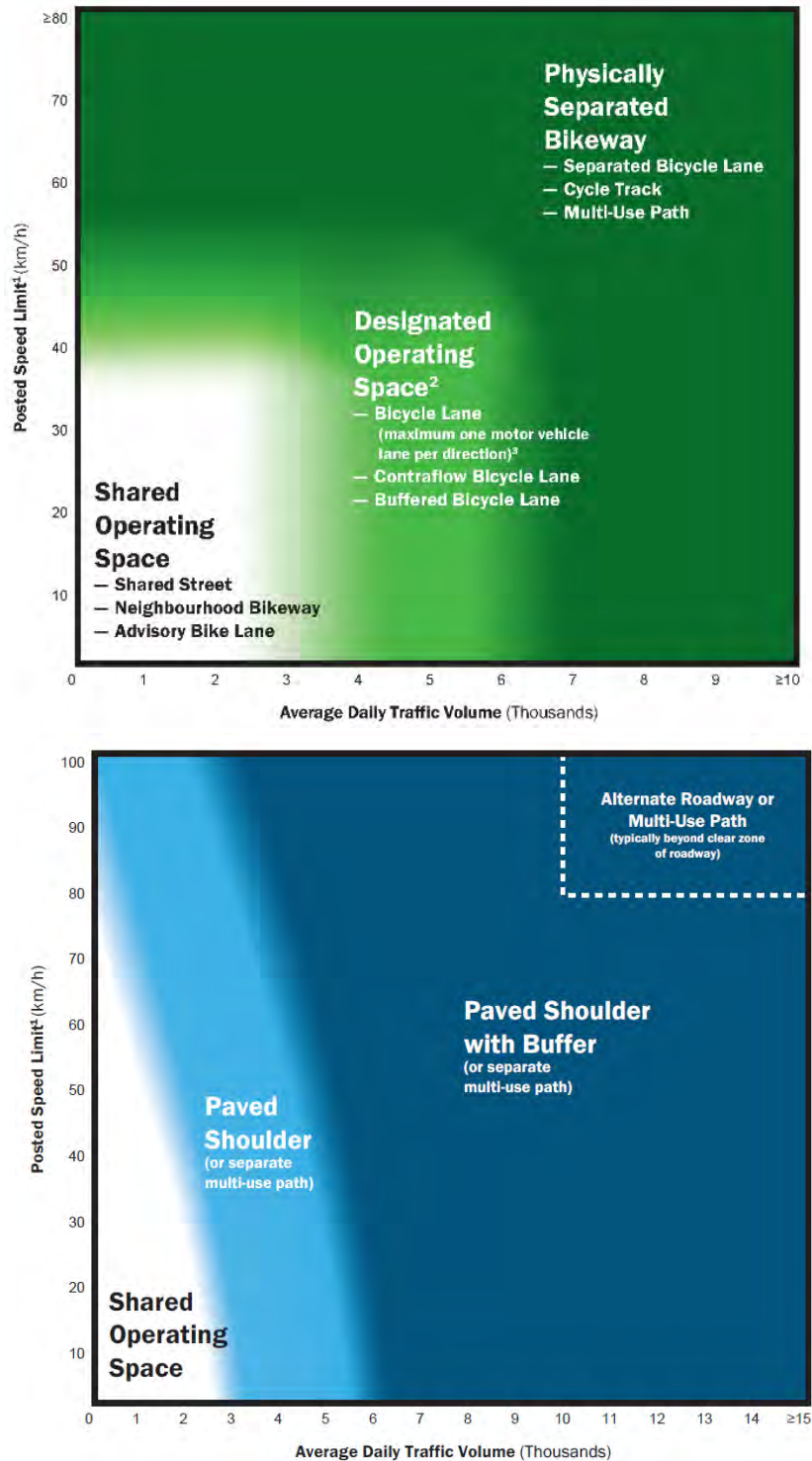
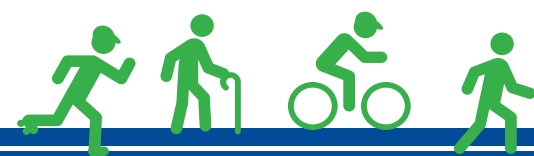


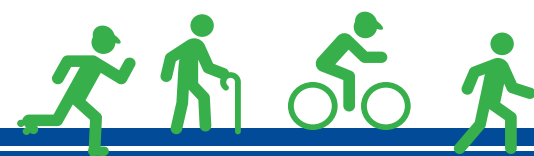
Figure 3-6. Urban (top) and Rural (bottom) Facility Selection Nomographs (Source: OTM Book 18, 2021)



Next, application heuristics (**Figure 3-7**), also known as a list of criteria, was used to further refine the preliminary assessment to identify what facility type within the shared, separated and designated category is most appropriate based on the context of the street. It should be noted that desire lines were carried forward as a “facility type” to identify routes that the Town should protect for as the required property comes up for redevelopment in the future.

	Shared Roadway	Neighbourhood Bikeway	Rural Paved Shoulder	Advisory Bicycle Lane	Bicycle Lane	Buffered Bicycle Lane	Separated Bicycle Lane	Cycle Track	Multi-Use Path
Motor vehicle speed									
30 km/h or less	✓	✓	?	?					
40 km/h	?	?	?	✓	✓	✓	✓	✓	✓
50 km/h			?	✓	✓	✓	✓	✓	✓
60 km/h			?			?	✓	✓	✓
70 to 90 km/h			?					✓	✓
Over 90 km/h								✓	✓
Motor vehicle volumes									
<1,500 vehicles/day	✓	✓	?	?	?	?			
1,500 to 3,000 vpd	?	?	?	✓	✓	✓	✓	✓	✓
3,000 to 6,000 vpd			?	?	?	?	✓	✓	✓
6,000 to 10,000 vpd			?				✓	✓	✓
>10,000 vpd							?	✓	✓
Function of street/road/highway									
Access roads (local streets)	✓	✓	✓	?	?	?			
Both mobility and access roads (minor collectors)			?	?	✓	✓	✓	✓	✓
Mobility roads (major collectors and arterials)			?		?	?	✓	✓	✓
Vehicle mix									
More than 30 trucks/buses per hour in curb lane			?			?	✓	✓	✓
Bus stops located along route			?		?	?	✓	✓	✓
Pedestrian activity									
Low pedestrian volumes	✓	✓	✓	✓	✓	✓	✓	✓	✓
High pedestrian volumes	✓	✓		✓	✓	✓	✓	✓	?
On-street parking									
Parallel parking; low turnover	?	?		?	?	?	✓	✓	✓
Parallel parking; high turnover							✓	✓	✓
Perpendicular or angle parking							✓	✓	✓
Frequency of intersections and crossings									
Limited intersections and driveway crossings	?	?	✓	✓	✓	✓	✓	✓	✓
Low-volume driveways or unsignalized intersections	✓	✓	✓	✓	✓	✓	✓	✓	✓
Frequent high-volume driveways or unsignalized intersections					?	?	✓	✓	?
Signalized intersections with high-volume turning conflicts						?	✓	✓	?
✓	Typically appropriate for the context								
?	Requires further context specific evaluation								

Figure 3-7. Application Heuristics for Determining Facility Type (Source: OTM Book 18, 2021)



How was it informed?

- Findings from previous steps in the network development approach;
- Additional desktop and field investigations where required;
- Input from Town Staff, Regional Staff, interested groupss and residents; and
- Wise practices and guidelines on active transportation facility selection.

What is the outcome?

In total, the Town of East Gwillimbury's active transportation and trails network is made up of over 750 km of routes. Approximately 291 km is existing and this AT and Trails Network Report proposes about 459 km of new routes. A summary of the network by facility type is provided in **Table 3.4**.

Table 3.4. Summary of East Gwillimbury Updated Active Transportation and Trails Network

Facility Type	Existing Length (KM)	Proposed Length (KM)	Total Length (KM)
Multi-Use Trail	63.3	34.2	97.5
Multi-Use Path	8.6	59.1	67.7
Protected Bike Lane	0.0	0.0	0.0
Cycle Track	4.1	0.0	4.1
Bike Lane	6.1	35.1	41.2
Paved Shoulder	36.2	32.4	68.6
Signed Route	2.9	33.0	35.9
Signed Route with Urban Shoulder	0.0	9.4	9.4
Sidewalk	150.0	30.1	180.1
Walkway	11.6	1.5	13.1
Footpath	8.2	0.0	8.2
Desire Line	0.0	98.6	98.6
Regional Proposed	0.0	126.1	126.1
Total	291.0	459.5	750.5

This network is intended to be a blueprint for implementation of facilities and for decision making as it regards to active transportation and trails. The recommendations should be reviewed at the time of implementation to identify if the proposed facility type or alignment is appropriate. There should be flexibility in the plan to accommodate additional routes and revisions as the network and Town evolves. **Figure 3-8** and **Figure 3-9** show the ultimate recommended pedestrian and cycling and multi-use networks, respectively.

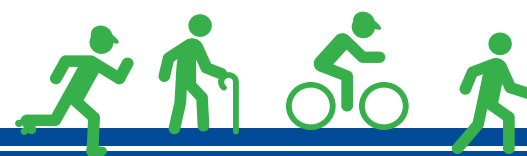


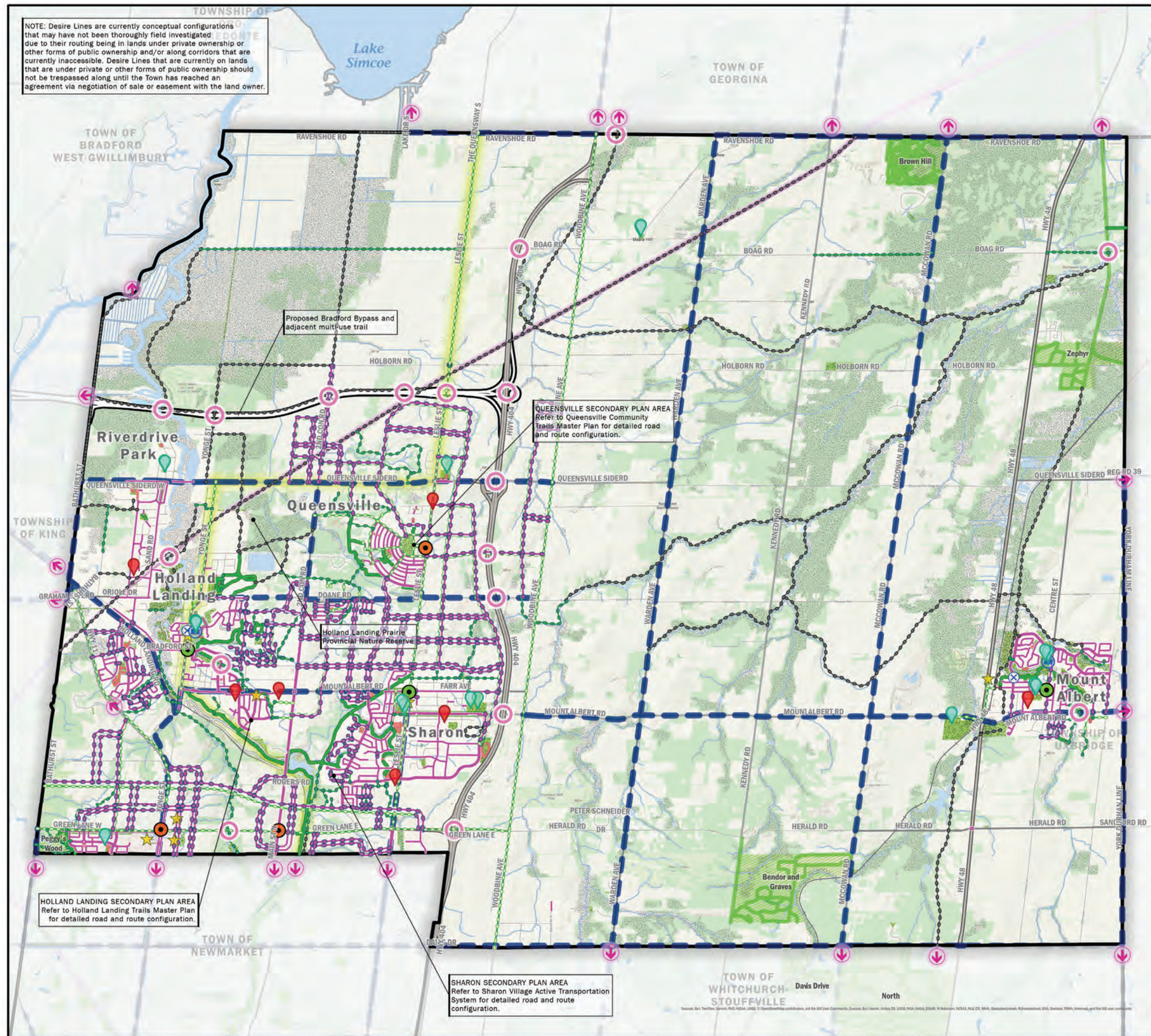
FIGURE 3-8A

2026-04-17

Recommended Pedestrian Network - Town-Wide

East Gwillimbury Active Transportation & Trails Plan

NOTE: Desire Lines are currently conceptual configurations that may have not been thoroughly field investigated due to their routing being in lands under private ownership or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Walkway / Neighbourhood Connector	Walkway
Footpath	Desire Line
Sidewalk	Sidewalk

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility ¹
Boulevard Multi-Use Path	

Connections

Key AT Crossing	Named Trails
Potential AT Connection	Lake to Lake Cycling Route (Nokidaa Trail)

Base Features

Highway / Expressway	School
Arterial / Collector Road	Community Centre / Civic Hall
Local Road	Pedestrian Crossover
Proposed Roads	Library
Proposed Highway 404 Extension Link (Bradford Bypass)	Shopping Mall / Plaza
Utility Line	Major Local Centre
Rail Line	Minor Local Centre
Watercourse	
Waterbody	
Wetland	
Wooded Area	
York Regional Forest	
Park	
Town / Village / Hamlet	
Municipal Boundary	

- Notes:**
- Includes routes under the Jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid and dashed lines form the Town's ATP network.
 - The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
 - This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.
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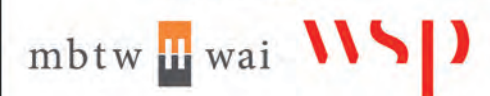
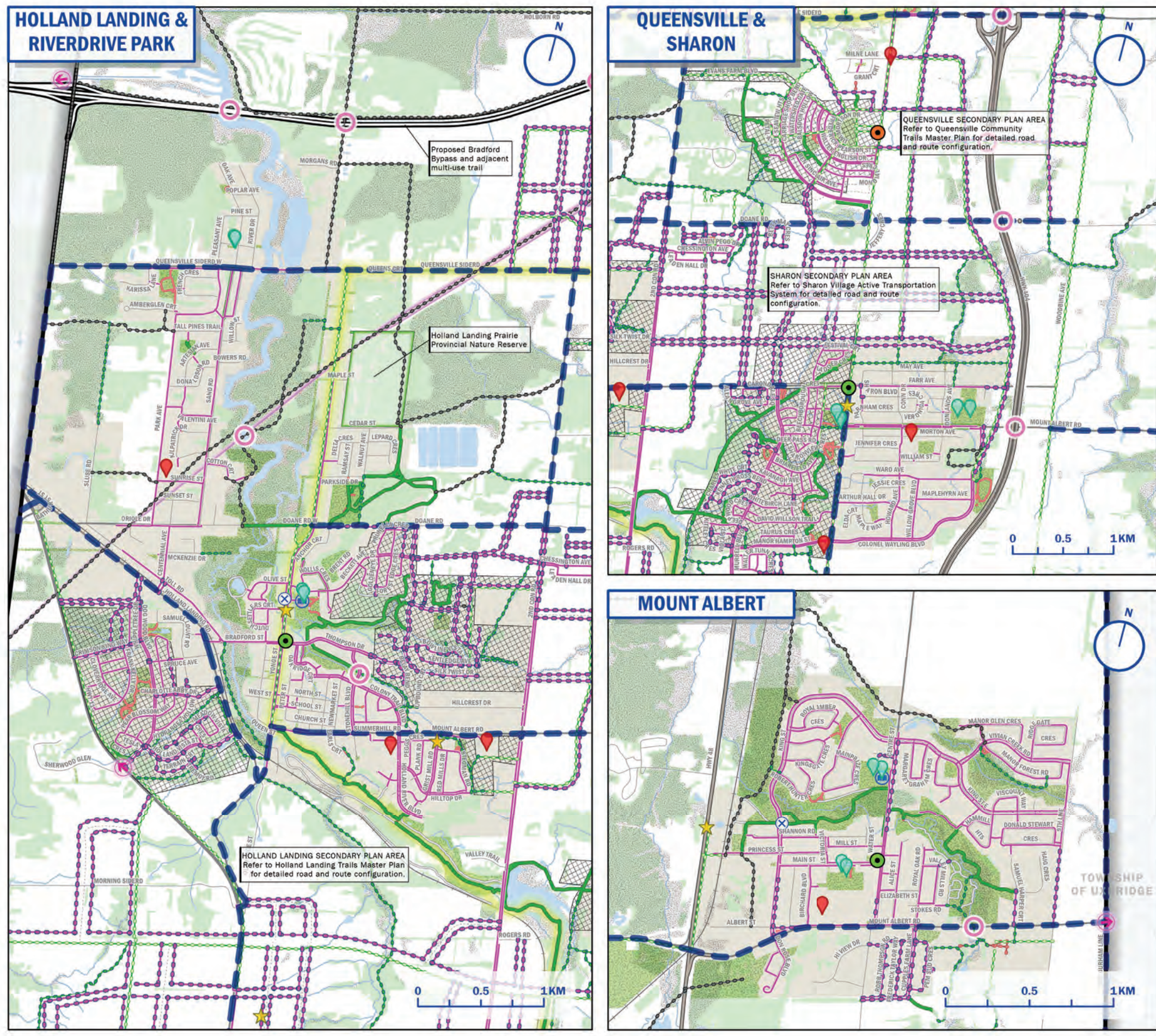


FIGURE 3-8B

2026-05-05

Recommended Pedestrian Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Walkway / Neighbourhood Connector	Walkway
Footpath	Desire Line
Sidewalk	Sidewalk

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility ¹
Boulevard Multi-Use Path	

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokida Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- Park
- Town / Village / Hamlet
- Municipal Boundary
- Secondary Plan Area

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

- Notes:**
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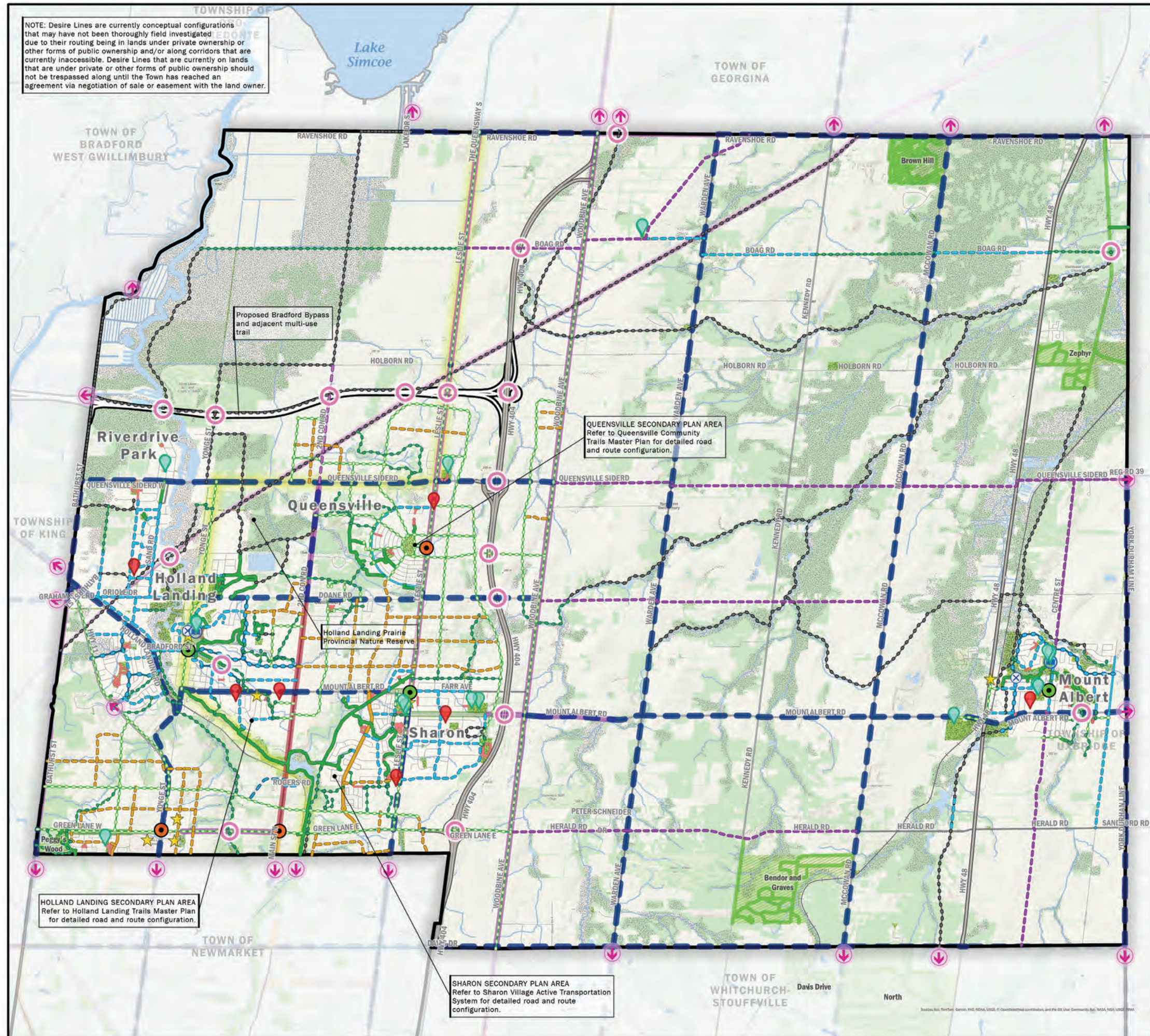
FIGURE 3-9A

2026-04-16

Recommended Cycling Network - Town-Wide

East Gwillimbury Active Transportation & Trails Plan

NOTE: Desire Lines are currently conceptual configurations that may have not been thoroughly field investigated due to their routing being in lands under private ownership or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Bike Lane	Cycle Track
Signed Route	Bike Lane
Walkway / Neighbourhood Connector	Paved Shoulder
	Signed Route
	Signed Route with Urban Shoulder
	Desire Line
	Walkway

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility*
Boulevard Multi-Use Path	
Cycle Track	
Protected Bike Lane	
Bike Lane	
Paved Shoulder	
Signed Route	

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokidaa Trail)

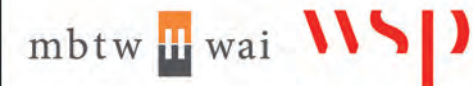
Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- York Regional Forest
- Park
- Parcel
- Town / Village / Hamlet
- Municipal Boundary

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

- Notes:**
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HOLLAND LANDING SECONDARY PLAN AREA Refer to Holland Landing Trails Master Plan for detailed road and route configuration.

SHARON SECONDARY PLAN AREA Refer to Sharon Village Active Transportation System for detailed road and route configuration.

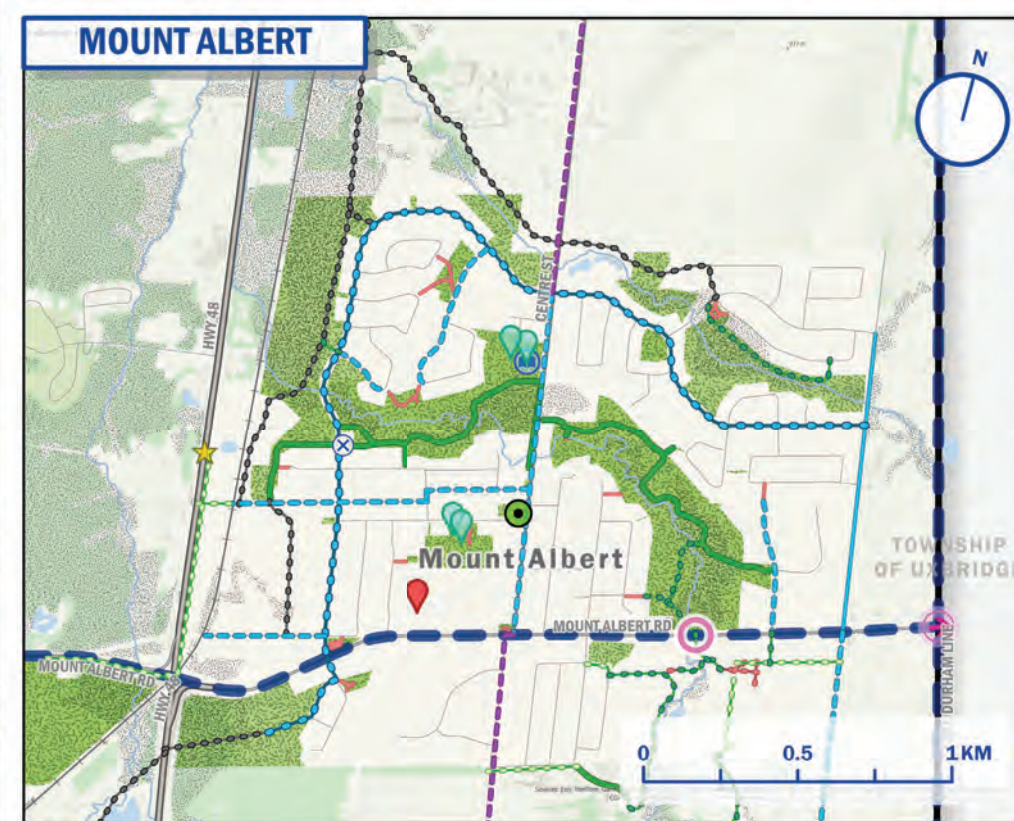
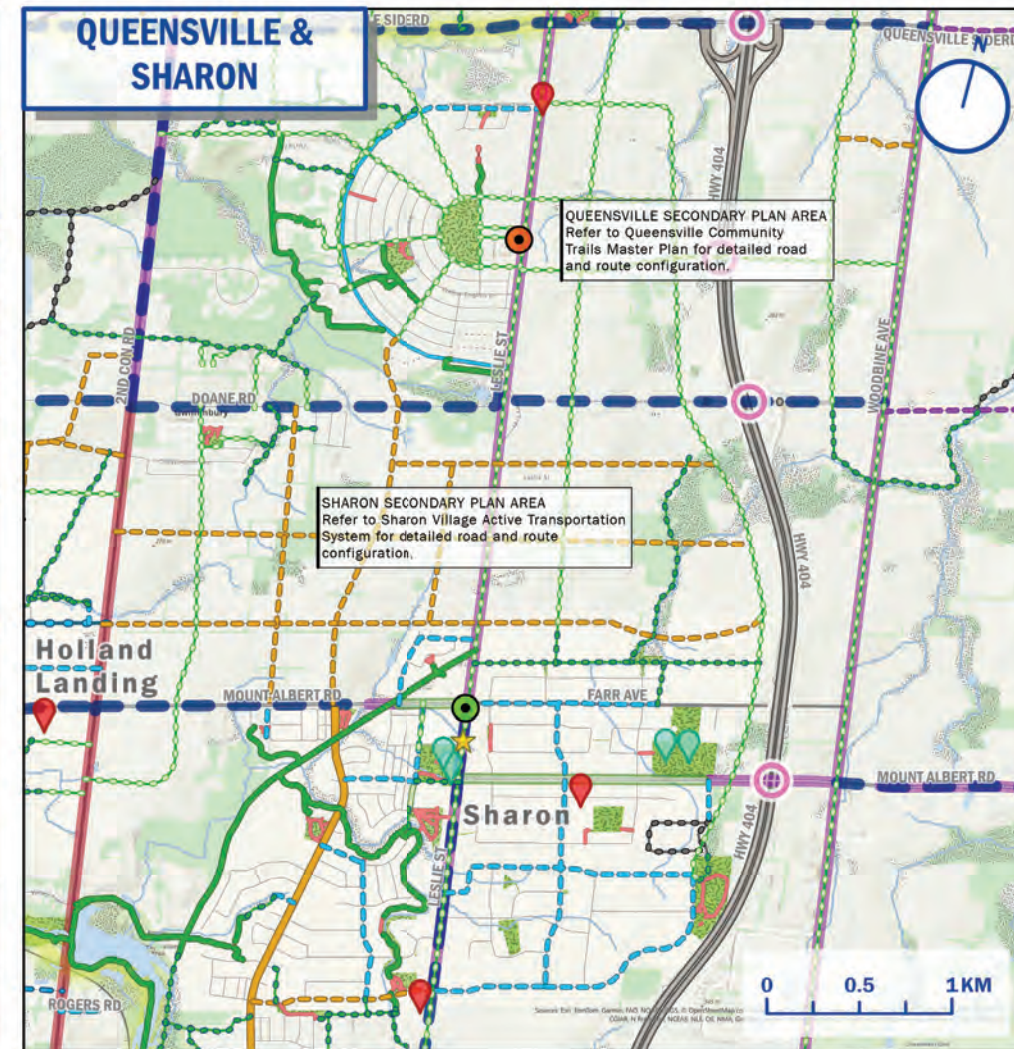
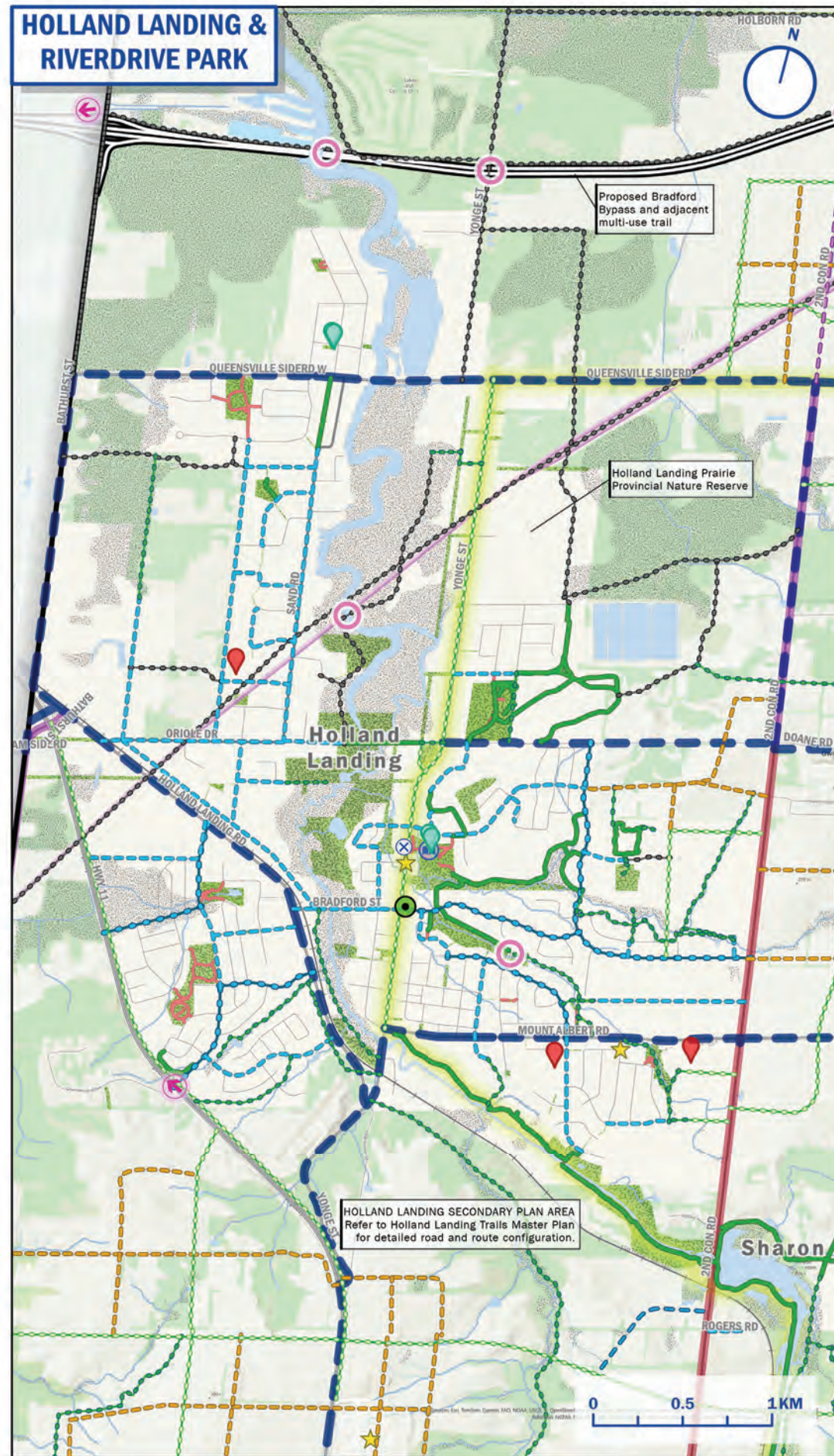
QUEENSVILLE SECONDARY PLAN AREA Refer to Queensville Community Trails Master Plan for detailed road and route configuration.

FIGURE 3-9B

2026-04-16

Recommended Cycling Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Bike Lane	Cycle Track
Signed Route	Bike Lane
Walkway / Neighbourhood Connector	Paved Shoulder
	Signed Route
	Signed Route with Urban Shoulder
	Desire Line
	Walkway

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility*
Boulevard Multi-Use Path	
Cycle Track	
Protected Bike Lane	
Bike Lane	
Paved Shoulder	
Signed Route	

Connections

- Key AT Crossing
- Potential AT Connection

Named Trails

- Lake to Lake Cycling Route (Nokiidaa Trail)

Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 404 to Highway 404 Extension Link (Bradford Bypass)
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- Waterbody
- Wetland
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Destinations

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Proposed Facility Types

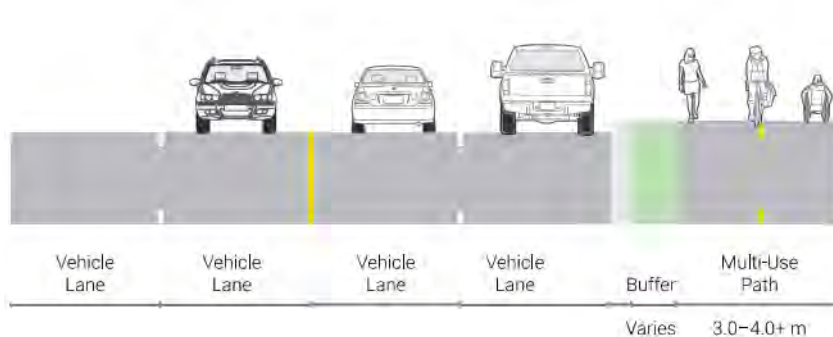
Off-Road Multi-Use Trail

Off-road multi-use trails are designated pathways or routes that are separated from regular roadways and are designed for shared use by various modes of non-motorized transportation. These trails are typically designed to support the widest range of users including pedestrians, cyclists, in-line skaters, skateboarders, and people who use mobility devices. Off-road multi-use trails are often located in natural settings, parks, abandoned rail corridors, or utility/hydro corridors that are designed to provide a safe and enjoyable environment for active transportation and outdoor activities. It may be appropriate to provide physically separated trails within the same corridor to create opportunities for both higher speed users (e.g. cyclists) and lower speed users (e.g. pedestrians). Where this design treatment is appropriate, separation of the two facilities can be created by distance, grade, or planted buffers. Signs to identify permitted uses for each trail should be used to communicate intent and ensure the integrity of the separated system. Typical multi-use trails should have a minimum 3.0m width and a desired width of 3.5 – 4.0m to facilitate two-way travel. The width of the trail may be widened to accommodate a higher volume of users.

In-Boulevard Multi-Use Path

An in-boulevard multi-use path is horizontally and vertically separated from motor vehicle traffic by a curb and a strip of grass or paved “splash strip” within the roadway or highway right-of-way. This facility type provides two-way travel, is shared between people riding bikes and pedestrians, and is suitable for roadways with moderate to high traffic volumes and speeds. **Figure 3-10** shows a typical cross section of a roadway with an in-boulevard multi-use path.

Figure 3-10. Cross-Section of In-Boulevard Multi-Use Path (Source: OTM Book 18, 2021)

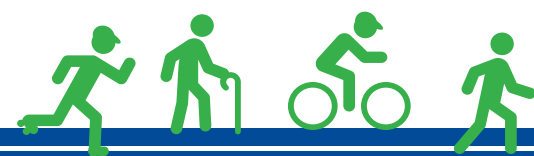


Where the volume of path users is high, mixing of pedestrians and cyclists can lead to conflicts between users, creating uncomfortable and potentially hazardous conditions. This is more likely to occur in higher-volume pedestrian areas, such as near transit stops and stations, through shopping areas or along scenic routes. **Table 3.5** summarizes the desired and minimum facility widths based on expected user volumes.

An in-boulevard multi-use path is located outside the travelled portion of the roadway and does not necessarily follow its geometric design. Practitioners should consider several geometric elements including the width, design speed, grade, stopping sight distance, horizontal curvature, crest vertical curves and lateral clear zones. Refer to the **TAC Geometric Design Guide for Canadian Roads (2017)** for guidance on the alignment of in-boulevard multi-use paths.





Table 3.5 Desired and Suggested Minimum Widths for In-Boulevard Multi-Use Paths (Source: OTM Book 18, 2021)

Facility	Desired Width	Suggested Minimum
Low-to-moderate volume path (< 100 users/hour)	3.5 m	3.0 m
High-volume path (> 100 users/hour)	≥ 4.0 m	3.0 m



Signage and pavement markings typically used for multi-use paths are included in **Table 3.6** and **Table 3.7**.

Table 3.6. Signs for In-Boulevard Multi-Use Paths (Source: OTM Book 18, 2021)

Sign	Sign Code	Purpose
	Rb-71 (OTM) 30 x 45 cm	<p>Shared Pathway Sign</p> <ul style="list-style-type: none"> Placed at the entrance of multi-use trails and paths that are shared by pedestrians and cyclists Instructs cyclists and pedestrians to be cognizant of each other's presence along the shared facility
	Rb-72A (OTM) or Rb-72B (OTM) 30 x 45 cm	<p>Pathway Organization Sign</p> <ul style="list-style-type: none"> Placed at the end of cyclist-pedestrian mixing zones or shared spaces to direct cyclists and pedestrians to their separate dedicated facilities Directs cyclists and pedestrians toward their separate, adjacent facilities
	Ra-16 (OTM) 30 x 45 cm	<p>Yield to Pedestrians Sign</p> <ul style="list-style-type: none"> Placed in advance of bicycle-pedestrian mixing zones, shared spaces, or pedestrian crossing areas that are yield controlled for cyclists Instructs cyclists to yield the right-of-way to pedestrians
	Wc-14 (OTM) 60 x 60 cm	<p>Pedestrian and Bicycle Crossing Ahead Sign</p> <ul style="list-style-type: none"> Placed in advance of a bicycle crossing Warns road users of a bicycle crossing ahead

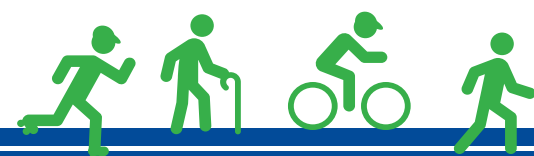
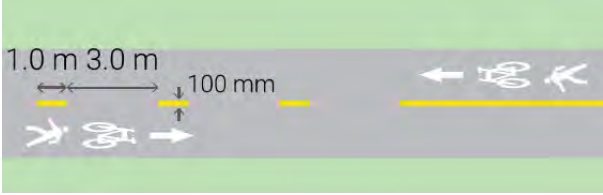


Table 3.7. Pavement Markings for In-Boulevard Multi-Use Paths (Source: OTM Book 18, 2021)

Pavement Markings	Common Applications
<p>In-Boulevard Multi-Use Pavement Markings</p> 	<ul style="list-style-type: none"> <li>Sample pavement markings for a multi-use path, including solid and broken directional dividing line, bicycle and pedestrian stencil plus directional arrows.

Cycle Track

Cycle tracks are a physically separated bikeway that are horizontally and vertically separated from the travelled portion of the roadway by a curb plus a horizontal buffer. Cycle tracks often travel parallel to the sidewalk but are designated exclusively for use by people riding bikes. They may be at the same level as the sidewalk, or at an intermediate level between the roadway and sidewalk. Cycle tracks may be placed in the boulevard adjacent to or setback from the curb. Green infrastructure or a furnishing zone may be placed where space is available between the cycle track and the roadway or the cycle track and the sidewalk.

Cycle tracks can be used to accommodate a wide range of bicycle types and users. They are typically suitable for roadways with moderate to high motor vehicle speeds and volumes. Cycle tracks can carry one-way or two-way bicycle traffic as shown in **Figure 3-11** and **Figure 3-12**.

Figure 3-11. Cross-Section of One-Way Cycle Tracks (Source: OTM Book 18, 2021)

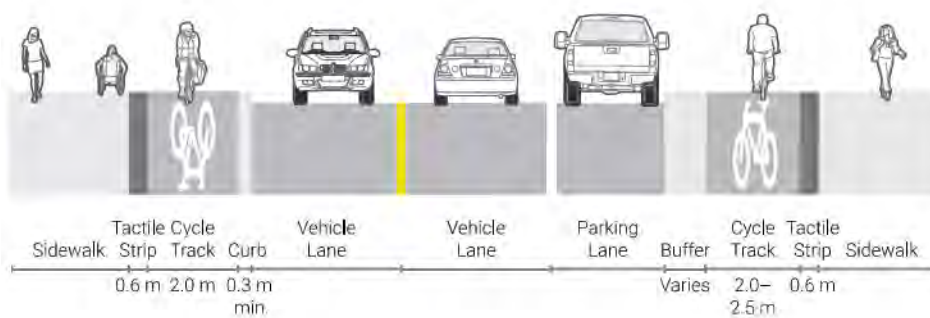
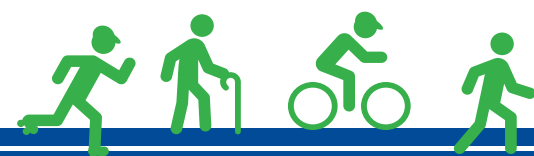
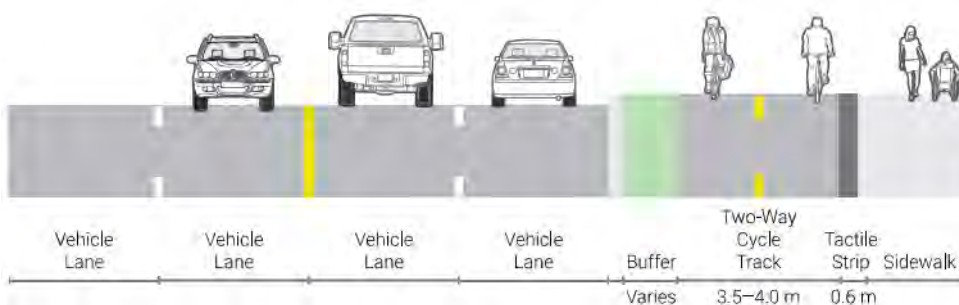


Figure 3-12. Cross-Section of Two-Way Cycle Tracks (OTM Book 18)



The recommended widths for a one-way and two-way cycle track are 2.0 and 3.5 m, respectively. Given their high degree of separation from motor vehicle traffic, cycle tracks are more suitable for a variety of users and bicycle types. When selecting the width for a cycle track, practitioners should consider the potential for the facility to be used for:

- **Overtaking:** Overtaking is common when routes have higher cycling volumes. Passing movements can be accommodated by having a mountable curb or by building a wider cycle track for cyclists to pass safely. A width of 2.0 meters is considered comfortable for passing, with a minimum of 1.8 meters needed. A buffer between the curb and cycle track can also provide additional passing space.
- **Side-by-side riding:** Building cycle tracks that are wide enough for two cyclists to ride side-by-side enables social riding, which may be appealing to more users.
- **Cargo bikes and adapted bikes:** These bikes are typically wider and heavier than standard bikes. As a result, the suggested absolute minimum cycle track width is 1.8 m.
- **Electric bikes and kick style e-scooters:** if permitted in cycle tracks, e-bikes and e-scooters have a higher rate of acceleration and operating speed and may result in more overtaking movements.

Table 3.8 summarizes the desired width for one-way and two-way cycle tracks according to OTM Book 18.

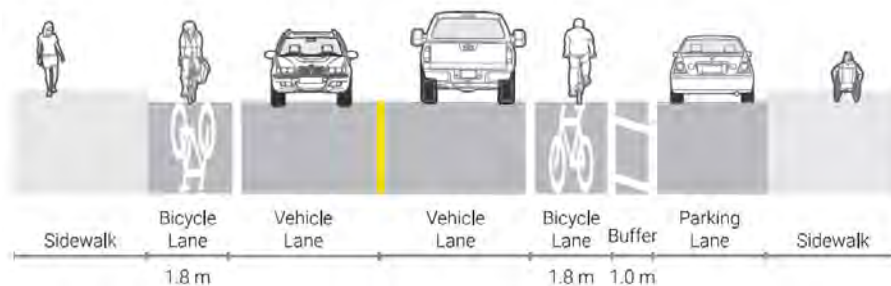
Table 3.8 Desired and Suggested Minimum Widths for Cycle Tracks (Source: OTM Book 18, 2021)

Facility	Desired Width	Suggested Minimum
One-way Cycle Track	2.0 – 2.5 m	1.5 m
Two-way Cycle Track	3.5 – 4.0 m	3.0 m

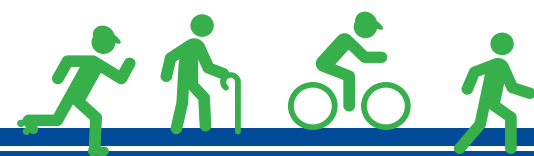
Bike Lane

A conventional bicycle lane is a portion of a roadway which has been designated by pavement markings and signage for preferential or exclusive use by people riding bikes. This facility type is well suited for two-lane roadways with motor vehicle speeds of 50 km/h or less and low-to-moderate volumes of motor vehicle traffic. Conventional bicycle lanes are suitable for one-way bicycle travel only. A typical configuration on a two-way roadway includes a conventional bicycle lane on each side as shown in Figure 3-13.

Figure 3-13. Cross-Section a roadway with Bicycle Lanes (Source: OTM Book 18, 2021)



Where cycling facilities operate on a roadway with on-street parking, the opening of vehicle doors pose a significant threat to the safety of people riding bikes, and as such, appropriate design measures are required. The facility design should guide people riding bikes to travel outside of the door zone. One option to achieve this is by providing a buffer treatment between the parking lane and the bicycle lane. For example, a 2.4 m parking lane should be complemented with a 1.0 m wide painted buffer. At a minimum, it is strongly recommended that a painted buffer of 0.6 m be provided. A parking buffer is



preferred over a wider bicycle lane since buffers have been shown to influence the lateral position of cyclists away from the parking lane.



While people find riding in conventional bike lanes more comfortable than riding in mixed traffic, conventional bicycle lanes do not promote greater horizontal passing distances by motorists and may actually lead to lower overtaking distance compared to mixed traffic. Providing a generous bicycle lane width allows people riding bikes to increase their distance from motor vehicles by positioning themselves toward the right side of the bicycle lane. While a narrow bicycle lane may provide enough space for a cyclist to operate, it provides little space for a buffer between the cyclist and a passing motorist. **Table 3.9** summarizes the suggested design widths for bicycle lanes.

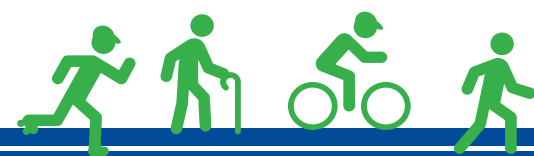
Table 3.9 Desired and Suggested Minimum Widths for Bicycle Lanes (Source: OTM Book 18, 2021)

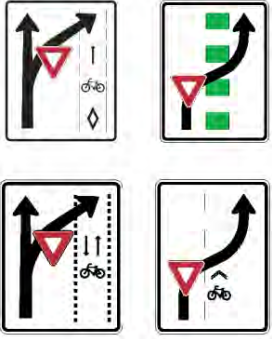
Facility	Desired Width	Suggested Minimum
Conventional Bicycle Lane	1.8 m	1.5 m
Conventional Bicycle Lane splitting two travel lanes	2.0 m	1.8 m
Conventional Bicycle Lane adjacent to on-street parking	1.5 m lane + 1.0 m parking buffer	1.5 m lane + 0.6 m parking buffer

Signage typically used for bike lanes are shown in **Table 3.10**.

Table 3.10. Signs for Bike Lanes (Source: OTM Book 18, 2021)

Sign	Sign Code	Purpose
	<p>Rb-84 (OTM) or Rb-84A (OTM) 60 x 60 cm</p>	<p>Reserved Bicycle Lane Sign (Overhead and side-mounted)</p> <ul style="list-style-type: none"> Periodically placed adjacent to designated or separated on-street cycling facilities Rb-84 signs (top figure) for overhead mounting applications only Identifies a reserved lane for bicycles in the road right-of-way
	<p>WB-10 (TAC) 60 x 60 cm</p>	<p>Reserved Bicycle Lane Ahead Sign</p> <ul style="list-style-type: none"> Placed in advance of a reserved lane for bicycles Warns road users to anticipate the beginning of a reserved lane for bicycles

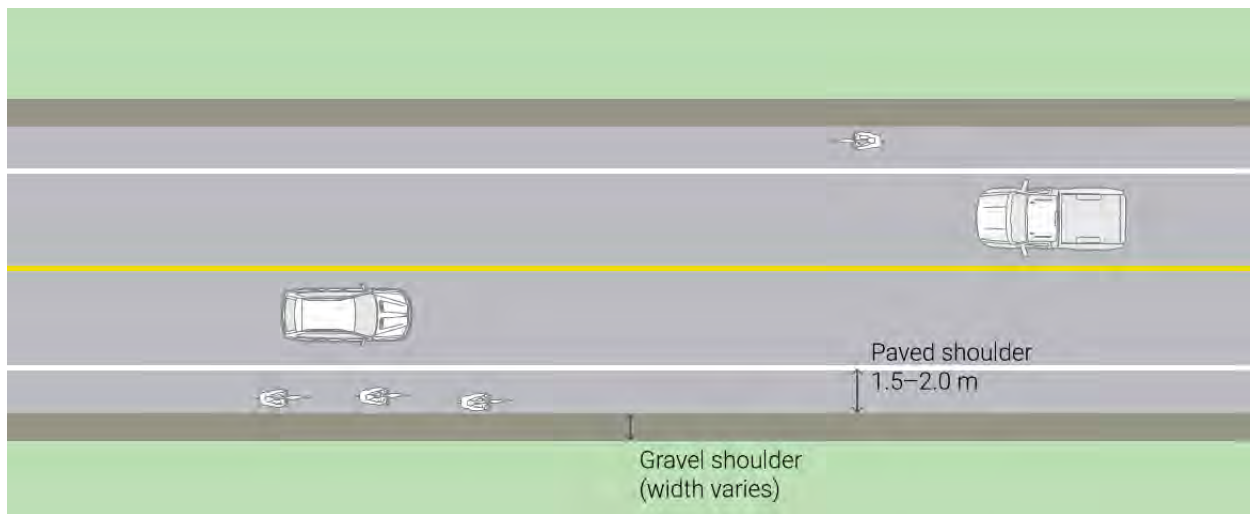


Sign	Sign Code	Purpose
	<p>Ra-18 (OTM) 60 x 75 cm</p>	<p>Turning Vehicles Yield to Bicycles Sign</p> <ul style="list-style-type: none"> Placed in advance of an intersection, high-volume ramp, minor street or driveway with a cycling facility crossing its entrance The sign variant used should match the type of cycling facility or conflict zone treatment present in the conflict zone. The sign should illustrate two-way bicycle traffic if placed at a two-way cycling facility. Communicates to motorists that they must yield the right-of-way to cyclists before crossing the cycling facility

Paved Shoulders

A paved shoulder is a portion of a roadway which is contiguous with the travelled way and provides lateral support for the pavement structure. It accommodates stopped and emergency motor vehicles, pedestrians and people riding bikes. It is often used by cyclists for travel since it provides them with an area for riding that is adjacent to but separate from the motor travel portion of the roadway. Cyclists must travel in the same direction as the motor vehicle traffic. An example cross section of a roadway with a paved shoulder is shown in **Figure 3-14**.

Figure 3-14. Roadway with Paved Shoulders (Source: OTM Book 18, 2021)



Paved shoulders are typically found on rural roads, but can also be implemented on urban and suburban roadways in the form of urban shoulders. Paved shoulders are considered a shared facility because they permit other uses within the same space. In urban and suburban environments, providing dedicated space for cycling is always preferred over an urban shoulder. The desired widths and suggested minimum widths of paved shoulders are shown in **Table 3.11**.

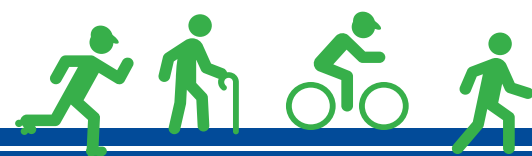


Table 3.11 Desired and Suggested Minimum Widths for Paved Shoulders (Source: OTM Book 18, 2021)

Facility	Desired Width	Suggested Minimum
Rural Paved Shoulder	1.5 – 2.0 m	1.2 m
Rural Paved Shoulder with Marked Buffer	1.5 – 2.0 m operating space + 0.5 – 1.0 m buffer	1.5 m operating space + 0.5 m buffer
Urban Paved Shoulder (Edge Line)	≥ 1.5 m	1.2 m

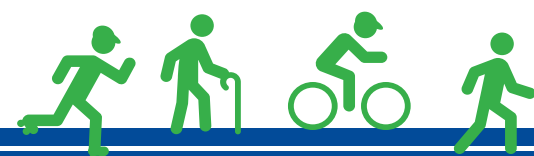
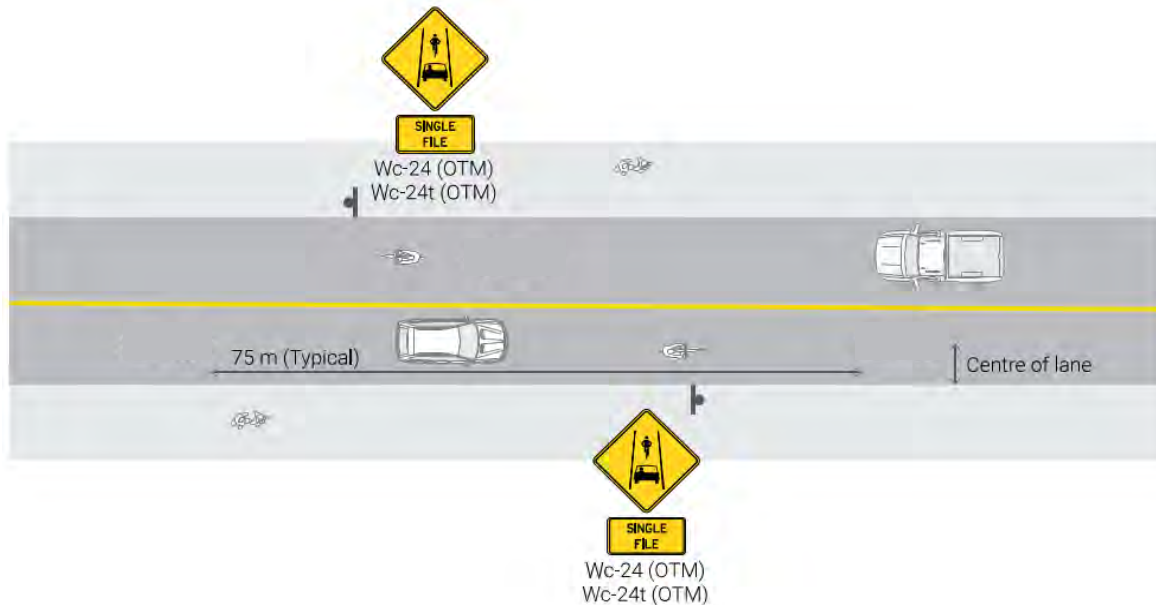
Signed Route

Signed routes are marked with signs to designate specific roads for cycling. For this facility, cyclists share the road with motor vehicles, as there is no physical separation between them. Bicycle signage such as M511 Bicycle Route Marker Signs (shown in **Table 3.12**) help cyclists identify and follow the designated route, enhancing safety and navigation for both cyclists and other road users.

Signed routes are typically found along roads where traffic volumes and/or vehicle operating speeds are low. Typical of quieter residential streets (low volume and low speed), core urban areas (higher volume and low speed) and lower order rural roads (low volume and moderate speed). Lane widths are a key design element in encouraging low speed travel for motorists along signed routes. Wider travel lanes may degrade the quality of the cycling environment by encouraging higher vehicle speeds and heavy vehicles to use the lane. In fact, signed routes are recommended on narrow travel lanes along with traffic calming treatments to slow down motor vehicles to allow for safe and comfortable mixing of modes along the road.

Generally, cyclists are expected to ride on the right of the shared travel lane. However, cyclists can use any part of the lane if necessary for safety. In situations where the lane is not wide enough for side-by-side operation, cyclists have a right to travel in the centre of the lane to discourage motor vehicle passing. Under the Highway Traffic Act, motorists must provide, at least 1.0 m of space when passing cyclists, and are permitted to cross the centreline to do so.

Figure 3-15. Mixed Traffic Operation with Cyclists Positioned in Centre of Lane (Source: OTM Book 18, 2021)



Signed Route with Urban Shoulder

Urban shoulders are marked with a white edge line along the roadway. Cyclists and motorists may interpret this space as a bicycle lane even though no bicycle pavement markings are applied to this area. Urban shoulders are not an alternative to bicycle lanes, but may be used to narrow existing wide travel lanes, to calm traffic or to facilitate on-street parking.




Urban shoulders may also be used as an “interim” measure to build local support for a dedicated cycling facility. Where and when sufficient support exists, a bicycle lane is preferred. Urban shoulders should be no narrower than 1.2 m, which provides the minimum operating width for a cyclist.

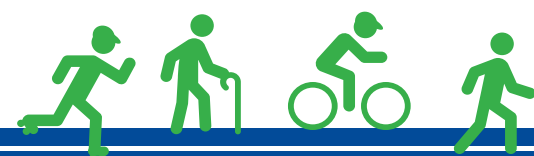
If 2.0 m in width or greater is available, the urban shoulder may also act as a space for on-street parking. Consideration should be given to the number of parked motor vehicles and their impact on the path of cyclists since cyclists will be required to merge into a live lane to exit and re-enter the shoulder in avoidance of parked motor vehicles. In these cases, people riding bikes may not always be visible to other road users given the temporary obstruction by parked motor vehicles in the shoulder. Since urban shoulders will be used by cyclists, bicycle friendly features such as side inlet catch basins should be incorporated.




Adding signage is crucial on mixed traffic roads to clearly indicate that cyclists share the road with motor vehicles. The installation of signs help increases awareness for all road users, reminding motorists to expect and accommodate cyclists on the roadway. **Table 3.12** shows the signs used to support cyclists operating in mixed traffic roads.

In areas where the pavement width is narrow, “share the road” signs can also be erected along the roadside to encourage cooperative behaviour between cyclists and motorists. Signed bicycle routes with wide curb lanes should be encouraged for all classes of roads to provide cycling friendly streets, whether they are designated as part of the cycling network or not.

Table 3.12. Signs for Mixed Traffic Operations (Source: OTM Book 18, 2021)

Sign	Sign Code	Purpose
	M511 (OTM) 45 x 45 cm	Bicycle Route Marker Sign <ul style="list-style-type: none"> Signs are used to identify bicycle routes on shared streets Communicates to cyclists that they are traveling on a bicycle route
	Wc-19 (OTM) 60 x 60 cm Wc-19t (OTM) 30 x 60 cm	Share the Road Sign and Tab <ul style="list-style-type: none"> Placed on roads with high cycling volumes that do not have designated cycling facilities Reminds motorists and cyclists to share the road
	Wc-24 (OTM) 60 x 60 cm	Single File Sign and Tab <ul style="list-style-type: none"> Placed on shared roads with narrow rights-of-way where side-by-side travel is not encouraged



Sign	Sign Code	Purpose
	Wc-24t (OTM) 30 x 60 cm	<ul style="list-style-type: none"> Instructs motorists and cyclists to travel single file along narrow portions of the road
 	Rc-66 (OTM) 60 x 60 cm Rb-66t (OTM) 30 x 60 cm	Motor Vehicle Passing Prohibited Sign and Do Not Pass Bicycles Tab <ul style="list-style-type: none"> Placed on shared streets where the passing of cyclists by motorists is restricted Informs motorists that passing a cyclist is not permitted

Sidewalk and Walkway

A sidewalk is located within the road right-of-way but separated from the travelled portion of the roadway. Sidewalks are typically concrete and are designed primarily for pedestrians. A walkway is a narrow footpath generally situated within parks and between residential homes connecting different parts of neighbourhoods.

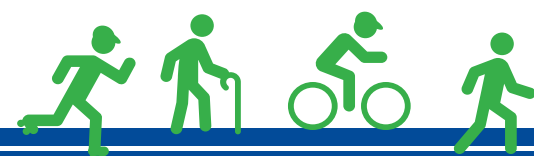
Existing and future sidewalks / walkways should be incorporated into the Active Transportation network in urban areas for all system segments proposed within road rights-of-way. Sidewalks are preferred on both sides of all streets in the urban areas that are designated Active Transportation routes (for both new street construction and retrofitting of existing streets).

Where this cannot be achieved a sidewalk should be provided on at least one side for all streets other than laneways. On laneways where traffic volume is extremely low, pedestrians can safely share the street with motor vehicles. In older and established neighbourhoods, the cost of installing sidewalks and opposition by residents may be significant challenges encountered in the decision to add sidewalks or not in these neighbourhoods.

Once sidewalks / walkways are constructed within the public right-of-way (either Town or Regional right-of-way), the Town assumes responsibility for all future repair, reconstruction, maintenance, and operation during the life of the asset. Therefore, it is important that long-term financial liability be recognized when the Town decides when and where sidewalks are required. A "buffer" zone should also be provided between the sidewalk and roadway where possible to separate pedestrians from the road. Buffer zones may vary depending on the nature of the area they serve.

Desire Line

The proposed ATTP network identifies certain areas that could potentially be used as future trail routes. The potential trail corridors that are currently under private ownership that may be considered in the longer term are identified as "desire lines". While there may be challenges in acquiring these areas, they are seen as valuable opportunities for expanding the trail network in the long term.



4 Trail Signage Strategy

4.1 Summary of Wise Practices in Trail Signage

4.1.1 Purpose of Trail Signage

Trail signage represents the public image and identity of a route in a consistent way, symbolizing the values and goals of the route. An effective trail signing system identifies landmarks, navigates users through the system safely and effectively, conveys essential information about trail routes and auxiliary facilities and services, and informs users of their responsibility regarding use and etiquette.

Cycling and pedestrian signage are recognized as separate wayfinding tools. Cycling wayfinding help people follow routes that are part of a cycling network, including signs that identify quiet local streets, bicycle lanes, cycle tracks and multi-user trails. There may also be signage that informs distance and nearby destinations. Pedestrian wayfinding signs are typically less focused on distinct routes and more on highlighting area and destination signage that fosters an environment where people wish to discover new places and reduce reliance on driving. Examples of existing signage in East Gwillimbury is shown in **Figure 4-1**.

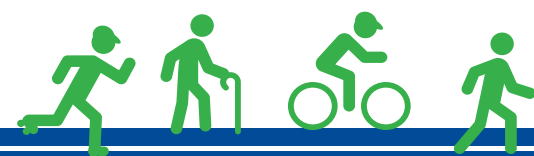


Figure 4-1. Examples of Trail Signage for the Kelley Swing Bridge (top) and Rogers Reservoir Conservation Area (bottom) (Source: WSP)

4.1.2 Wise Practices

The wise practices reviewed and considered when developing this ATTP Network Update include:

- Transportation Association of Canada (TAC) Bikeway Traffic Control Guidelines for Canada (2012);
- Transportation Association of Canada (TAC) Manual of Uniform Traffic Control Devices for Canada (2014);
- Ontario Traffic Manual Book 18: Cycling Facilities (2021);
- Ontario Traffic Manual Book 8: Guide and Information Signs (2010);



- Ontario Traffic Manual Book 2: Sign Design, Fabrication and Panels (2005);
- York Region Sustainable Mobility Wayfinding Guidelines (2018);
- Federal Highway Administration (FHWA) Manual of Uniform Traffic Control Devices (Last Revision 2022); and
- Metrolinx / GO Transit Static Signage Catalogue (2011).

Wayfinding Sign Design

Fundamental principles for wayfinding were developed as part of the York Region Sustainable Wayfinding Guidelines (2018) to establish consistency and efficiency of signage across the Region. The principles consist of:

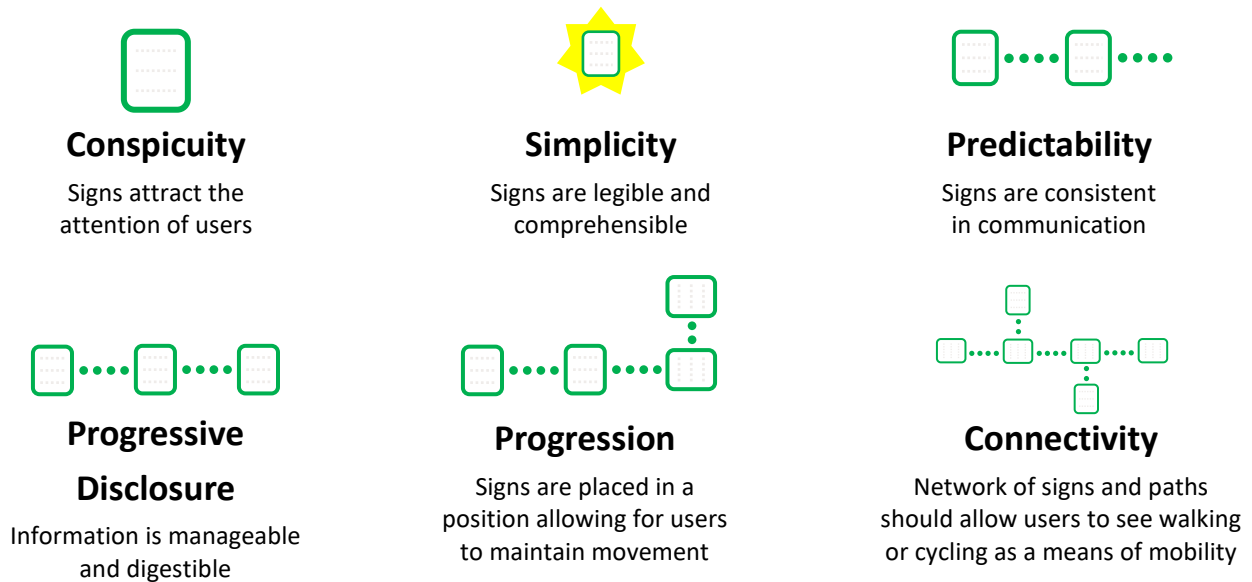
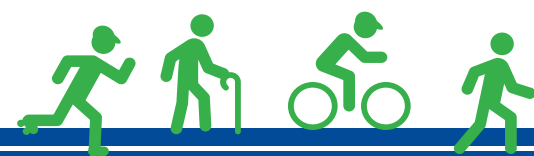


Figure 4-2. Sign Design Principles (Source: York Region Sustainable Mobility Wayfinding Guidelines)

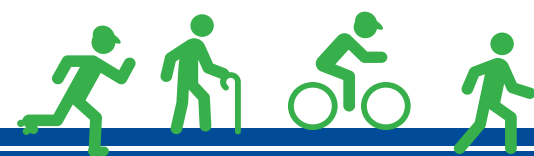


Family of Signs

Developing a “Family of Signs” means creating a design theme that can be reflected in the different types of signs in terms of materials, colours, graphics, or fonts. This gives the signs a consistent and finished look that helps to unify the system and can be essential in branding the trail system. Trail signs can be grouped into trail head signs, gateway signs, directional signs, interpretive signs, and regulatory/safety signs. An example of York Region’s family of signs for the Lake to Lake Route is shown in **Figure 4-3**.



Figure 4-3. York Region Lake to Lake Trail (Source: York Region Sustainable Mobility Wayfinding Guidelines)



Signage Installation and Details

When choosing materials for a sign, durability is one of the most important factors due to the effects of weather, vandalism and salt. It is important to consider the long-term maintenance requirements, budget limitations, anticipated life expectancy, and graphic requirements before choosing the right sign. For additional details on signage installation and typical details, refer to **Appendix A**.

Wayfinding sign installation considers:

- 1 **Lateral clearance** is the clearance of the sign in relation to the roadway, cycling facility or path. Lateral clearance identifies a safe offset between the user and the sign that is a fixed hazard near their path of travel.
- 2 **Vertical clearance** or protrusion is the clearance of the sign in relation to the ground. It identifies sufficient height required for the sign to be visible.

The lateral and vertical clearances requirements for cyclists are summarized in

Figure 4-4, and pedestrian requirements are summarized in **Figure 4-5**.

Exhibit 7-1 Summary of Lateral and Vertical Clearances for Cycling Wayfinding Signs

Facility			Lateral Clearance		
			Min.	Max.	
Rural roadway Measured from the edge of paved shoulder to the near edge of the sign Exhibit 7-2	VERTICAL CLEARANCE	Min.	2.1 m	1.0 m	3.5 m
		Max.	2.5 m		
Urban street Measured from the face of curb to the near edge of the sign Exhibit 7-3	VERTICAL CLEARANCE	Min.	2.1 m	0.3 m	3.5 m
		Max.	3.0 m		
Multi-use Path Measured from the edge of the path to the near edge of the sign Exhibit 7-4	VERTICAL CLEARANCE	Min.	1.2 m	0.9 m	1.8 m
		Max.	1.5 m		
		Min.	2.5 m	If minimum lateral clearance to sign cannot be met; however, minimum 0.9 m lateral clearance to post is still required	

Figure 4-4. Lateral and Vertical Clearances Requirements for Cyclists (Source: York Region Sustainable Mobility Wayfinding Guidelines)

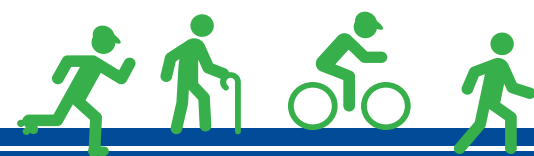


Exhibit 7-5 Summary of Lateral and Vertical Clearances for Pedestrian Wayfinding Signs

Sign TYPE			Lateral Clearance		
			Min.	Max.	
Destination Fingerboard Measured from ground to the bottom edge of the sign Exhibit 7-6	Min.	2.1 m	Not applicable – the post is detectable and the protruding sign is mounted above the heads of pedestrians		
	Max.	3.0 m			
Map / Information Totem	Not applicable – this type of sign is detectable because it is of a constant width and extends to the ground, so no clearances to pedestrian activity areas are required				
Trailhead Sign If located adjacent the path and outside of a pedestrian activity area Measured from the edge of the path to the near edge of the sign Exhibit 7-7	VERTICAL CLEARANCE	Min.	1.2 m	0.9 m	1.8 m
		Max.	1.5 m		
If located within a pedestrian activity area at the trailhead (must meet the clearances to the path noted above) Measured from the ground to near edge of sign Exhibit 7-8		Max.	0.68 m	Not applicable – the posts and protruding sign are detectable	

Figure 4-5. Lateral and Vertical Clearances for Pedestrians (Source: York Region Sustainable Mobility Wayfinding Guidelines)

Additional wise practices on trail signage, including placement, spacing and typical drawings can be found in **Appendix A**.



4.2 Recommended East Gwillimbury Sign Design and Messaging

The Town has developed a family of signs and signage strategy that extends and incorporates the wise practices in signage examined during this study. This approach also aligns with York Region's existing signage strategy. An example of the Town's family of signs for the Nokiidaa Trail is shown in **Figure 4-6**.

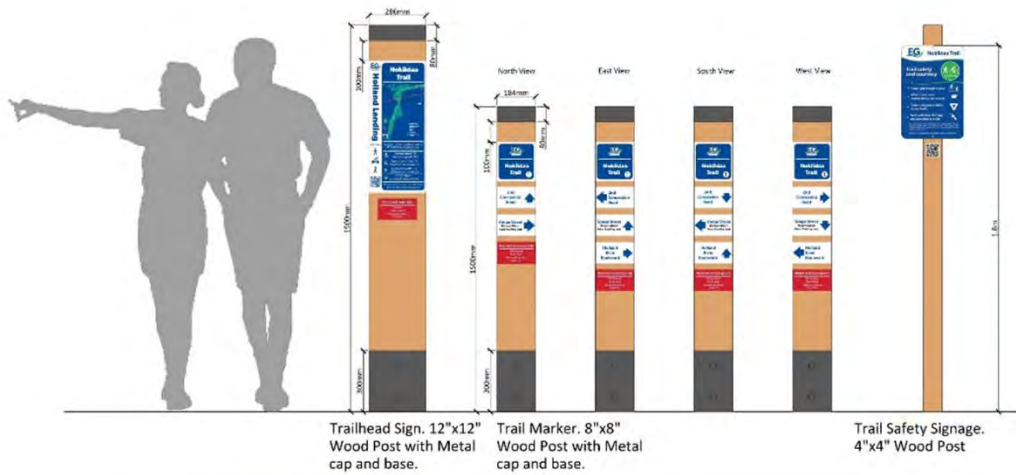
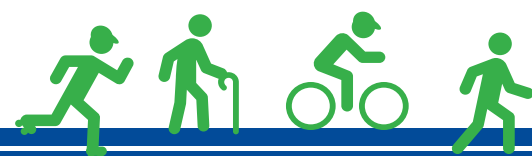


Figure 4-6. Nokiidaa Trail Signage



5 Implementation Strategy

To achieve the proposed pedestrian, cycling and multi-use networks, financial investment and other resources need to be strategically allocated. The strategies included in this section are intended to inform decision making on active transportation policy and planning processes while being flexible to adapt to changes in active transportation trends or other opportunities that may arise over years as the network is being implemented. This chapter specifically focuses on facilities within the Town of East Gwillimbury, excluding those proposed by the Region. The key is to create a culture of walking, cycling and micro-mobility use in the Town of East Gwillimbury. As “quick win” projects are being implemented in the short-term horizon, it will build momentum and encourage the medium and long-term efforts. Implementation of the network will require on-going collaboration between the Town, Region and other partners to not only implement the infrastructure, but also to support through programming, education and encouragement.

5.1 Phasing

The proposed AT and trails recommendations are categorized into three horizons based on input from consultation and existing capital plans:

Short-Term

0 to 5 years

- Low investment “quick wins” such as signed bike routes or adding painted bike routes;
- Projects that align with projects identified in the Town’s capital plans for the short-term; and
- Projects that align with subdivisions that are being implemented.

Medium-Term

6 to 10 years

- Projects that align with projects identified in the Town’s capital plans for the medium-term; and
- Routes that require additional studies such as an environmental assessment before they can be implemented.

Long-Term

10 to 20 years and beyond

- Desire lines across properties that the Town may not currently own;
- Projects that align with projects identified in the Town’s capital plans for the long-term; and
- Routes that require additional discussions with the Ministry of Transportation or York Region before they can proceed.

The proposed phasing is illustrated in **Figure 5-1** to **Figure 5-2** and also summarized in **Table 5.1**.

Table 5.1. Summary of Proposed AT and Trails Network by Facility Type

Facility Type	Short-Term Length (KM)	Medium-Term Length (KM)	Long-Term Length (KM)	Total Length (KM)
Multi-Use Trail	14.8	10.0	9.4	34.2
Multi-Use Path	17.1	7.2	34.8	59.1
Cycle Track	0.0	0.0	0.0	0.0
Bike Lane	4.3	13.1	17.8	35.1
Paved Shoulder	0.0	7.9	24.6	32.4
Signed Route	21.9	4.4	6.6	33.0
Signed Route with Urban Shoulder	9.4	0.0	0.0	9.4
Sidewalk	2.6	0.4	27.1	30.1
Walkway	0.1	0.5	0.8	1.5
Desire Line	0.2	1.3	97.0	98.5
Total	70.4	44.8	218.2	333.3

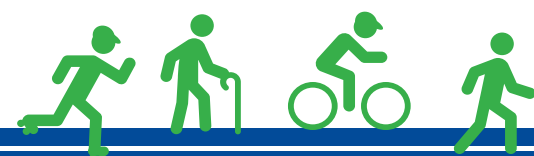


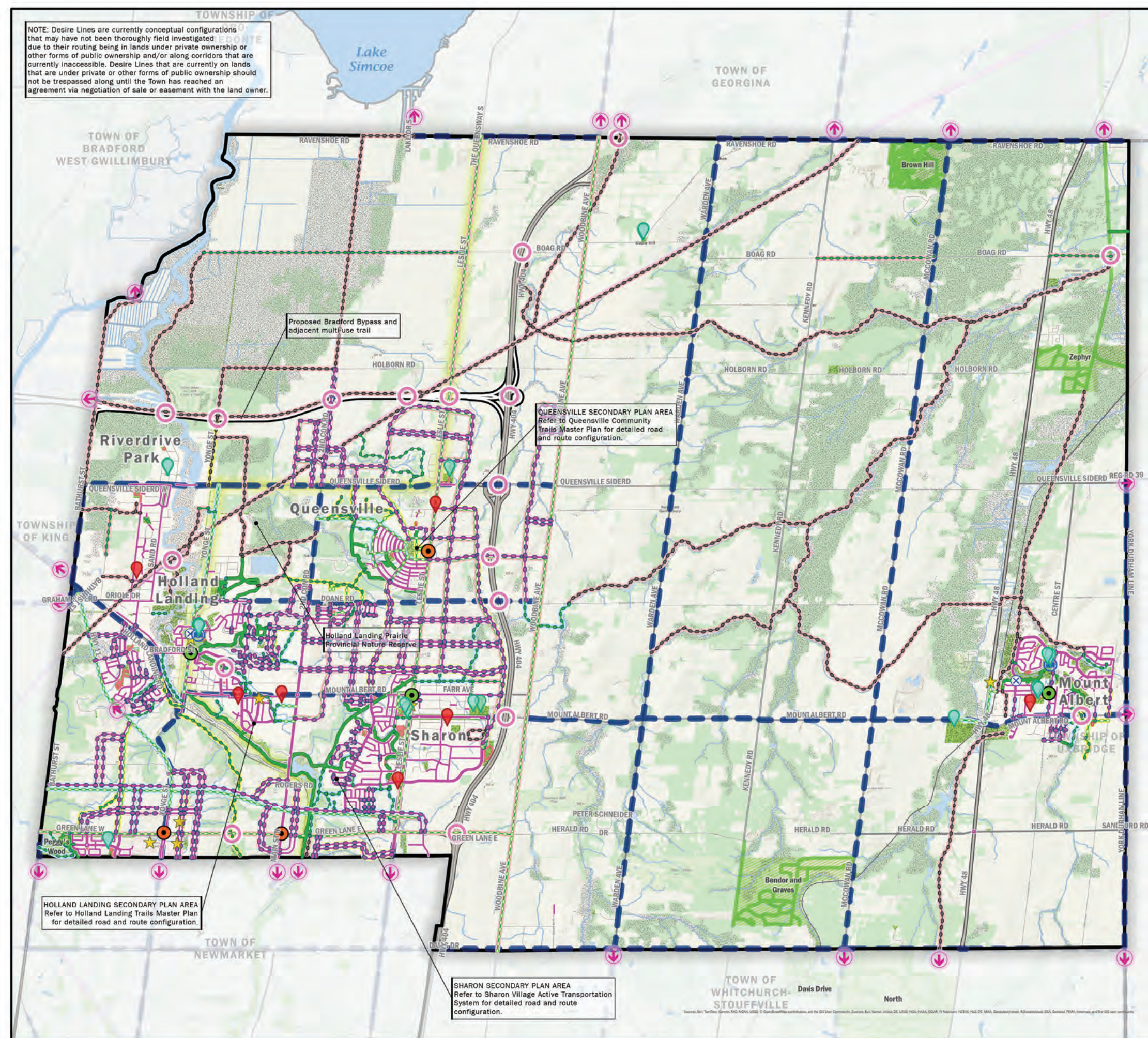
FIGURE 5-1A

2026-04-17

Phasing for Pedestrian Network - Town-Wide

East Gwillimbury Active Transportation & Trails Plan

NOTE: Desire Lines are currently conceptual configurations that may have not been thoroughly field investigated due to their routing being in lands under private ownership or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Walkway / Neighbourhood Connector	Walkway
Footpath	Desire Line
Sidewalk	Sidewalk

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility
Boulevard Multi-Use Path	

Connections

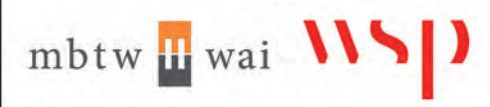
Key AT Crossing	Short-Term (0 to 5 years)
Potential AT Connection	Medium-Term (6 to 10 years)
	Long-Term (11 to 20+ years)

Base Features

Highway / Expressway	School
Arterial / Collector Road	Community Centre / Civic Hall
Local Road	Pedestrian Crossover
Proposed Roads	Library
Proposed Highway 404 Extension Link (Bradford Bypass)	Shopping Mall / Plaza
Rail Line	Major Local Centre
Watercourse	Minor Local Centre
Waterbody	
Wetland	
Wooded Area	
York Regional Forest	
Park	
Town / Village / Hamlet	
Municipal Boundary	



- Notes:**
- Includes routes under the Jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid and dashed lines form the Town's ATP network.
 - The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
 - This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.
 - The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



HOLLAND LANDING SECONDARY PLAN AREA
Refer to Holland Landing Trails Master Plan for detailed road and route configuration.

SHARON SECONDARY PLAN AREA
Refer to Sharon Village Active Transportation System for detailed road and route configuration.

QUEENSVILLE SECONDARY PLAN AREA
Refer to Queensville Community Trails Master Plan for detailed road and route configuration.

Proposed Bradford Bypass and adjacent multi-use trail

Holland Landing Prairie Provincial Nature Reserve

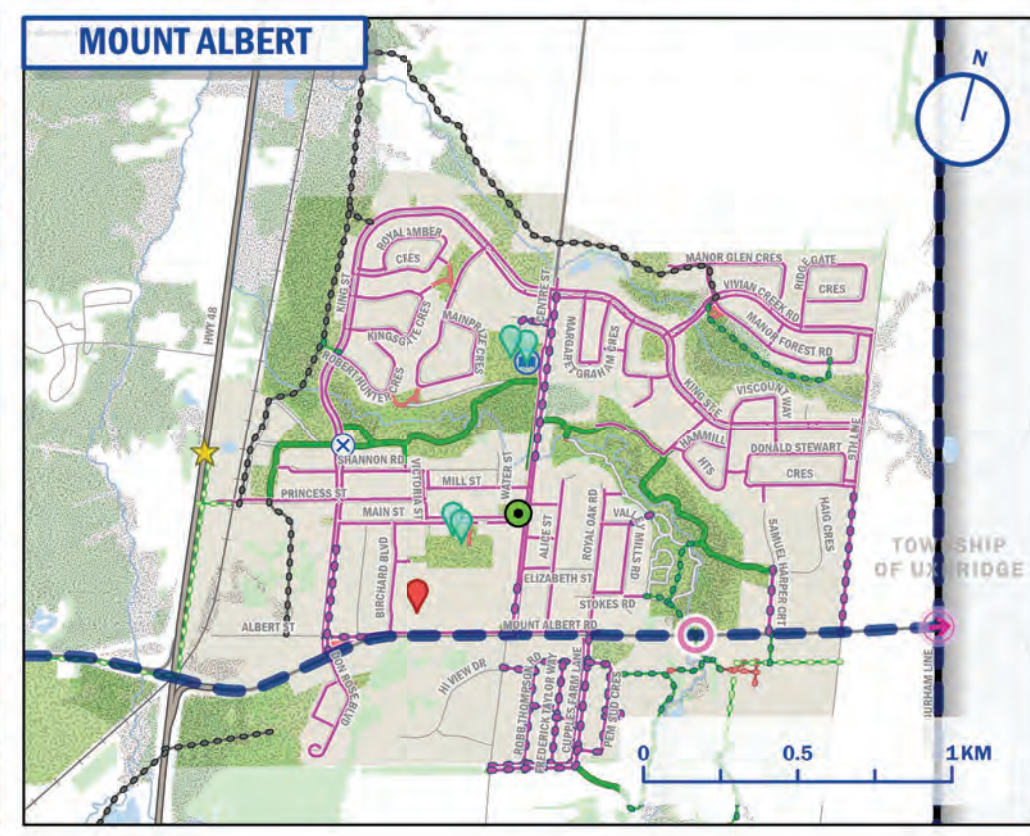
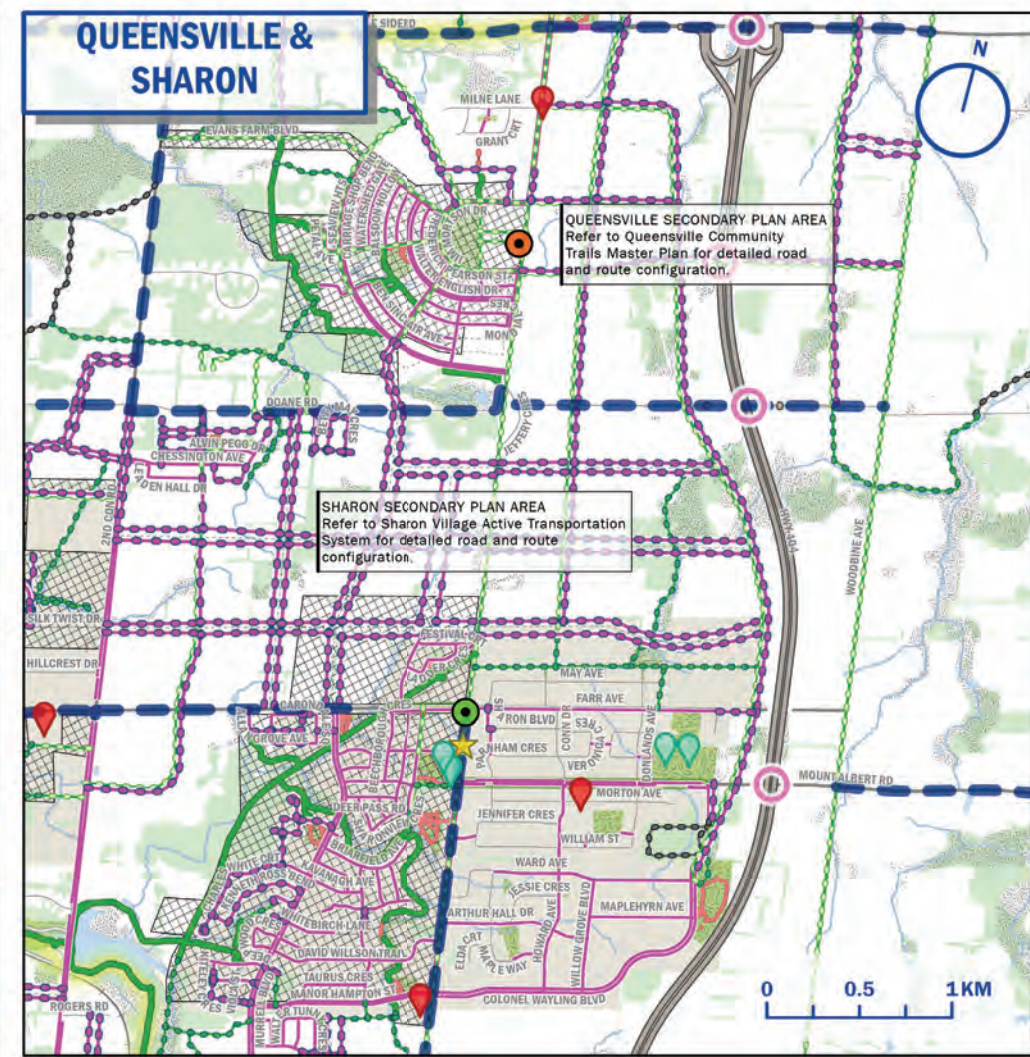
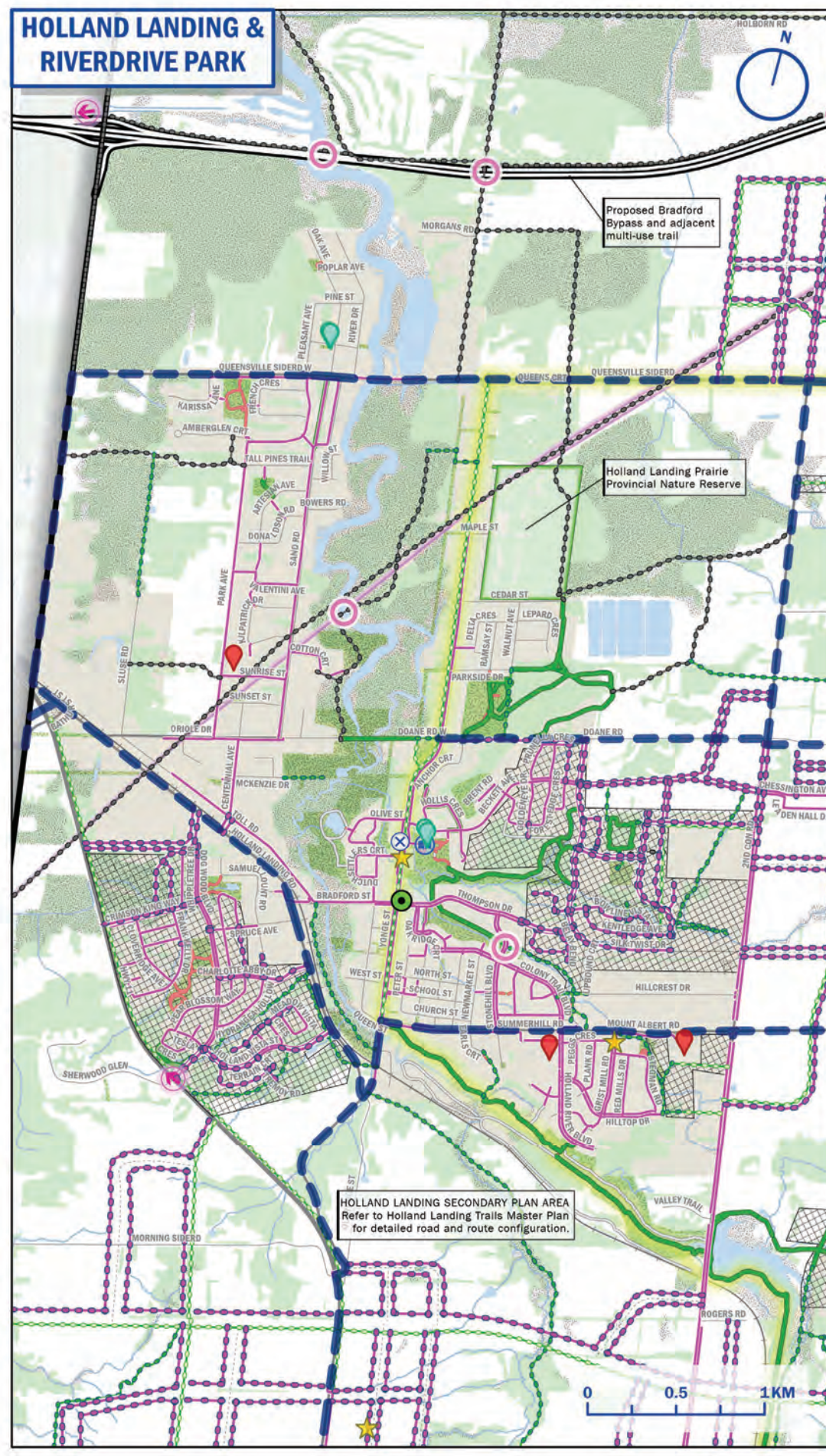
TOWN OF WHITCHURCH-STOUFFVILLE
Davis Drive North

FIGURE 5-1B

2026-04-17

Phasing for Pedestrian Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Walkway / Neighbourhood Connector	Walkway
Footpath	Desire Line
Sidewalk	Sidewalk

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility ¹
Boulevard Multi-Use Path	

Connections

Key AT Crossing	Short-Term (0 to 5 years)
Potential AT Connection	Medium-Term (6 to 10 years)
	Long-Term (11 to 20+ years)

Base Features

Highway / Expressway	School
Arterial / Collector Road	Community Centre / Civic Hall
Local Road	Pedestrian Crossover
Proposed Roads	Library
Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)	Shopping Mall / Plaza
Rail Line	Major Local Centre
Watercourse	Minor Local Centre
Waterbody	
Wetland	
Wooded Area	
York Regional Forest	
Park	
Town / Village / Hamlet	
Municipal Boundary	

- Notes:**
1. Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 2. The thinner solid and dashed lines form the Town's ATP network.
 3. The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
 4. This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.
 5. The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.

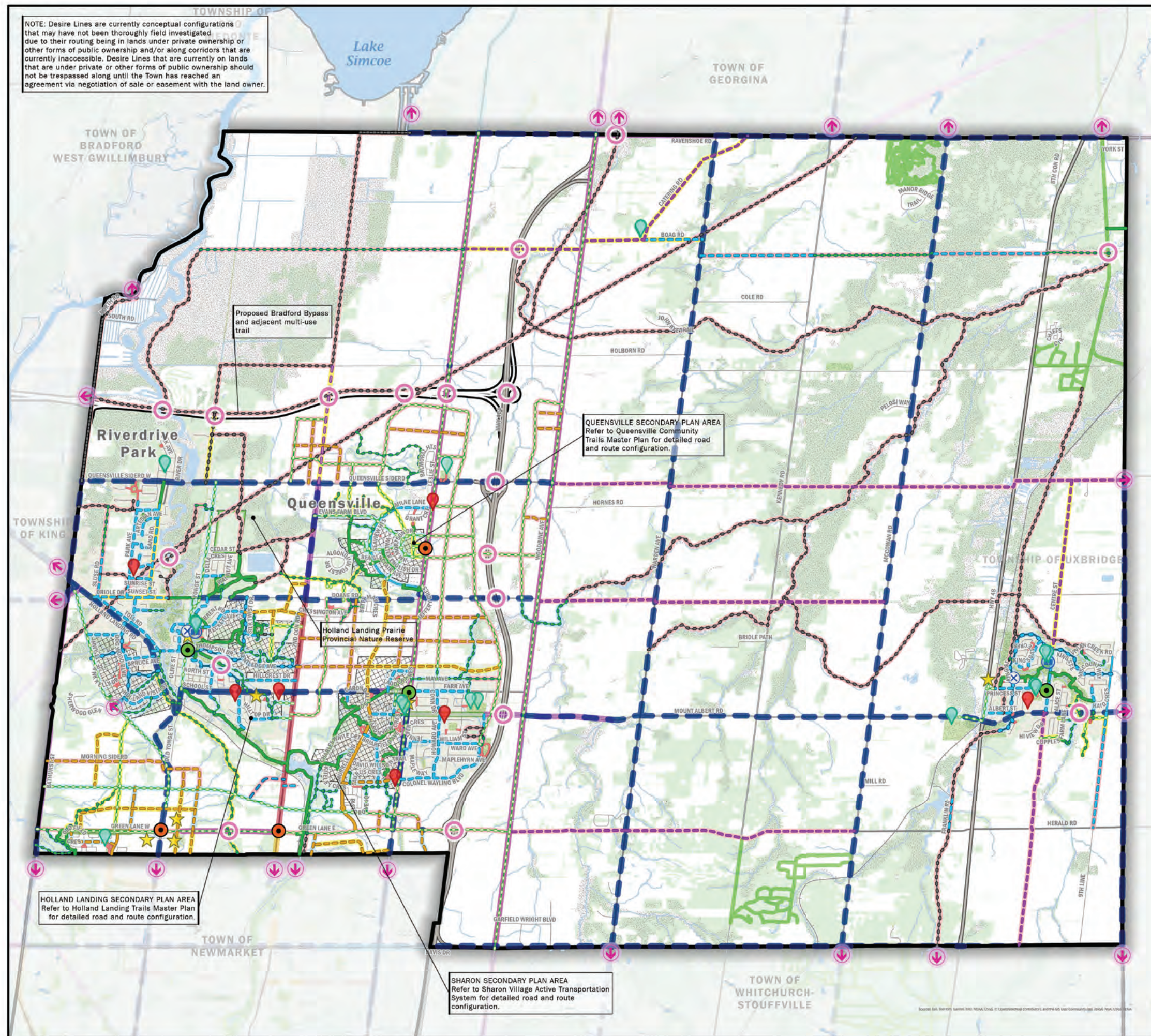
FIGURE 5-2A

2026-04-17

Phasing for Cycling Network - Town-Wide

East Gwillimbury Active Transportation & Trails Plan

NOTE: Desire Lines are currently conceptual configurations that may have not been thoroughly field investigated due to their routing being in lands under private ownership or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Bike Lane	Cycle Track
Signed Route	Bike Lane
Walkway / Neighbourhood Connector	Paved Shoulder
	Signed Route
	Signed Route with Urban Shoulder
	Walkway
	Desire Line

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility ¹
Boulevard Multi-Use Path	
Cycle Track	
Protected Bike Lane	
Bike Lane	
Paved Shoulder	
Signed Route	

Connections

Key AT Crossing	Short-Term (0 to 5 years)
Potential AT Connection	Medium-Term (6 to 11 years)
	Long-Term (11 to 20+ years)

Base Features

Highway / Expressway	School
Arterial / Collector Road	Community Centre / Civic Hall
Local Road	Pedestrian Crossover
Proposed Roads	Library
Proposed Bradford Bypass	Shopping Mall / Plaza
Utility Line	Major Local Centre
Rail Line	Minor Local Centre
Watercourse	
Waterbody	
Wetland	
Wooded Area	
Park	
Town / Village / Hamlet	
Municipal Boundary	

- Notes:**
- Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid and dashed lines form the Town's ATP network.
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 - The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.

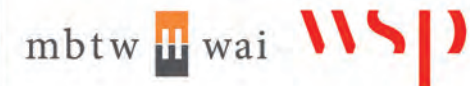
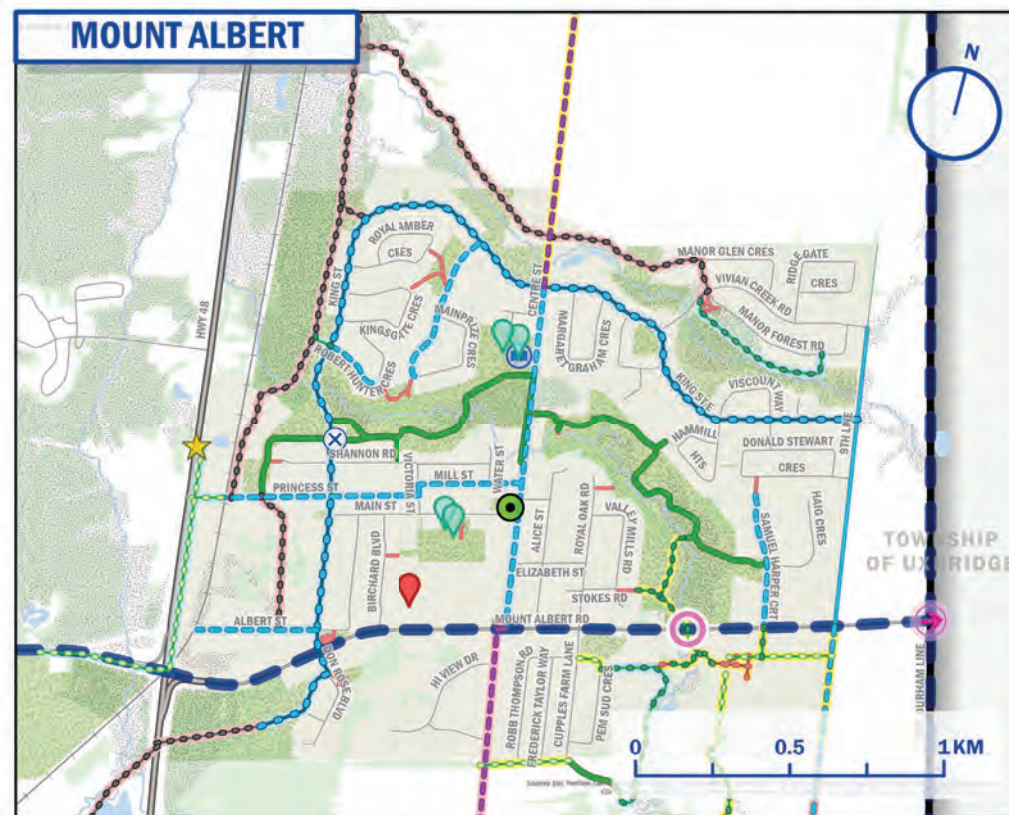
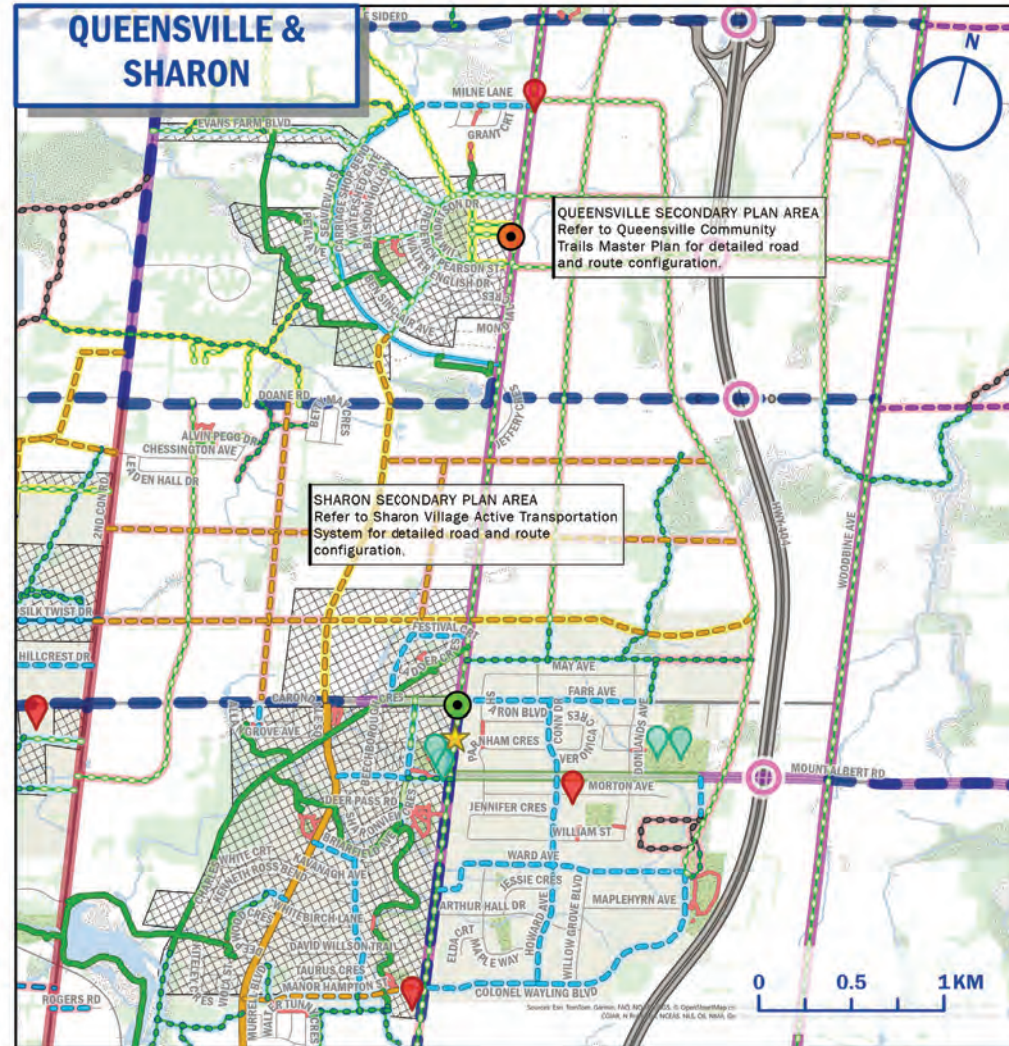
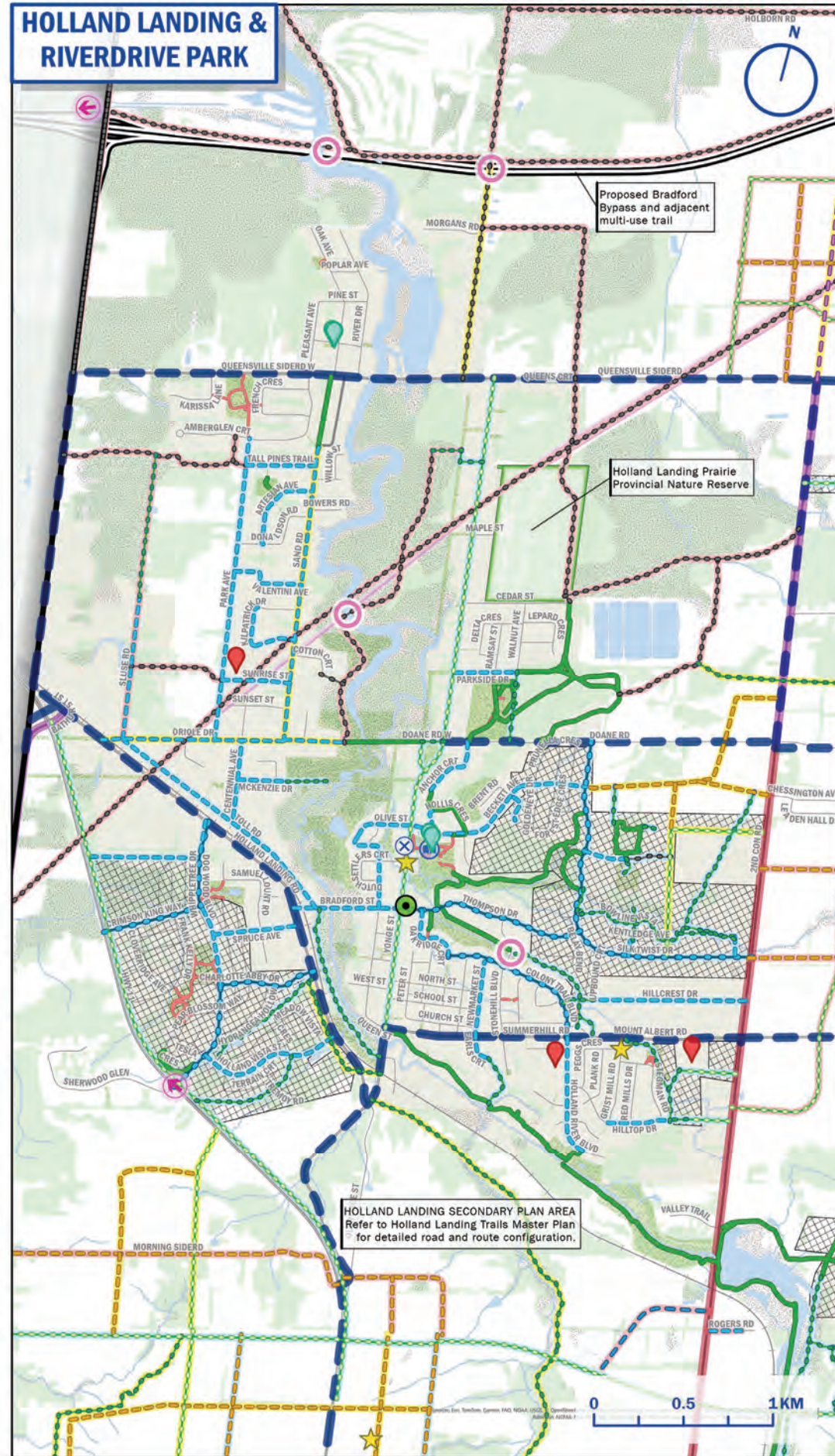


FIGURE 5-2B

2026-04-17

Phasing for Cycling Network - Urban Areas

East Gwillimbury Active Transportation & Trails Plan



Local Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Off-Road Multi-Use Trail
Boulevard Multi-Use Path	Boulevard Multi-Use Path
Bike Lane	Cycle Track
Signed Route	Bike Lane
Walkway / Neighbourhood Connector	Paved Shoulder
	Signed Route
	Signed Route with Urban Shoulder
	Desire Line
	Walkway

Regional Trail Network

Existing	Proposed
Off-Road Multi-Use Trail	Regional Facility*
Boulevard Multi-Use Path	
Cycle Track	
Protected Bike Lane	
Bike Lane	
Paved Shoulder	
Signed Route	

Connections

- Key AT Crossing
- Potential AT Connection

Phasing

- Short-Term (0 to 5 years)
- Medium-Term (6 to 11 years)
- Long-Term (11 to 20+ years)

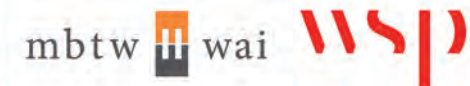
Base Features

- Highway / Expressway
- Arterial / Collector Road
- Local Road
- Proposed Roads
- Proposed Highway 400 to Highway 404 Extension Link (Bradford Bypass)
- Utility Line
- Rail Line
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- Park
- Town / Village / Hamlet
- Municipal Boundary

Destinations

- School
- Community Centre / Civic Hall
- Pedestrian Crossover
- Library
- Shopping Mall / Plaza
- Major Local Centre
- Minor Local Centre

- Notes:**
- Includes routes under the jurisdiction of York Region. Refer to the York Region Transportation Master Plan (2022) for detailed information regarding proposed facilities.
 - The thinner solid and dashed lines form the Town's ATP network.
 - The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan and Transportation Master Plan.
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 - The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



5.2 Cost Estimates

The high-level cost to implement the updated active transportation and trails network was developed to help inform future capital budgets and decision making. The costs for the improvements are based on unit prices and include the following assumptions:

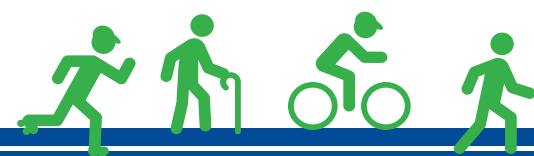
- Unit prices used are in 2023 dollars and intended to be used for functional design purposes and do not include taxes;
- Costs include a 25% contingency and 15% design and approvals cost;
- Costs reflect the construction costs of the route and do not include property acquisitions, signal modifications, underground utility relocations, major roadway draining works or costs associated with site-specific projects such as bridges, railway crossings, retaining walls, and stairways, unless otherwise noted;
- Assume typical environmental conditions and topography; and
- Further detailed studies will need to be completed in coordination with relevant agencies where required to ensure alignments meet requirements.

The unit costs used are based on wise practices and recent tenders and projects of similar scope in Ontario and are not intended to be prescriptive. Desire lines are not costed as part of this study as the facility type has not yet been determined. It should also be recognized that the level of effort to implement an active transportation facility will vary on a project-by-project basis. It is recommended the Town review the estimated costs as part of their capital planning process to reassess the conditions at the time of implementation. **Table 5.2** provides the summary of costs by facility and phase. Details on the unit pricing and a breakdown of the cost per route is provided in **Appendix B**.

Overall, the estimated cost to implement the proposed active transportation and trails network is approximately \$76 million over the next 20+ years.

Table 5.2. Summary of Proposed High-Level Costing for the Recommended Network

Facility Type	Short-Term 0 to 5 years		Medium-Term 6 to 10 years		Long-Term 10 to 20+ years		Total	
	KM	\$	KM	\$	KM	\$	KM	\$
Multi-Use Trail	14.8	\$7,772,750	10.0	\$5,260,622	9.4	\$4,928,258	34.2	\$17,961,629
Multi-Use Path	17.1	\$8,961,779	7.2	\$3,763,038	34.8	\$18,292,252	59.1	\$31,017,068
Cycle Track	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
Bike Lane	4.3	\$172,764	13.1	\$531,853	17.8	\$722,230	35.1	\$1,426,848
Paved Shoulder	0.0	\$0	7.9	\$2,830,472	24.6	\$7,397,174	32.4	\$10,227,646
Signed Route	21.9	\$36,798	4.4	\$7,474	6.6	\$11,161	33.0	\$55,434
Signed Route with Urban Shoulder	9.4	\$2,826,282	0.0	\$0	0.0	\$0	9.4	\$2,826,282
Sidewalk	2.6	\$1,032,221	0.4	\$184,311	27.1	\$11,373,148	30.1	\$12,589,680
Walkway	0.1	\$56,016	0.5	\$193,794	0.8	\$344,663	1.5	\$594,473
Desire Line	0.2	\$0	1.3	\$0	97.0	\$0	98.5	\$0
Total	70.4	\$20,858,611	44.8	\$12,771,563	218.2	\$43,068,885	333.3	\$76,699,060



5.3 Integration with Other Municipal Plans and Policies

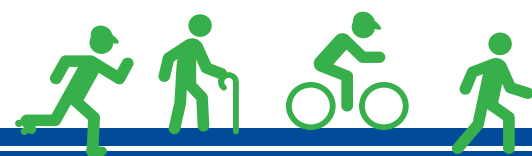
This Network Update report is intended to be read in conjunction with the 2012 Active Transportation and Trails Master Plan. It is recommended that the network recommendations in this update be integrated into the Town's Transportation Master Plan and all future planning documents to support implementation and encouragement of active transportation across East Gwillimbury. This document will inform other municipal planning documents, including the Town's Official Plan, the Region's Transportation Master Plan, the Province-wide cycling network, AT plans for the neighbouring municipalities and plans from the conservation authority.

6 Where Do We Go From Here?

The Town of East Gwillimbury's Active Transportation and Trails Plan and this network update is intended to provide long-term guidance to shape the development of pedestrian, cycling and micromobility in the Town. The recommended network has been informed by the needs of the Town with input from partners and residents and also draws on lessons learned from current active transportation wise practices.

The following steps are recommended for the Town to advance the active transportation network, adapting from the recommendations from the 2012 Plan:

- Formally adopt this Network Update Report as a municipal policy document alongside the 2012 Active Transportation and Trails Master Plan;
- Issue a media release and public notice announcing the completion of the Network Update, assuming Council's adoption of the Report in principle;
- Provide copies of the Network Update and 2012 ATTMP to all Town and Regional Departments, including the York Region Police and York Region Transit, as well as other relevant partners such as Metrolinx, school boards, Ontario Ministry of Transportation and Lake Simcoe Region Conservation Authority;
- Request that the Region give consideration to the proposed route and facility types proposed for Regional roads in the Town in all future environmental assessment studies and road design projects;
- Identify line items in the Town's annual budget to begin to implement the recommended routes;
- Continue to engage in consultation and engagement with residents and partners to confirm short-term infrastructure priorities; and
- Consider the application of performance to evaluate and monitor the implementation of the ATTP.



APPENDIX

A Trail Signage Strategy and Best Practices Review



Trail Signage Strategy and Best Practice Review

Town of East Gwillimbury

September 2021

mbtw  wai

wsp



EG
East Gwillimbury

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Appendix A: York Region Sustainable Mobility Wayfinding Guidelines	



INTRODUCTION

PURPOSE AND VALUE OF AN EFFECTIVE TRAIL SIGNING SYSTEM (PARKS CANADA)

*“A good sign system is not only important to **transmit information** and **ensure the safety of visitors**, but also vital to Parks Canada’s public image and identity. A coordinated and effective identity program will enable Parks Canada to be **identified in a distinct, consistent way** the **public can recognize** in all circumstances. It helps **symbolize the values, goals and dedication** Parks Canada strives for in protecting and presenting nationally significant examples of Canada’s natural and cultural heritage.”*

Parks Canada Exterior Signage Standards and Guidelines (March 2007)



PURPOSE AND VALUE OF AN EFFECTIVE TRAIL SIGNING SYSTEM

- Guidance regarding traffic operations
- Provides information related to safety
- Promoting the network
- Helps to “brand” the system
- Identifies landmarks
- Attracts new users, help them find the system
- Guides users through the system, navigate in a safe and effective way, reassure users they are on the system/network
- Convey essential information about trail routes and accessory facilities, events, nearby services
- Informs users of their responsibility/expectations regarding use and etiquette
- Information on local historical, cultural, natural features and points of interest

PURPOSE AND VALUE OF AN EFFECTIVE TRAIL SIGNING SYSTEM

Design a system with the following key goals in mind:

- To enable first – time visitors and repeat users to recognize municipal trail facilities clearly and instantly by means of a uniform sign system
- To ensure that users can find, and navigate safely throughout the system
- To ensure that signs function within the context of their environment and do not detract from the user experience or quality of the environment
- To ensure that signage clearly and consistently addresses visitor safety
- To realize cost savings through standardization of both design and material and to improve the effectiveness and efficiency of the design, fabrication, installation and maintenance

INTENDED ACTIVE TRANSPORTATION USERS

- **Utilitarian users**
 - Destination-oriented trips to work, school, and services
 - Rely on consistent information for efficient routes to their destinations
- **Recreational users**
 - Experience-oriented trips for leisure, fitness or sport typically shorter distances than tourists
 - Rely on consistent information leading to route but may also seek contextual information and direction to services
- **Tourists**
 - Typically longer distance trips as part of a vacation or experience
 - Rely on information leading them along their route and may seek contextual information, direction to services and destinations to explore
 - May choose indirect routes if they are more scenic compared to the direct route

Source: York Region Sustainable Mobility Wayfinding Guidelines (2018)

CYCLING VS PEDESTRIAN SIGNAGE PRINCIPLES

- Cycling wayfinding will typically be used to help people follow routes that are **part of a cycling network**
 - Includes signs that identify quiet local streets, bicycle lanes, cycle tracks and multi-use trails
 - Signage that describes distance and destination information can be provided along cycling routes of any type in order to help cyclists orient themselves to nearby destinations
- Pedestrian wayfinding typically focuses less on distinct routes and more on **highlighting area and destination signage**
 - Fosters an environment where people wish to discover new places and build people's confidence to walk in places and for distances that they have not tried before
 - Signage supplements their understanding of how to get somewhere on foot, replacing their reliance on driving, or overcoming indirect public transit route options

Source: York Region Sustainable Mobility Wayfinding Guidelines (2018)



BACKGROUND

EXISTING SIGNAGE IN EAST GWILLIMBURY TODAY



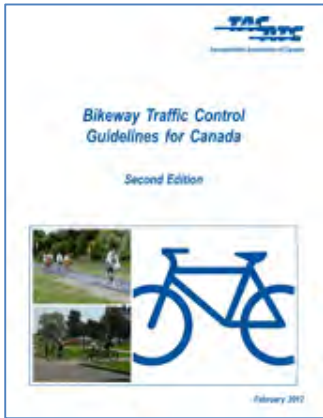
EXISTING SIGNAGE IN EAST GWILLIMBURY CONTINUED



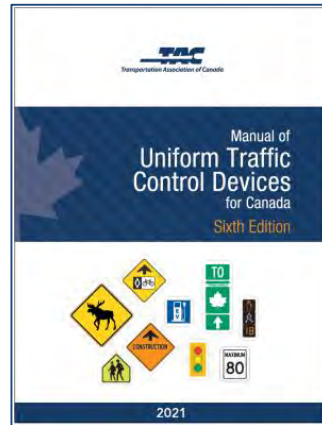


BEST PRACTICES FOR TRAIL SIGNAGE

SIGNAGE GUIDANCE



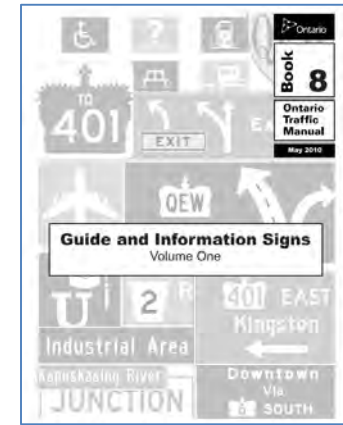
Transportation Association of Canada (TAC) Bikeway Traffic Control Guidelines for Canada



Transportation Association of Canada (TAC) Manual of Uniform Traffic Control Devices for Canada



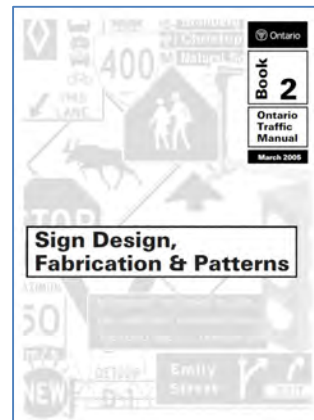
Ontario Traffic Manual Book 18 - Cycling Facilities



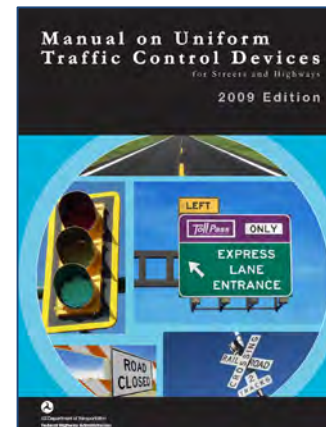
Ontario Traffic Manual Book 8 - Guide and Information Signs



York Region Sustainable Mobility Wayfinding Guidelines



Ontario Traffic Manual Book 2 - Sign Design, Fabrication and Panels



Federal Highway Administration (FHWA) Manual of Uniform Traffic Control Devices, Chapter 2K Tourist-Oriented Directional Signs and Chapter 9B Bicycle Guide Signs



Metrolinx / GO Transit Static Signage Catalogue October 2011

SIGN DESIGN PRINCIPLES

Fundamental principles were developed as part of the Region's Wayfinding Guidelines should be observed in order to establish consistency and efficiency of signage throughout the Region.



Conspicuity
Signs attract the attention of users



Simplicity
Signs are legible and comprehensible



Predictability
Signs are consistent in communication



Progressive Disclosure
Information is manageable and digestible



Progression
Signs are placed in a position allowing for users to maintain movement



Connectivity
Network of signs and paths should allow users to see walking or cycling as a means of mobility

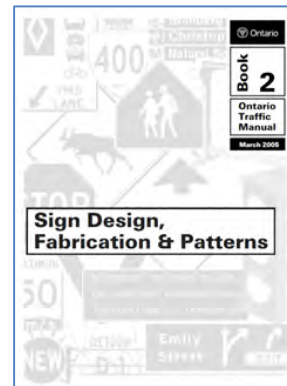
Source: York Region Sustainable Mobility Wayfinding Guidelines (2018)

OTHER CHARACTERISTICS OF A GOOD TRAIL SIGNAGE SYSTEM

- Functional
- Attractive and informative
- Easy to understand and follow
- Designed in scale with the location/setting
- Visually integrated with the landscape
- Informs but does not distract or detract from the quality of the overall experience
- Consolidates information and avoids clutter
- Improves visitor enjoyment and appreciation
- Provides opportunity for user education
- Limits the number of messages to avoid graphic overload
- Uses simple language and short familiar words
- Uses universal symbols where ever possible
- Placed so that users can approach the sign
- Weatherproof and vandal resistant
- Modular format so it can be added to and updated
- Has a long aesthetic lifespan
- Cost effective
- Accessible (size of text, contrast, etc.)
- Assists with minimizing visitor/user risk and can reduce the level of public liability

SIGNAGE SHOULD BE CONSISTENT WITH...

- York Region Sustainable Mobility Wayfinding Guidelines
- Ontario Regulation 413/12 of the Accessibility for Ontarians with Disabilities Act 2005)
- OTM Book 2 Sign Design, Fabrication and Patterns
- TAC Sign Pattern Manual
- Metrolinx / GO Transit Static Signage Catalogue



POOR SIGNAGE

- Detracts from the site and from the visitor experience (poor design, poor quality, lack of maintenance, etc.)
- Poor design or poorly written text may not get the message across effectively
- May discourage future use/repeat visits
- They are not maintenance free



SIGN CLUTTER



SIGNS ON SIGNS



HOME MADE SIGNS



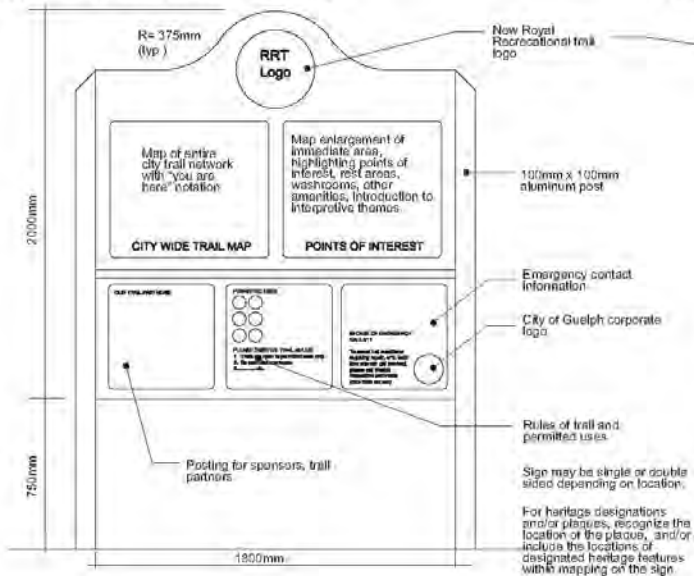
SIGNS ON TREES

A FAMILY OF SIGNS

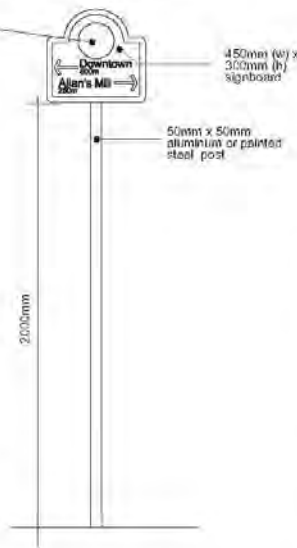
- An important element of the overall design
- Develop a “Family of Signs” by creating a **design theme and characteristics** that can be reflected in the different types of signs (materials, colours, graphics, fonts, etc.)
 - Gives the signs a **consistent and finished** look that helps to unify the system and can be essential in branding the trail system as a whole
 - Careful balance between providing enough information for users and avoiding over-signing / sign clutter
- Trail signs can be grouped into:
 - Trail head Signs
 - Gateway Signs
 - Directional / Marker Signs
 - Interpretive Signs
 - Regulatory / Safety / Information Signs

FAMILY OF SIGNS – EXAMPLE: GUELPH, ON

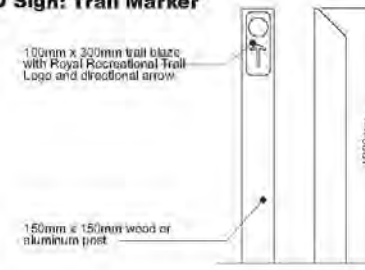
Type A Sign: Major Trailhead Sign



Type C Sign: Directional Sign



Type D Sign: Trail Marker

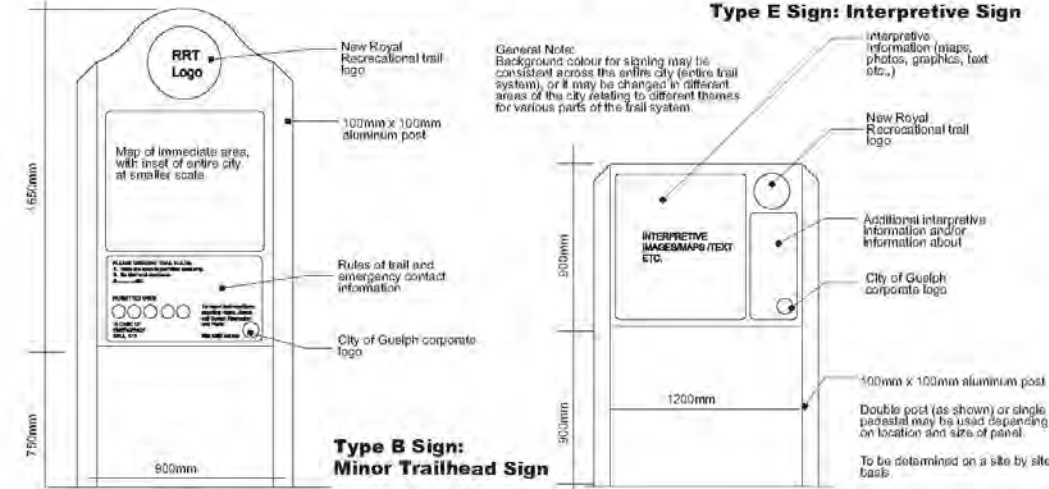


Sign Placement

The following chart provides some guidance regarding the frequency with which each sign type should be placed throughout the trail system. It is important to note that this chart is intended as guidelines only and that signage must be considered on a site-specific basis.

Sign Type	Frequency / Typical Location	Other Comments
General Sign Types		
Type A Sign (Major Trailhead Sign)	At every major trailhead. (Refer to network map for suggested locations of major staging areas/trailheads).	Must be considered as part of an integrated design for the trailhead/staging area.
Type B Sign (Minor Trailhead Sign)	At every minor trailhead/staging area. (Refer to network map for suggested locations of major staging areas/trailheads).	Must be considered as part of an integrated design for the trailhead/staging area.
Type C Sign (Directional Sign)	Where main trails intersect with other main trails, where main trails intersect with minor trails, at connecting links to nearby communities.	
Type D Sign (Trail Marker)	At regular intervals along the trail system (500m for rural trails with motorized uses, 250m for urban/town trails where walkers are a major user group). At trail directional change points.	
Type E Sign (Interpretive Sign)	Located within view of features to be interpreted.	Frequency dependent upon number of features to be interpreted and anticipated major trail user mode. Consider 1 sign for every 20 minutes of active trail use (20-minute walk, 20-minute ride) for a dedicated interpretive trail. For trails where sporadic features are to be interpreted, signs should be located at feature sites.
Other Signs		
Regulatory sign	As required throughout the system to inform users of maximum rate of travel, hazards etc.	Use sign types recognized by Ministry of Transportation and Transportation Association of Canada. To be placed in advance of feature/point. Distance from sign to feature is determined by design speed of trail to allow users sufficient reaction time (minimum 30m is recommended).
Trail Etiquette	At each trailhead, access point or roadway crossing.	Can be stand alone sign or can be incorporated into trailhead signs.

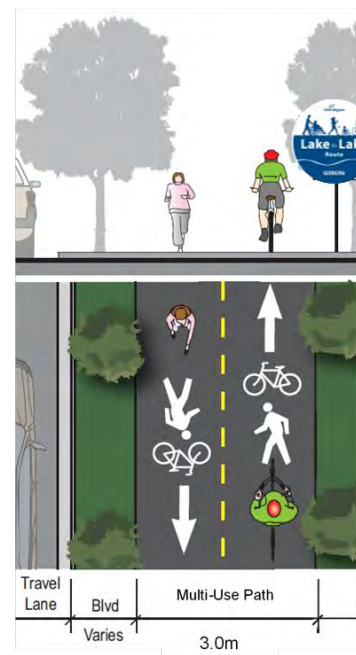
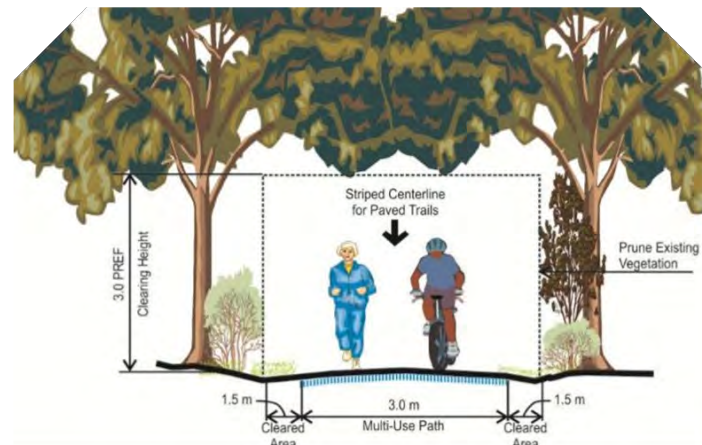
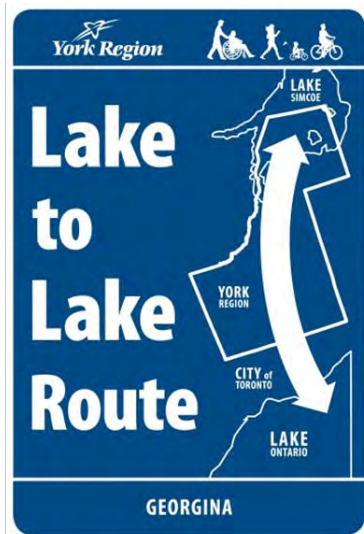
Type E Sign: Interpretive Sign



A FAMILY OF SIGNS – EXAMPLE: BRAMPTON, ON



A FAMILY OF SIGNS – EXAMPLE: YORK REGION LAKE TO LAKE TRAIL, ON



TRAILHEAD SIGNS

- Largest of the pathway signs in the “family of signs”
- Located at main parking areas
- Provide overview of the pathway route/network in the form of map(s)
- Communicate level of accessibility so users can make an informed decision about whether to proceed on the path or not
- Also typically provide emergency contact information, an introduction to interpretive themes, and pathway etiquette



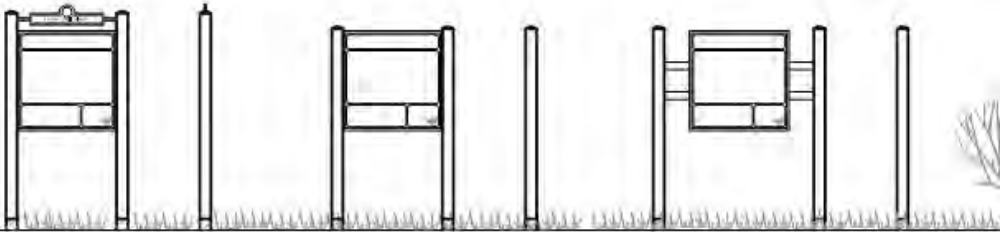
TRAILHEAD SIGNS



MINOR TRAILHEAD SIGNS



FRONT SIDE FRONT SIDE FRONT SIDE

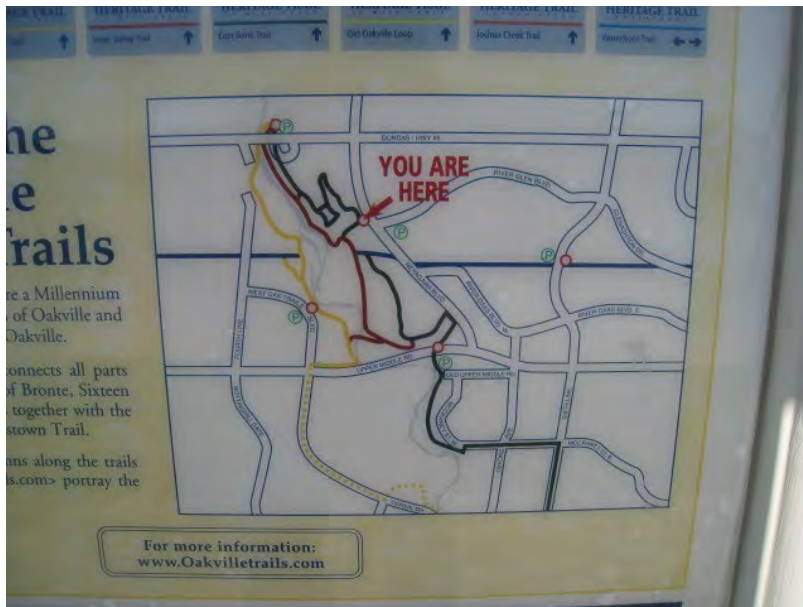


MINOR TRAILHEAD SIGN



TRAILHEAD SIGNS: "YOU ARE HERE"

- A key element of the trailhead sign
- Mapping may or may not use an air photo background, often depends on the scale of the map



KEEPING THE INFORMATION UP TO DATE



JOHN ROWSWELL HUB TRAIL

TRAIL ETIQUETTE

- Please keep on the trail.
- Respect others right to use the trail.
- Walk, run, ride, or roll in a safe, predictable manner.
- Keep to the right, except when passing.
- Keep the trail and ecosystems litter free.
- Do not disturb or approach wildlife.
- Do not damage or remove trees or plants.
- Keep pets on a leash (By-law 98-211) and clean up after them (By-law 87-125).
- Motorized vehicles are prohibited on the trail, except motorized wheelchairs, maintenance or emergency vehicles.
- Recreational Trail, Use at Your Own Risk
- Trail will not be maintained from October 15th to May 15th.

Welcome Trail Users,

The Hub Trail is an approximately 25 km multi-use, non-motorized trail system that connects many significant points of interest throughout the city, including the waterfront walkway, Bellevue Park, Algoma University, Sault College, the new Sault Area Hospital and the Fort Creek Conservation Area.

This trail system provides access to several parts of the City and links together key cultural, historical, and natural areas of the community. The trail also provides community residents with an alternative, environmentally friendly mode of transportation, decreasing auto-dependency within the City.

With both on and off-road trail facilities, the trail system also provides increased recreational opportunities for residents and visitors to Sault Ste. Marie.

By choosing to use the Hub Trail, you are not only exploring the incredible points of interest throughout the community, but you are making a difference in the well being of both yourself and the community. We hope you enjoy your experience on the Hub Trail.

Yours truly,

The Mayor and Council of Sault Ste. Marie



CLERGUE PARK

WATERFRONT

FORT CREEK

EMERGENCY INFORMATION

Police, Fire, Ambulance - 911

General Maintenance Questions Or Issues - 705-759-5201

FUNDING PARTNERS

- Government of Canada
- Province of Ontario
- City of Sault Ste. Marie

QR CODE

Scan this barcode using your smart phone device to visit the City of Sault Ste. Marie Website.



HEALTH BENEFITS

Walking

Walking is one of the easiest and most enjoyable forms of physical activity. All you need is a good pair of shoes and comfortable clothing.

There are many benefits of walking:

- Refreshes the mind, reduces fatigue and increases energy
- Reduces risk of heart disease, diabetes and osteoporosis
- Strengthens bones
- Trains heart, lungs and muscles to work more efficiently
- Lowers blood pressure and cholesterol
- Relieves stress and tension

Active Transportation

Active Transportation is any trip using active/human power such as, walking, cycling or wheeling. Active transportation can help to provide a cleaner environment and improve health.

Working Active Transportation Into Your Life:

- Make active transportation part of your regular travel destinations (i.e. work and school).
- Get off the bus or park your car a few blocks away from your destination and walk the extra distance.
- Think twice about using your car for every trip: could you walk or use your bike?
- Bike or walk with your children to the park or to their after school events.



FINN HILL

BOARDWALK

FORT CREEK

JOHN ROWSWELL

John Rowswell served as Mayor of the City of Sault Ste. Marie from December 2000 until his death on August 31, 2010.

Mayor Rowswell entered municipal politics with a strong focus on economic growth and expansion. He was committed to building a vibrant and diverse community with the goal of providing citizens an extraordinary quality of life.

John Rowswell advocated the creation of large scale projects including the construction of the Hub Trail and the ongoing development of the waterfront walkway. He was a passionate supporter of the Hub Trail system linking neighbourhoods to provide economic, environmental, recreational and health benefits for residents and visitors.



The John Rowswell Hub Trail is dedicated to the memory of Mayor John Rowswell 1965 - 2010



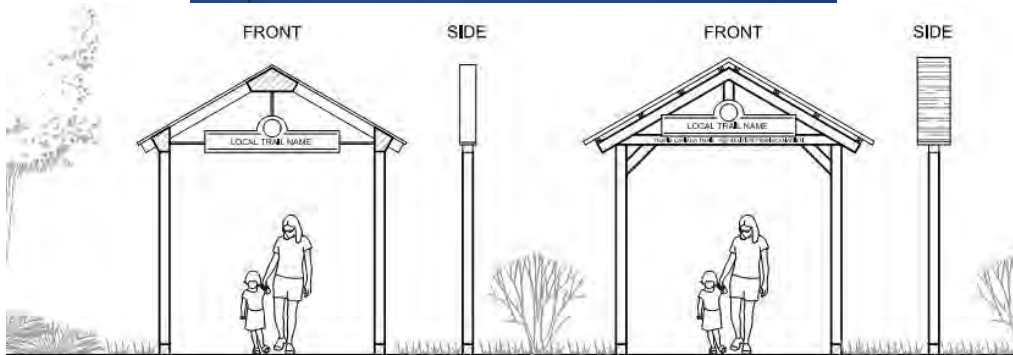
Quick Response (QR) Code

Scan with a handheld device, provides instant access to a designated website.

Website can be easily modified so that information (mapping, events, programs, etc.) are current.

GATEWAY SIGNS

- Located at municipal boundaries
- “Welcome”
- “You are Entering”

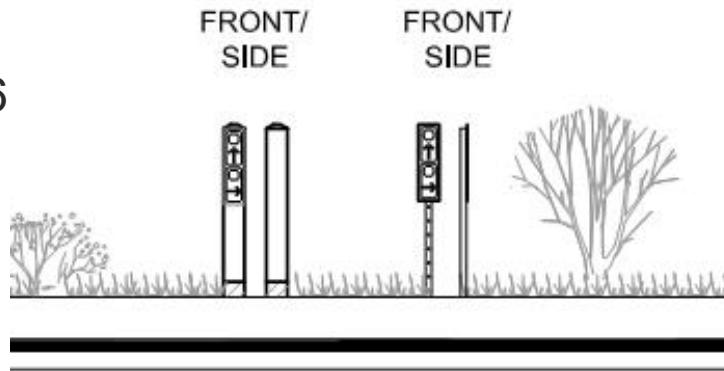


GATEWAY SIGNS



TRAIL DIRECTIONAL / MARKER SIGNS

- Located at pathway intersection points and at regular intervals on long uninterrupted sections
- Assure users they are on the main route
- Contain directional arrows, distance to destinations along or nearby the pathway, can include GPS information to assist with Emergency Response
- “TrailKey”™: a 190 mm (6 in) square aluminum extrusion with radius corners and is slotted for graphics panels



TRAIL DIRECTION MARKERS



DIRECTIONAL SIGN AT COMPLEX LOCATION

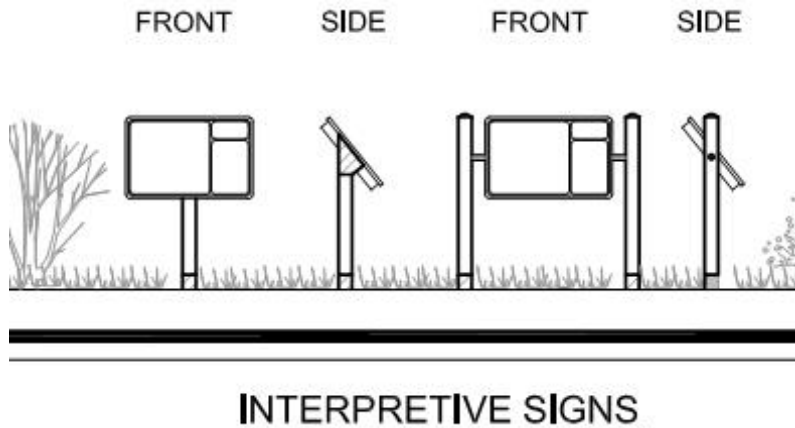


Applications:

- Used where the trail route follows a complex alignment, particularly in an urban area
- Used for a temporary alignment (e.g. when trail is closed for construction or major maintenance)

INTERPRETIVE SIGNS

- Located at points of interest along the trail (natural heritage, cultural heritage, cultural history, significant views)
- Located where there is a learning opportunity
- Can be incorporated into rest area along the trail
- Excellent opportunity for partnership (e.g. have local naturalist groups develop the theme and information for the sign)
- In contrast to other types of trail signs, interpretive signs can be “information intensive” with lots of graphics and text

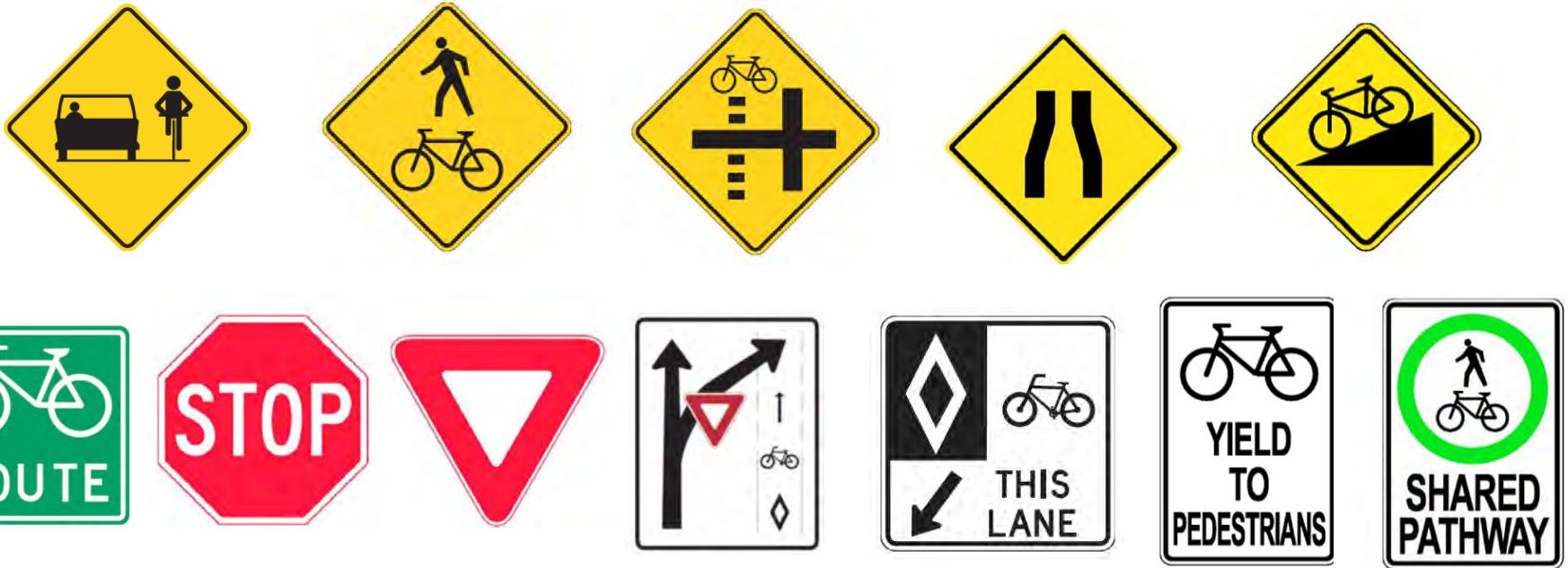


INTERPRETIVE SIGNS: RECOGNIZING CONTRIBUTORS



“REGULATORY” SIGNS

- Provide important messages regarding safety (e.g. stop for road crossings, shared pathway, narrow pathway, steep descent ahead etc.)
- Use symbols and sign character that is consistent with those in use on roadway systems
- Sign size is smaller than those used on the roadway system
- Positive reinforcement of pathway user behaviour
- Transportation Association of Canada (TAC) Bikeway Design Guidelines
- Manual of Uniform Traffic Control Devices (MUTCD) for Canada



"RULES OF THE TRAIL"- Trail-Etiquette



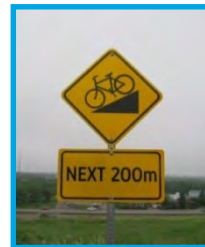
"REGULATORY" AND IMPORTANT USER INFORMATION



PERMITTED VS.
PROHIBITED



FACILITIES / SERVICES
NEARBY, POINTS OF
INTEREST



CAUTION / WARNING

MATERIALS

Durability is one of the most important factors when choosing the material for a sign due to the effects of :

- Weather (i.e. moisture, sun, wind)
- Vandalism (i.e. graffiti, cutting/scratching, fire)
- Salt

Before choosing the right sign material it is important to consider:

- Long term maintenance requirements
- Budget limitations
- Anticipated life expectancy
- Graphic requirements/complexity

SIGNBOARD

Coroplast Signs (4mm Corrugated Plastic)

- Lightweight and cost effective,
- Ideally suited for a wide variety of indoor and short-term outdoor uses.



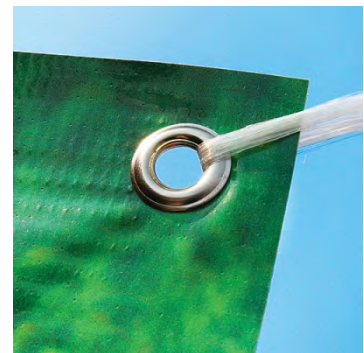
PVC (Sintra) Signs (Polyvinyl Chloride)

- Lightweight polyvinyl chloride (PVC)
- Rigid and durable, suitable for short term outdoor use.
- Heat formable, chemical resistant and has superior dent and scratch resistance.



Vinyl Banner Signs

- Digitally printed onto a durable, weather resistant outdoor vinyl banner material
- Temporary outdoor solution with high-end graphic quality



SIGNBOARD

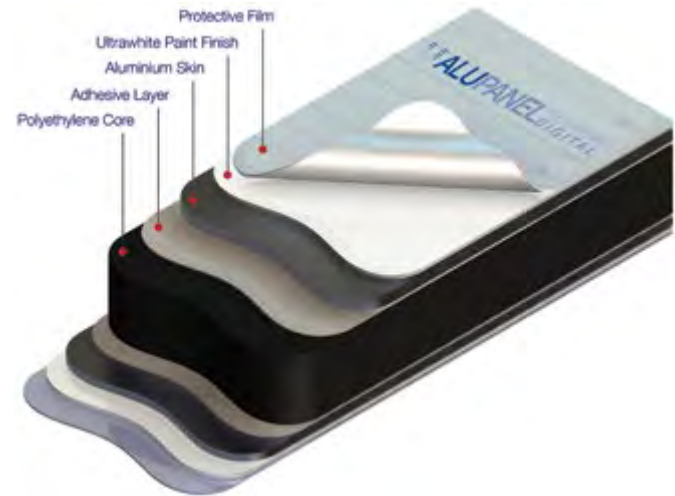
Aluminum Signs

- Manufactured from aluminum panels that are printed with high quality images and sealed with a baked enamel finish
- Can be easily mounted to a wide variety of posts,
- Rust resistant and can withstand very low temperatures (-40°F)



Alupanel Signs (i.e. Aluminum Composite Panel)

- Formed by laminating two sheets of aluminum to either side of a plastic core material
- Creates a rigid and stable form for outdoor use.
- Smooth surface finish, excellent impact resistance, weather resistant, fire retardant and erosion resistant



SIGNBOARD

Sun Glaze Enamel Signs (i.e. Fantasy Signs)

- Durable, 100% recyclable aluminum panel with bright, vibrant and high quality full colour digitally printed graphics.
- Product is finished with a UV enamel top coat which prevents graphics from fading
- Solvent resistant, allowing graffiti to be wiped off without damaging the graphics.
- Has no layers, making it impervious to water, and will not delaminate.
- Can be cut into any size or shape.



High Pressure Laminate (i.e. Folia Signs)

- High quality digital image printed on a high pressure laminate panel
- Waterproof, durable, graffiti, burn and corrosion resistant
- Can be cut into any desired shape to fit the theme of any landscape environment



SIGNBOARD

Sandblasted Wood

- Sandblasted out of a durable wood such as cedar.
- If properly treated, these signs can last for 25 years
- More rustic and natural feel to a trail environment
- Classic look and excellent durability



Cast Metal Signs

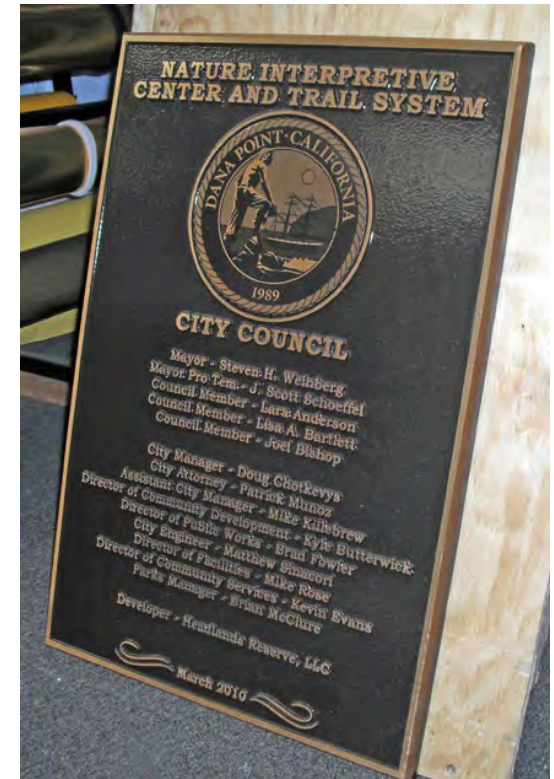
- Most commonly used for an entrance sign or a heritage plaque
- Common metals used are brass and aluminum.
- Produced by pouring molten metal into a form or mould
- Long life and durability, and create a notable piece within the landscape



SIGNBOARD

Bronze Plaque

- Used most commonly as a commemorative or memorial plaque
- Long lasting, durable element within any landscape environment.
- Produced by pouring molten bronze into a sand mould, then polished to the desired finish.
- High cost





SIGN INSTALLATION

LATERAL AND VERTICAL CLEARANCES – CYCLING

Exhibit 7-2: Vertical and lateral clearance for cycling wayfinding signs along rural roads

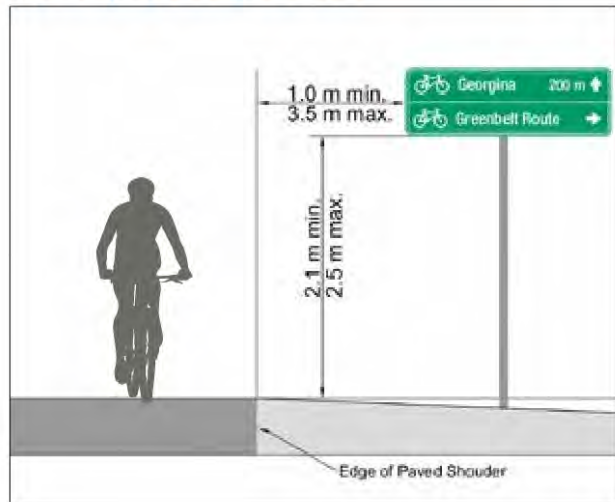


Exhibit 7-3: Vertical and lateral clearance for cycling wayfinding signs along urban road

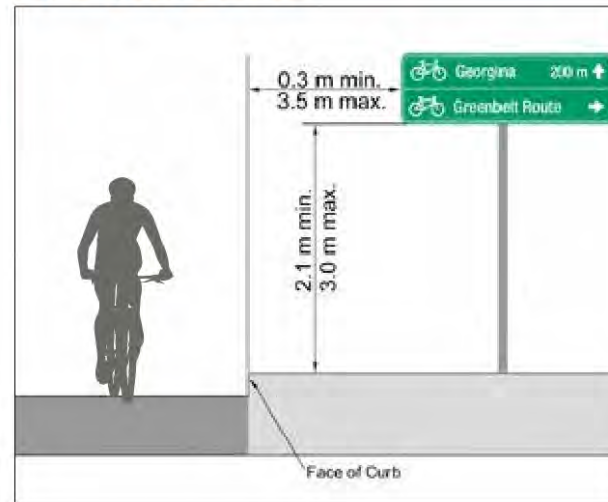


Exhibit 7-4: Vertical and lateral clearance for cycling wayfinding signs along multi-use paths

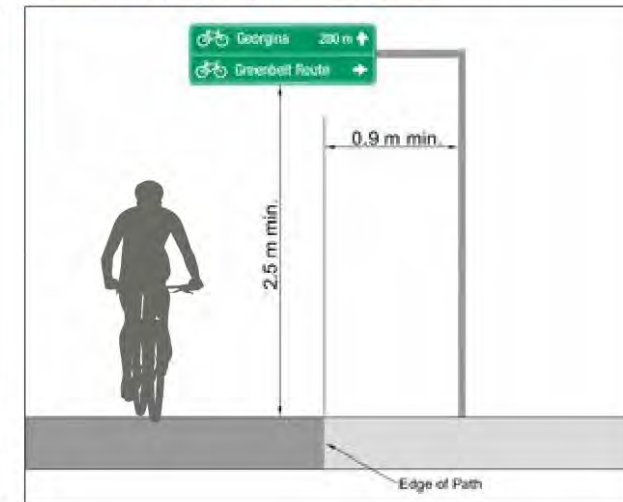
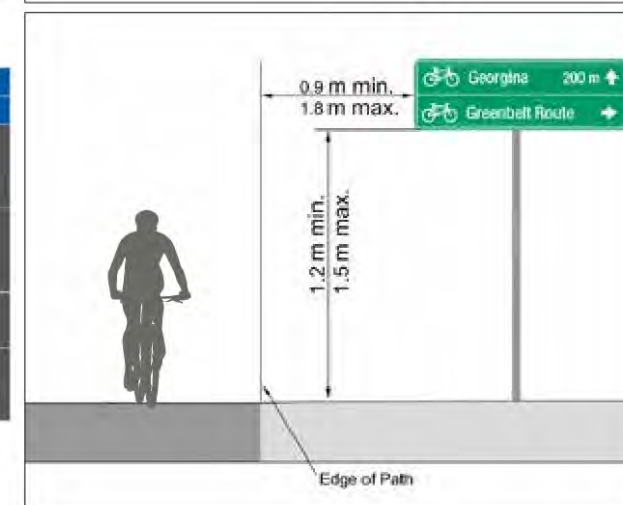


Exhibit 7-1 Summary of Lateral and Vertical Clearances for Cycling Wayfinding Signs

Facility	Vertical Clearance	Lateral Clearance	
		Min.	Max.
Rural roadway Measured from the edge of paved shoulder to the near edge of the sign Exhibit 7-2	Min. 2.1 m Max. 2.5 m	1.0 m	3.5 m
Urban street Measured from the face of curb to the near edge of the sign Exhibit 7-3	Min. 2.1 m Max. 3.0 m	0.3 m	3.5 m
Multi-use Path Measured from the edge of the path to the near edge of the sign Exhibit 7-4	Min. 1.2 m Max. 1.5 m	0.9 m	1.8 m
	Min. 2.5 m	If minimum lateral clearance to sign cannot be met; however, minimum 0.9 m lateral clearance to post is still required	



Source: York Region Sustainable Mobility Wayfinding Guidelines (2018)

LATERAL AND VERTICAL CLEARANCES – PEDESTRIAN

Exhibit 7-5 Summary of Lateral and Vertical Clearances for Pedestrian Wayfinding Signs

Sign TYPE				Lateral Clearance	
				Min.	Max.
Destination Fingerboard Measured from ground to the bottom edge of the sign Exhibit 7-6	VERTICAL CLEARANCE	Min.	2.1 m	Not applicable – the post is detectable and the protruding sign is mounted above the heads of pedestrians	
		Max.	3.0 m		
Map / Information Totem		Not applicable – this type of sign is detectable because it is of a constant width and extends to the ground, so no clearances to pedestrian activity areas are required			
Trailhead Sign If located adjacent the path and outside of a pedestrian activity area Measured from the edge of the path to the near edge of the sign Exhibit 7-7		Min.	1.2 m	0.9 m	1.8 m
		Max.	1.5 m		
If located within a pedestrian activity area at the trailhead (must meet the clearances to the path noted above) Measured from the ground to near edge of sign Exhibit 7-8		Max.	0.68 m	Not applicable – the posts and protruding sign are detectable	

Source: York Region Sustainable Mobility Wayfinding Guidelines (2018)

PLACEMENT AND SPACING REQUIREMENTS

EXHIBIT 7-10: Sign placement and spacing for bike route identification signs

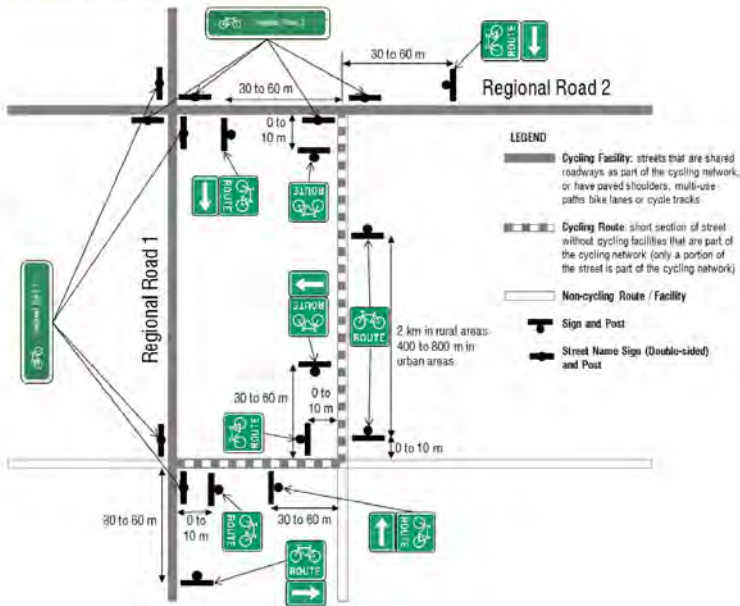


EXHIBIT 7-11: Sign placement and spacing for cycling destination signs

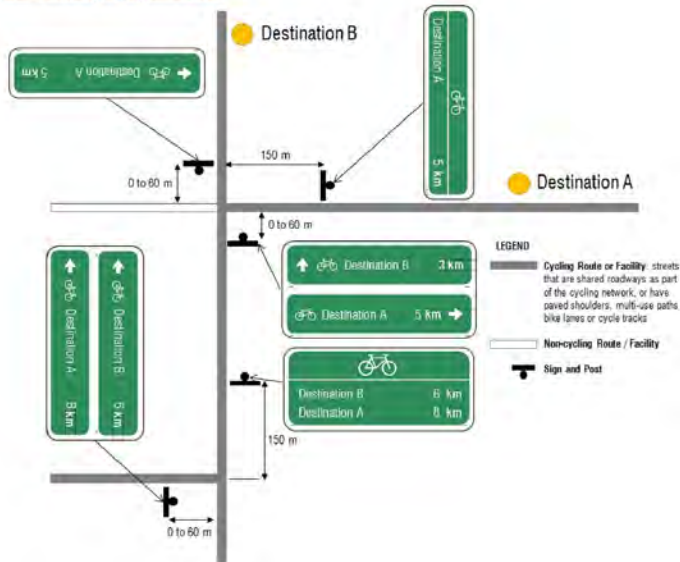


Exhibit 7-9 - Summary of Placement and Spacing Requirements

Type of SIGN	Decision Point or Intersection	Spacing*
Integrated Bicycle Route Identification Street sign	At intersection	Not applicable
Standalone Bicycle Route Identification sign	0 to 10 m on the far side of intersections.	Rural areas: every 2 km Urban areas: every 400 to 800 m
Bicycle Route Directional sign	Stop-controlled intersection: 0 to 10 m on far side of intersection	Not applicable
Destination Decision sign	Free-flow intersection: 15 to 60 m in advance of intersection	Not applicable
	Traffic signal controlled intersection: 30 to 60 m in advance of intersection	Not applicable
Destination Confirmation sign	150 m following a decision point or intersection	Every 3 km
Advance sign only if Bicycle Route Directional sign or Destination Decision sign is not conspicuous from 60m away	30 m in advance of the inconspicuous sign	Not applicable

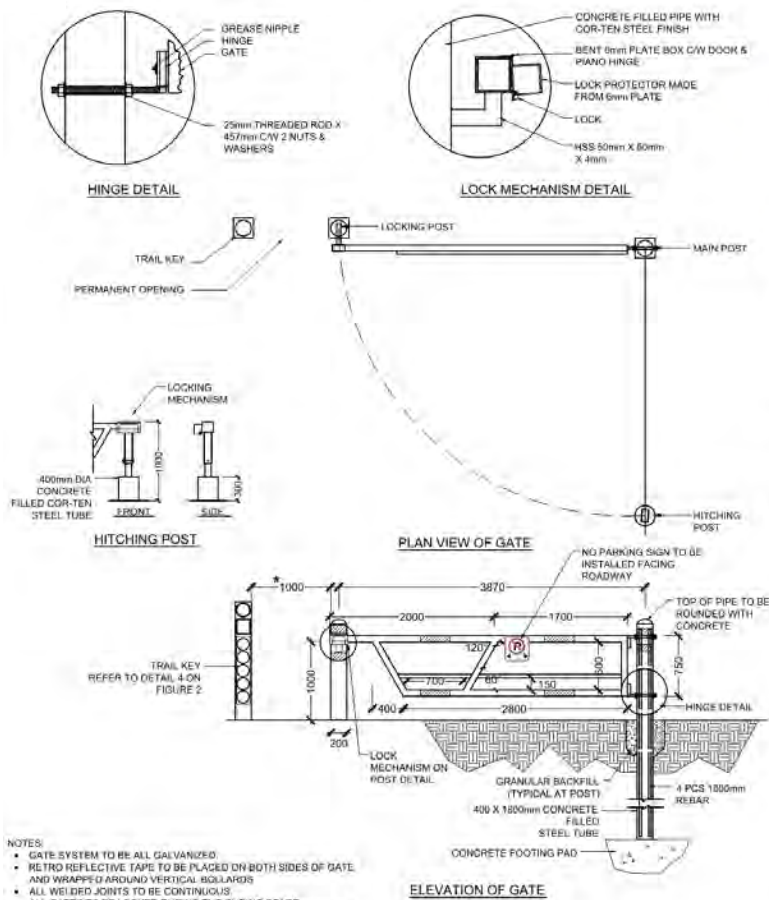
* All signs, including other road signs, should be spaced at least 25 m apart and in sequence where possible.

Source: York Region Sustainable Mobility Wayfinding Guidelines (2018)



TYPICAL DETAILS

TYPICAL ROAD CROSSING LAYOUT



- NOTES:**
- GATE SYSTEM TO BE ALL GALVANIZED
 - RETRO REFLECTIVE TAPE TO BE PLACED ON BOTH SIDES OF GATE AND WRAPPED AROUND VERTICAL ISOLATORS
 - ALL WELDED JOINTS TO BE CONTINUOUS
 - ALL GATES TO BE LOCKED DURING THE CURING STAGE
 - TOP OF NEW CONCRETE FOOTING TO BE LEVEL WITH THE SURFACE OF EXISTING GRADE
 - ALL HARDWARE TO BE GALVANIZED
 - ALL DIMENSIONS IN mm (MILLIMETERS)
 - ALL METAL COMPONENTS SHALL CONFIRM TO RELEVANT OPS
 - PERMANENT OPENING TO BE A MINIMUM OF 1000mm FOR ACCESSIBLE TRAILS TO A MAXIMUM OF 1100mm TO LIMIT MOTORIZED VEHICLES FROM ENTERING TRAIL

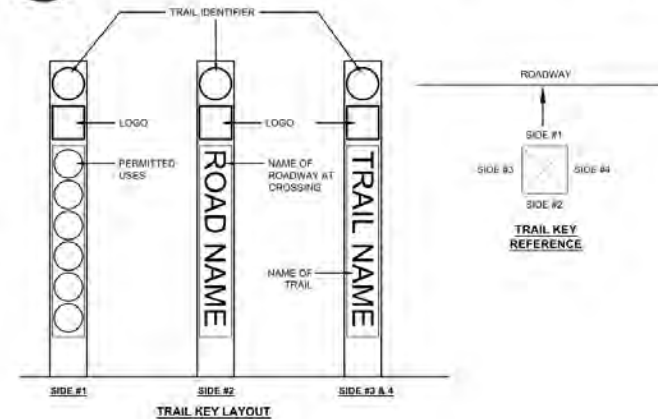
2 TYPICAL SWING GATE DETAIL

SCALE: NTS



3 TYPICAL SIGN INSTALLATION DETAIL

SCALE: NTS



4 TRAIL KEY DETAIL

SCALE: NTS

Source: Uxbridge Active Transportation Plan (2021)

TYPICAL RURAL ROAD CROSSING SIGNAGE



Place 100m to 120m before any stop sign. If two stop signs are less than 100m apart then a second stop ahead is not required if an unobstructed sightline exists between the two.

▲ S1: STOP HEAD



Mounted on the right side of the trail close to significant entrance points. For snowmobile use, One sign every 10km.

▲ S2: MAXIMUM 50km/hr. SIGN



For use at all intersections where other motorized vehicle use occurs, including driveways.

▲ S3: STOP SIGN



OFSC approved cautionary and regulatory signage installed at every intersection with another trail, highway, railway, or other crossing. Every 5km if no intersection.

▲ S4: OFSC PRESCRIBED TRAIL SIGN



Sign advises snowmobilers, cyclists, and other users of no trespassing on private property without a permit. Sign also includes other permitted and non-permitted uses of the trail. Erected at entrance to trail well off groomed portion of the trail.

▲ S5: TRAIL ENTRY AND RESTRICTION SIGN

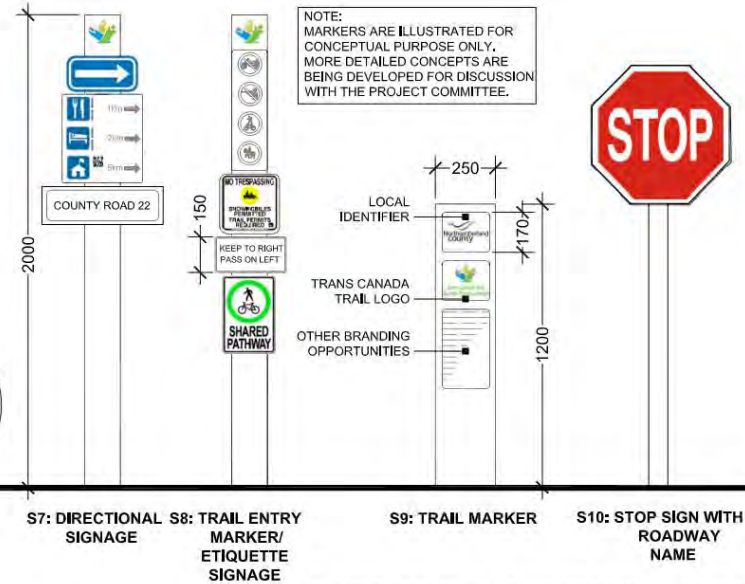


To be installed on the right hand side of the trail at all trail entrance points and road crossings, 20 to 30m from traveled portion of the Intersection. OFSC approved. No other signs to be mounted at the same location.

▲ S6: USE AT OWN RISK SIGN

▲ TYPICAL OFSC SIGNAGE TYPES

OFSC APPROVED Cautionary and Regulatory signs



▲ OFSC APPROVED CAUTIONARY AND REGULATORY SIGNAGE

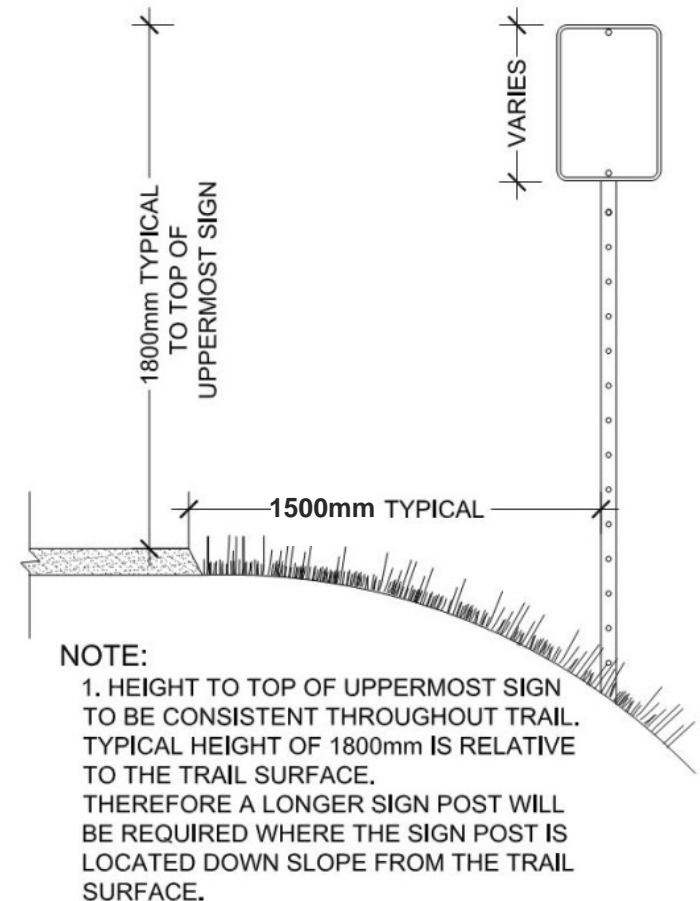
OFSC APPROVED CAUTIONARY AND REGULATORY SIGNS TAKE PRECEDENCE OVER ALL OTHER SIGNS UNLESS REGULATED BY LAW REFER TO "OFSC SIGN GUIDE SUPPLEMENT" VERSION 8, JUNE 25, 2011

▲ TYPICAL SIGN SCHEMATICS
SCALE: NTS

DRAFT FOR DISCUSSION ONLY

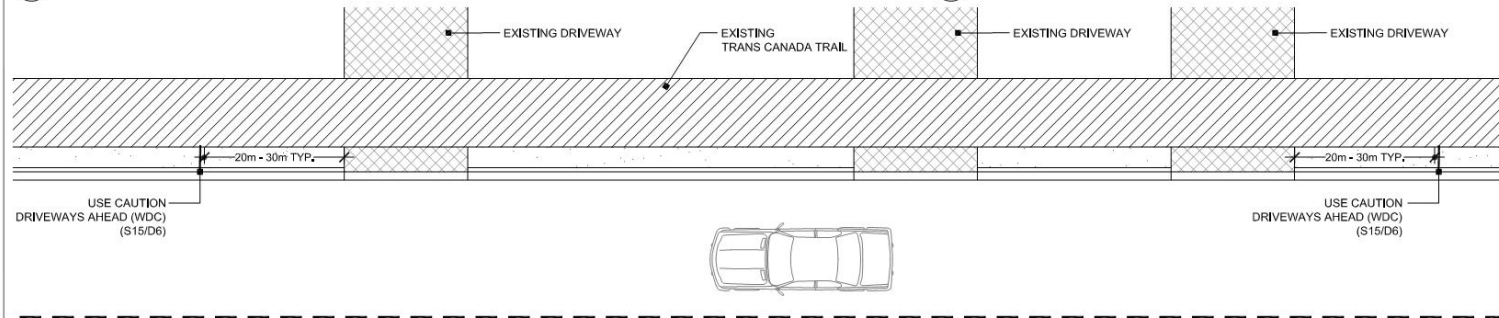
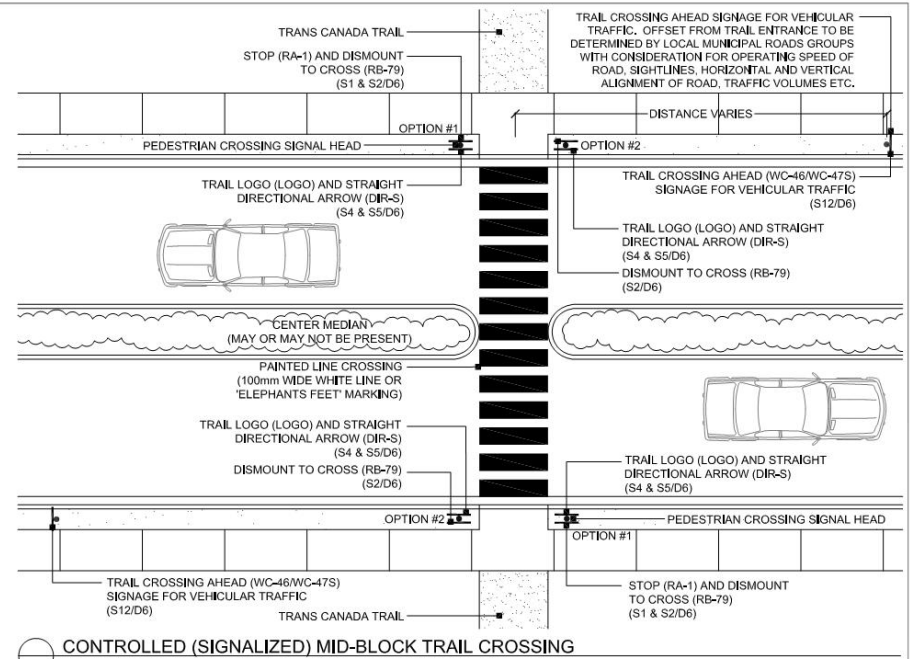
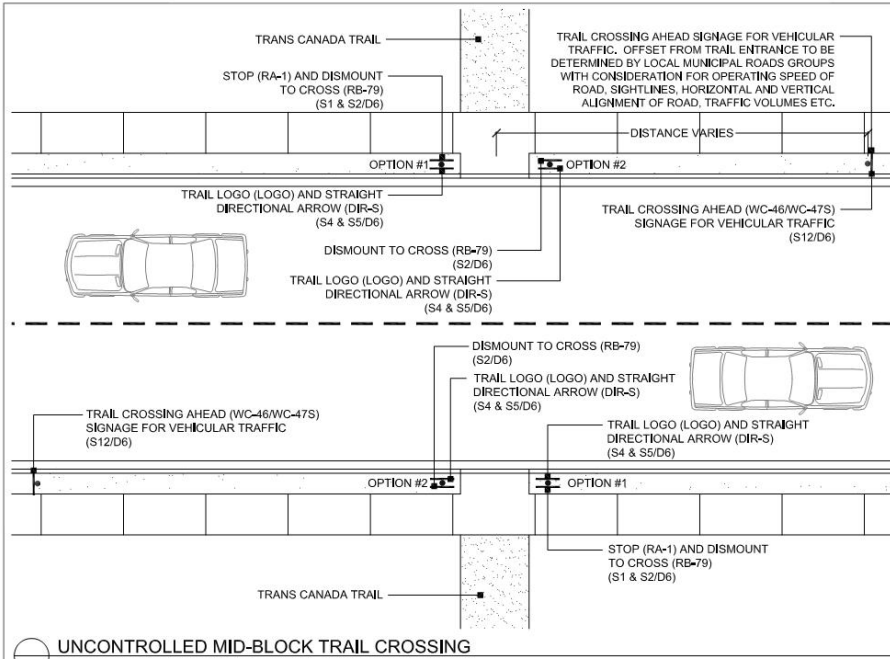
MOUNTING / PLACEMENT

- Direct burial
 - Embedded anchor system
 - Foundation
 - Pad Mounted
-
- Large signs require engineering to examine structure and wind loading
-
- Roadside signs-consult with traffic control standards regarding placement (clear zones and breakaway requirements)
-
- For pedestrian signs the centreline of sign to the ground should be +/- 1.5m



TYPICAL SIGN MOUNT BESIDE TRAIL

TYPICAL MID-BLOCK CROSSING



DRAFT FOR DISCUSSION ONLY

CONTROLLED MID-BLOCK CROSSING

Mid-Block Pedestrian Signal

The Mid-Block Pedestrian Signal allows cyclists and pedestrians to cross while motor vehicles are stopped. A mid-block pedestrian / pathway crossing of a multi-lane road should be considered only at locations with adequate sight lines and only if the nearest controlled intersection is too far to expect users to travel to it.



Photo Credit: MMM Group, 2012 – Mid-Block Pedestrian Signal without Median Refuge

Multi-use Path Crossing with Median Refuge Island

A protected space in the centre of the road enables allows cyclists pedestrians trying to cross traffic coming from one direction at a time. The median refuge may or may not include a Mid-block Pedestrian Signal. Where a mid block pedestrian signal is not provided the pedestrian crossing pavement markings should not be applied to avoid any confusion regarding right-of-way. Pedestrian islands are typically installed on uncontrolled midblock crossings

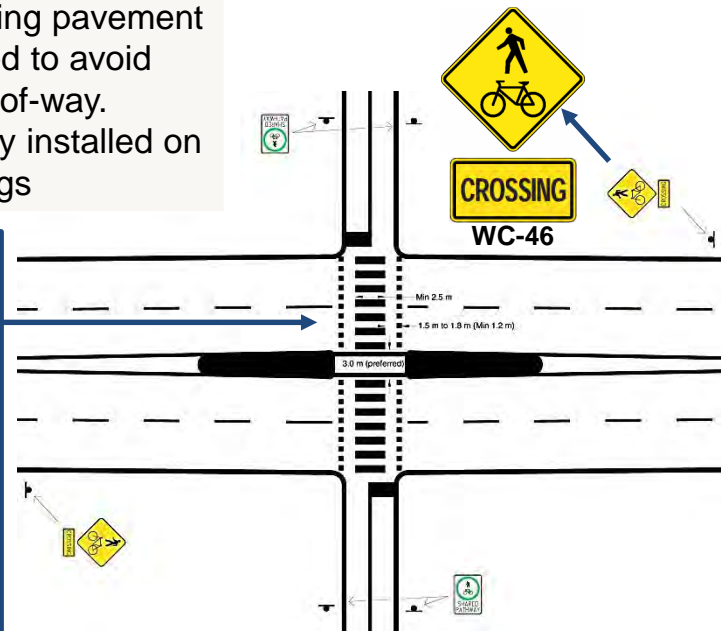
OTM Book 15 – Pedestrian Crossing Facilities:

“Pavement markings to delineate pedestrian crossings are not recommended in the design of a refuge island.” Section 3.3.1.2

Also, “marked crosswalks with painted pavement markings are not recommended at uncontrolled crossings as they create a false sense of security on the part of pedestrians...” Section 3.3.1

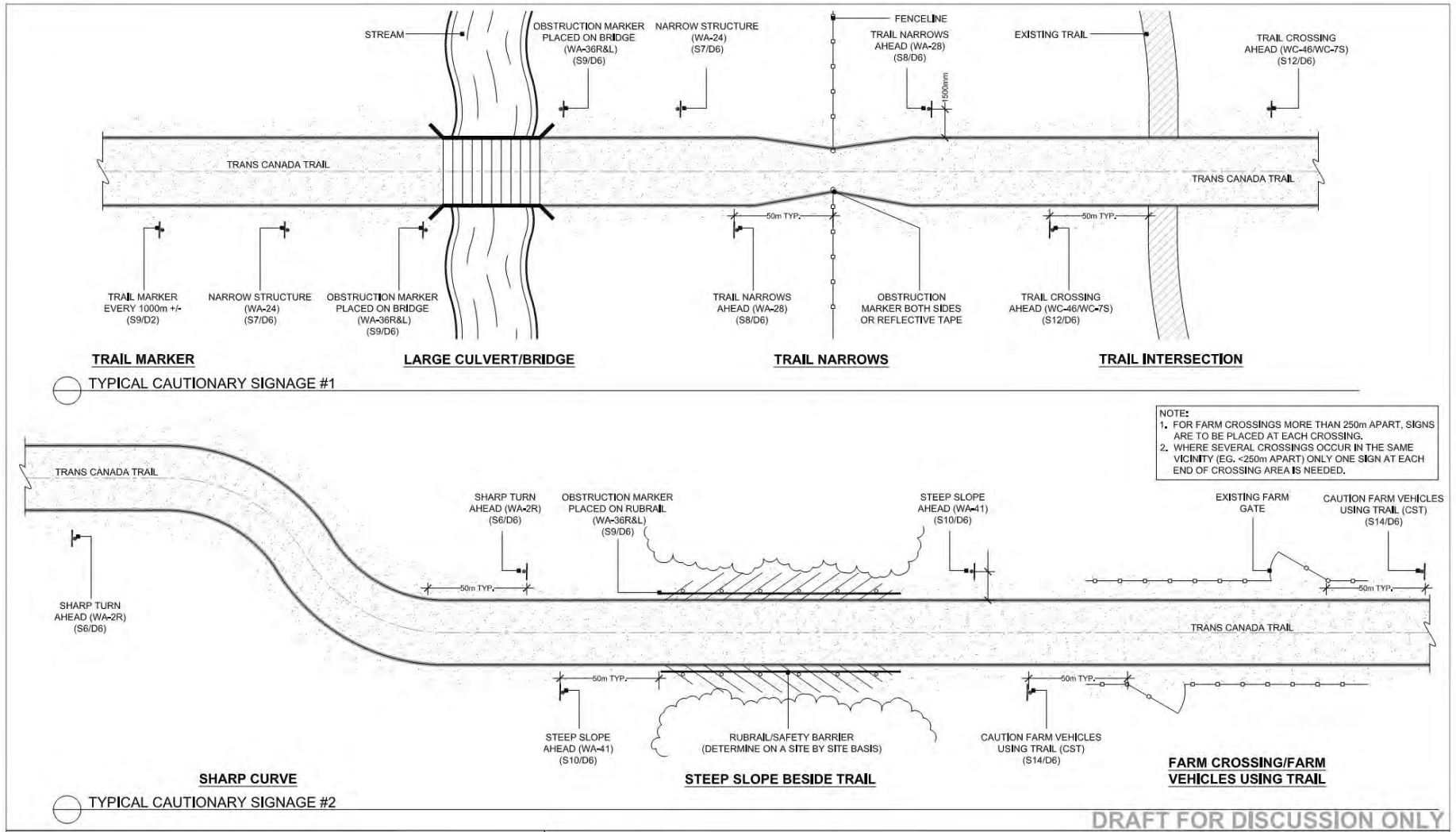


Photo Credit: MMM Group, 2010 – Mid-Block Pedestrian Signal with Median Refuge



Credit: TAC Bikeway Traffic Control Guidelines, 2012

CAUTIONARY SIGNAGE PLACEMENT





NEXT STEPS

NEXT STEPS

- Town staff to review and provide input on preferred Family of Signs approach
 - May want to review with preferred sign contractor for their input
- Town to share most current signage and branding guidance for municipal destinations and trails
- WSP to draft a Family of Signs concept for Town review
- WSP and Town to confirm pilot location(s) for implementing new trail signage in the Town



APPENDIX A

YORK REGION SUSTAINABLE MOBILITY WAYFINDING GUIDELINES



SUSTAINABLE MOBILITY WAYFINDING GUIDELINES

YORK REGION
Transportation Services





IBI Group in
association with
Vélo Québec
Association



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The image features a vibrant blue background with dark silhouettes of trees and branches. A prominent white geometric shape, resembling a stylized '1' or a corner bracket, is positioned on the right side. Inside the lower-left portion of this white shape, the text '1.0' is written in a bold, blue, sans-serif font. The overall aesthetic is clean and modern, suggesting a version number or a design element.



INTRODUCTION

1.0 Introduction

Wayfinding provides direction to help people navigate through space and among places. The design of wayfinding is more than signs - it also includes pavement markings, names, landmarks, maps and sometimes changes to the built environment all within a set of conventions that simplify communication. When wayfinding is successful, it goes beyond providing information, and supports place-making, enriching the public realm.

Wayfinding that highlights options for walking and cycling are important investments that help to build a multi-modal transportation system.

1.1 Purpose

These guidelines are a toolkit for wayfinding signage and pavement markings that may be used as a reference for walking and cycling practitioners in the cities, towns, and hamlets throughout York Region. The guidelines are intended to provide a coordinated system for both pedestrian and cycling wayfinding signage, and options for supportive pavement markings and trailhead signage.

1.2 Goals of Information Signing

As described by the Transportation Association of Canada's Bikeway Traffic Control Guidelines for Canada (2012), wayfinding signage indicates information for route selection, for locating off-road facilities, or for identifying geographical features or points of interest. Ontario Traffic Manual (OTM) Book 8 Guide and Information Signs (Volume 1, 2010) describes this family of signs as essential to:

- Direct users along roadways. For cyclists and pedestrians, they must direct them along bicycle routes, bikeways and trails
- Identify intersecting routes
- Provide direction on centres of population and other destinations

OTM Book 8 clearly identifies that guide and informational signs are an aid to users reaching their destination; they cannot be relied on as the only source of information for making a trip. Using maps and route planning are considered fundamental to making a trip.

City of Burlington's multi-use path and cycling network trailhead signs and destination direction signs



1.3 Wayfinding Specific to Cyclists and Pedestrians

Wayfinding describes how a person orients themselves and navigates through an area or space. It is about knowing:

- Where you are
- Where you want to go
- How to get there from where you are

People respond to their built environment. Each trip becomes a memory which informs how the world is understood around us. Routes that are frequently travelled become the default navigation choice, because we know how to reach a destination without getting lost and know approximately how far (or long) the trip is and what to expect along the way.

If trips are predominantly taken by motor vehicle, then the natural tendency for many people is to try to walk or cycle on the same route that they would drive, because this is the route they are familiar with. The problem with this approach is that the most efficient driving routes may not necessarily be the most desirable options for walking or cycling.

This issue can become most pronounced in areas where highways or arterials are used to travel between neighbourhoods within an urban area. In certain cases, neighbourhoods may be within a walking or cycling distance as the bird flies, but an overreliance on highways in order to plus a desire to avoid traffic has created a mental map that is spatially skewed.

This issue can become most pronounced in areas where highways or arterials are used to travel between neighbourhoods within an urban area. In certain cases, neighbourhoods may be within a walking or cycling distance as the bird flies, but an overreliance on highways plus a desire to avoid traffic has created a mental map that is spatially skewed.

The provision of pedestrian and cycling signage can therefore be understood as a way of encouraging people to reconsider their travel options, based on new information in order to challenge their unconscious assumptions about travel.

1.4 Intended Users

The system is intended for people who are walking or cycling of all ages and abilities. Cyclists can generally be divided into the following categories by trip purpose:



Photo Credit Shawn Smith

UTILITARIAN USERS

These are users who are undertaking destination-oriented trips to work, school, and services. They rely on consistent **information leading them along an efficient route to their destination.**



Photo Credit Shawn Smith

RECREATIONAL USERS

These are users who are undertaking experience-oriented trips for leisure, fitness or sport over typically shorter distances than tourists. They rely on **consistent information leading them along their route, but may also seek contextual information and directions to services.**



TOURISTS

These are users who are undertaking longer distance trips as part of a vacation or getaway experience. They rely on **consistent information leading them along their route, but may also seek contextual information, directions to services, and destinations** to explore on route. They are more likely to choose an **indirect route if it is scenic** over a more direct route.

Wayfinding must address all of the above types of cycling trips – providing information on direct bike routes and bikeways, indirect and scenic routes, and services and destinations.

There is also a need to distinguish wayfinding for pedestrians from cyclists. Pedestrians are more likely to stop along their route to read larger amounts of information on signage. Using comparable exertion, cyclists are able to travel at much greater speeds than pedestrians. As such, cyclists are more likely to rely on smaller amounts of information that can be seen from a greater distance allowing them to interpret it quickly and make a decision.

Accordingly, this report provides different wayfinding solutions for pedestrians and cyclists. This difference in requirements, however, does not preclude pedestrians from finding value in using signage designed for cyclists, to assist with their journey and vice versa.

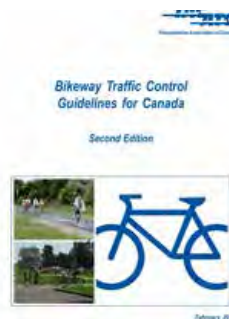
1.5 Guidance Context

This wayfinding guidance has been developed as part of the *Pedestrian and Cycling Planning and Design Guidelines for York Region*. Street typologies and detailed design drawings are components of the Design Standards for Pedestrian and Cycling Facilities toolkit, to provide the framework for the design and construction of great streets.

The Pedestrian and Cycling Planning and Design Guidelines for York Region are an update of the *2008 Planning and Design Guidelines* and directly supportive of the work of *York Region's Great Streets* context sensitive design manual and policy directions stemming from the recently updated Transportation Master Plan.

These guidelines focus specifically on pedestrian and cycling wayfinding applications. Planning, designing and implementing the applications will require reference to other manuals and documents with content on bikeways, bicycle signage and sign design in general, that address related topics in greater detail. These resources include:

Exhibit 1-1: Relevant Manuals



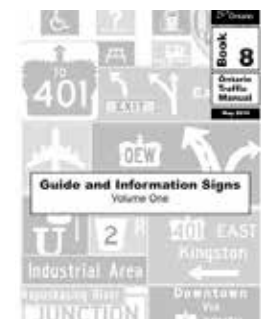
Transportation Association of Canada (TAC) Bikeway Traffic Control Guidelines for Canada, Version 2



Transportation Association of Canada (TAC) Manual of Uniform Traffic Control Devices for Canada



Ontario Traffic Manual Book 18 - Cycling Facilities



Ontario Traffic Manual Book 8 - Guide and Information Signs



Ontario Traffic Manual Book 2 - Sign Design, Fabrication and Panels



Federal Highway Administration (FHWA) Manual of Uniform Traffic Control Devices, Chapter 2K Tourist-Oriented Directional Signs and Chapter 9B Bicycle Guide Signs



Metrolinx / GO Transit Static Signage Catalogue October 2011

In addition, these guidelines build upon the knowledge developed in the following cycling wayfinding guidelines:

Exhibit 1-2: Cycling-specific Wayfinding Guidelines from Other Jurisdictions



Wayfinding Guidelines for Utility Cycling in Metro Vancouver, September 2013



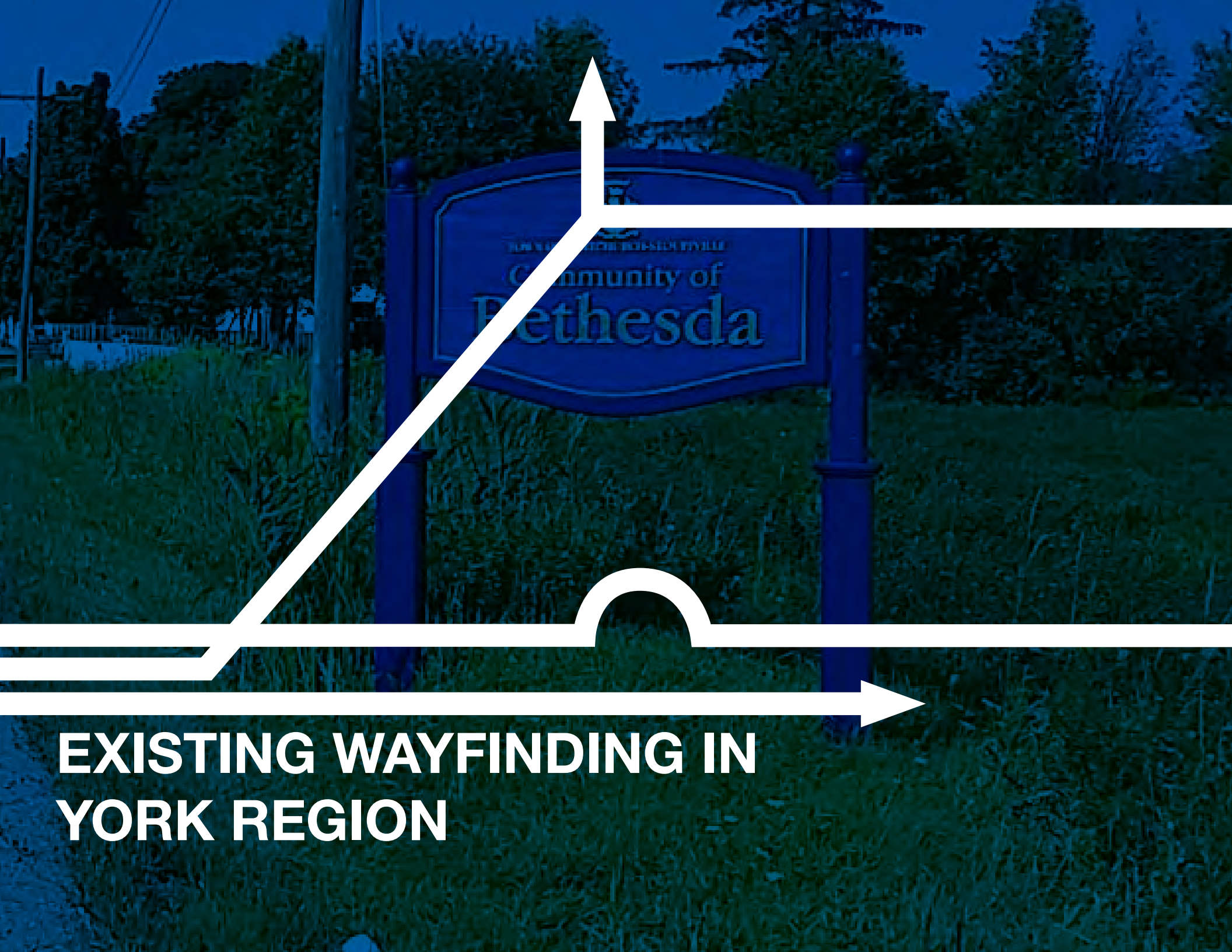
Capital Region District Interim Cycling Destination Wayfinding Guidelines, October 2014



Toronto 360° Wayfinding Strategy, August 2012



2.0



COMMUNITY OF
Bethesda

**EXISTING WAYFINDING IN
YORK REGION**

2.0 Existing Wayfinding in York Region

An inventory of existing signage in use in York Region revealed a variety of signs installed by various agencies to help people navigate the region as they walk or cycle.

2.1 Existing and Planned Assets

The current signs in place predominantly focus on trails. The Region publishes paper cycling maps, and is currently developing a cycling comfort map, which may further inform route choices being made by users.

Examples of existing wayfinding signs in York Region are provided in Exhibit 2-1.

Exhibit 2-1 - Existing Wayfinding Signs in York Region

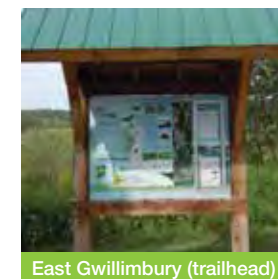
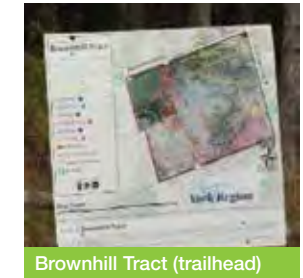
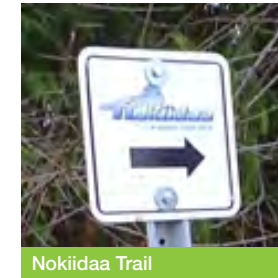
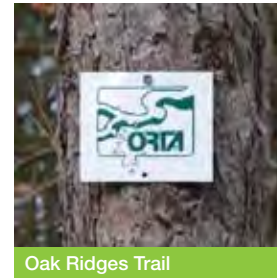
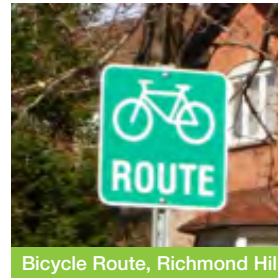


Exhibit 2-2 - Examples of Wayfinding Signage by Municipalities in York Region

A number of municipalities in York Region have or are in the process of planning wayfinding assets to serve users in their area. This includes signage for the Bartley Smith Greenway Trail, Township of King Trail and the multi-jurisdiction Lake-to-Lake route, as illustrated in Exhibit 2-2.

Wayfinding signs used by other agencies of interest to York Region are illustrated in Exhibit 2-3.

Exhibit 2-3 - Examples of Other Agency's Signage



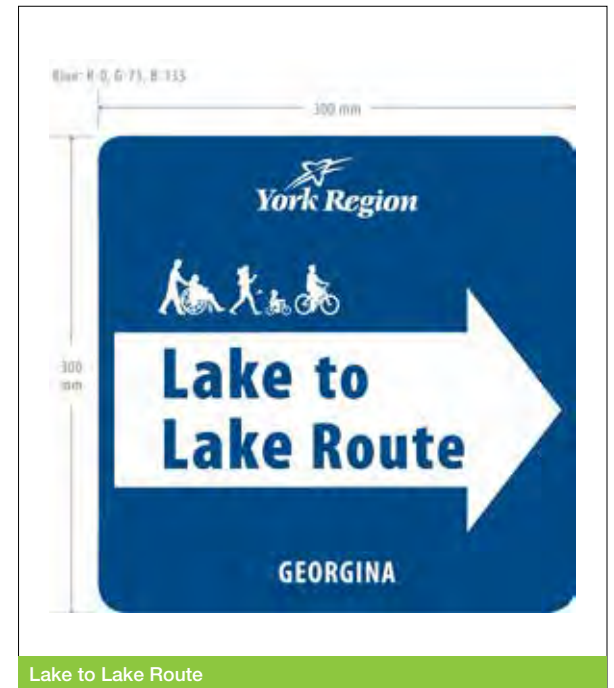
GO Transit / Waterfront Trail Wayfinding Signs



Bartley Smith Greenway Trail



King City Trails



Lake to Lake Route

2.2 Opportunities

Based on the inventory of existing and planned wayfinding assets for walking and cycling, a number of opportunities to expand and enhance these investments were identified:

Unsigned Assets refers to existing walking and cycling infrastructure and destinations that have been established without the provision of wayfinding. There are a number of opportunities that exist within the Region where the addition of wayfinding signage would provide immediate benefit, destinations such as GO Train stations and popular public spaces.

Information is lacking in many crucial locations, such as at key decision points, or on local streets that may represent potential connections between existing trails or dedicated cycling infrastructure.

Continuity is needed where current routes (and information) end, as suggested connections may be difficult to identify in-situ and/or on maps. Connections between on- and off-street routes may be challenging without continuity across the system.

Cohesive Network Awareness is needed for cycling travel in particular, to create a system that is easy to recognize, especially for people new to cycling or those unfamiliar with an area. This also allows for users to discover easy routes that can be taken by cycling in place of busy routes taken by personal vehicles.

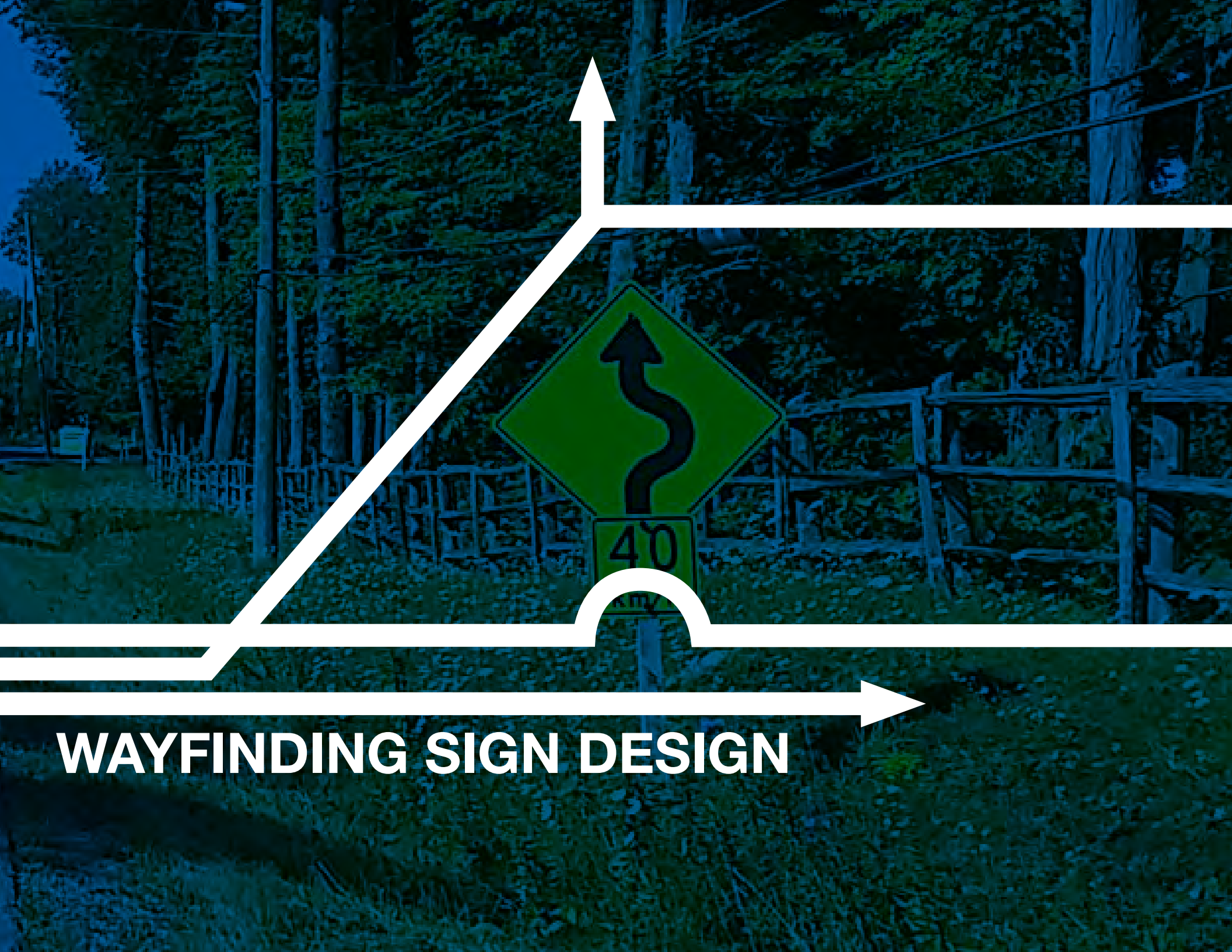
Promoting Destinations is a natural outcome of signing key civic landmarks. Information on wayfinding signs helps to build awareness about how the places people would want to walk or cycle to are distributed spatially, while also raising awareness of public assets such as parks, community centres, public libraries, civic buildings and landmarks.



Lake Drive East, Georgina, on the Lake to Lake Cycling Route, Photo Credit Shawn Smith



3.0



WAYFINDING SIGN DESIGN

3.0 Wayfinding Sign Design

Fundamental principles for wayfinding should be observed in order to establish consistency and efficiency of signage in York Region. Consistency and efficiency support the ability of users to collect, understand, make decisions about, and react to information obtained from signage. Wayfinding principles can also inform how information is communicated by third-party systems in privately owned public places.

Wayfinding Principles and General, Practical Applications

3.1 Principles



Conspicuity

The sign needs to attract the attention of the user. Conspicuity of design and placement is critical to ensure that signs are easily discerned by users.

- If roadway signs for motorists (e.g. Tourism Oriented Destination Signage) are also pertinent to cyclists and are visible from cycling facilities on the road or in the boulevard, the signage does not have to be repeated on the cycling facility.
- Where signs are intended for pedestrians and cyclists only, such as on trails, they may be scaled down in size.
- Minimum sign sizes are provided.
- Oversized signs are permissible where investigations show a need for emphasis or context-specific design speed. The excessive use of oversized signs is discouraged since it has the effect of deemphasizing the conspicuity and importance of standard-sized signs.
- Separation should be provided between wayfinding signs and between other regulatory and warning signs.



Simplicity

Signs must be legible and comprehensible, and not become overcrowded with information.

- The size of the sign depends on the length of the message, and the size and spacing of letters and symbols so that it is legible from a distance that allows for the sign to be read in full prior to riding past it without slowing down.
- Where practical, signs with symbols rather than words should be used to convey the message. A simple, conventional symbol like the bicycle is instantly recognized.
- Use of bilingual text should be consistent with legislation and policies in place in the applicable jurisdiction.
- Use the minimum number of signs to clearly convey the information and guidance required by users, thereby avoiding sign clutter.
- Referenced sign guidelines should be followed as they relate to colour, lettering, spacing, borders, standard symbols, illumination and reflectorization.



Predictability

Information should be communicated in a consistent manner. The hierarchy of information on the signs must be consistent, ensuring that people will be able to predict where to look on a sign for the information they want. This is particularly important for users taking unfamiliar routes to their destinations or on route to an unfamiliar destination.

- Naming of destinations and use of abbreviations must be consistent.
- On directional and destination signs for cyclists, the bicycle symbol should be to the left of the destination symbol and word legend.
- Arrows are placed on the side of the sign to which they are pointing: arrows pointing left or up should be on the extreme left side of the sign; arrows pointing right should be on the extreme right side of the sign.
- Symbols for destinations, when used, should be to the left of the word legend.
- Directional and destination signs in one assembly should all be the same width.
- Signs should be placed in consistent locations so users know where to look for information.



Progressive Disclosure

Information should be provided in a manageable amount for users. Providing too much information at once can be difficult to interpret quickly and remember. However, providing too little information can leave users unable to make the appropriate decision.

- In advance of decision points, only information needed for that decision should be provided. Information should be reiterated following a decision point, and repeated as needed. This is especially important for users who are not familiar with an area, and require ongoing confirmation that they are moving in the correct direction.
- Sign assemblies should present information in a descending order of importance.
- Sign assemblies should generally present the information about the through movement first, followed by the left, and then the right movement.
- At intersections, one destination is signed for each route leaving the intersection (three for a four-legged intersection, two for a T-intersection), selecting the major destination or the destination nearest the junction. Additional destinations can be added on subsequent directional or confirmation signs.
- Generally directional and destination wayfinding sign assemblies should not exceed four signs



Progression

Signs should be placed in a position allowing for users, cyclists in particular, to maintain movement.

- The size and placement of the sign must take into account travel speeds, visibility and the time it takes for the user to interpret the sign and make a travel decision to turn, stop or continue.
- Directional signs are placed in advance of and/or at intersections to notify cyclists of upcoming turns and changes in direction of cycling facilities or to find destinations.
- Advance signing of directional and destination signage is generally not necessary given the lower speed of cyclists, typically less than 40 km/h and more likely ranging from 15 to 35 km/h, unless the sign placement is not conspicuous.



Connectivity

The network of signs and paths should allow users to see walking or cycling as a means to mobility, used in place of motor vehicles.

- Identification signage of bikeways and trails is provided at intersections with the roadway network.
- Identification signage of bikeways and trails is provided at regular intervals along long stretches these facilities.

3.2 Text Case and Fonts

Upper case letters are more legible for unfamiliar words; mixed case (upper and lower case) is more legible for familiar words with the user recognizing the shape of the 'envelop' created by the unique pattern of dots, letter ascenders and descenders before individual letters are recognized. Ontario Traffic Manual recommends mixed case for street name signs, and guide, destination and directional signs.

Pedestrian Wayfinding Signs

Ontario Regulation 413/12 of the Accessibility for Ontarians With Disabilities Act (2005) recommends characters that use a sans serif font. Helvetica is a widely used and available typeface that complies with AODA legislation, and may be implemented by most sign shops.

Other sans serif fonts may be used, such as Clearview or FHWA 2001 Canadian Edition / Highway Gothic that are standard typefaces used by facilities that fabricate signs for roadside installation.

Generally, the sign message is recommended to be at a height between 1.2 and 1.6 m above the ground for readability from an average viewing distance; however, in areas where the sign may be obscured by crowds, it is recommended to be more than 2 m above the ground. Note that for people with low vision, the viewing distance is generally 17.5 mm.

Helvetica

Cycling Wayfinding Signs

FHWA 2001 Canadian Edition (also known as Highway Gothic) is the preferred font for signs erected along public roadways in Ontario and intended for people who are cycling. This typeface has been specially designed in shape and form to ensure contrast and legibility when viewed while in motion. This is particularly important when approaching signs from a distance under conditions that threaten visibility such as inclement weather. Furthermore, it is a standard typeface used by facilities that fabricate signs intended for people travelling by motor vehicle, and will ensure a consistent look and feel for standalone cycling wayfinding signs, street signs that integrate the bicycle symbol and other roadside guide signs used by the traveling public. In general, most signs in York Region will use Highway Gothic C.

Highway Gothic C

3.3 Colours

Signs that are similar in function are typically designed to use the same colour combination for text, symbols, backgrounds and borders. Colour along with shape help to organize the messages. People can recognize sign colours and shapes at far greater distances than they can distinguish symbols or read sign text. Colours are identified first and are therefore the most effective way to help users locate particular signs quickly and understand their general function.

Cycling Wayfinding Signs

The Ontario Traffic Manual has assigned colours to various classes of signs. Guide signs used on Ontario's streets have the following colour combinations:

- **White** message and border on **Green** – recommended for route identification signs, street name blades, and destination signs including those for cycling wayfinding. Also used for specific traffic generator marker signs such as bus station, train station, airport, ferry, university / college,
- **White** message and border on **Blue** – recommended for specific destination markers such as hospital, emergency helipad, and public telephone, and for services such as picnic area, scenic lookout, and public boat launch

- **Black** message and border on **White** – used for some destination markers with regulations such as carpool lot (with green permitted circle)

Ontario's Tourism-Oriented Directional Signing (TODS) is white on blue; bicycle rental operations are included as an eligible service.

Colours on tab signs should be the same as on the primary sign

Sign borders frame the message content and make it easier to read when displayed as part of a sign assembly. Non-retroreflective borders, typically 10 to 15 mm wide, should be inset (i.e. black borders); retroreflective borders may be inset or edge borders.

Pedestrian Wayfinding Signs

Typically destination signs are white on green and service signs are white on blue, aligning with the recommendations for cycling wayfinding signs. However, these signs may vary in colour to reflect municipal and local branding or preferences.

Maps are recommended to be designed using high tonal contrast.

Ontario Regulation 413/12 of the Accessibility for Ontarians With Disabilities Act (2005) specifies for trailhead signs that the text has high tonal contrast with its background in order to assist with visual recognition.

Exhibit 3-1: Standard Print Colour Specifications as per OTM Book 2

COLOUR NAME	PANTONE® MATCHING SYSTEM (PMS)	PROCESS COLOUR			
		Cyan (C)	Magenta (M)	Yellow (Y)	Black (K)
Green	342	100	0	69	43
White	N/A	0	0	0	0
Blue	294	100	56	0	18.5
Black	426	0	0	0	100

3.4 Graphic Standards

Graphic standards should be based on:

- Ontario Traffic Manual, Book 2 Sign Design, Fabrication and Patterns including the Electronic Master Sign Library with files in Adobe® Illustrator® (ai) and Adobe® Acrobat® (pdf) format
- Transportation Association of Canada's Sign Pattern Manual that includes with files in Adobe® Illustrator® (ai) and Adobe® Acrobat® (pdf) format .eps and .pdf file formats, Encapsulated PostScript (eps) format
- Metrolinx / GO Transit Static Signage Catalogue, October 2011

3.5 Identifying Destinations

The major focus of these guidelines is how to guide cyclists along the cycling network to the places they want to go. In order to do this, a set of destinations and their names must be agreed regionally in order to meet the principles of simplicity and predictability. A hierarchy of destinations is necessary in order to prioritize which destinations to include when there are too many possible destinations than can fit legibly on a sign.

Destination wayfinding signs may be installed on "regionally significant" routes to guide cyclists to the following destinations:

- Major tourist attractions of Regional Significance as defined by regional tourism
- Public trails
- Municipalities
- Downtown areas, rural hamlets and BIAs
- Major public transit hubs / stations
- Bike shops / bike service centres / bike rental facilities / bike pumps or repair stations
- Public washroom facilities
- Schools and post-secondary institutions
- Major municipal or Regional roads
- Public community / recreational centres

When used on Trails, signs that provide information for services and amenities, distinct from on-street destination signs, may be useful including:

- Toilets
- Water
- Rest or picnic area
- Air pump
- Repair station
- Bicycle shops or rentals
- Transit stations

Exhibit 3-2 Sample Destinations



Markham City Centre



Unionville GO Station



Canada's Wonderland



Highway 7 Bicycle Lanes

One of the first steps in the development implementation of wayfinding signs for York Region, will be an exercise to identify and list assets that should be signed in each implementation area or along specific corridors. There will often be many destinations suggested as candidates to sign and it will be difficult or impossible to resource signing them all. For each area or corridor where destination wayfinding signs are to be installed, the following considerations can be reviewed in order to choose which destinations will be featured on the signage. These considerations may be used to narrow down an initial list of candidate destinations.

Demographics - Signage systems should be tailored to meet the needs of the area's demographics. For example, communities with a permanent population of elderly people will have very different needs to a neighbouring community that attracts a lot of tourists, but has a small permanent population. If local facilities attract users or visitors during the normal business season that do not reside in the area of the facility, then it can be considered for designation as a tourist destination.

Areas of interest - Identify schools, hospitals, shopping areas (including the location of main entrances in larger shopping complexes) and tourist attractions, as well as the major origins and destinations, and identify the type of transport or route people take to reach them.

Walking distances to public transport - Provide maps linking transport hubs with major activity centres (for example schools, universities and shopping areas).

Major walking, cycling and accessible routes (formal and informal) - Consider the condition and use of existing routes. Identify the areas where pedestrians, people with impaired mobility and cyclists might need help finding key destinations while avoiding obstacles (for example major intersections).

Potential journeys - Identify alternative routes that are quicker, safer, or more scenic.

Key crossing points over waterways, railways and major roads / freeways - Identify alternative routes to less comfortable routes that provide access to limited crossings of key barriers.

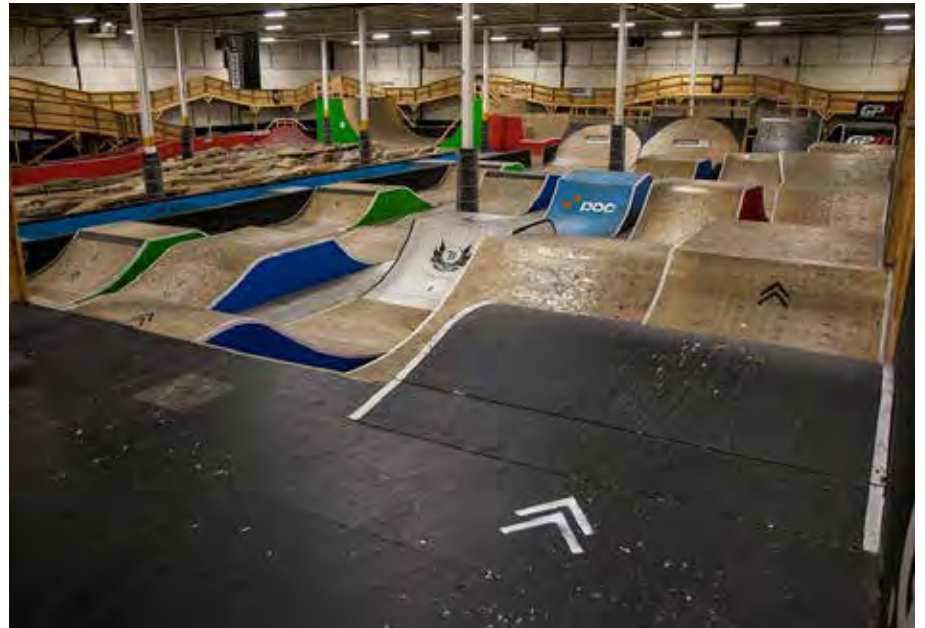
Existing signage - Review its location, condition and whether it needs to be upgraded or replaced.

Generally speaking, only public assets or institutions such as schools, hospitals, heritage sites or tourist attractions should be promoted on wayfinding programs that are publicly administered. Major shopping malls, or shopping or business districts may be considered if they function as a significant landmark in the area, but individual private businesses should not be promoted by a publicly-funded wayfinding system. It is recommended that a strong rationale for regional significance be documented for why it is that any private for-profit destinations be included on publicly funded wayfinding signage, as other businesses will likely wish to receive the same treatment once they see that private businesses are being promoted.

Exhibit 3-3 Sample Destinations (cont.)



Historic Unionville



Joyride 150 Indoor Bike Park



McMichael Gallery



Pacific Mall

3.6 Displaying Destination Information



For Walking:

Destination signage directed to pedestrians may use the pedestrian symbol on the left of the destination symbol and word legend.

Distances should be displayed in metres.

Distances should be shown to the nearest 50 m when more than 50 m away from the destination, and the nearest 10 m if less than 50 m away.

Destinations should be signed up to 900 m away equivalent to a walking time catchment of 5-10 minutes at a walking speed of 1.5 to 3 m/sec (5 to 10 km/h).



For Cycling:

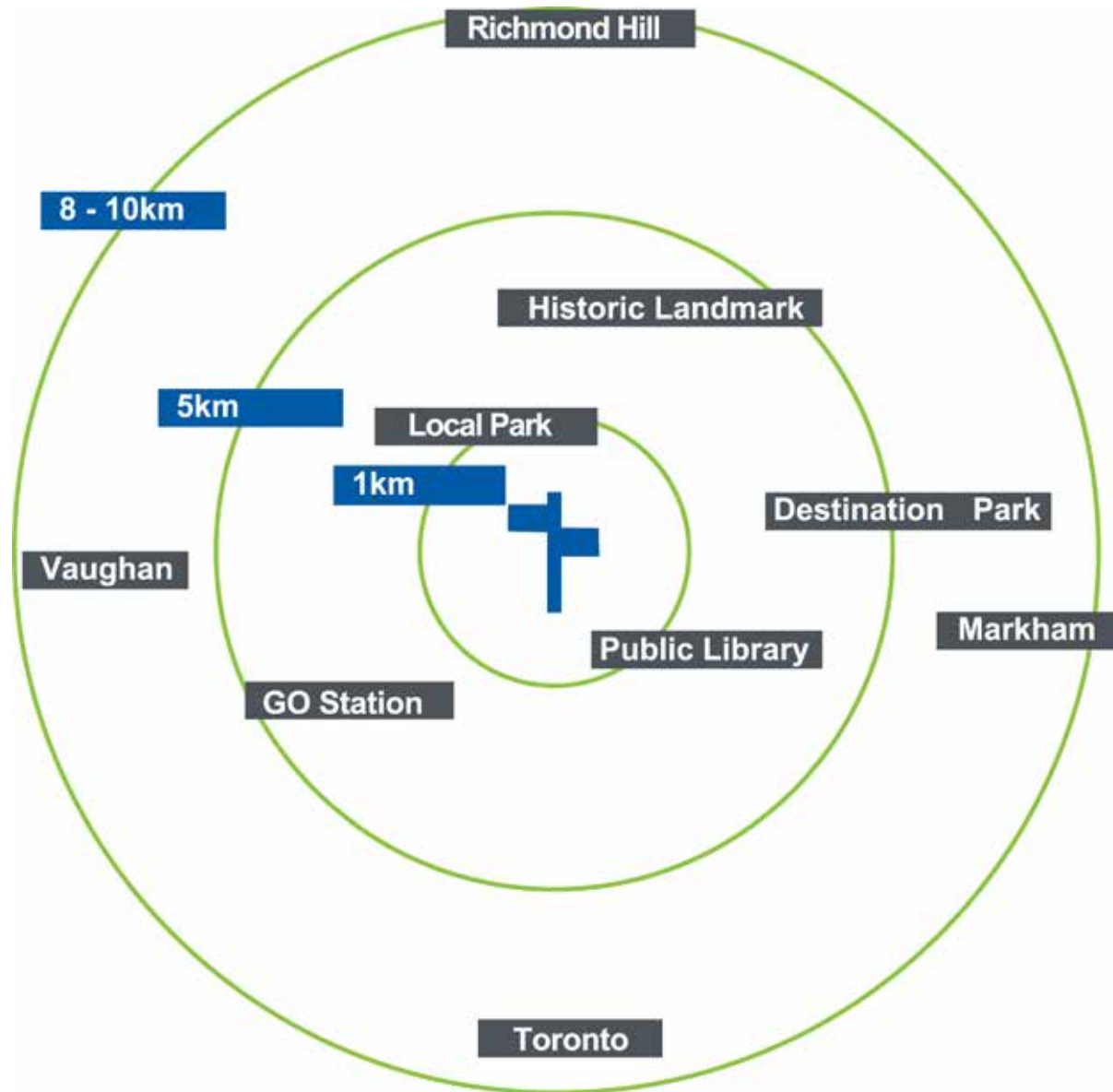
Destination signage directed to cyclists shall use the bicycle symbol on the left of the destination symbol and word legend.

Distances should be displayed in kilometers.

Distances should be shown to the nearest 1 km when more than 800 m or more away from the destination, to the nearest 0.5 km when between more than 300 m and 800 m away, and no distance is required if 300 m or less away.

Destinations should be signed up to 10 km away equivalent to a cycling time catchment of 25-40 minutes at a cycling speed of 15 to 25 km/h.

Exhibit 3-4: Travel Distances and Appropriate Destination Types for Cyclists



Destination hierarchy based on distance and destination type can be used to assess, select and prioritize primary, secondary and tertiary destinations. Longer, more continuous routes can focus on signing primary, secondary and tertiary destinations; shorter routes should focus on nearby destinations at the primary or secondary level depending on the length of the route.

The Exhibit 3-4 visualizes a conceptual distribution of different destination types for inclusion on cycle wayfinding signs. Destinations are distributed across three groups according to their distance from the decision point where the sign will be placed.



4.0



CYCLING WAYFINDING SIGNS

4.0 Cycling Wayfinding Signs

Cycling wayfinding will typically be used to help people follow routes that are part of a cycling network. This may include signs that identify quiet local streets, and connections to more obvious cycling facilities, such as painted bicycle lanes, cycle tracks or multi-use trails. Signage that describes distance and destination information can be provided along cycling routes of any type in order to help cyclists orient themselves to nearby destinations.

4.1 Principles



Bicycle Route Identification Signs

These signs assist users in locating and following along a particular cycling facility, which may require turns. They also confirm to users that they are still on a specific cycling route, particularly on longer sections, and have not lost their route. They are also used to identify off-road trails where they intersect roads.



Bicycle Route Directional Signs

These signs inform users of changes in direction of a route, where to make turns, or inform the user that they are traveling 'to' another route or trail.



Destination Decision Signs

These signs show the direction and distance to nearby destinations at key decision points or intersections that are of interest to people cycling along the route.



Destination Confirmation Signs

These signs assure the user that they are on the correct route towards one or more destinations after making a turn or after a major intersection. There are also used along longer sections of a route to a destination, i.e. spaced 3 km, as assurance.



Advance Signs

When Bicycle Route Directional Signs or Destinations Signs at turn-offs are not conspicuous, Advance Signs are used to inform users of upcoming turn-offs to destinations. Advance signs are typically not required for people who are cycling because they are travelling at speeds less than 60 km/h.

Signing of cycling routes and destinations must consider if the routes are comfortable for a wide range of cycling abilities. Where traffic speeds and volumes are higher than 1,000 vehicles per day and traffic speeds are at or above 40 km/h, a dedicated cycling facility is desirable and may be designed to help cyclists follow the cycling route. Dedicated cycling facilities, such as bike lanes and paths in the boulevard will therefore be the preferred facility type for the majority of York Regional roads. Routes and destinations that cannot be reached by a combination of low volume / low speed streets, multi-use trails and dedicated cycling facilities on busier roads should not be signed.

A system of Destination Decision and Confirmation signs may be installed on a cycling route or network independent of the Bicycle Route Identification and Directional signs.

4.2 Bicycle Route Identification Signs

There are two types of Bicycle Route Identification signs:

- Integrated Bicycle Route Identification Street sign mounted on street sign posts
- Standalone Bicycle Route Identification signs

Post-mounted Integrated Bicycle Route Identification Street Sign

Exhibit 4-1: Integrated Route Identification Street Sign 600mm x 150mm



The Integrated Bicycle Route Identification Street sign (Exhibit 4-1) adds a bicycle symbol to the post-mounted Street Name signs. A system of these signs is recommended over a system of Standalone signs in order to minimize and simplify the number of signs. Because users are familiar with the standard location and placement of Street Name signs, they are more conspicuous than Standalone signs. Bicycle Route Directional signs, including turn-off and advance signs, are typically not required with the Integrated signs. The number of signs are minimized, and their placement and the users' expectations of where to look for them is simplified. It is an elegant approach that communicates information clearly with a minimum number of signs to manufacture, install and maintain.

The Integrated system of signs reduces the overall amount of sign "clutter" present in the public realm. Some Standalone signs may still be necessary to provide clarity if the cycling route deviates from the street network.

Where overhead, mast-arm mounted signs are used to identify street names, bicycle routes will be identified by separate post-mounted Bicycle Route Identification Street signs.

This integrated system is popular in Vancouver, and has been adopted within the GTHA by the Town of Ajax (Exhibit 4-2). Incorporating information into signage that road users are already in the habit of looking for allows for a more intuitive approach. These are then supplemented with destination signs at decision points in the cycling network.

Exhibit 4-2: Photo of Integrated Route Identification Street Sign in the Town of Ajax



Standalone Bicycle Route Identification Sign

Exhibit 4-3: Stand-alone Bicycle Route Identification Sign, (OTM sign M511)
450mm x 450 mm



Standalone signs (Exhibit 4-3) are useful when signing a route or cycling facility that is made up of a number of short segments of streets with numerous turns. These signs require an agency to support a separate cycling route signing system from the street name sign system, in terms of manufacturing, **installing and maintaining a separate set of signs. This sign is recommended in both TAC and OTM Book 18 with the word “ROUTE” included to improve comprehension.**

This sign is applicable to shared roadways with traffic speeds less than 1,000 vehicles per day and traffic speeds below 40 km/h, and paved shoulders. On roads with facilities for the exclusive use of cyclists, such as bicycle lanes and raised cycle tracks, the Reserved Bicycle Lane sign (OTM sign Rb-84 and Rb-84A) shall be used instead of the Bicycle Route Directional sign.

The Standalone Identification signs are typically supplemented with Bicycle Route Directional signs.

Bicycle Route Identification Signs may identify routes along multi-use paths. The paths may be identified by other local, regional, provincial or national route signage such as the Nokiidaa Trail, Greenbelt Route, etc. All applicable route identification signs should be placed on the same signpost. In order to ensure legibility and a coherent sign information hierarchy, the signs should be the same size. Route information should be positioned based on the significance of the route being communicated. The convention is to place National routes on top, followed by Provincial, Regional and then Local route information.

Exhibit 4-4: Example sign assembly for two overlapping routes with higher-order regional route on top of local route signage



4.3 Bicycle Route Directional Signs

Directional signs provide information about turn-offs and connections to cycling routes (Exhibit 4-5). They can be used with the Standalone and Integrated Bicycle Route sign systems.

Arrow tab signs are used to communicate when the cycling route or facility makes a turn. It is particularly useful with the Integrated Bicycle Route Street sign system when a cycling route ends on one street, turning onto another street.

The “TO” tab sign is used to communicate important connections to nearby cycling routes or facilities that are not made apparent by the Bicycle Route signs on their own. For example, the Integrated Bicycle Route Street sign may be installed on two parallel routes; the “TO” sign can be used to sign an important connection between the two. It must be used with the appropriate Arrow tab sign showing the direction in which the cycling route can be found.

The “BEGINS” and “ENDS” tab signs are used to communicate when a bicycle route begins or ends abruptly. Generally the cycling network should provide sufficient connections such that these signs are not necessary. However, when a cycling route begins or ends abruptly, particularly during interim conditions, these signs may be installed.

Arrow and “BEGINS” and “ENDS” tab signs are mounted below; “TO” tab signs are mounted above the Standalone Bicycle Route Identification sign. These sign assemblies are placed before the intersection where the turn will be made. They must be conspicuous enough that users can see, interpret and act upon the information. If they are not conspicuous at the turn, then an Advance sign should be installed (see Advance Signs).

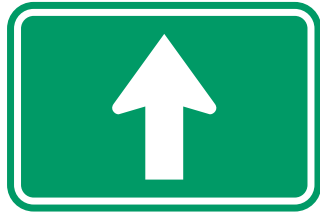
If there is more than one Bicycle Route with turns at an intersection, then the signs are mounted as an assembly beside each other – one Standalone Bicycle Route Identification sign for each route with the appropriate Arrow sign mounted below each. The one with the left turn is located on the left side of the assembly, and the right turn on the right side.

All tab signs are the same colour as the main Bicycle Route Identification sign that they supplement, white on green.

Exhibit 4-5: Bicycle Route Identification sign (OTM sign M511) with sample Tab signs
Stand-alone side-mounted on road or trail:
450mmx450mm sign with
450mmx300mm tab above or below



Exhibit 4-6: Family of Directional tab signs
 450mmx300mm tab
 Straight Arrow tab (TAC IS-7)



Left and Right tab



TO Route tab (TAC sign IS-17)



Left Arrow tab (TAC IS – 8L)



Left Arrow tab (TAC IS 9-L)



Route BEGINS tab (TAC IS-16)



Right Arrow tab (TAC IS-8R)



Right Arrow tab (TAC IS – 9R)



Route ENDS tab (TAC IS-15)



Exhibit 4-8: Bicycle Route Identification sign in the City of Vaughan

When communicating directions to named trails or routes, such as the Greenbelt Route or Lake to Lake Route, the “TO” and arrow tab signs can be combined with the named trail or route sign and installed at decision points on the cycling network, as shown in Exhibit 4-7.

Exhibit 4-7: Sample Bicycle Route Directional tabs combined with named trail / route signs



4.4 Destination Information Signs

Destination Decision signs (Exhibit 4-9) assist users in finding a route to destinations within a reasonable cycling distance. A person's decision to walk, cycle or drive may be made based on the distance to the destination and how much time they wish to spend travelling. The Destination Decision signs, therefore include distance. Decision signs are placed at decision points to notify cyclists of upcoming turns and changes in direction to find destinations in such a way that they can maintain movement and are able to make the appropriate turn. They can be supplemented by Destination Confirmation signs, and Advance Destination Decision signs if the sign is not conspicuous.

On shared rights of way, signing of destinations for motorists will generally fulfill the needs of cyclists. Separate signing is necessary only when cyclists are directed to cycling routes that differ from those of motorists, or for destinations that are of interest only to cyclists.

The sign is made up of the following elements:

- **Arrow** in the direction of the turn-off to the destination. Arrows pointing left and straight (up) should be located at the extreme left of the sign; arrows pointing right should be located on the extreme right of the sign.
- **Bicycle symbol** located on the left side of the destination name word legend.
- **Destination name.** Naming of destinations and use of abbreviations must be consistent.
- **Symbols** associated with the destination name, if used, should be to the left of it but to the right of the bicycle symbol.
- **Distance numerals** followed by the abbreviation 'km' shall be placed to the right of the destination name.

When more than one destination is signed at one time, then the following principles should be followed for sign assemblies:

- Generally Destination Decision wayfinding sign assemblies should not exceed four signs.
- Destination Decision signs in one assembly should all be the same width.
- Sign assemblies should present information in a descending order of importance. Sign assemblies should generally present the information about the through movement first, followed by the left, and then the right movement.
- At intersections, one destination is signed for each route leaving the intersection (three for a four-legged intersection, two for a T-intersection), selecting the major destination or the destination nearest the junction. Additional destinations can be added on subsequent directional or confirmation signs.
- Generally Destination Decision wayfinding sign assemblies should not exceed four signs.

Exhibit 4-9: Destinations Decision Signs

One location: 900 mm x 150mm

Two locations: 900mm x 300mm

Three locations: 900mm x 450 mm

Types of destinations to be signed are discussed in Section 3 Identifying Destinations and Section 3.2 Displaying Destination Information. **Destinations that cannot be reached by a combination of low volume / low speed streets, multi-use trails and dedicated cycling facilities on busier roads should not be signed.**



4.5 Destination Confirmation Signs

Confirmation signs provide users reassurance after a decision point that they have taken the correct turn towards their destination. These signs are placed within a short distance following a decision point, or at regular intervals along longer routes, i.e. spaced approximately 3 km apart.

The sign is made up of the following elements:

- **Bicycle symbol** located on the top of the sign or sign assembly.
- **Destination name.** Naming of destinations and use of abbreviations must be consistent.
- **Symbols** associated with the destination name, if used, should be to the left of it.
- **Distance numerals** followed by the abbreviation 'km' shall be placed to the right of the destination name.

Arrows are not required since the Destination Confirmation sign is placed on the route to the destination. If turns are required farther along the route, then another Destination Decision sign is placed followed by the associated Confirmation sign.

When more than one destination is confirmed at one time, then the following principles should be followed:

- Generally not more than four destinations should be listed on one sign.
- Destinations should be listed in ascending order of distance with the closest destination first.

Types of destinations to be signed are discussed in Section 3 Identifying Destinations and Section 3.2 Displaying Destination Information.

[Exhibit 4-10: Photo of Destination Signs used as part of Route Verte system in Quebec](#)



Exhibit 4-11: Destination Confirmation Signs

One location: 600 mm x 150mm

Two locations: 600mm x 300mm

Three locations: 600mm x 450 mm



4.6 Pavement Markings for Wayfinding

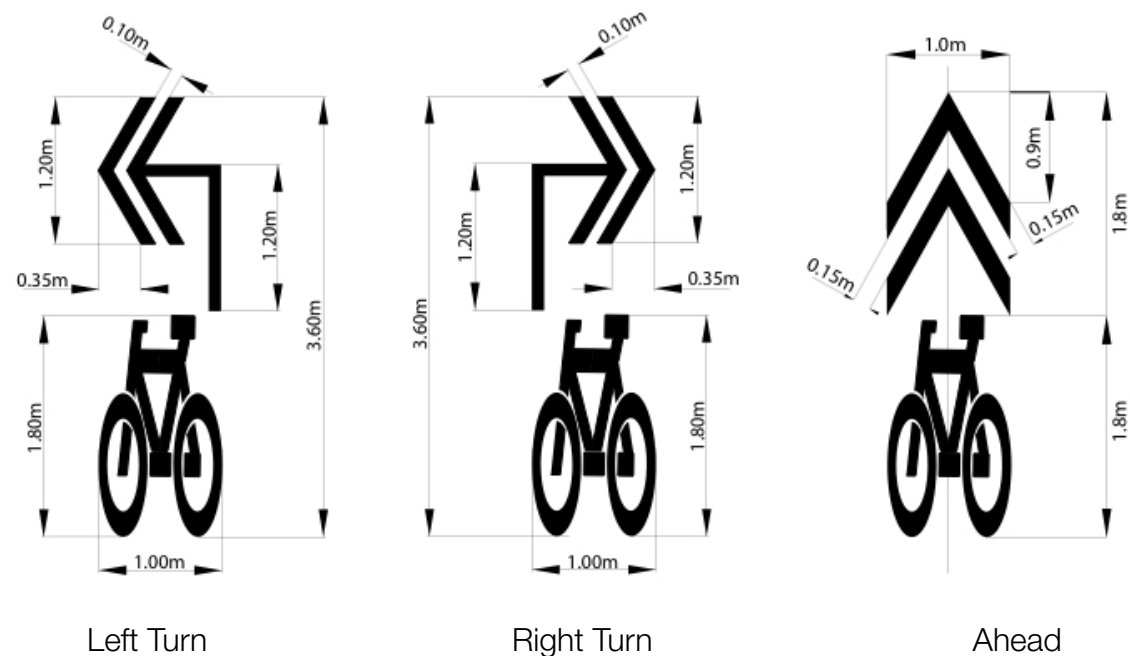
Pavement markings can complement wayfinding signs to facilitate navigation.

Shared Lane Pavement Marking or “sharrow” is a pavement marking that is composed of a bicycle symbol and two white chevrons. For cycling routes on quiet streets, this type of marking can support wayfinding signage, to ensure that turns are not missed. This type of marking is recommended for streets where the traffic volumes are below 1,000 vehicles per day and traffic speeds are at or below 40 km/h.

The Confirmation sharrow, as shown in Exhibit 4-12, can be used in 2 locations within the width of a roadway:

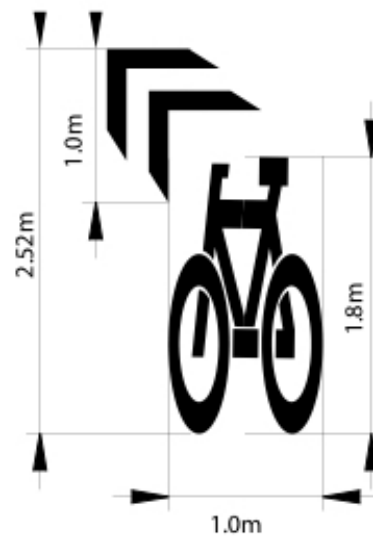
- Where there is sufficient width for a cyclist and motorist to share a single lane side-by-side, the Confirmation sharrow is placed with the points of the chevrons 1m away from the face of the curb, providing cyclists room to manoeuvre and allowing them to avoid debris and catchbasin grates.
- Where there is insufficient width for a cyclist and motorist to share a single lane side-by-side, the sharrow is moved to the centre of the lane, indicating to both cyclists and motorists that cyclists are encouraged to ride in the centre of the lane.

Exhibit 4-12: Left, Right and Ahead Confirmation Sharrows
Source: City of Toronto Wayfinding Guidelines



Where there is a verge in the road (as opposed to a hard turn) a bear left / bear right sharrow pavement marking may optionally be used, instead of the turn left / turn right sharrow.

Exhibit 4-13: Bear Left Confirmation Sharrows
Source: City of Toronto Wayfinding Guidelines



5.0

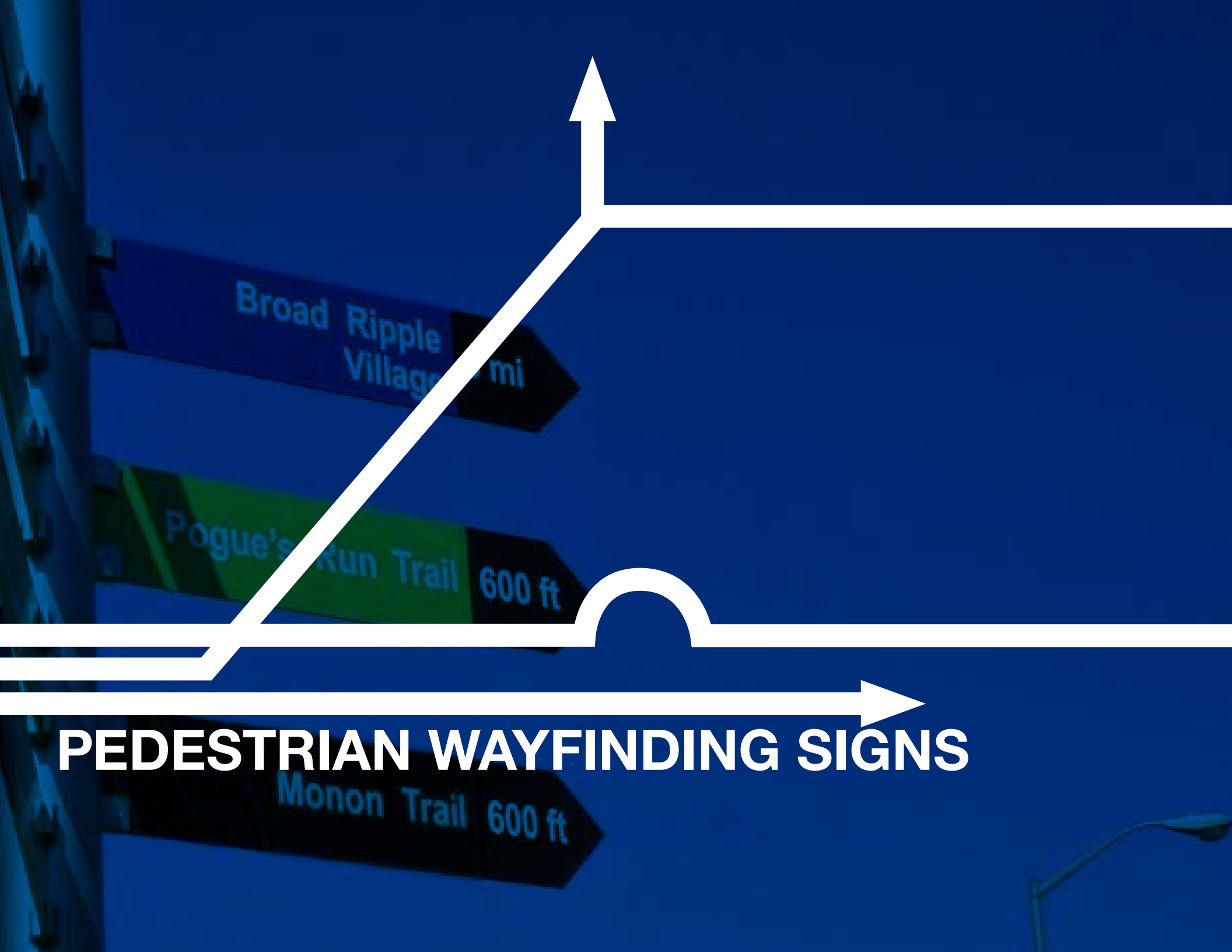
4 mi Fountain Square

3 mi Indiana Avenue

2 mi The Canal District

1.5 mi Wholesale District

Mass Ave



PEDESTRIAN WAYFINDING SIGNS

5.0 Pedestrian Wayfinding Signs

Wayfinding signage designed for pedestrians helps to foster an environment where people wish to discover new places. The provision of information may help build people's confidence to walk in places and for distances that they have not tried before. The signage supplements their understanding of how to get somewhere on foot, replacing their reliance on driving, or overcoming indirect public transit route options.

Wayfinding designed for pedestrians generally focuses less on distinct routes, and more on highlighting areas and destinations of interest. Pedestrian wayfinding, therefore, predominantly focuses on destination signs.

5.1 Principles



Destination Fingerboards

These signs installed in pedestrian areas show the direction and distance to nearby destinations.



Map / Information Totems

Map totem signs are information-rich, wayfinding signs that can include a variety of information around a map about multiple destinations placed within a pedestrian area.



Trailhead Signs

Ontario Regulation 413/12 of the Accessibility For Ontarians With Disabilities Act (2005) specifies that a recreational trail must have at each trail head, i.e., where the trail begins or where major sections of the trail begin, signage that provides specific information about the accessibility of the trail. Additional information including a map, destinations, trail etiquette, etc. can be added.

5.2 Directional Signs

Destination Decision signs for pedestrians are in the form of one or more fingerboards mounting on a single post with each fingerboard pointing in the direction of the destination. They are intended for high pedestrian activity areas such as:

- Transit hubs
- Major pedestrian intersections in town centres
- Public plazas

The sign is made up of the following elements:

- **Arrow** placed at the end of the fingerboard farthest from the post. It points in the same direction as the fingerboard, i.e., if the fingerboard is mounted to the post on right side of the sign, a left arrow is located on the extreme left side of the sign; if the fingerboard is mounted to the post on the left, a right arrow is located at the extreme right side of the sign.
- **Destination name.** Naming of destinations and use of abbreviations must be consistent is recommended to be in a sans serif font.
- **Symbols** associated with the destination name, if used, should be to the left of it.
- **Distance numerals** followed by the abbreviation 'm' shall be placed to the right of the destination name.
- **Pedestrian symbol** is optional. If used it is placed on the right side of the sign to the right of the destination name.

This type of sign requires the information to be provided on both sides of the fingerboard to be seen by users traveling in all directions.

Pedestrians travel at a relative slow speed so are able to take in more information at one time and can stop easily to read more information. When more than one destination is signed at one time, then the following principles should be followed for sign assemblies:

- Generally Destination fingerboard assemblies should not exceed three to four signs pointing in any one direction to simplify the information and reduce sign clutter.
- Fingerboards in one assembly should all be the same width.
- Fingerboard assemblies should present information in a descending order of importance. Typically the major destination is signed first above minor destinations; however, if all destinations are of equal importance, then the nearest destination is on the top with distances to destinations increasing on subsequent signs below it.

Types of destinations to be signed are discussed in Section 3 Identifying Destinations and 3.2 Displaying Destination Information.

Exhibit 5-1: Destination Fingerboard
850mm x 215mm (colours used may vary based on corporate identity and/or preferences of the Town/City where the system is being installed)

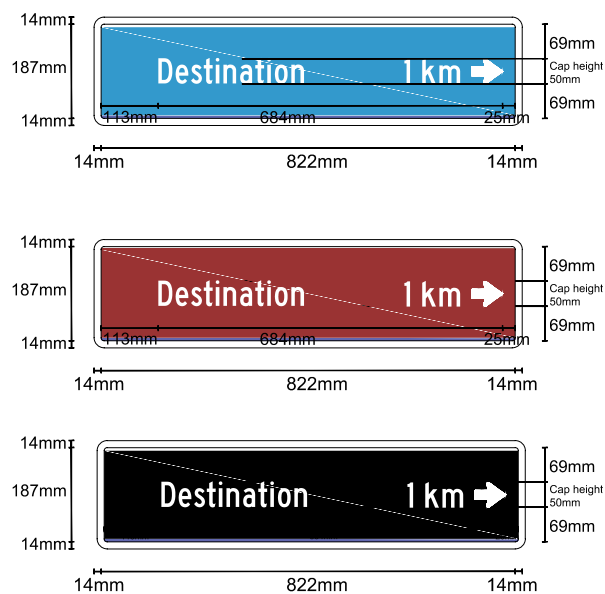


Exhibit 5-2: Sample assembly of Destination fingerboards on one post.



Exhibit 5-3: Pedestrian Destination fingerboard, City of Barrie



Exhibit 5-4: Sample Map / Information Totem

5.3 Destination Information Signs

Totems or panel signs are highly visual with information on destinations and services and include large, comprehensive maps. They illustrate information that helps pedestrians orient themselves within a neighbourhood or district so that they may walk short distances to nearby destinations. They are generally located in high pedestrian activity such as:

- Transit hubs
- Major pedestrian intersections in town centres
- Public plazas

They may standalone or complement nearby Destination fingerboards.

Essential elements on Map / Information totems include:

- **Name** of neighbourhood or district where it is located
- **One to three destinations with directional arrows and distance.** Average walking time is optional. Types of destinations to be signed are discussed in Section 3 Identifying Destinations and 3.2 Displaying Destination Information.
- **Main map** with “you are here” symbol and five minute walk radii
- Smaller **Context map** with “you are here” symbol.
- **Supplementary interpretive information** is optional, such as a description or photograph of nearby cultural, heritage or natural features.
- **Contact and emergency information**
- **Legend** on the bottom

The maps should include street name labels, plus named alleys, laneways and side streets with high tonal contrast between the mapped information and map background. Other map totems in the area can be included on the map. Once a map design is established, it should be reproduced in several places.



5.4 Trailhead Signs

Trailheads are established to provide access to trails, where they begin, intersect major roads or intersect other major trails. They typically have some amenities such as parking (for motor vehicles and or / bicycles), gateways, visitor kiosk, trash / recycling receptacles, benches, or picnic tables, etc. Trailheads and the associated trails are generally outside of the roadway rights-of-way so the signs will be independent of information signs on the roadways.

Ontario Regulation 413/12 of the Accessibility for Ontarians With Disabilities Act (2005) specifies that a recreational trail must have at each trailhead signage that provides the following information:

- **Length** of the trail.
- **Type of surface** of which the trail is constructed.
- Average and minimum **trail width**.
- Average and maximum **running slope and cross slope**.
- The **location of amenities**, where provided.

The Regulation also specifies that the text on the signs must have a high tonal contrast with its background in order to assist with visual recognition. A sans serif font is required. If other media, such as park websites or brochures, are used by to provide information about the recreational trail, beyond advertising, notice or promotion, the media must provide the same information as listed above.

Other information that may be included on the trailhead sign includes:

- **Map** illustrating the trail route and network, “you are here” symbol, nearby cycling facilities or network, location of amenities.
- **Supplementary interpretive information** is optional, such as a description or photograph of cultural, heritage or natural features in the area.
- **Trail user etiquette information.**
- **Contact and emergency information along with important location information** for first responders to locate the trail in case of an emergency.
- **Legend** on the bottom.

Exhibit 5-5: Sample Trailhead sign

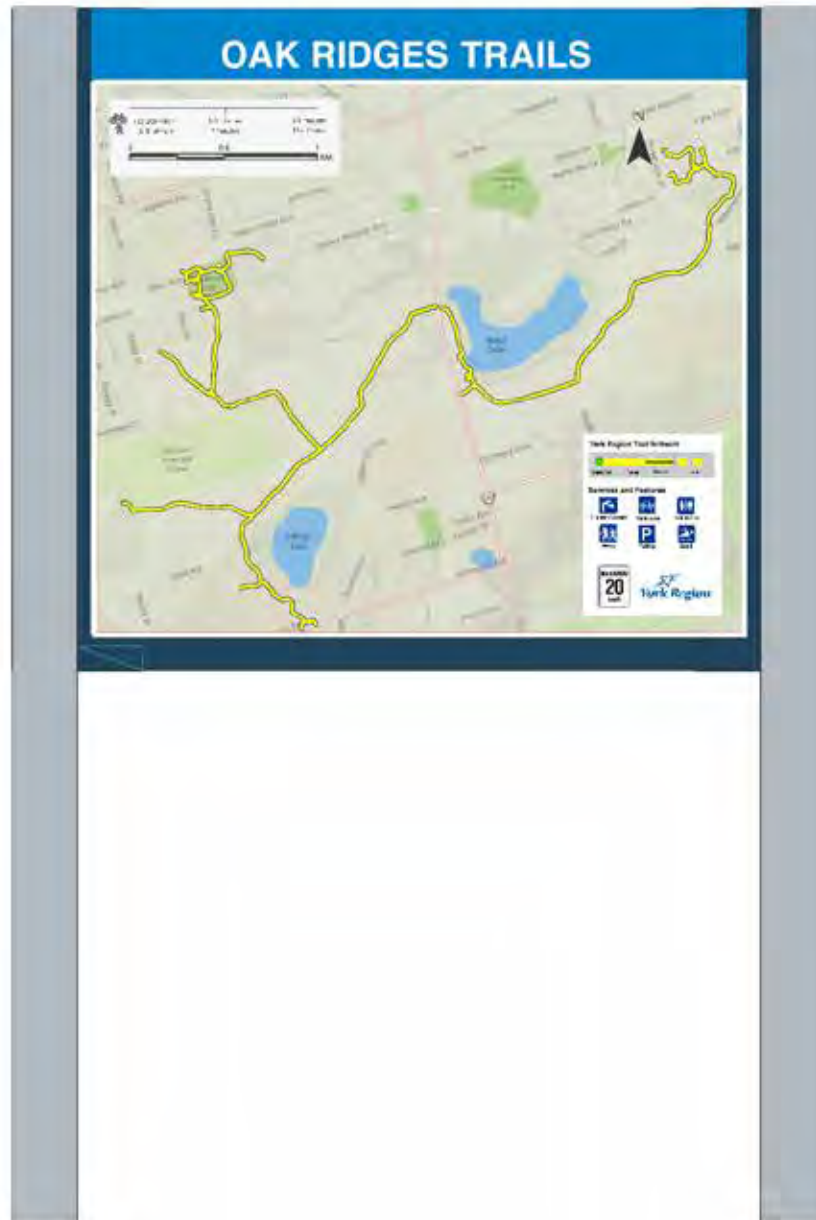


Exhibit 5-6: Oak Ridges Corridor Conservation Reserve Trailhead

OAK RIDGES CORRIDOR CONSERVATION RESERVE

Oak Ridges Corridor Conservation Reserve (ORCCR) is comprised of approximately 600 hectares of green space in the heart of the Oak Ridges Moraine. This area serves to protect the headwaters of the Humber and Rouge Rivers and plays an integral role in the recharge of their waters. With over 15 km of maintained trails, visitors are given a window into one of the most diverse collections of habitat on the Oak Ridges Moraine. This property includes wetlands, kettle lakes and forests, supporting many unique wildlife and plant species. Large portions of the property are provincially designated as Areas of Natural and Scientific Interest for their physical and ecological values.

The ORCCR is made up of lands owned by the Province of Ontario and Toronto and Region Conservation (TRCA) and is managed by TRCA.

ATTENTION

- ORCCR is a rugged natural area;
- Trails are not winter maintained;
- Weather and trail conditions will vary;
- Staff presence is intermittent and emergency access is limited;
- Visitors enter the property at their own risk and bear full responsibility for their own safety;
- **IN CASE OF EMERGENCY CALL 911**

RECREATIONAL TRAIL RULES & ETIQUETTE

- No motorized vehicles;
- Dogs must be on leash at all times;
- All trails are multi-use; Cyclists must yield to pedestrians;
- Stay on designated trails and respect trail closures;
- Carry out all garbage, including pet waste;
- Do not light fires.

To access this trail map online, visit trca.ca/humber-river/trail-guides

PERMITTED ACTIVITIES:

Hiking

Cycling

Snowshoeing

Cross-Country Skiing

Bird Watching

Dog Walking

Geocaching is permitted in accordance with TRCA's Geocaching Policy, www.trca.ca/geocaching

Primary Multi-Use Trail and Secondary Trail Accessibility Information – Bathurst to Bayview

TRAIL	LENGTH (km)	TYPICAL SURFACE	USABLE SURFACE (%)	TYPICAL CROSS-SLOPE (%)	MINIMUM CROSS-SLOPE (%)	MAXIMUM SLOPE (%)	TYPICAL RAMP WIDTH (m)	TYPICAL TRAILHEAD
1017 Bathurst to Bayview (Public Access)	10.2	Grass	26.8	3.2	15.9	89.1	2.08	Chained Lanes Stone

Primary Multi-Use Trail Accessibility Information (no Secondary Trails) – Bayview to Bethesda

TRAIL	LENGTH (km)	TYPICAL SURFACE	USABLE SURFACE (%)	TYPICAL CROSS-SLOPE (%)	MINIMUM CROSS-SLOPE (%)	MAXIMUM SLOPE (%)	TYPICAL RAMP WIDTH (m)	TYPICAL TRAILHEAD
1012 Bayview to Bethesda (Public Access)	8.8	Grass	34.8	5.1	15.7	100	1.543	Chained Lanes Stone

LEGEND

- Forest Cover
- River
- Post Marker
- Parking Lot (NOT winter maintained)
- Trail Access

- Trailhead (Info Kiosk)
- No Public Access

RECREATIONAL TRAILS

- Primary Multi-Use Trail (Oak Ridges web-trail)
- Secondary Trail

If you have additional questions or concerns, please contact Toronto and Region Conservation Authority at 416-641-6600 or visit www.trca.ca

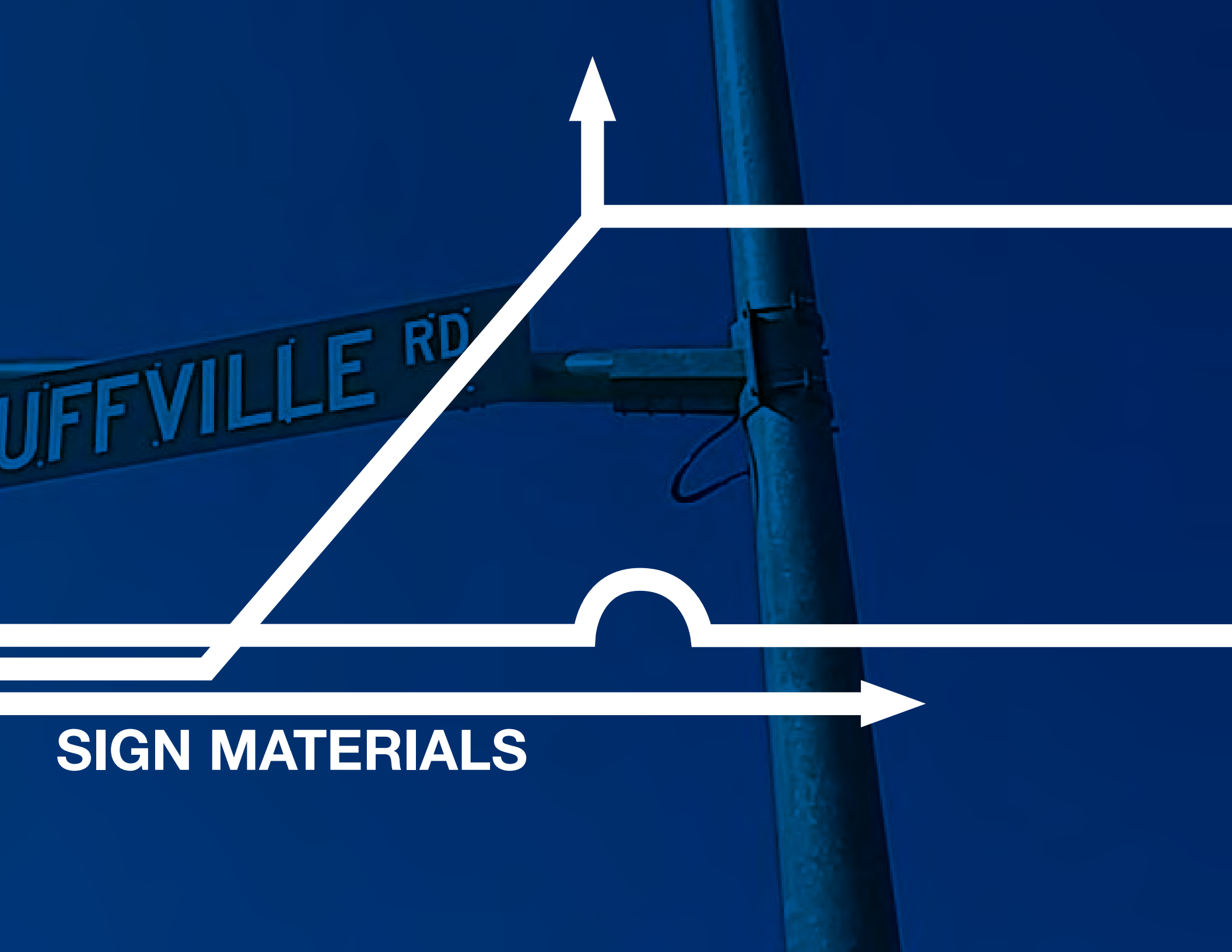


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6.0



UFFVILLE RD

SIGN MATERIALS

6.0 Sign Materials

Sign fabrication considers the materials for sign face, sign substrate to which the face material is applied, and supports such as posts, structures and hardware. These materials should be consistent, durable to withstand the elements, and cost effective in terms of fabrication and maintenance.

Some of the options for sign materials are presented in these guidelines. Sign material technology is continually evolving. New materials may be used if they have been sufficiently tested to demonstrate that they meet or exceed the performance characteristics of materials currently in use.

6.1 Cycling Wayfinding Sign Materials

Wayfinding signs erected in the public right-of-way are recommended to be fabricated to meet the Ontario Traffic Book 2 fabrication standards. Roadside signs are generally manufactured of adhesive sheeting screen printed with inks and coatings and with a computer cuttable overlay film. The sheeting typically degrades before the substrate and other components of the sign. Material guarantees are typically 7 to 10 years, and service life has been reported to range from 7 to 20 years or more depending on the sheeting.

The Ontario Traffic Manual requires signs that convey essential directional information that is relevant during the hours of darkness to be conspicuous at night, as well as the day. The colour of these signs must also appear the same at night as by day.

Material that reflects light back to the light source, i.e. headlights, is retroreflective. It is achieved by using a reflectorized, adhesive sheeting applied to the rigid sign blank for roadside signs. The standard for reflectorization in the Ontario Traffic Manual is in ASTM Specification D 4956-01a and subsequent revisions.

Little research has been done on the conspicuity of retroreflective signs at night intended for cyclists. Cycling wayfinding signs may or may not be illuminated by the headlights used on bicycles, depending on their field of illumination and strength. In addition, ordinary street lighting does not meet the requirements for sign illumination for road users. As an alternative, external or internal illumination may be used for signs. This should be considered for wayfinding signs at critical decision locations.

OTM Book 2 recommends sheeting grades from Type I to Type IV for permanent signing meeting ASTM Specification D 4956-01a (or its subsequent revisions). Cycling wayfinding signs erected within the street right-of-way are recommended to meet the municipality's sign sheeting grades for other roadside guide and information signs to provide consistency in terms of conspicuity and life cycle.

6.2 Pedestrian Wayfinding Signage Materials

The substrate material to which the sign face material is applied is typically fabricated from aluminum, steel, or plywood. Other, newer materials such as fiberglass, plastic, composites, recycled materials continue to be developed and may be considered if they have been sufficiently tested to meet or exceed the standards of conventional materials. OTM Book 2 references Ontario Provincial Standard Specifications for metal and plywood substrates, with York Region generally using aluminium for the substrate (OPSS 2001 and subsequent revisions).

A standard Integrated Bicycle Route Street sign, Standalone Bicycle Route Identification sign, or single Bicycle Destination Decision aluminium sign is expected to cost in the range of \$150 to \$350 per sign (2018 Dollars) to supply and install with a life span of typically 10 years. Non-standard sizes will cost more.

Pedestrian wayfinding signs erected in pedestrian activity areas can be made of a wide variety of materials. In selecting materials, consideration should be given to consistency in visual appearance and conspicuity, durability, and maintenance along with cost-effectiveness. Durability is influenced by weather, humidity, impact resistance (if hit by a vehicle or other object), graffiti, etc.

Pedestrian Destination Fingerboard signs can be made of materials similar to cycling wayfinding signs. A single sign is expected to cost in the range of \$150 to \$350 per sign (2018 Dollars) to supply and install with a life span of typically 10 years. Non-standard sizes will cost more.

A variety of options for Map / Information Totem signs and Trailhead signs are available; three common options are described below.

Map / Information Totems and Trailhead signs will vary significantly in cost depending on size, graphic material development, materials, installation methods, and in-situ conditions such as surface and / or subsurface conditions for installation and availability of power sources if illuminated. For planning purposes only, the cost to supply and install a 2-sided totem or trailhead sign is expected to range from \$6,000 to \$10,000 per sign (2018 Dollars).

Digital Printing

Digital printing signage presents information through a digital screen, encased in smash-resistant polycarbonate screen (such as cabinet-style signs).

Advantages

- More adaptable than other options - content is easily replaced, if or when information needs updating.
- Maintenance costs
- Can be backlit and is effective in urban areas where many pedestrians use the signs at night

Disadvantages

- Higher capital costs than other options
- Less damage resistant - graffiti or scratching can deface the surface, making the sign illegible.
- For urban areas, digital printing that can be backlit is recommended for pedestrian wayfinding maps / information totems.

Aluminium panels

Aluminum panels present information on a vinyl sheet with printed graphics and steel structural framing.

Advantages

- More adaptable than vitreous enamel panels - can be updated by re-printing content
- Lower capital and maintenance costs than other options

Disadvantages

- Less damage resistant than other options
- Less adaptable and greater costs for updates than digital signage
- Requires separate lighting for night-time viewing – cannot be backlit

Vitreous enamel panels

Vitreous enamel panels on a steel frame present information on a panel which appears glass-like while retaining the strength and durability of steel.

Advantages

- Lower capital and maintenance costs than digital signage
- More damage resistant than other options - hard-wearing and graffiti-resistant

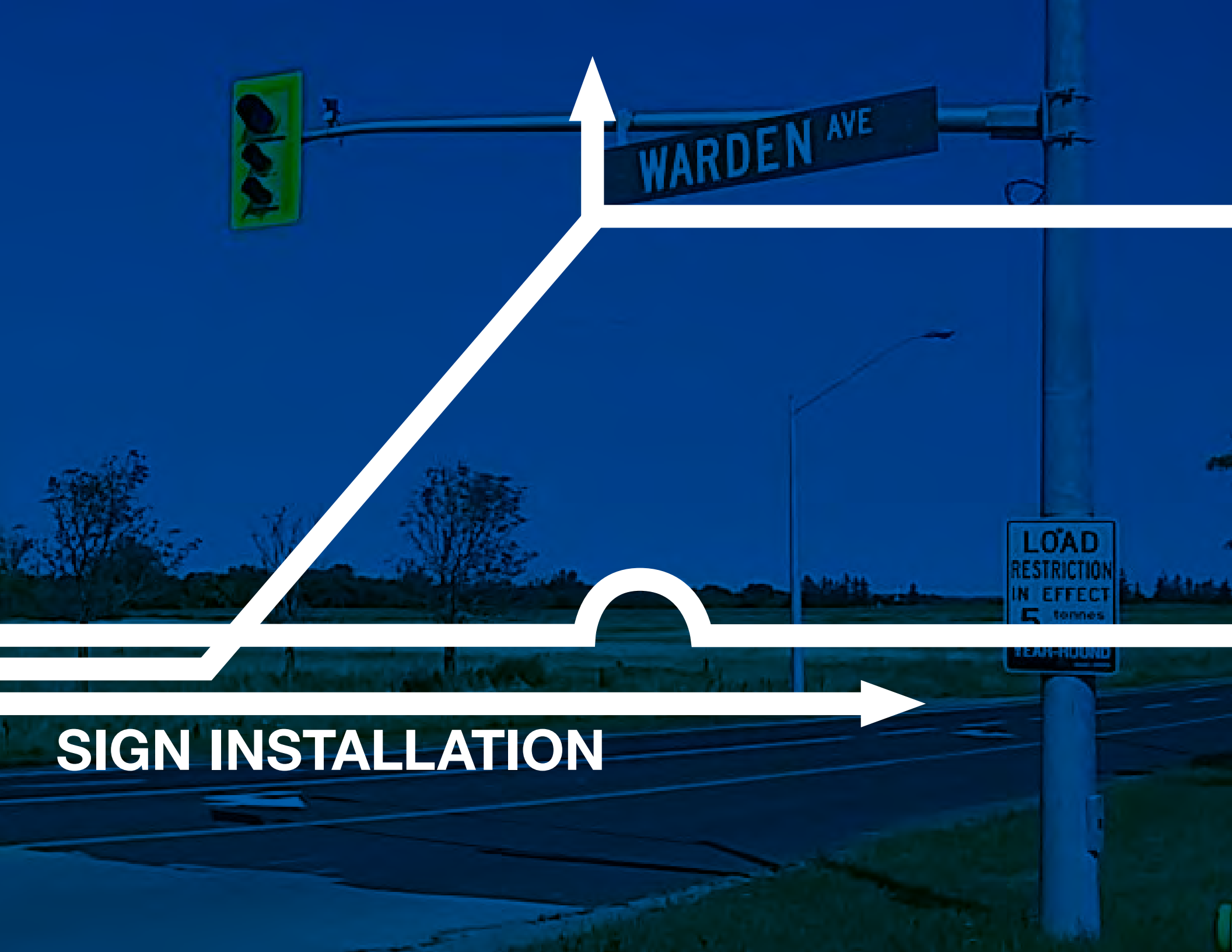
Disadvantages

- Less adaptable than other options - difficult to change content
- Requires separate lighting for night-time viewing – cannot be backlit





7.0



WARDEN AVE

LOAD
RESTRICTION
IN EFFECT
5 tonnes
YEAR-ROUND

SIGN INSTALLATION

7.0 Sign Installation

Wayfinding sign installation considers:

- Vertical clearance or protrusion of the sign in relation to the ground.
 - Lateral clearance of the sign in relation to the roadway, cycling facility or path.
 - Longitudinal spacing of various types of wayfinding signs in relation to destinations, decisions points, intersections and other signs.
-

Local conditions, such as vegetation, other signs, and fixed objects (bus shelters, buildings, utility cabinets, etc.), must be considered when the signs are actually installed. Appropriate adjustments will need to be made to ensure their visibility during daytime and nighttime.

Wayfinding signs may be mounted on the same posts as other guide and information signs but must NOT be mounted on the posts for regulatory, warning or temporary condition signs

7.1 Lateral and Vertical Clearances

Lateral clearance is specified to provide a safe offset between the user and the sign that is a fixed hazard near their path of travel. Vertical clearance is specified to provide the height of sign for visibility.

If lateral clearances cannot be met, then vertical clearances to users of a facility are required.

[Exhibit 7-1 Summary of Lateral and Vertical Clearances for Cycling Wayfinding Signs](#)

Cycling Wayfinding Signs

Lateral and vertical clearances for mounting cycling wayfinding signs adjacent roadways follows the requirements for roadside signs. Clearances associated with signs mounted adjacent multi-use paths are smaller unless the sign protrudes into the

lateral clearance, than a larger vertical clearance is required.

The lateral clearance and vertical clearances for cycling wayfinding signs mounted beside facilities are determined based on the type of facility as follows:

Facility				Lateral Clearance	
		Min.	Max.	Min.	Max.
Rural roadway Measured from the edge of paved shoulder to the near edge of the sign Exhibit 7-2	VERTICAL CLEARANCE	Min.	2.1 m	1.0 m	3.5 m
		Max.	2.5 m		
Urban street Measured from the face of curb to the near edge of the sign Exhibit 7-3	VERTICAL CLEARANCE	Min.	2.1 m	0.3 m	3.5 m
		Max.	3.0 m		
Multi-use Path Measured from the edge of the path to the near edge of the sign Exhibit 7-4	VERTICAL CLEARANCE	Min.	1.2 m	0.9 m	1.8 m
		Max.	1.5 m		
		Min.	2.5 m	If minimum lateral clearance to sign cannot be met; however, minimum 0.9 m lateral clearance to post is still required	

Exhibit 7-2: Vertical and lateral clearance for cycling wayfinding signs along rural roads

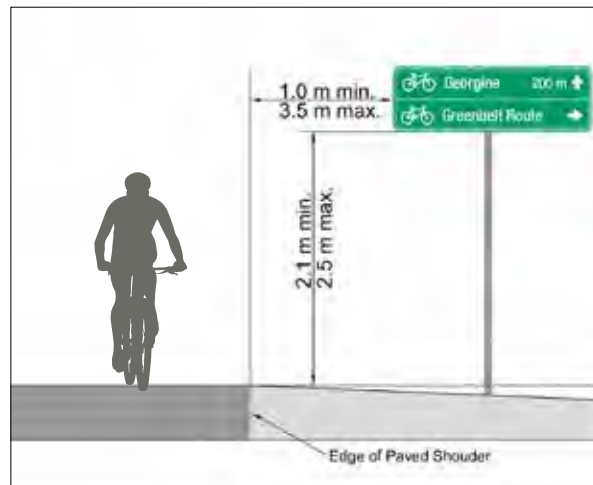


Exhibit 7-3: Vertical and lateral clearance for cycling wayfinding signs along urban road

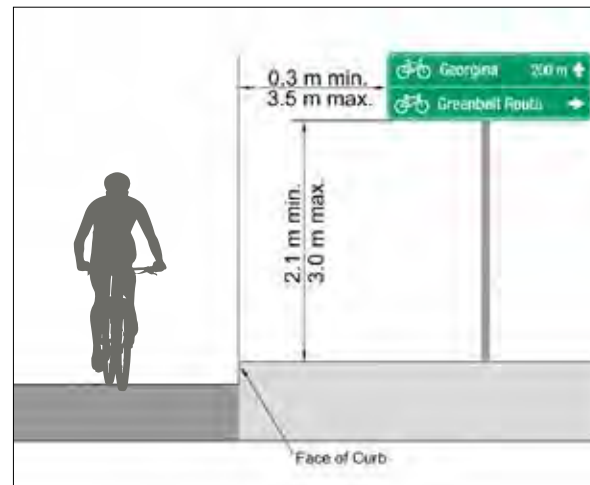
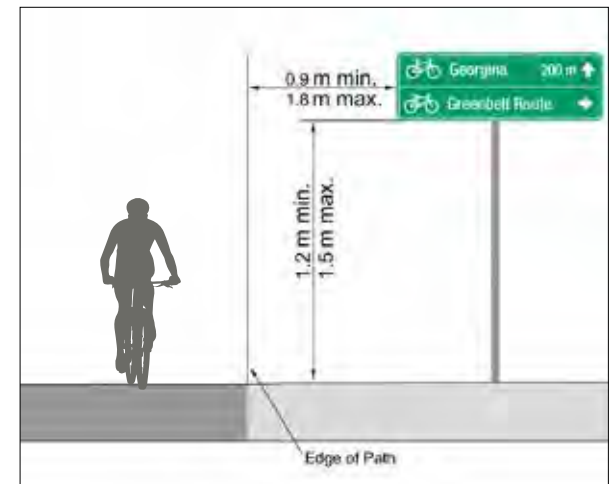
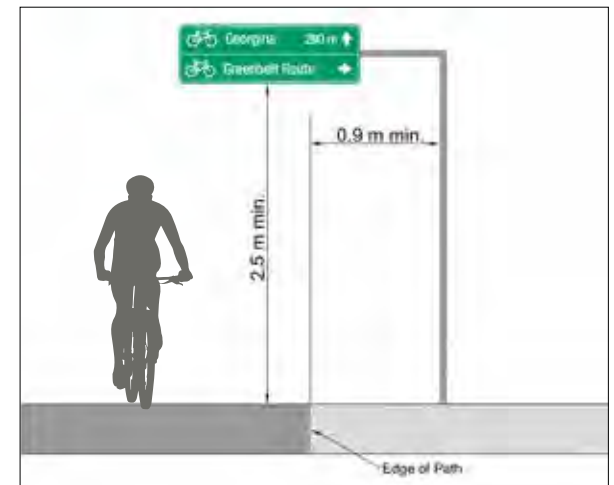


Exhibit 7-4: Vertical and lateral clearance for cycling wayfinding signs along multi-use paths



Pedestrian Wayfinding Signs

Objects that are more than 2.1 m high are generally over the heads of pedestrians. Pedestrians who use long canes will usually detect and avoid objects on the sidewalk that extend from the ground to 0.7 m above it. Therefore, signs installed in pedestrian activity areas must either provide 2.1 m of vertical clearance, or extend below 0.68 m from the ground. Signs that are within 0.7 m and 2.1 m must not protrude beyond the posts by more than 0.1 m.

The lateral clearance and vertical clearances for pedestrian wayfinding signs mounted in pedestrian activity areas facilities are determined based on the type of sign as follows:

Exhibit 7-5 Summary of Lateral and Vertical Clearances for Pedestrian Wayfinding Signs

Sign TYPE	Lateral Clearance		
	Min.		Max.
Destination Fingerboard Measured from ground to the bottom edge of the sign Exhibit 7-6	Min.	2.1 m	Not applicable – the post is detectable and the protruding sign is mounted above the heads of pedestrians
	Max.	3.0 m	
Map / Information Totem	Not applicable – this type of sign is detectable because it is of a constant width and extends to the ground, so no clearances to pedestrian activity areas are required		
Trailhead Sign If located adjacent the path and outside of a pedestrian activity area Measured from the edge of the path to the near edge of the sign Exhibit 7-7	Min.	1.2 m	0.9 m
	Max.	1.5 m	
If located within a pedestrian activity area at the trailhead (must meet the clearances to the path noted above) Measured from the ground to near edge of sign Exhibit 7-8	Max.	0.68 m	Not applicable – the posts and protruding sign are detectable

Exhibit 7-6: Vertical and lateral clearance for pedestrian Destination Fingerboard signs in pedestrian activity areas



Exhibit 7-7: Vertical and lateral clearance for pedestrian Trailhead signs located near paths and outside pedestrian activity areas

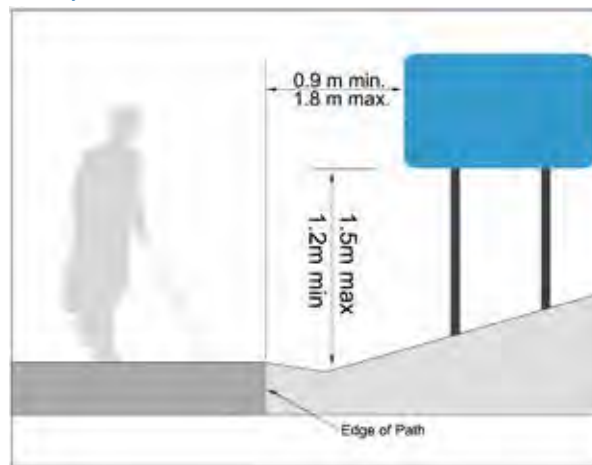
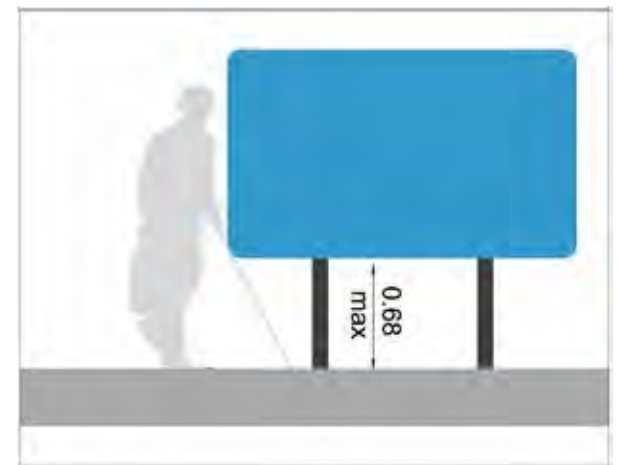


Exhibit 7-8: Sign clearance for pedestrian Trailhead sign located in pedestrian activity areas (but outside the path)



7.2 Horizontal Placement and Spacing

Cycling Wayfinding Signs

Destination signs for people who ride bicycles, including Decision, Confirmation, and Advance (if required) signs, are placed leading to a destination. As discussed in Section 3.0, the first sign will be installed a certain distance from the destination, as follows, and additional Decision and Confirmation signs will be installed along the cycling facilities or routes leading to it until the destination is within 300 m:

- **Primary Destination** (large districts) signs will start up to 8 km to 10 km away.
- **Secondary Destinations** (neighbourhoods and large transit hubs) signs will start up to 5 km away.
- **Tertiary Destinations** (local transit stations, libraries, other local destinations) may be signed when they are up to 1km away.

Placement and spacing of signs by sign type is as follows and illustrated in Exhibit 7-10 and Exhibit 7-11:

Exhibit 7-9 - Summary of Placement and Spacing Requirements

Type of SIGN	Decision Point or Intersection	Spacing*
Integrated Bicycle Route Identification Street sign	At intersection	Not applicable
Standalone Bicycle Route Identification sign	0 to 10 m on the far side of intersections	Rural areas: every 2 km Urban areas: every 400 to 800 m
Bicycle Route Directional sign Destination Decision sign	Stop-controlled intersection: 0 to 10 m on far side of intersection	Not applicable
	Free-flow intersection: 15 to 60 m in advance of intersection	Not applicable
	Traffic signal controlled intersection: 30 to 60 m in advance of intersection	Not applicable
Destination Confirmation sign	150 m following a decision point or intersection	Every 3 km
Advance sign only if Bicycle Route Directional sign or Destination Decision sign is not conspicuous from 60m away	30 m in advance of the inconspicuous sign	Not applicable

* All signs, including other road signs, should be spaced at least 25 m apart and in sequence where possible.

Exhibit 7-10: Sign placement and spacing for bike route identification signs

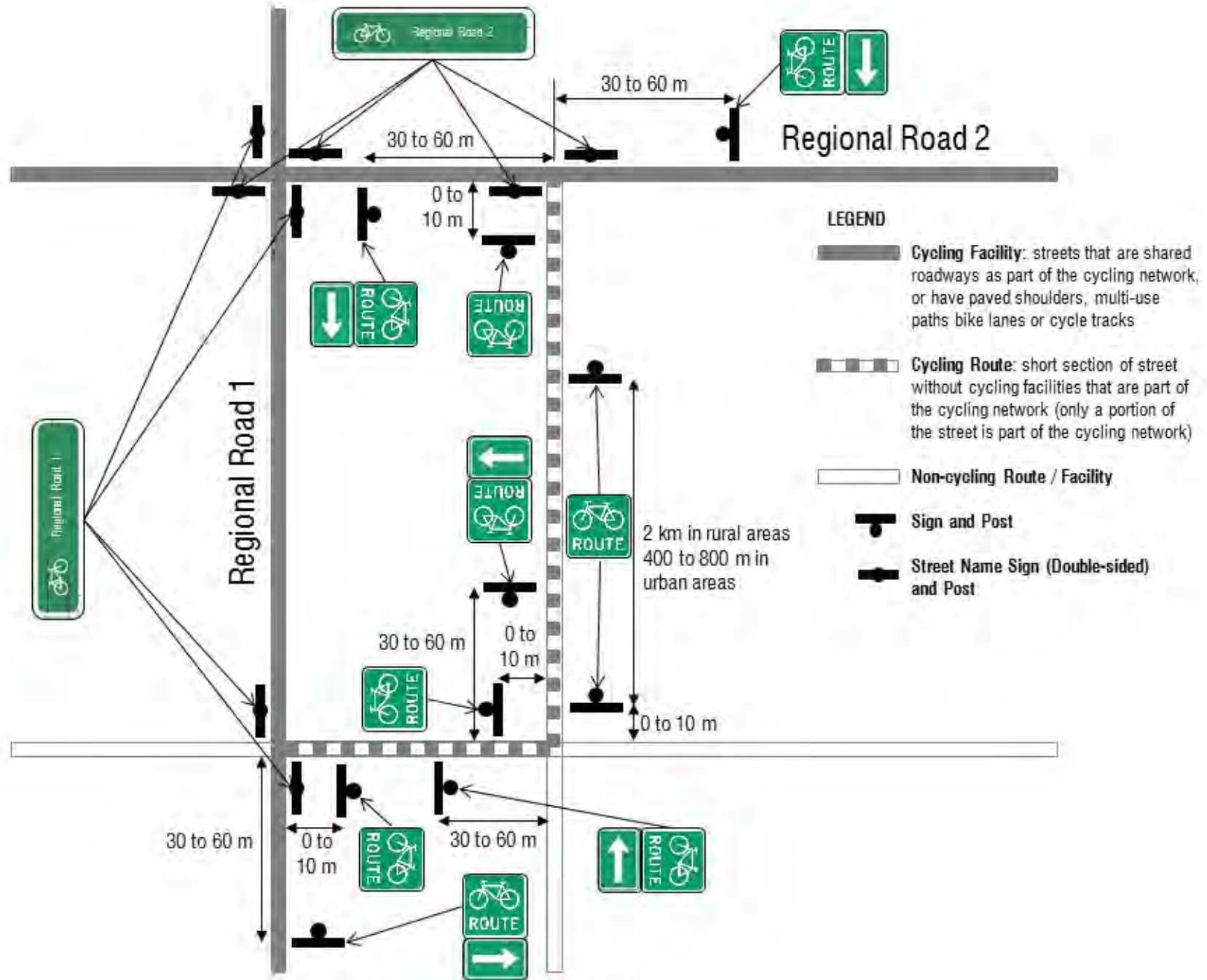
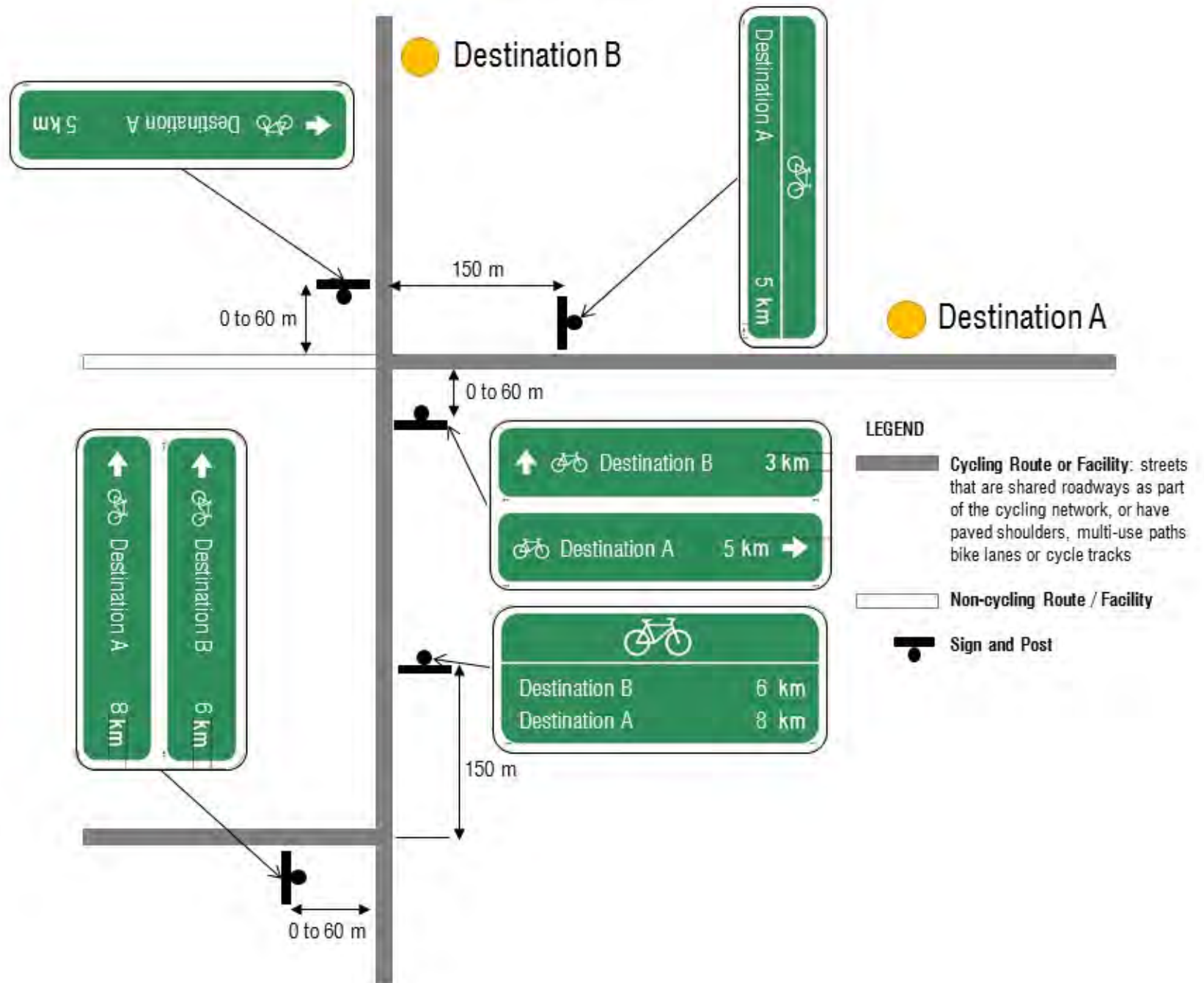
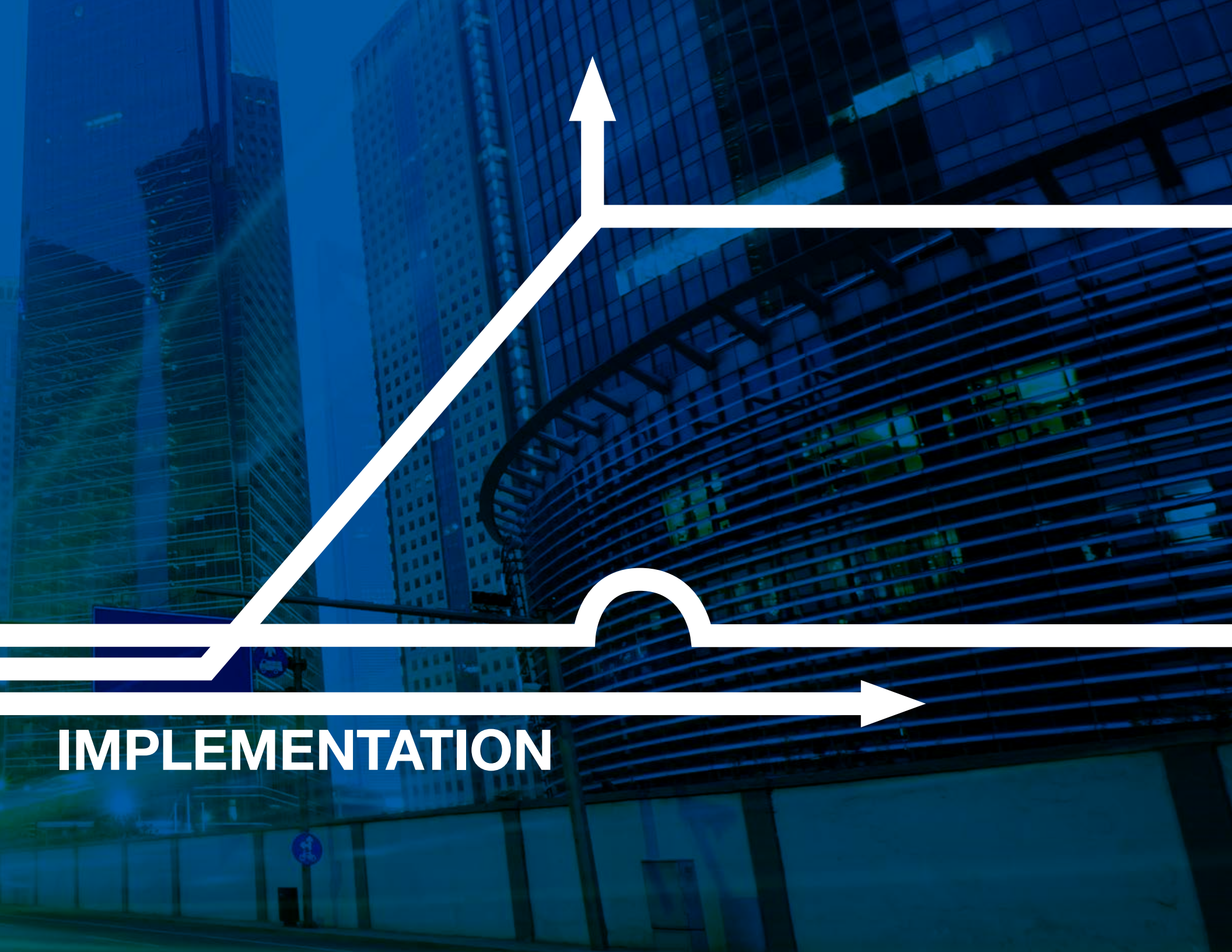


Exhibit 7-11: Sign placement and spacing for cycling destination signs





8.0



IMPLEMENTATION

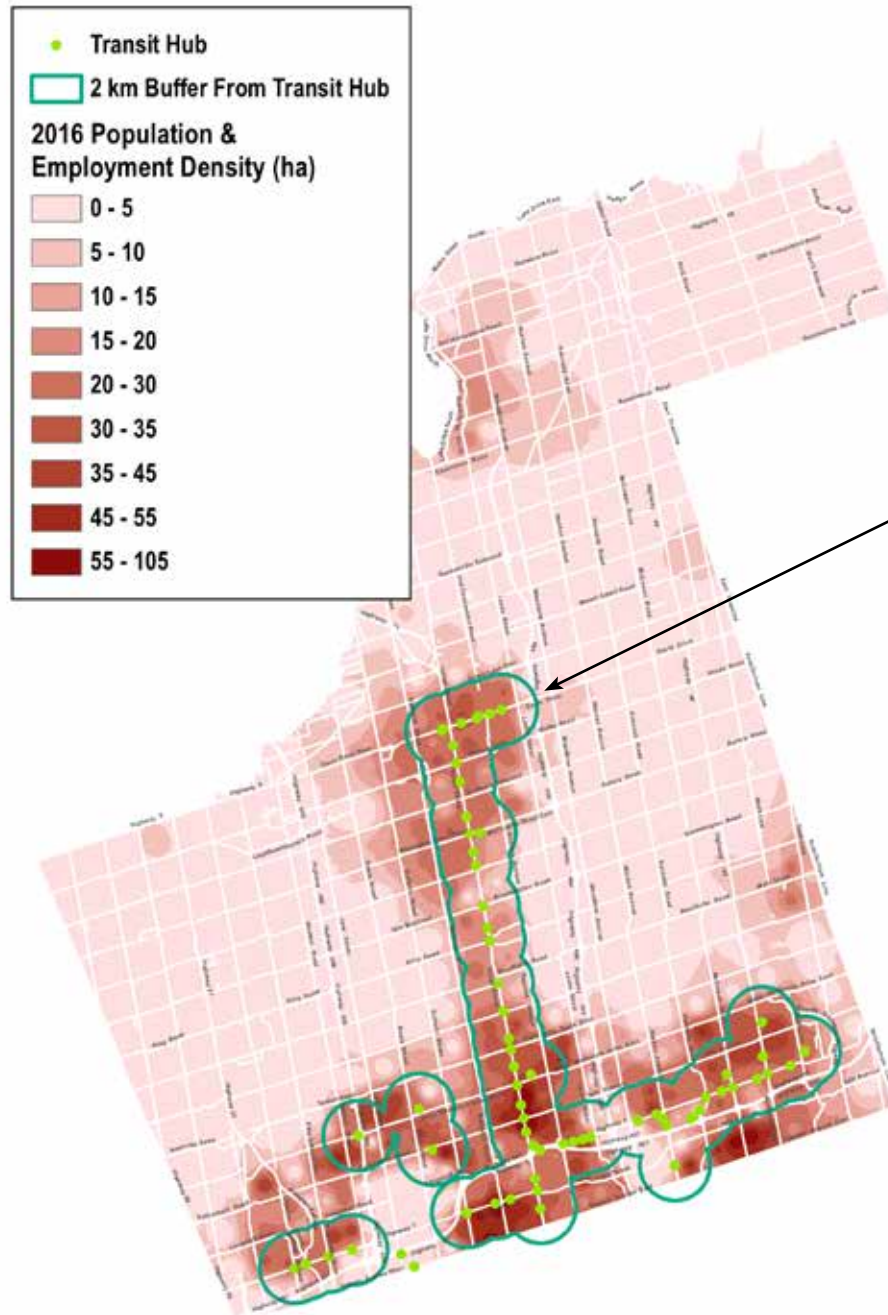
8.0 Implementation

Travel choices being made by the general public do not follow jurisdictional boundaries. Between origins and destinations are a combination of Regional and municipal roads, and people walking and cycling will use both. A key challenge for the design of wayfinding signage will be the coordination of implementation schedules between local and regional jurisdictions. A coordinated approach is important for pedestrian-focussed installations. It will be even more critical to ensure the cohesion of longer distance cycling routes, and for cycling destinations that are up to 10 km away.

8.1 Inter-Jurisdictional Coordination

The implementation program developed by York Region should ideally balance the resources available from different participating agencies, alongside the serving of areas that would best serve the general public. To this end, population centres and transit linkage opportunities have been mapped, as shown on Exhibit 8-1, to identify areas where investments in wayfinding signage and markings may yield the most benefit.

Exhibit 8-1: Opportunity areas for Sustainable Mobility Wayfinding



Warden Avenue is a popular cycling route from Highway 7 to Lake Simcoe, stretching the full north-south length of York Region. It can be improved with better wayfinding signage. It was selected as the pilot project to apply the recommendations of the Wayfinding Guidelines.

8.2 Regional Responsibilities

York Region's installation program areas include Regional roadways. York Region will fabricate, install and maintain all the signs necessary for approved wayfinding programs associated with on-road cycling facilities on Regional roads.

Wayfinding signage on trails associated with the York Regional Forests, including trailhead signage, are also be the responsibility of York Region.

The Region is exploring the possibility of manufacturing the signs at the Regional sign shop, in order to provide improved coordination with municipalities.

8.3 Municipal Responsibilities

Installation program areas that are located on roads under municipal jurisdiction are the responsibility of the local municipality.

In addition, local municipalities are responsible for any wayfinding signage associated with facilities in the boulevard along Regional roads including boulevard trails and sidewalks. The Region will explore partnership opportunities to support installation of wayfinding signage within the boulevards of Regional roads, whenever possible.

Wayfinding signage on any off-road trails or trail segments of regional significance is the responsibility of the municipality having jurisdiction over the corresponding trails or trail segments.

8.4 Other Agencies

Assets that may be under the jurisdiction of other agencies may be involved in the wayfinding signage program, such as trails under the jurisdiction of the Lake Simcoe Region Conservation Authority, Toronto region Conservation Authority, Ontario Parks, etc., or cycling routes along Ontario Highways. Cooperation and co-ordination are encouraged to install and maintain a system of signs that meet the sign design principles presented in this guideline.

8.5 Identifying Cycling Implementation Priorities

Generally speaking, “regionally significant” cycling routes (not owned by the Region) should meet the following conditions to be considered for signing in accordance with these guidelines:

- The cycling route should connect between more than one municipality within the Region.
- The route should be of sufficient length to attract users and provide connectivity. Five kilometres is considered to be an appropriate minimum length. Shorter links could be considered where they provide a direct connection between longer trail systems, including designated named cycling routes or trails.
- Cycling facility surface should accommodate utilitarian cycling. Either a paved or stone dust course is preferred. Trails that are largely made up of wood chip or dirt surfaces are inappropriate as cycling routes for the general population, i.e. they may be only suitable for the mountain biking segment of the population.
- The cycling route may provide access to key destinations such as municipal centres, key tourist attractions or major community facilities (e.g., major public transit hubs, educational institutions)
- The cycling route may have branding or region-wide recognition

Signing of cycling routes and destinations must consider if the routes are comfortable for a wide range of cycling abilities. Where traffic speeds and volumes are higher than 1,000 vehicles per day and traffic speeds are at or above 40 km/h, a dedicated cycling facility is desirable and may be designed to help cyclists follow the cycling route. Dedicated cycling facilities, such as bike lanes and paths in the boulevard will therefore be the preferred facility type for the majority of York Regional roads. **Routes and destinations that cannot be reached by a combination of low volume / low speed streets, multi-use trails and dedicated cycling facilities on busier roads should not be signed.**

8.6 Maintenance Program

Provisions for maintenance will follow the same coordination structure as for the project's installation. The Region will be responsible for the maintenance of signs for facilities operated by the Region, while local municipalities will be responsible for roadways under their jurisdiction, as well as boulevards, sidewalks and multi-use trails along Regional roadways.

An inventory of all signs erected for pedestrian and cycling wayfinding should be maintained including information on the type of sign, contents, material, size, type and size of post, and location.

Ontario Regulation 239/02 of the Municipal Act (2001) prescribes minimum maintenance standards including inspection and replacement requirements for regulatory and warning signs; it does not apply to information / guide signs. However, the jurisdictional body that erected the signs should develop an inspection and replacement program for pedestrian and cycling wayfinding signs to maintain these assets in good working order. Early spring inspections before the higher spring / summer / fall cycling season are recommended every one to two years. Any signs that do not meet retroreflectivity requirements of the Ontario Traffic Manual, or are illegible, improperly oriented, obscured or missing are recommended to be replaced within 30 days. Agencies should also respond to any reports of signs missing or in poor condition within a 30-day period.



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APPENDIX

B

Detailed
Costing
Spreadsheets

Table 1 - Active Transportation Unit Costs

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
1.0 GENERAL ACTIVE TRANSPORTATION FACILITIES					
Shared Lanes / Paved Shoulders					
1.1	Signed Bike Route in Urban or Rural Area	linear KM	\$1,000 to \$1,200	\$1,200	Price for both sides of the road, assumes one sign a minimum of every 500 metres in the direction of travel. Price assumes that signs will be mounted on an existing post. Price includes: - \$300 per sign x 4 signs (2 signs on each side of the road)
1.2	Signed Bike Route with Sharrow Lane Markings <i>Intended to supplement a signed bike route in specific locations. Not intended to be a stand-alone facility type.</i>	linear KM	\$11,600		Price for both sides of the road, includes route signs every 500 metres and sharrow stencils every 75 metres as per OTM Book 18 guidelines. Price includes: - \$300 per sign x 4 signs (2 signs on each side of the road) - \$400 per stencil marking x 26 (13 stencils on each side of the road)
1.3	Signed Route with Edgeline	linear KM	\$12,200	\$12,200	Price for both sides of the road, includes signs and painted edgeline (100mm solid white line). Price includes: - \$300 per sign x 4 signs (2 signs on each side of the road) - \$5.5 per metre for painted solid white line
1.4	Signed Bike Route with Paved Shoulder in conjunction with existing road reconstruction / resurfacing	linear KM	\$115,000 to \$215,000	\$215,000	1.5 metre paved shoulder on both sides of the road. Assumes cycling project pays for additional granular base, asphalt and painted line. Price may vary from \$115,000 to \$215,000 depending on work needed to improve platform. Price includes: - \$300 per sign x 4 signs (2 signs on each side of the road) - \$5.5 per metre for painted solid white line (both sides of the road) Price may be higher if road platform needs to be widened.
1.5	Signed Bike Route with Buffered Paved Shoulder in conjunction with existing road reconstruction / resurfacing project	linear KM	\$275,000 to \$340,000		1.5 metre paved shoulder + 0.5-1.0 metre paved buffer on both sides of the road. Assumes cycling project pays for additional granular base, asphalt, painted edge lines and signs (buffer zone framed by white edgelines). Price may vary from \$275,000 to \$340,000. Price includes: - \$300 per sign x 4 signs (2 signs on each side of the road) - \$5.5 per metre for painted solid white line (both sides of the road)
1.6	Addition of Rumble Strip to Existing Buffered Paved Shoulder (rural)	linear KM	\$12,000		Price for both sides. Buffer \$6 / m.
1.7	Granular Shoulder Sealing	linear KM	\$18,000		Both sides spray emulsion applied to harden the granular shoulder. This will reduce gravel on the paved portion of the shoulder and significantly reduce shoulder maintenance. Use \$9 / m.
1.8	Upgrade Granular Surface Back Road to Chip Seal Surface	linear KM	\$56,000		Price includes pulverizing existing surface with double treatment (\$6 / m ²) or tar and chip (\$2 / m ²) at 7m wide.
Conventional and Separated Bike Lanes					
1.9	Conventional 1.5m-1.8m Bicycle Lanes by Adding Bike Lane Markings and Signs	linear KM	\$29,000	\$29,000	Price for both sides of the road, includes signs, stencils and edge line. The price assumes: - \$11,000 for painted lane line (\$5.5 per metre multiply 2 for both sides of the road) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used.

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.10	Conventional 1.5m-1.8m Bicycle Lanes through Lane Conversion from 4 lanes to 3 lanes	linear KM	\$53,000		Price for both sides. Includes grinding of existing pavement, markings, signs, painted markings. Assumes road is not be surfacing. The price assumes: - \$11,000 for painted lane line (\$5.5 per metre multiply 2 for both sides of the road) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used. - \$6 to \$8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway. Remove soda-blasting cost component if the road is being resurfaced. The cost for resurfacing to be part of resurfacing project.
1.11	Conventional 1.5m-1.8m Bicycle Lanes in Conjunction with a New Road, or Road Reconstruction / Widening Project	linear KM	\$390,000		Price for 1.5m bike lanes on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$16,000 for signs, stencils and edge line The roadway project funds all other improvements.
1.12	Conventional 1.5m-1.8m Bicycle Lanes that require a road widening /reconstruction	linear KM	\$700,000		Price for both sides of the road, includes the cost for excavation, adjust catch basins, lead extensions, new curbs/driveway ramps, asphalt and sub-base, painted markings and signs. All costs associated with widening or reconstructing the road for the purposes of adding bike facilities is born by the bike project i.e. no economies of scale of adding a bike facility in conjunction with a planned roadway project.
1.13	Buffered Bicycle Lane with Hatched Pavement Markings - No Road Construction / Widening or Road Diet required	linear KM	\$49,000		Price for 1.5m bike lanes with 1m hatched buffer. The price assumes: - \$30,000 for painted lines (\$6 x 5000 metres of line paint) - \$1,000 for hatching paint (1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used
1.14	Buffered Bicycle Lane with Hatched Pavement Markings - No Road Construction / Widening or Road Diet required Includes pre-cast curbs and flexible bollards in the buffer	linear km	\$165,000		Price for 1.5m bike lanes with 1m hatched buffer (includes pre-cast curbs and flexible bollards in the buffer). The price assumes: - \$30,000 for painted lines (\$6 x 5000 metres of line paint) - \$1,000 for hatching paint (1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used - \$95,000 for pre-cast concrete curbs on both sides - Assume 70% of roadway to include physical delineation (700 metres per 1 linear km): 700 metres / 1.83m curb length = 382.5 pre-cast concrete curbs - 382.5 x \$250 = \$95,000 - Assume \$125 each 1.83m long curb x 2 = \$250 per linear metre of roadway (both sides) - \$21,000 for flexible bollards - Assume 700m spacing as per pre-cast curb placement above x 2 (both sides of the road). - 700m x 2 (both sides of the road) = \$1,400 - \$1,400 x \$150 (price per bollard) = \$21,000

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.15	Buffered Bicycle Lane with Hatched Pavement Markings with Road Diet	linear KM	\$65,000		Price for 1.5m bike lanes with 1m hatched buffer. The price assumes: - \$30,000 for painted lines (\$6 x 5000 metres of line paint) - \$1,000 for hatching paint (\$1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used. - \$6 to \$8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway.
1.16	Buffered Bicycle Lane with Hatched Pavement Markings - Assumes a Road Diet from a 4 Lane Cross-Section to a 2 Lane Cross-section with a two-way centre turn lane. Includes pre-cast curbs and flexible bollards in the buffer	linear km	\$194,620		Price for 1.5m bike lanes with 1m hatched buffer (includes pre-cast curbs and flexible bollards in the buffer). The price assumes: - \$48,000 for painted lines (\$6 x 8000 metres of line paint) - \$1,000 for hatching paint (1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used - \$95,000 for pre-cast concrete curbs on both sides - Assume 70% of roadway to include physical delineation (700 metres per 1 linear km): 700 metres / 1.83m curb length = 382.5 pre-cast concrete curbs - 382.5 x \$250 = \$95,000 - Assume \$125 each 1.83m long curb x 2 = \$250 per linear metre of roadway (both sides) - \$21,000 for flexible bollards - Assume 700m spacing as per pre-cast curb placement above x 2 (both sides of the road). - 700m x 2 (both sides of the road) = \$1,400 - \$1,400 x \$150 (price per bollard) = \$21,000 - \$6 to \$8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway. Assume 1,660 metres of lane line removal for a 4 lane road: - 1000m of yellow line (centre line) per km (assume continuous line, no break at intersections) - 1 continuous dashed white line that separates 2 vehicles lanes (x2 for both sides of the road) - dashed white line: 3-3 skip pavement marking (3m long with 3m spacing) = 330m length x 2 for both sides of road = 660m
1.17	Buffered Bicycle Lane with Hatched Pavement Markings - Assumes New Road or Road Reconstruction/Widening already Planned	linear KM	\$393,000		Price for 1.5m bike lanes + 0.5m hatched buffers on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line The roadway project funds all other improvements.
1.18	Buffered Bicycle Lane with Hatched Pavement Markings - Retrofit / No new road reconstruction or widening is planned	linear KM	\$533,000		Price for 1.5m bike lanes + 0.5m hatched buffers on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line - \$140,000 for removal and replacement of curb (140 / linear metre) The roadway project funds all other improvements.

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.19	Buffered Bicycle Lane with Flex Bollards - Assumes Road Reconstruction/Widening Already Planned	linear KM	\$423,000		Price for 1.5m bike lanes + 0.5m hatched buffers + flexible bollards on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line - \$30,000 for flexible bollards (\$150 per bollard, spaced every 10m) The roadway project funds all other improvements.
1.20	Buffered Bicycle Lane with Pre-Cast Barrier - Assumes New road or Road Reconstruction/Widening Already Planned	linear KM	\$483,000		Price for 1.5m bike lanes + 0.5m hatched buffers + flexible bollards+ pre-cast and anchored curb delineators. The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line - \$30,000 for flexible bollards (\$150 per bollard, spaced every 10m) - \$50,000 - \$60,000 pre-cast curb delineators (\$250 / pre-case unit 2m length + \$7.5 / pins and anchoring. Assumes 2m long x 2 = 200-250 per km depending on intersections and driveways) The roadway project funds all other improvements.
1.21	Supply and install surface mounted flexible post delineators	each	\$100 to \$150		Price depends on product, volume and supplier.
1.22	Standard precast concrete curb 178 mm high, 216 mm wide and 1.83 metre long	each	\$250		Approximately \$95,000 - \$100,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 1.83 metres = 382.5 pre-cast concrete curbs - 382.5 x \$250 = \$95,000 Assume \$125 each 1.83m long curb x 2 = \$250 per linear metre of roadway (both sides).
1.23	Standard precast concrete curb 457 mm high, 457 mm wide and 3.05 metre long	each	\$1,380		Approximately \$315,000 - \$320,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 3.05 metres = 229.5 pre-cast concrete curbs - 229.5 x \$1,380 = \$317,000
1.24	Standard precast concrete bullnose 457 mm high, 457 mm wide and 1.22 metre long	each	\$970		Approximately \$550,000 - \$560,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 1.22 metres = 573.8 pre-cast concrete curbs - 573.8 x \$970 = \$556,557
Cycle Tracks					
1.25	Uni-directional Cycle Tracks: Raised and Curb Separated - In conjunction with existing road reconstruction / resurfacing project	linear KM	\$500,000 - \$750,000	\$500,000	Both sides. Assumes cycle track will be implemented as part of road construction. Could include minor utility / lighting pole relocations. Other components such as bike signals, bike boxes etc. are project specific and will impact unit price.
1.26	Uni-directional Cycle Tracks: Raised and Curb Separated - Retrofit Existing Roadway	linear KM	\$750,000 - \$1,500,000		Both sides. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are project specific and will impact unit price
1.27	Two Way Cycle Track - Retrofit Existing Roadway	linear KM	\$750,000 - \$1,000,000		One side. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are project specific and will impact unit price

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Active Transportation Paths and Multi-Use Trails					
1.28	Two Way Active Transportation Multi-use path within road right-of-way	linear KM	\$275,000 - \$375,000	\$375,000	3.0m wide hard surface pathway (asphalt) within road right of way (no utility relocations). Price depends of scale / complexity of project and if existing sidewalk is being removed (i.e. crushing of existing sidewalk and compacting for trail base).
1.29	Concrete Splash Strip placed within road right-of-way between Active Transportation Multi-Use Path and Roadway	m ²	\$150		Colour Stamped Concrete
1.30	Hard Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in an Urban Setting (New)	linear KM	\$315,000 - \$630,000	\$375,000	3.0m wide hard surface pathway (asphalt) within park setting (normal conditions) 90mm asphalt depth. Price depends of scale / complexity of project.
1.31	Hard Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Urban Setting (Upgrade existing granular surface)	linear KM	\$250,000 - \$400,000		Includes some new base work (50% approx.), half of the material excavated is removed from site. Price depends of scale / complexity of project.
1.32	Granular Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Urban Setting	linear KM	\$195,000 - \$249,000		3.0m wide, compacted stone dust surface normal site conditions. Price depends of scale / complexity of project.
1.33	Granular Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Rural Setting (New)	linear KM	\$195,000 - \$249,000		3.0m wide, compacted stone dust surface in complex site conditions (includes cost of clearing and grubbing). Price depends of scale / complexity of project.
1.34	Upgrade existing granular surface trail to meet 3.0m wide compacted granular trail standard	linear KM	\$188,000 - \$215,000		Includes some new base work (50% approx.) and an average of 20 regulatory signs per kilometre. Price depends of scale and existing trail conditions e.g. width, slope, location of trail, etc.
1.35	Off-Road Multi-Use Trail Outside of Road Right-of-Way on Abandoned Rail Bed	linear KM	\$80,000 - \$125,000		3.0m wide, compacted stone dust surface, includes signage along trail and gates at road crossings. Assumes ballast is still in place. Price depends of scale / complexity of project.
1.36	Granular Surfaced Multi-use Trail in a Woodland Setting	linear KM	\$175,000		2.4m wide, compacted stone dust surface. Price depends of scale / complexity of project.
1.37	Major rough grading (for multi-use pathway)	m ²	\$8.00		Varies depending on a number of factors including site access, disposal location etc.
2.0 PEDESTRIAN FACILITIES					
2.1	Sidewalk	linear KM	\$300,000	\$300,000	Price for 1.5m concrete sidewalk. Include site prep., select utility relocation, minor drainage modifications / traffic control.
3.0 STRUCTURES AND CROSSINGS					
3.1	Culvert Water Crossing	each	\$5,000 - \$8,000		4 to 8m long
3.2	Wood Bridge (Short)	each	\$8,000 - \$15,000		Boardwalk style construction, straight beam span, up to 6m long
3.3	Wood Bridge (Medium)	each	\$15,000 - \$20,000		10 - 20m
3.4	Prefabricated Metal Bridge (Short)	each	\$20,000 - \$50,000		Weathering Steel, Single span, box truss style, 10 to 20m long
3.5	Prefabricated Metal Bridge (Medium)	each	\$75,000 - \$150,000		Weathering Steel, Single span, pony truss style, 20 to 30m long
3.6	Prefabricated Metal Bridge (Long)	each	\$200,000 - \$350,000		Weathering Steel, Single span, box truss style, 30 to 50m long
3.7	Custom Bridge (Small)	each	\$500,000 - \$1,000,000		Metal or Wood Structure, single span 10 to 50m long
3.8	Custom Bridge (Medium)	each	\$2,000,000 - \$5,000,000		Metal or Wood Structure, single span 50 to 100m long
3.9	Custom Bridge (Large)	each	\$5,000,000 - \$10,000,000		Metal or Wood Structure, single span 100 to 200m long
3.10	Mid-block Pedestrian Signal	each	\$150,000 - \$180,000		Traffic control signal systems that are dedicated primarily to providing traffic gaps for pedestrian right-of-way installed as pedestrian signals at mid-block pedestrian crossings.
3.11	Pedestrian Crossover 1	each	\$25,000 - \$35,000		Similar to Level 1 Type A PXO based on OTM Book 15. Assume two push buttons (\$10,000), flashing unit (\$5,000) and civil engineering elements including tactile plates, concrete ramp, signage, stencils and crossing lines.
3.12	Pedestrian Crossover 2	each	\$30,000 - \$40,000		Similar to Level 2 Type B PXO based on OTM Book 15. Assume rapid flashing beacons (\$20,000), tactile plates (\$3,500), concrete ramp (\$3,000), signage (\$2,800), shark teeth (\$1,200) and pavement crossing.
3.13	Pedestrian Crossover 3	each	\$30,000 - \$40,000		Level 2 Type C PXO based on OTM Book 15. Assume back to back signs, solid white lines, shark teeth and rapid reflecting beacon.
3.14	Pedestrian Crossover 4	each	\$10,000 - \$15,000		Level 2 Type D PXO based on OTM Book 15. Assume back to back signs, tactile plates, solid white lines and shark teeth.
3.15	Line Paint/Sign		\$4,000 - \$6,000		Assume 8 signs, shark teeth and solid white line markings.
3.16	Driveway Crossing		\$2,500 - \$3,500		Assume adjustment of existing curb cuts to accommodate 3.0m multi-use pathway, commercial driveway (\$2,500 - 3,500 without green thermoplastic) and driveway with green thermoplastic (\$4,000-5,000).
3.17	Median Refuge	each	\$10,000 - \$20,000		Average price for basic refuge with curbs, no pedestrian signals
3.18	Move Existing School Crossing	each	\$10,000 - \$25,000		Average price for removing existing school crossing and repainting in a new location
3.19	At grade railway crossing with gate	each	\$60,000 - \$100,000		Assume surface treatment, standard gate and signage
3.20	At grade railway crossing with automatic gate	each	\$100,000 - \$300,000		Assume surface treatment, flashing lights, with or without motion sensing switch and automatic gate.
3.21	Below grade railway crossing	each	\$500,000 - \$1,500,000		Assume 4m wide, unit culvert style approx. 10m long for single elevated railway track
3.22	Intersection Signalization	each	\$160,000 - \$200,000		Assume full signalization of intersection with potential to add cycling facility and improvements.
3.23	Intersection Pedestrian / Bike Signal	each	\$72,000 - \$88,000		Assume average price for intersection pedestrian signal. Assume partial rebuild of intersection for bike signals i.e. realignment of ducts and poles.
3.24	Multi use subway under 4 lane road	each	\$1,000,000 - \$1,200,000		Guideline price only for basic 3.3 m wide, lit.
3.25	Retaining Wall - Engineered	m ²	\$1,200		Face metre squared
3.26	Retaining Wall - Natural	m ²	\$1,200		Face metre squared
3.27	Drainage Ditches	linear KM	\$4,500 - \$5,500		
3.28	Drainage Culverts	linear KM	\$2,000 - \$3,000		

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
4.0 BARRIERS AND ACCESS CONTROL FOR MULTI-USE TRAILS OUTSIDE OF THE ROAD RIGHT-OF-WAY					
4.1	Lockable gate (2 per road crossing)	each	\$4,000		Heavy duty gates (e.g. equestrian supported step over gate). Price for one side of road - 2 required per road crossing. Typically only required in rural settings or city boundary areas
4.2	Metal offset gates	each	\$2,000		"P"-style park gate
4.3	Removable Bollard	each	\$500 - \$750		Basic style (e.g. 75mm diameter galvanized), with footing. Increase budget for decorative style bollards
4.4	Berming/boulders at road crossing	each	\$1,200		Price for one side of road (2 required per road crossing)
4.5	Granular parking lot at staging area (15 car capacity-gravel)	each	\$45,000		Basic granular surfaced parking area (i.e. 300mm granular B sub-base with 150mm granular A surface), with precast bumper curbs. Includes minor landscaping and site furnishings, such as garbage receptacles and bike racks.
4.6	Paige wire fencing	linear M	\$60		1.5m height with peeled wood posts
4.7	Chain link fencing	linear M	\$90 - \$110		Galvanized, 1.5m height
5.0 SIGNAGE					
5.1	Regulatory and caution Signage (off-road pathway) on new metal post	each	\$200-300		300mm x 300mm metal signboard c/w metal "u" channel post
5.2	Signboards for interpretive sign	each	\$2,400		Does not include graphic design. Based on a 600mm x 900mm typical size and embedded polymer material, up to 40% less for aluminum or aluminum composite panel
5.3	Staging area kiosk	each	\$2,000 - \$10,000		Wide range provided. Price depends on design and materials selected. Does not include design and supply of signboards
5.4	Signboards for staging area kiosk sign	each	\$1,500 - \$2,000		Typical production cost, does not include graphic design (based on a 900mm x 1500mm typical size and embedded polymer material). Up to 40% less for aluminum or aluminum composite panel
5.5	Pathway directional sign	each	\$350 - \$500		Bollard / post (100mm x100mm marker), with graphics on all 4 sides
5.6	Pathway marker sign	each	\$250		Bollard / post (100mm x100mm marker), graphics on one side only
5.7	Pathway marker sign	linear KM	\$1,000		Price for both sides of the path, assumes one sign on average, per direction of travel every 0.5 km
5.8	Bike sign	each	\$300		Price for one side of road.
5.9	Major Trailhead	each	\$10,000 - \$20,000		Assume large signage/map feature, control barrier, seating, bike parking, supply of materials, and installation.
5.10	Minor Trailhead	each	\$6,000 - \$12,000		Assume small to medium signage, control barrier, bike parking, supply of materials, and installation.
5.11	Rustic Trailhead	each	\$5,000		Assume a wayfinding/regulatory sign board, extended gravel shoulder or other informal parking allowance for 1-2 cars, supply of materials, and installation.
6.0 BICYCLE PARKING INFRASTRUCTURE					
6.1	Bicycle rack (Post and Ring style)	each	\$150 - \$250		Holds 2 bicycles, price varies depending on manufacturer (includes installation).
6.2	Bicycle rack (U style)	each	\$600		Holds 2 bicycles, price varies depending on manufacturer (includes installation).
6.3	Bicycle rack	each	\$1,800		Holds 6 bicycles, price varies depending on manufacturer (includes installation).
6.4	Bicycle Locker	each	\$3,000		Price varies depending on style and size. Does not include concrete mounting pad.
6.5	Bike Loop	each	\$2,500		Price for installation including labour and equipment. Price also includes materials e.g. two channel detector for traffic cabinet, bike loop (wire and sealant), cable to traffic cabinet, handhole and conduit.
6.6	Bicycle Corral (one parking space with bollards)	each	\$1,500 - \$2,900		Price may vary from \$1,500 (galvanized finish with the mad shield corrosion warranty) to \$2,900 (stainless finish with the mad shield corrosion warranty) for one parking space.
7.0 LIGHTING AND UTILITIES					
7.1	Pathway Lighting	per 25 m	\$5,000		Includes cabling, connection to power supply, transformers and fixtures.
7.2	Relocation of Light / Support Pole	each	\$4,000		Adjustment of pole offset (distance between pole and roadway).
7.3	Relocation of Signal Pole / Utility Box	each	\$8,000		Adjustment of pole offset (distance between pole and roadway).
8.0 PAVEMENT MARKINGS					
8.1	Sharrow Symbol	each	\$400		Price for durable paint. Sharrow symbol with green pavement marking
8.2	Bike Symbol	each	\$400		Price depends on volume
8.2	Line Painting	linear M	\$6		Price for durable paint.
8.2	Removal of Line Painting	linear M	\$6		N/A
9.0 OTHER					
9.1	Bike Box	each	\$1,500		Price may vary depending on road cross-section (e.g. two lane roadway, four lane roadway, etc.). Price includes installing a bike box on the approach of an intersection using a bike stencil and durable e.g. green surface treatment (\$250 / each). Price also include estimate to move stop-bar back to provide space for bike box.
9.2	Clearing and Grubbing	m ²	\$15		
9.3	Bench	each	\$1,000 - \$2,000		Price varies depending on style and size. Does not include footing/concrete mounting pad
9.4	Safety Railings / Rubrail	linear M	\$300		1.4m height basic post and rail style
9.5	Small diameter culvert	each (6 m)	\$1,200		Price range applies to 400mm to 600mm diameter PVC or CSP culverts for drainage below trail
9.6	Flexible Bollards	each	\$110		Should be placed at 10m intervals where required. Cost depends on product type used.
9.7	Picnic Tables	each	\$4,000 - \$6,000		Includes wood picnic table with metal frame and concrete pad. This cost includes the supply of materials and installation.
9.8	Waste and Recycling Receptacle	each	\$500 - \$5,000		Assume waste and recycle receptacles are in a range between steel drum and high end non-electronic. Cost assumes 1 per minor and major entry points.
9.9	Cellular Emergency Beacon Station	each	\$5,000 - \$10,000		Assume elements including cellular beacon station, cabling, connection to power supply and fixtures.
9.10	Flush Toilet	each	\$30,000 - \$40,000		Assumes washroom structure with single toilet and sink and excludes water and sewer connection
9.11	Composting Toilet	each	\$35,000 - \$45,000		Assumes washroom structure with single toilet, subsurface chamber and sub-surface cleanout access
9.12	Vault Toilet	each	\$10,000 - \$15,000		Concrete structure with pump out design

Notes:

- Unit Prices are for functional design purposes only, include installation but exclude contingency, design and approvals costs (unless noted) and reflect 2023 dollars, based on projects in southern Ontario.
- Estimates do not include the cost of property acquisitions, signal modifications, utility relocations, major roadside drainage works or costs associated with site-specific projects such as bridges, railway crossings, retaining walls, and stairways, unless otherwise noted.
- Assumes typical environmental conditions and topography.
- Applicable taxes and permit fees are additional.

Table 2 - Active Transportation and Trails Network by Route

ID	GIS Source	Facility	Length (KM)	Unit Price	Route Cost	Contingency Cost (25%)	Design and Approvals Cost (15%)	Total Route with Contingency, Design and Approvals	Phase
251	ATMP	Bike Lane	0.938132049	\$ 29,000.00	\$ 27,205.83	\$ 6,801.46	\$ 4,080.87	\$ 38,088.16	ST
303	ATMP	Bike Lane	0.978244886	\$ 29,000.00	\$ 28,369.10	\$ 7,092.28	\$ 4,255.37	\$ 39,716.74	ST
692	ATMP	Bike Lane	0.406322821	\$ 29,000.00	\$ 11,783.36	\$ 2,945.84	\$ 1,767.50	\$ 16,496.71	ST
702	ATMP	Bike Lane	2.214012884	\$ 29,000.00	\$ 64,206.37	\$ 16,051.59	\$ 9,630.96	\$ 89,888.92	LT
780	ATMP	Bike Lane	2.345899529	\$ 29,000.00	\$ 68,031.09	\$ 17,007.77	\$ 10,204.66	\$ 95,243.52	MT
1	ATMP	Desire Line	0.720688401		\$ -	\$ -	\$ -	\$ -	LT
5	ATMP	Desire Line	1.09199882		\$ -	\$ -	\$ -	\$ -	LT
7	ATMP	Desire Line	1.292207797		\$ -	\$ -	\$ -	\$ -	LT
8	ATMP	Desire Line	0.886197873		\$ -	\$ -	\$ -	\$ -	LT
9	ATMP	Desire Line	0.501325343		\$ -	\$ -	\$ -	\$ -	LT
16	ATMP	Desire Line	0.246902103		\$ -	\$ -	\$ -	\$ -	LT
28	ATMP	Desire Line	5.607423273		\$ -	\$ -	\$ -	\$ -	LT
29	ATMP	Desire Line	1.41823944		\$ -	\$ -	\$ -	\$ -	LT
33	ATMP	Desire Line	12.94154306		\$ -	\$ -	\$ -	\$ -	LT
34	ATMP	Desire Line	10.14491978		\$ -	\$ -	\$ -	\$ -	LT
35	ATMP	Desire Line	3.034223932		\$ -	\$ -	\$ -	\$ -	LT
36	ATMP	Desire Line	0.937564573		\$ -	\$ -	\$ -	\$ -	LT
37	ATMP	Desire Line	2.353268023		\$ -	\$ -	\$ -	\$ -	LT
41	ATMP	Desire Line	1.799388802		\$ -	\$ -	\$ -	\$ -	LT
44	ATMP	Desire Line	3.750695194		\$ -	\$ -	\$ -	\$ -	LT
45	ATMP	Desire Line	1.336288391		\$ -	\$ -	\$ -	\$ -	LT
57	ATMP	Desire Line	1.069322937		\$ -	\$ -	\$ -	\$ -	LT
63	ATMP	Desire Line	0.845368021		\$ -	\$ -	\$ -	\$ -	MT
98	ATMP	Desire Line	0.115955678		\$ -	\$ -	\$ -	\$ -	ST
153	ATMP	Desire Line	0.131056745		\$ -	\$ -	\$ -	\$ -	LT
187	ATMP	Desire Line	0.081990638		\$ -	\$ -	\$ -	\$ -	LT
204	ATMP	Desire Line	0.534357279		\$ -	\$ -	\$ -	\$ -	LT
217	ATMP	Desire Line	0.405187531		\$ -	\$ -	\$ -	\$ -	MT
218	ATMP	Desire Line	0.769050251		\$ -	\$ -	\$ -	\$ -	LT
219	ATMP	Desire Line	4.043004609		\$ -	\$ -	\$ -	\$ -	LT
221	ATMP	Desire Line	0.342283412		\$ -	\$ -	\$ -	\$ -	LT
239	ATMP	Desire Line	1.869814366		\$ -	\$ -	\$ -	\$ -	LT
240	ATMP	Desire Line	2.061445037		\$ -	\$ -	\$ -	\$ -	LT
242	ATMP	Desire Line	5.936135308		\$ -	\$ -	\$ -	\$ -	LT
254	ATMP	Desire Line	0.458896296		\$ -	\$ -	\$ -	\$ -	LT
256	ATMP	Desire Line	7.845714668		\$ -	\$ -	\$ -	\$ -	LT
257	ATMP	Desire Line	3.602957821		\$ -	\$ -	\$ -	\$ -	LT
261	ATMP	Desire Line	1.564310484		\$ -	\$ -	\$ -	\$ -	LT
263	ATMP	Desire Line	0.961403506		\$ -	\$ -	\$ -	\$ -	LT
296	ATMP	Desire Line	0.668411429		\$ -	\$ -	\$ -	\$ -	LT
612	ATMP	Desire Line	7.889987898		\$ -	\$ -	\$ -	\$ -	LT
745	ATMP	Desire Line	0.131396731		\$ -	\$ -	\$ -	\$ -	ST
767	ATMP	Desire Line	6.820771681		\$ -	\$ -	\$ -	\$ -	LT
768	ATMP	Desire Line	1.971142212		\$ -	\$ -	\$ -	\$ -	LT
777	ATMP	Desire Line	0.329726183		\$ -	\$ -	\$ -	\$ -	LT
833	ATMP	Desire Line	0.129028349		\$ -	\$ -	\$ -	\$ -	
231	ATMP	Multi-Use Path	1.136687783	\$ 375,000.00	\$ 426,257.92	\$ 106,564.48	\$ 63,938.69	\$ 596,761.09	ST
305	ATMP	Multi-Use Path	0.392660819	\$ 375,000.00	\$ 147,247.81	\$ 36,811.95	\$ 22,087.17	\$ 206,146.93	LT
322	ATMP	Multi-Use Path	0.233036335	\$ 375,000.00	\$ 87,388.63	\$ 21,847.16	\$ 13,108.29	\$ 122,344.08	ST
642	ATMP	Multi-Use Path	0.285486527	\$ 375,000.00	\$ 107,057.45	\$ 26,764.36	\$ 16,058.62	\$ 149,880.43	MT
649	ATMP	Multi-Use Path	0.264560142	\$ 375,000.00	\$ 99,210.05	\$ 24,802.51	\$ 14,881.51	\$ 138,894.07	MT

656	ATMP	Multi-Use Path	0.099626136	\$	375,000.00	\$	37,359.80	\$	9,339.95	\$	5,603.97	\$	52,303.72	MT
666	ATMP	Multi-Use Path	0.189488817	\$	375,000.00	\$	71,058.31	\$	17,764.58	\$	10,658.75	\$	99,481.63	MT
667	ATMP	Multi-Use Path	0.327429089	\$	375,000.00	\$	122,785.91	\$	30,696.48	\$	18,417.89	\$	171,900.27	MT
678	ATMP	Multi-Use Path	0.56763441	\$	375,000.00	\$	212,862.90	\$	53,215.73	\$	31,929.44	\$	298,008.07	MT
679	ATMP	Multi-Use Path	0.538870184	\$	375,000.00	\$	202,076.32	\$	50,519.08	\$	30,311.45	\$	282,906.85	MT
683	ATMP	Multi-Use Path	0.378719899	\$	375,000.00	\$	142,019.96	\$	35,504.99	\$	21,302.99	\$	198,827.95	MT
684	ATMP	Multi-Use Path	0.239125861	\$	375,000.00	\$	89,672.20	\$	22,418.05	\$	13,450.83	\$	125,541.08	MT
685	ATMP	Multi-Use Path	0.245233617	\$	375,000.00	\$	91,962.61	\$	22,990.65	\$	13,794.39	\$	128,747.65	MT
701	ATMP	Multi-Use Path	0.311226527	\$	375,000.00	\$	116,709.95	\$	29,177.49	\$	17,506.49	\$	163,393.93	ST
730	ATMP	Multi-Use Path	4.284629827	\$	375,000.00	\$	1,606,736.19	\$	401,684.05	\$	241,010.43	\$	2,249,430.66	ST
741	ATMP	Multi-Use Path	0.237636739	\$	375,000.00	\$	89,113.78	\$	22,278.44	\$	13,367.07	\$	124,759.29	MT
757	ATMP	Multi-Use Path	0.052653944	\$	375,000.00	\$	19,745.23	\$	4,936.31	\$	2,961.78	\$	27,643.32	LT
776	ATMP	Multi-Use Path	0.420853425	\$	375,000.00	\$	157,820.03	\$	39,455.01	\$	23,673.01	\$	220,948.05	ST
781	ATMP	Multi-Use Path	8.469343582	\$	375,000.00	\$	3,176,003.84	\$	794,000.96	\$	476,400.58	\$	4,446,405.38	LT
787	ATMP	Multi-Use Path	0.535708906	\$	375,000.00	\$	200,890.84	\$	50,222.71	\$	30,133.63	\$	281,247.18	MT
818	ATMP	Multi-Use Path	0.146044415	\$	375,000.00	\$	54,766.66	\$	13,691.66	\$	8,215.00	\$	76,673.32	MT
835	ATMP	Multi-Use Path	0.173026096	\$	375,000.00	\$	64,884.79	\$	16,221.20	\$	9,732.72	\$	90,838.70	ST
836	ATMP	Multi-Use Path	0.095546055	\$	375,000.00	\$	35,829.77	\$	8,957.44	\$	5,374.47	\$	50,161.68	ST
837	ATMP	Multi-Use Path	1.165645173	\$	375,000.00	\$	437,116.94	\$	109,279.23	\$	65,567.54	\$	611,963.72	ST
853	ATMP	Multi-Use Path	0.634523609	\$	375,000.00	\$	237,946.35	\$	59,486.59	\$	35,691.95	\$	333,124.89	ST
854	ATMP	Multi-Use Path	0.528226961	\$	375,000.00	\$	198,085.11	\$	49,521.28	\$	29,712.77	\$	277,319.15	ST
855	ATMP	Multi-Use Path	0.5381929	\$	375,000.00	\$	201,822.34	\$	50,455.58	\$	30,273.35	\$	282,551.27	ST
856	ATMP	Multi-Use Path	0.250849053	\$	375,000.00	\$	94,068.39	\$	23,517.10	\$	14,110.26	\$	131,695.75	ST
857	ATMP	Multi-Use Path	0.912313875	\$	375,000.00	\$	342,117.70	\$	85,529.43	\$	51,317.66	\$	478,964.78	ST
858	ATMP	Multi-Use Path	0.543236393	\$	375,000.00	\$	203,713.65	\$	50,928.41	\$	30,557.05	\$	285,199.11	ST
11	ATMP	Multi-Use Trail	2.047400594	\$	375,000.00	\$	767,775.22	\$	191,943.81	\$	115,166.28	\$	1,074,885.31	LT
14	ATMP	Multi-Use Trail	1.188126175	\$	375,000.00	\$	445,547.32	\$	111,386.83	\$	66,832.10	\$	623,766.24	ST
15	ATMP	Multi-Use Trail	0.406636131	\$	375,000.00	\$	152,488.55	\$	38,122.14	\$	23,483.28	\$	213,483.97	ST
19	ATMP	Multi-Use Trail	0.624212583	\$	375,000.00	\$	234,079.72	\$	58,519.93	\$	35,111.96	\$	327,711.61	ST
26	ATMP	Multi-Use Trail	1.210088419	\$	375,000.00	\$	453,783.16	\$	113,445.79	\$	68,067.47	\$	635,296.42	MT
31	ATMP	Multi-Use Trail	1.224533105	\$	375,000.00	\$	459,199.91	\$	114,799.98	\$	68,879.99	\$	642,879.88	ST
43	ATMP	Multi-Use Trail	1.077400737	\$	375,000.00	\$	404,025.28	\$	101,006.32	\$	60,603.79	\$	565,635.39	LT
46	ATMP	Multi-Use Trail	0.116950745	\$	375,000.00	\$	43,856.53	\$	10,964.13	\$	6,578.48	\$	61,399.14	ST
62	ATMP	Multi-Use Trail	0.163990884	\$	375,000.00	\$	61,496.58	\$	15,374.15	\$	9,224.49	\$	86,095.21	ST
101	ATMP	Multi-Use Trail	0.077041389	\$	375,000.00	\$	28,890.52	\$	7,222.63	\$	4,333.58	\$	40,446.73	ST
102	ATMP	Multi-Use Trail	0.182995603	\$	375,000.00	\$	68,623.35	\$	17,155.84	\$	10,293.50	\$	96,072.69	ST
121	ATMP	Multi-Use Trail	0.220040722	\$	375,000.00	\$	82,515.27	\$	20,628.82	\$	12,377.29	\$	115,521.38	ST
123	ATMP	Multi-Use Trail	0.087399303	\$	375,000.00	\$	32,774.74	\$	8,193.68	\$	4,916.21	\$	45,884.63	ST
141	ATMP	Multi-Use Trail	0.787710941	\$	375,000.00	\$	295,391.60	\$	73,847.90	\$	44,308.74	\$	413,548.24	LT
146	ATMP	Multi-Use Trail	0.186190756	\$	375,000.00	\$	69,821.53	\$	17,455.38	\$	10,473.23	\$	97,750.15	ST
155	ATMP	Multi-Use Trail	0.935818946	\$	375,000.00	\$	350,932.10	\$	87,733.03	\$	52,639.82	\$	491,304.95	ST
167	ATMP	Multi-Use Trail	0.136962	\$	375,000.00	\$	51,360.75	\$	12,840.19	\$	7,704.11	\$	71,905.05	ST
186	ATMP	Multi-Use Trail	0.060198002	\$	375,000.00	\$	22,574.25	\$	5,643.56	\$	3,386.14	\$	31,603.95	ST
188	ATMP	Multi-Use Trail	0.585884354	\$	375,000.00	\$	219,706.63	\$	54,926.66	\$	32,955.99	\$	307,589.29	ST
199	ATMP	Multi-Use Trail	0.303949743	\$	375,000.00	\$	113,981.15	\$	28,495.29	\$	17,097.17	\$	159,573.61	ST
202	ATMP	Multi-Use Trail	0.374848715	\$	375,000.00	\$	140,568.27	\$	35,142.07	\$	21,085.24	\$	196,795.58	ST
223	ATMP	Multi-Use Trail	0.155103988	\$	375,000.00	\$	58,164.00	\$	14,541.00	\$	8,724.60	\$	81,429.59	LT
260	ATMP	Multi-Use Trail	0.139351508	\$	375,000.00	\$	52,256.82	\$	13,064.20	\$	7,838.52	\$	73,159.54	LT
262	ATMP	Multi-Use Trail	1.503131967	\$	375,000.00	\$	563,674.49	\$	140,918.62	\$	84,551.17	\$	789,144.28	ST
265	ATMP	Multi-Use Trail	0.14200011	\$	375,000.00	\$	53,250.04	\$	13,312.51	\$	7,987.51	\$	74,550.06	ST
299	ATMP	Multi-Use Trail	0.287164141	\$	375,000.00	\$	107,686.55	\$	26,921.64	\$	16,152.98	\$	150,761.17	ST
300	ATMP	Multi-Use Trail	0.522294688	\$	375,000.00	\$	195,860.51	\$	48,965.13	\$	29,379.08	\$	274,204.71	ST
301	ATMP	Multi-Use Trail	0.278157424	\$	375,000.00	\$	104,309.03	\$	26,077.26	\$	15,646.36	\$	146,032.65	ST
302	ATMP	Multi-Use Trail	0.124686297	\$	375,000.00	\$	46,757.36	\$	11,689.34	\$	7,013.60	\$	65,460.31	ST
319	ATMP	Multi-Use Trail	0.493660666	\$	375,000.00	\$	185,124.77	\$	46,281.19	\$	27,768.72	\$	259,174.68	ST
320	ATMP	Multi-Use Trail	0.322869782	\$	375,000.00	\$	121,076.17	\$	30,269.04	\$	18,161.43	\$	169,506.64	LT

597	ATMP	Multi-Use Trail	0.050189426	\$	375,000.00	\$	18,821.03	\$	4,705.26	\$	2,823.16	\$	26,349.45	ST
599	ATMP	Multi-Use Trail	0.04996139	\$	375,000.00	\$	18,735.52	\$	4,683.88	\$	2,810.33	\$	26,229.73	ST
601	ATMP	Multi-Use Trail	0.00066698	\$	375,000.00	\$	250.12	\$	62.53	\$	37.52	\$	350.16	ST
603	ATMP	Multi-Use Trail	0.180144354	\$	375,000.00	\$	67,554.13	\$	16,888.53	\$	10,133.12	\$	94,575.79	ST
653	ATMP	Multi-Use Trail	0.160363027	\$	375,000.00	\$	60,136.14	\$	15,034.03	\$	9,020.42	\$	84,190.59	MT
657	ATMP	Multi-Use Trail	0.396978864	\$	375,000.00	\$	148,867.07	\$	37,216.77	\$	22,330.06	\$	208,413.90	MT
662	ATMP	Multi-Use Trail	0.949878436	\$	375,000.00	\$	356,204.41	\$	89,051.10	\$	53,430.66	\$	498,686.18	MT
663	ATMP	Multi-Use Trail	0.368568567	\$	375,000.00	\$	138,213.21	\$	34,553.30	\$	20,731.98	\$	193,498.50	MT
664	ATMP	Multi-Use Trail	0.258334718	\$	375,000.00	\$	96,875.52	\$	24,218.88	\$	14,531.33	\$	135,625.73	LT
672	ATMP	Multi-Use Trail	0.4867676	\$	375,000.00	\$	182,537.85	\$	45,634.46	\$	27,380.68	\$	255,552.99	MT
673	ATMP	Multi-Use Trail	0.324119203	\$	375,000.00	\$	121,544.70	\$	30,386.18	\$	18,231.71	\$	170,162.58	MT
674	ATMP	Multi-Use Trail	0.841391785	\$	375,000.00	\$	315,521.92	\$	78,880.48	\$	47,328.29	\$	441,730.69	MT
675	ATMP	Multi-Use Trail	0.168001823	\$	375,000.00	\$	63,000.68	\$	15,750.17	\$	9,450.10	\$	88,200.96	MT
676	ATMP	Multi-Use Trail	0.301354569	\$	375,000.00	\$	113,007.96	\$	28,251.99	\$	16,951.19	\$	158,211.15	MT
677	ATMP	Multi-Use Trail	0.423413442	\$	375,000.00	\$	158,780.04	\$	39,695.01	\$	23,817.01	\$	222,292.06	ST
699	ATMP	Multi-Use Trail	0.063550541	\$	375,000.00	\$	23,831.45	\$	5,957.86	\$	3,574.72	\$	33,364.03	ST
700	ATMP	Multi-Use Trail	0.11083772	\$	375,000.00	\$	41,564.15	\$	10,391.04	\$	6,234.62	\$	58,189.80	ST
710	ATMP	Multi-Use Trail	0.093189582	\$	375,000.00	\$	34,946.09	\$	8,736.52	\$	5,241.91	\$	48,924.53	MT
729	ATMP	Multi-Use Trail	0.658981698	\$	375,000.00	\$	247,118.14	\$	61,779.53	\$	37,067.72	\$	345,965.39	ST
731	ATMP	Multi-Use Trail	0.171116316	\$	375,000.00	\$	64,168.62	\$	16,042.15	\$	9,625.29	\$	89,836.07	ST
732	ATMP	Multi-Use Trail	0.284321946	\$	375,000.00	\$	106,620.73	\$	26,655.18	\$	15,993.11	\$	149,269.02	ST
735	ATMP	Multi-Use Trail	0.002332525	\$	375,000.00	\$	874.70	\$	218.67	\$	131.20	\$	1,224.58	ST
737	ATMP	Multi-Use Trail	1.232873742	\$	375,000.00	\$	462,327.65	\$	115,581.91	\$	69,349.15	\$	647,258.71	ST
753	ATMP	Multi-Use Trail	0.210605253	\$	375,000.00	\$	78,976.97	\$	19,744.24	\$	11,846.55	\$	110,567.76	ST
763	ATMP	Multi-Use Trail	4.598985649	\$	375,000.00	\$	1,724,619.62	\$	431,154.90	\$	258,692.94	\$	2,414,467.47	LT
778	ATMP	Multi-Use Trail	1.891144027	\$	375,000.00	\$	709,179.01	\$	177,294.75	\$	106,376.85	\$	992,850.61	MT
779	ATMP	Multi-Use Trail	0.718672822	\$	375,000.00	\$	269,502.31	\$	67,375.58	\$	40,425.35	\$	377,303.23	MT
825	ATMP	Multi-Use Trail	1.40584037	\$	375,000.00	\$	527,190.14	\$	131,797.53	\$	79,078.52	\$	738,066.19	MT
826	ATMP	Multi-Use Trail	0.54682189	\$	375,000.00	\$	205,058.21	\$	51,264.55	\$	30,758.73	\$	287,081.49	ST
839	ATMP	Multi-Use Trail	0.212545007	\$	375,000.00	\$	79,704.38	\$	19,926.09	\$	11,955.66	\$	111,586.13	MT
849	ATMP	Multi-Use Trail	0.49132759	\$	375,000.00	\$	184,247.85	\$	46,061.96	\$	27,637.18	\$	257,946.98	MT
859	ATMP	Multi-Use Trail	0.592540674	\$	375,000.00	\$	222,202.75	\$	55,550.69	\$	33,330.41	\$	311,083.85	ST
321	ATMP	Paved Shoulder	4.092808118	\$	215,000.00	\$	879,953.75	\$	219,988.44	\$	131,993.06	\$	1,231,935.24	LT
724	ATMP	Paved Shoulder	2.073192953	\$	215,000.00	\$	445,736.48	\$	111,434.12	\$	66,860.47	\$	624,031.08	MT
725	ATMP	Paved Shoulder	1.050300634	\$	215,000.00	\$	225,814.64	\$	56,453.66	\$	33,872.20	\$	316,140.49	MT
726	ATMP	Paved Shoulder	2.667837734	\$	215,000.00	\$	573,585.11	\$	143,396.28	\$	86,037.77	\$	803,019.16	MT
748	ATMP	Paved Shoulder	3.288106025	\$	215,000.00	\$	706,942.80	\$	176,735.70	\$	106,041.42	\$	989,719.91	LT
756	ATMP	Paved Shoulder	0.847248727	\$	215,000.00	\$	182,158.48	\$	45,539.62	\$	27,323.77	\$	255,021.87	LT
771	ATMP	Paved Shoulder	2.048095741	\$	215,000.00	\$	440,340.58	\$	110,085.15	\$	66,051.09	\$	616,476.82	LT
782	ATMP	Paved Shoulder	6.176668711	\$	215,000.00	\$	1,327,983.77	\$	331,995.94	\$	199,197.57	\$	1,859,177.28	LT
783	ATMP	Paved Shoulder	2.075836458	\$	215,000.00	\$	446,304.84	\$	111,576.21	\$	66,945.73	\$	624,826.77	LT
786	ATMP	Paved Shoulder	6.046564192	\$	215,000.00	\$	1,300,011.30	\$	325,002.83	\$	195,001.70	\$	1,820,015.82	LT
66	ATMP	Signed Route	1.6439573	\$	1,200.00	\$	1,972.75	\$	493.19	\$	295.91	\$	2,761.85	MT
67	ATMP	Signed Route	1.014220539	\$	1,200.00	\$	1,217.06	\$	304.27	\$	182.56	\$	1,703.89	MT
69	ATMP	Signed Route	1.197407322	\$	1,200.00	\$	1,436.89	\$	359.22	\$	215.53	\$	2,011.64	ST
70	ATMP	Signed Route	1.456063682	\$	1,200.00	\$	1,747.28	\$	436.82	\$	262.09	\$	2,446.19	ST
71	ATMP	Signed Route	0.481824461	\$	1,200.00	\$	578.19	\$	144.55	\$	86.73	\$	809.47	ST
72	ATMP	Signed Route	0.852404329	\$	1,200.00	\$	1,022.89	\$	255.72	\$	153.43	\$	1,432.04	ST
73	ATMP	Signed Route	1.696410873	\$	1,200.00	\$	2,035.69	\$	508.92	\$	305.35	\$	2,849.97	ST
74	ATMP	Signed Route	0.382004465	\$	1,200.00	\$	458.41	\$	114.60	\$	68.76	\$	641.77	ST
78	ATMP	Signed Route	0.774932325	\$	1,200.00	\$	929.92	\$	232.48	\$	139.49	\$	1,301.89	ST
79	ATMP	Signed Route	0.380318108	\$	1,200.00	\$	456.38	\$	114.10	\$	68.46	\$	638.93	ST
81	ATMP	Signed Route	0.743364153	\$	1,200.00	\$	892.04	\$	223.01	\$	133.81	\$	1,248.85	ST
84	ATMP	Signed Route	0.672404257	\$	1,200.00	\$	806.89	\$	201.72	\$	121.03	\$	1,129.64	ST
85	ATMP	Signed Route	1.05204624	\$	1,200.00	\$	1,262.46	\$	315.61	\$	189.37	\$	1,767.44	MT
86	ATMP	Signed Route	2.027034336	\$	1,200.00	\$	2,432.44	\$	608.11	\$	364.87	\$	3,405.42	LT

87	ATMP	Signed Route	2.032212824	\$	1,200.00	\$	2,438.66	\$	609.66	\$	365.80	\$	3,414.12	LT
89	ATMP	Signed Route	0.441326046	\$	1,200.00	\$	529.59	\$	132.40	\$	79.44	\$	741.43	ST
90	ATMP	Signed Route	0.368343646	\$	1,200.00	\$	442.01	\$	110.50	\$	66.30	\$	618.82	ST
93	ATMP	Signed Route	0.245343342	\$	1,200.00	\$	294.41	\$	73.60	\$	44.16	\$	412.18	ST
94	ATMP	Signed Route	0.153003365	\$	1,200.00	\$	183.60	\$	45.90	\$	27.54	\$	257.05	ST
103	ATMP	Signed Route	0.116934019	\$	1,200.00	\$	140.32	\$	35.08	\$	21.05	\$	196.45	ST
105	ATMP	Signed Route	0.481613355	\$	1,200.00	\$	577.94	\$	144.48	\$	86.69	\$	809.11	ST
107	ATMP	Signed Route	0.829572767	\$	1,200.00	\$	995.49	\$	248.87	\$	149.32	\$	1,393.68	ST
125	ATMP	Signed Route	0.691165119	\$	1,200.00	\$	829.40	\$	207.35	\$	124.41	\$	1,161.16	ST
126	ATMP	Signed Route	0.279907552	\$	1,200.00	\$	335.89	\$	83.97	\$	50.38	\$	470.24	ST
131	ATMP	Signed Route	0.207228826	\$	1,200.00	\$	248.67	\$	62.17	\$	37.30	\$	348.14	ST
132	ATMP	Signed Route	0.50806245	\$	1,200.00	\$	609.67	\$	152.42	\$	91.45	\$	853.54	ST
142	ATMP	Signed Route	0.753003302	\$	1,200.00	\$	903.60	\$	225.90	\$	135.54	\$	1,265.05	ST
144	ATMP	Signed Route	0.337842309	\$	1,200.00	\$	405.41	\$	101.35	\$	60.81	\$	567.58	ST
161	ATMP	Signed Route	0.599463233	\$	1,200.00	\$	719.36	\$	179.84	\$	107.90	\$	1,007.10	ST
169	ATMP	Signed Route	0.57453431	\$	1,200.00	\$	689.44	\$	172.36	\$	103.42	\$	965.22	ST
191	ATMP	Signed Route	0.340292551	\$	1,200.00	\$	408.35	\$	102.09	\$	61.25	\$	571.69	ST
205	ATMP	Signed Route	0.432585306	\$	1,200.00	\$	519.10	\$	129.78	\$	77.87	\$	726.74	ST
206	ATMP	Signed Route	0.388147151	\$	1,200.00	\$	465.78	\$	116.44	\$	69.87	\$	652.09	ST
706	ATMP	Signed Route	0.525245423	\$	1,200.00	\$	630.29	\$	157.57	\$	94.54	\$	882.41	ST
707	ATMP	Signed Route	0.232816041	\$	1,200.00	\$	279.38	\$	69.84	\$	41.91	\$	391.13	ST
708	ATMP	Signed Route	0.116587002	\$	1,200.00	\$	139.90	\$	34.98	\$	20.99	\$	195.87	ST
709	ATMP	Signed Route	0.434367448	\$	1,200.00	\$	521.24	\$	130.31	\$	78.19	\$	729.74	ST
720	ATMP	Signed Route	0.334994599	\$	1,200.00	\$	401.99	\$	100.50	\$	60.30	\$	562.79	ST
721	ATMP	Signed Route	0.649636553	\$	1,200.00	\$	779.56	\$	194.89	\$	116.93	\$	1,091.39	ST
746	ATMP	Signed Route	0.103048848	\$	1,200.00	\$	123.66	\$	30.91	\$	18.55	\$	173.12	ST
750	ATMP	Signed Route	0.193321475	\$	1,200.00	\$	231.99	\$	58.00	\$	34.80	\$	324.78	ST
754	ATMP	Signed Route	0.279161553	\$	1,200.00	\$	334.99	\$	83.75	\$	50.25	\$	468.99	LT
755	ATMP	Signed Route	1.120510346	\$	1,200.00	\$	1,344.61	\$	336.15	\$	201.69	\$	1,882.46	ST
761	ATMP	Signed Route	0.317825352	\$	1,200.00	\$	381.39	\$	95.35	\$	57.21	\$	533.95	MT
765	ATMP	Signed Route	0.818948229	\$	1,200.00	\$	982.74	\$	245.68	\$	147.41	\$	1,375.83	ST
773	ATMP	Signed Route	1.637558293	\$	1,200.00	\$	1,965.07	\$	491.27	\$	294.76	\$	2,751.10	LT
789	ATMP	Signed Route	0.903009274	\$	1,200.00	\$	1,083.61	\$	270.90	\$	162.54	\$	1,517.06	ST
832	ATMP	Signed Route	0.420938112	\$	1,200.00	\$	505.13	\$	126.28	\$	75.77	\$	707.18	MT
64	ATMP	Signed Route with Urban Shoulder	3.773413171	\$	215,000.00	\$	811,283.83	\$	202,820.96	\$	121,692.57	\$	1,135,797.36	ST
82	ATMP	Signed Route with Urban Shoulder	0.632333432	\$	215,000.00	\$	135,951.69	\$	33,987.92	\$	20,392.75	\$	190,332.36	ST
88	ATMP	Signed Route with Urban Shoulder	1.0811203	\$	215,000.00	\$	232,440.86	\$	58,110.22	\$	34,866.13	\$	325,417.21	ST
92	ATMP	Signed Route with Urban Shoulder	0.600833744	\$	215,000.00	\$	129,179.25	\$	32,294.81	\$	19,376.89	\$	180,850.96	ST
106	ATMP	Signed Route with Urban Shoulder	0.556136864	\$	215,000.00	\$	119,569.43	\$	29,892.36	\$	17,935.41	\$	167,397.20	ST
108	ATMP	Signed Route with Urban Shoulder	0.53942619	\$	215,000.00	\$	115,976.63	\$	28,994.16	\$	17,396.49	\$	162,367.28	ST
157	ATMP	Signed Route with Urban Shoulder	0.719915209	\$	215,000.00	\$	154,781.77	\$	38,695.44	\$	23,217.27	\$	216,694.48	ST
705	ATMP	Signed Route with Urban Shoulder	0.405362542	\$	215,000.00	\$	87,152.95	\$	21,788.24	\$	13,072.94	\$	122,014.13	ST
747	ATMP	Signed Route with Urban Shoulder	0.294217266	\$	215,000.00	\$	63,256.71	\$	15,814.18	\$	9,488.51	\$	88,559.40	ST
759	ATMP	Signed Route with Urban Shoulder	0.193922951	\$	215,000.00	\$	41,693.43	\$	10,423.36	\$	6,254.02	\$	58,370.81	ST
762	ATMP	Signed Route with Urban Shoulder	0.120996484	\$	215,000.00	\$	26,014.24	\$	6,503.56	\$	3,902.14	\$	36,419.94	ST
843	ATMP	Signed Route with Urban Shoulder	0.471964129	\$	215,000.00	\$	101,472.29	\$	25,368.07	\$	15,220.84	\$	142,061.20	ST
650	ATMP	Walkway	0.117514345	\$	300,000.00	\$	35,254.30	\$	8,813.58	\$	5,288.15	\$	49,356.02	MT
651	ATMP	Walkway	0.065545801	\$	300,000.00	\$	19,663.74	\$	4,915.94	\$	2,949.56	\$	27,529.24	MT
652	ATMP	Walkway	0.037876631	\$	300,000.00	\$	11,362.99	\$	2,840.75	\$	1,704.45	\$	15,908.18	MT
654	ATMP	Walkway	0.035066043	\$	300,000.00	\$	10,519.81	\$	2,629.95	\$	1,577.97	\$	14,727.74	MT
660	ATMP	Walkway	0.031709831	\$	300,000.00	\$	9,512.95	\$	2,378.24	\$	1,426.94	\$	13,318.13	ST
690	ATMP	Walkway	0.06104682	\$	300,000.00	\$	18,314.05	\$	4,578.51	\$	2,747.11	\$	25,639.66	MT
651	Proposed	Walkway	0.065534534	\$	300,000.00	\$	19,660.36	\$	4,915.09	\$	2,949.05	\$	27,524.50	MT
652	Proposed	Walkway	0.037870112	\$	300,000.00	\$	11,361.03	\$	2,840.26	\$	1,704.16	\$	15,905.45	MT
654	Proposed	Walkway	0.035059986	\$	300,000.00	\$	10,518.00	\$	2,629.50	\$	1,577.70	\$	14,725.19	MT
660	Proposed	Walkway	0.031703188	\$	300,000.00	\$	9,510.96	\$	2,377.74	\$	1,426.64	\$	13,315.34	ST

690	Proposed	Walkway	0.061033907	\$	29,000.00	\$	1,769.98	\$	442.50	\$	265.50	\$	2,477.98	MT
41	Proposed	Sidewalk	0.109151804	\$	29,000.00	\$	3,165.40	\$	791.35	\$	474.81	\$	4,431.56	ST
17	Sidewalk	Sidewalk	0.031269763	\$	300,000.00	\$	9,380.93	\$	2,345.23	\$	1,407.14	\$	13,133.30	LT
25	Sidewalk	Sidewalk	0.225453218	\$	300,000.00	\$	67,635.97	\$	16,908.99	\$	10,145.39	\$	94,690.35	LT
27	Sidewalk	Sidewalk	0.032879772	\$	300,000.00	\$	9,863.93	\$	2,465.98	\$	1,479.59	\$	13,809.50	LT
32	Sidewalk	Sidewalk	0.082339486	\$	300,000.00	\$	24,701.85	\$	6,175.46	\$	3,705.28	\$	34,582.58	LT
43	Sidewalk	Sidewalk	0.056468732	\$	300,000.00	\$	16,940.62	\$	4,235.15	\$	2,541.09	\$	23,716.87	LT
51	Sidewalk	Sidewalk	0.043122553	\$	300,000.00	\$	12,936.77	\$	3,234.19	\$	1,940.51	\$	18,111.47	LT
53	Sidewalk	Sidewalk	0.134481129	\$	300,000.00	\$	40,344.34	\$	10,086.08	\$	6,051.65	\$	56,482.07	LT
55	Sidewalk	Sidewalk	0.36580043	\$	300,000.00	\$	109,740.13	\$	27,435.03	\$	16,461.02	\$	153,636.18	LT
57	Sidewalk	Sidewalk	0.077247715	\$	300,000.00	\$	23,174.31	\$	5,793.58	\$	3,476.15	\$	32,444.04	LT
58	Sidewalk	Sidewalk	0.376477883	\$	300,000.00	\$	112,943.36	\$	28,235.84	\$	16,941.50	\$	158,120.71	LT
59	Sidewalk	Sidewalk	0.046142085	\$	300,000.00	\$	13,842.63	\$	3,460.66	\$	2,076.39	\$	19,379.68	LT
60	Sidewalk	Sidewalk	0.163789189	\$	300,000.00	\$	49,136.76	\$	12,284.19	\$	7,370.51	\$	68,791.46	LT
71	Sidewalk	Sidewalk	0.031614455	\$	300,000.00	\$	9,484.34	\$	2,371.08	\$	1,422.65	\$	13,278.07	LT
72	Sidewalk	Sidewalk	0.161878032	\$	300,000.00	\$	48,563.41	\$	12,140.85	\$	7,284.51	\$	67,988.77	LT
73	Sidewalk	Sidewalk	0.15686861	\$	300,000.00	\$	47,060.58	\$	11,765.15	\$	7,059.09	\$	65,884.82	LT
74	Sidewalk	Sidewalk	0.167512518	\$	300,000.00	\$	50,253.76	\$	12,563.44	\$	7,538.06	\$	70,355.26	LT
75	Sidewalk	Sidewalk	0.163481963	\$	300,000.00	\$	49,044.59	\$	12,261.15	\$	7,356.69	\$	68,662.42	LT
91	Sidewalk	Sidewalk	0.129898613	\$	300,000.00	\$	38,969.58	\$	9,742.40	\$	5,845.44	\$	54,557.42	LT
93	Sidewalk	Sidewalk	0.156720979	\$	300,000.00	\$	47,016.29	\$	11,754.07	\$	7,052.44	\$	65,822.81	LT
94	Sidewalk	Sidewalk	0.224170212	\$	300,000.00	\$	67,251.06	\$	16,812.77	\$	10,087.66	\$	94,151.49	LT
97	Sidewalk	Sidewalk	0.031488109	\$	300,000.00	\$	9,446.43	\$	2,361.61	\$	1,416.96	\$	13,225.01	LT
98	Sidewalk	Sidewalk	0.036612212	\$	300,000.00	\$	10,983.66	\$	2,745.92	\$	1,647.55	\$	15,377.13	LT
130	Sidewalk	Sidewalk	0.002475563	\$	300,000.00	\$	742.67	\$	185.67	\$	111.40	\$	1,039.74	LT
604	Sidewalk	Sidewalk	0.065865495	\$	300,000.00	\$	19,759.65	\$	4,939.91	\$	2,963.95	\$	27,663.51	LT
1009	Sidewalk	Sidewalk	0.248249777	\$	300,000.00	\$	74,474.93	\$	18,618.73	\$	11,171.24	\$	104,264.91	LT
1010	Sidewalk	Sidewalk	0.179847225	\$	300,000.00	\$	53,954.17	\$	13,488.54	\$	8,093.13	\$	75,535.83	LT
1012	Sidewalk	Sidewalk	0.216673396	\$	300,000.00	\$	65,002.02	\$	16,250.50	\$	9,750.30	\$	91,002.83	LT
1013	Sidewalk	Sidewalk	0.071224386	\$	300,000.00	\$	21,367.32	\$	5,341.83	\$	3,205.10	\$	29,914.24	LT
1016	Sidewalk	Sidewalk	0.194223397	\$	300,000.00	\$	58,267.02	\$	14,566.75	\$	8,740.05	\$	81,573.83	LT
1017	Sidewalk	Sidewalk	0.101808164	\$	300,000.00	\$	30,542.45	\$	7,635.61	\$	4,581.37	\$	42,759.43	LT
1018	Sidewalk	Sidewalk	0.480631639	\$	300,000.00	\$	144,189.49	\$	36,047.37	\$	21,628.42	\$	201,865.29	LT
1033	Sidewalk	Sidewalk	0.267122489	\$	300,000.00	\$	80,136.75	\$	20,034.19	\$	12,020.51	\$	112,191.45	LT
1037	Sidewalk	Sidewalk	0.270786074	\$	300,000.00	\$	81,235.82	\$	20,308.96	\$	12,185.37	\$	113,730.15	LT
1041	Sidewalk	Sidewalk	0.064247561	\$	300,000.00	\$	19,274.27	\$	4,818.57	\$	2,891.14	\$	26,983.98	LT
1044	Sidewalk	Sidewalk	0.067304014	\$	300,000.00	\$	20,191.20	\$	5,047.80	\$	3,028.68	\$	28,267.69	LT
1046	Sidewalk	Sidewalk	0.033574121	\$	300,000.00	\$	10,072.24	\$	2,518.06	\$	1,510.84	\$	14,101.13	LT
1058	Sidewalk	Sidewalk	0.057699629	\$	300,000.00	\$	17,309.89	\$	4,327.47	\$	2,596.48	\$	24,233.84	LT
1059	Sidewalk	Sidewalk	0.178232355	\$	300,000.00	\$	53,469.71	\$	13,367.43	\$	8,020.46	\$	74,857.59	LT
1061	Sidewalk	Sidewalk	0.299787987	\$	300,000.00	\$	89,936.40	\$	22,484.10	\$	13,490.46	\$	125,910.95	LT
1063	Sidewalk	Sidewalk	0.274166585	\$	300,000.00	\$	82,249.98	\$	20,562.49	\$	12,337.50	\$	115,149.97	LT
1065	Sidewalk	Sidewalk	0.011854045	\$	300,000.00	\$	3,556.21	\$	889.05	\$	533.43	\$	4,978.70	LT
1067	Sidewalk	Sidewalk	0.398991428	\$	300,000.00	\$	119,697.43	\$	29,924.36	\$	17,954.61	\$	167,576.40	LT
1068	Sidewalk	Sidewalk	0.060204336	\$	300,000.00	\$	18,061.30	\$	4,515.33	\$	2,709.20	\$	25,285.82	LT
1069	Sidewalk	Sidewalk	0.221262754	\$	300,000.00	\$	66,378.83	\$	16,594.71	\$	9,956.82	\$	92,930.36	LT
1070	Sidewalk	Sidewalk	0.139204928	\$	300,000.00	\$	41,761.48	\$	10,440.37	\$	6,264.22	\$	58,466.07	LT
1071	Sidewalk	Sidewalk	0.221441551	\$	300,000.00	\$	66,432.47	\$	16,608.12	\$	9,964.87	\$	93,005.45	LT
1078	Sidewalk	Sidewalk	0.087198806	\$	300,000.00	\$	26,159.64	\$	6,539.91	\$	3,923.95	\$	36,623.50	LT
1081	Sidewalk	Sidewalk	0.233674435	\$	300,000.00	\$	70,102.33	\$	17,525.58	\$	10,515.35	\$	98,143.26	LT
1082	Sidewalk	Sidewalk	0.195061561	\$	300,000.00	\$	58,518.47	\$	14,629.62	\$	8,777.77	\$	81,925.86	LT
1083	Sidewalk	Sidewalk	0.352852345	\$	300,000.00	\$	105,855.70	\$	26,463.93	\$	15,878.36	\$	148,197.98	LT
1084	Sidewalk	Sidewalk	0.061074834	\$	300,000.00	\$	18,322.45	\$	4,580.61	\$	2,748.37	\$	25,651.43	LT
1085	Sidewalk	Sidewalk	0.180606489	\$	300,000.00	\$	54,181.95	\$	13,545.49	\$	8,127.29	\$	75,854.73	LT
1087	Sidewalk	Sidewalk	0.287315136	\$	300,000.00	\$	86,194.54	\$	21,548.64	\$	12,929.18	\$	120,672.36	LT
1090	Sidewalk	Sidewalk	0.074748041	\$	300,000.00	\$	22,424.41	\$	5,606.10	\$	3,363.66	\$	31,394.18	LT

1096	Sidewalk	Sidewalk	0.196864903	\$	300,000.00	\$	59,059.47	\$	14,764.87	\$	8,858.92	\$	82,683.26	LT
1097	Sidewalk	Sidewalk	0.196828908	\$	300,000.00	\$	59,048.67	\$	14,762.17	\$	8,857.30	\$	82,668.14	LT
1111	Sidewalk	Sidewalk	0.035244493	\$	300,000.00	\$	10,573.35	\$	2,643.34	\$	1,586.00	\$	14,802.69	LT
1114	Sidewalk	Sidewalk	0.036356973	\$	300,000.00	\$	10,907.09	\$	2,726.77	\$	1,636.06	\$	15,269.93	LT
1116	Sidewalk	Sidewalk	0.06637722	\$	300,000.00	\$	19,913.17	\$	4,978.29	\$	2,986.97	\$	27,878.43	LT
1117	Sidewalk	Sidewalk	0.060337705	\$	300,000.00	\$	18,101.31	\$	4,525.33	\$	2,715.20	\$	25,341.84	LT
1118	Sidewalk	Sidewalk	0.260182769	\$	300,000.00	\$	78,054.83	\$	19,513.71	\$	11,708.22	\$	109,276.76	LT
1120	Sidewalk	Sidewalk	0.280567096	\$	300,000.00	\$	84,170.13	\$	21,042.53	\$	12,625.52	\$	117,838.18	LT
1132	Sidewalk	Sidewalk	0.063022887	\$	300,000.00	\$	18,906.87	\$	4,726.72	\$	2,836.03	\$	26,469.61	LT
1133	Sidewalk	Sidewalk	0.314419154	\$	300,000.00	\$	94,325.75	\$	23,581.44	\$	14,148.86	\$	132,056.04	LT
1134	Sidewalk	Sidewalk	0.316833505	\$	300,000.00	\$	95,050.05	\$	23,762.51	\$	14,257.51	\$	133,070.07	LT
1138	Sidewalk	Sidewalk	0.186304703	\$	300,000.00	\$	55,891.41	\$	13,972.85	\$	8,383.71	\$	78,247.98	LT
1139	Sidewalk	Sidewalk	0.071199635	\$	300,000.00	\$	21,359.89	\$	5,339.97	\$	3,203.98	\$	29,903.85	LT
1140	Sidewalk	Sidewalk	0.065733009	\$	300,000.00	\$	19,719.90	\$	4,929.98	\$	2,957.99	\$	27,607.86	LT
1141	Sidewalk	Sidewalk	0.186624148	\$	300,000.00	\$	55,987.24	\$	13,996.81	\$	8,398.09	\$	78,382.14	LT
1142	Sidewalk	Sidewalk	0.02955806	\$	300,000.00	\$	8,867.42	\$	2,216.85	\$	1,330.11	\$	12,414.39	LT
1144	Sidewalk	Sidewalk	0.184409463	\$	300,000.00	\$	55,322.84	\$	13,830.71	\$	8,298.43	\$	77,451.97	LT
1182	Sidewalk	Sidewalk	0.038501893	\$	300,000.00	\$	11,550.57	\$	2,887.64	\$	1,732.59	\$	16,170.79	LT
1223	Sidewalk	Sidewalk	0.211945788	\$	300,000.00	\$	63,583.74	\$	15,895.93	\$	9,537.56	\$	89,017.23	LT
1224	Sidewalk	Sidewalk	0.080634267	\$	300,000.00	\$	24,190.28	\$	6,047.57	\$	3,628.54	\$	33,866.39	LT
1225	Sidewalk	Sidewalk	0.022959163	\$	300,000.00	\$	6,887.75	\$	1,721.94	\$	1,033.16	\$	9,642.85	LT
1230	Sidewalk	Sidewalk	0.309490547	\$	300,000.00	\$	92,847.16	\$	23,211.79	\$	13,927.07	\$	129,986.03	LT
1234	Sidewalk	Sidewalk	0.002094221	\$	300,000.00	\$	628.27	\$	157.07	\$	94.24	\$	879.57	LT
1239	Sidewalk	Sidewalk	0.07888676	\$	300,000.00	\$	23,666.03	\$	5,916.51	\$	3,549.90	\$	33,132.44	LT
1240	Sidewalk	Sidewalk	0.002370913	\$	300,000.00	\$	711.27	\$	177.82	\$	106.69	\$	995.78	LT
1241	Sidewalk	Sidewalk	0.002714471	\$	300,000.00	\$	814.34	\$	203.59	\$	122.15	\$	1,140.08	LT
1243	Sidewalk	Sidewalk	0.002592146	\$	300,000.00	\$	777.64	\$	194.41	\$	116.65	\$	1,088.70	LT
1261	Sidewalk	Sidewalk	0.061115611	\$	300,000.00	\$	18,334.68	\$	4,583.67	\$	2,750.20	\$	25,668.56	LT
1262	Sidewalk	Sidewalk	0.002572909	\$	300,000.00	\$	771.87	\$	192.97	\$	115.78	\$	1,080.62	LT
1264	Sidewalk	Sidewalk	0.001924687	\$	300,000.00	\$	577.41	\$	144.35	\$	86.61	\$	808.37	LT
1266	Sidewalk	Sidewalk	0.001949041	\$	300,000.00	\$	584.71	\$	146.18	\$	87.71	\$	818.60	LT
1281	Sidewalk	Sidewalk	0.234142315	\$	300,000.00	\$	70,242.69	\$	17,560.67	\$	10,536.40	\$	98,339.77	LT
1282	Sidewalk	Sidewalk	0.241713147	\$	300,000.00	\$	72,513.94	\$	18,128.49	\$	10,877.09	\$	101,519.52	LT
1283	Sidewalk	Sidewalk	0.038950845	\$	300,000.00	\$	11,685.25	\$	2,921.31	\$	1,752.79	\$	16,359.35	LT
1284	Sidewalk	Sidewalk	0.038668773	\$	300,000.00	\$	11,600.63	\$	2,900.16	\$	1,740.09	\$	16,240.88	LT
1285	Sidewalk	Sidewalk	0.197756281	\$	300,000.00	\$	59,326.88	\$	14,831.72	\$	8,899.03	\$	83,057.64	LT
1286	Sidewalk	Sidewalk	0.159900263	\$	300,000.00	\$	47,970.08	\$	11,992.52	\$	7,195.51	\$	67,158.11	LT
1287	Sidewalk	Sidewalk	0.14340785	\$	300,000.00	\$	43,022.35	\$	10,755.59	\$	6,453.35	\$	60,231.30	LT
1289	Sidewalk	Sidewalk	0.226914089	\$	300,000.00	\$	68,074.23	\$	17,018.56	\$	10,211.13	\$	95,303.92	LT
1290	Sidewalk	Sidewalk	0.004203255	\$	300,000.00	\$	1,260.98	\$	315.24	\$	189.15	\$	1,765.37	LT
1292	Sidewalk	Sidewalk	0.05871214	\$	300,000.00	\$	17,613.64	\$	4,403.41	\$	2,642.05	\$	24,659.10	LT
1293	Sidewalk	Sidewalk	0.237695888	\$	300,000.00	\$	71,308.77	\$	17,827.19	\$	10,696.31	\$	99,832.27	LT
1295	Sidewalk	Sidewalk	0.430704887	\$	300,000.00	\$	129,211.47	\$	32,302.87	\$	19,381.72	\$	180,896.05	LT
1311	Sidewalk	Sidewalk	0.469289971	\$	300,000.00	\$	140,786.99	\$	35,196.75	\$	21,118.05	\$	197,101.79	LT
1316	Sidewalk	Sidewalk	0.094682466	\$	300,000.00	\$	28,404.74	\$	7,101.18	\$	4,260.71	\$	39,766.64	ST
1317	Sidewalk	Sidewalk	0.302784518	\$	300,000.00	\$	90,835.36	\$	22,708.84	\$	13,625.30	\$	127,169.50	LT
1318	Sidewalk	Sidewalk	0.11068392	\$	300,000.00	\$	33,205.18	\$	8,301.29	\$	4,980.78	\$	46,487.25	ST
1319	Sidewalk	Sidewalk	0.264074383	\$	300,000.00	\$	79,222.31	\$	19,805.58	\$	11,883.35	\$	110,911.24	ST
1320	Sidewalk	Sidewalk	0.028029478	\$	300,000.00	\$	8,408.84	\$	2,102.21	\$	1,261.33	\$	11,772.38	ST
1321	Sidewalk	Sidewalk	0.074698771	\$	300,000.00	\$	22,409.63	\$	5,602.41	\$	3,361.44	\$	31,373.48	LT
1322	Sidewalk	Sidewalk	0.274702247	\$	300,000.00	\$	82,410.67	\$	20,602.67	\$	12,361.60	\$	115,374.94	LT
1323	Sidewalk	Sidewalk	0.061077507	\$	300,000.00	\$	18,323.25	\$	4,580.81	\$	2,748.49	\$	25,652.55	LT
1324	Sidewalk	Sidewalk	0.155545149	\$	300,000.00	\$	46,663.54	\$	11,665.89	\$	6,999.53	\$	65,328.96	LT
1325	Sidewalk	Sidewalk	0.149539392	\$	300,000.00	\$	44,861.82	\$	11,215.45	\$	6,729.27	\$	62,806.54	LT
1326	Sidewalk	Sidewalk	0.119485081	\$	300,000.00	\$	35,845.52	\$	8,961.38	\$	5,376.83	\$	50,183.73	LT
1327	Sidewalk	Sidewalk	0.123591616	\$	300,000.00	\$	37,077.48	\$	9,269.37	\$	5,561.62	\$	51,908.48	LT

1333	Sidewalk	Sidewalk	0.210181135	\$	300,000.00	\$	63,054.34	\$	15,763.59	\$	9,458.15	\$	88,276.08	LT
1334	Sidewalk	Sidewalk	0.00313757	\$	300,000.00	\$	941.27	\$	235.32	\$	141.19	\$	1,317.78	LT
1335	Sidewalk	Sidewalk	0.000854537	\$	300,000.00	\$	256.36	\$	64.09	\$	38.45	\$	358.91	LT
1336	Sidewalk	Sidewalk	0.035082623	\$	300,000.00	\$	10,524.79	\$	2,631.20	\$	1,578.72	\$	14,734.70	LT
1337	Sidewalk	Sidewalk	0.012805711	\$	300,000.00	\$	3,841.71	\$	960.43	\$	576.26	\$	5,378.40	LT
1338	Sidewalk	Sidewalk	0.012806718	\$	300,000.00	\$	3,842.02	\$	960.50	\$	576.30	\$	5,378.82	LT
1339	Sidewalk	Sidewalk	0.004622177	\$	300,000.00	\$	1,386.65	\$	346.66	\$	208.00	\$	1,941.31	LT
1340	Sidewalk	Sidewalk	0.058499312	\$	300,000.00	\$	17,549.79	\$	4,387.45	\$	2,632.47	\$	24,569.71	LT
1341	Sidewalk	Sidewalk	0.072731969	\$	300,000.00	\$	21,819.59	\$	5,454.90	\$	3,272.94	\$	30,547.43	LT
1342	Sidewalk	Sidewalk	0.152403831	\$	300,000.00	\$	45,721.15	\$	11,430.29	\$	6,858.17	\$	64,009.61	LT
1350	Sidewalk	Sidewalk	0.353337027	\$	300,000.00	\$	106,001.11	\$	26,500.28	\$	15,900.17	\$	148,401.55	LT
1351	Sidewalk	Sidewalk	0.242197392	\$	300,000.00	\$	72,659.22	\$	18,164.80	\$	10,898.88	\$	101,722.90	LT
1352	Sidewalk	Sidewalk	0.387993159	\$	300,000.00	\$	116,397.95	\$	29,099.49	\$	17,459.69	\$	162,957.13	LT
1355	Sidewalk	Sidewalk	0.181279486	\$	300,000.00	\$	54,383.85	\$	13,595.96	\$	8,157.58	\$	76,137.38	LT
1356	Sidewalk	Sidewalk	0.049882518	\$	300,000.00	\$	14,964.76	\$	3,741.19	\$	2,244.71	\$	20,950.66	LT
1357	Sidewalk	Sidewalk	0.01143926	\$	300,000.00	\$	3,431.78	\$	857.94	\$	514.77	\$	4,804.49	LT
1358	Sidewalk	Sidewalk	0.044331734	\$	300,000.00	\$	13,299.52	\$	3,324.88	\$	1,994.93	\$	18,619.33	LT
1359	Sidewalk	Sidewalk	0.017632095	\$	300,000.00	\$	5,289.63	\$	1,322.41	\$	793.44	\$	7,405.48	LT
1360	Sidewalk	Sidewalk	0.007824878	\$	300,000.00	\$	2,347.46	\$	586.87	\$	352.12	\$	3,286.45	LT
1361	Sidewalk	Sidewalk	0.050350422	\$	300,000.00	\$	15,105.13	\$	3,776.28	\$	2,265.77	\$	21,147.18	LT
1362	Sidewalk	Sidewalk	0.051515342	\$	300,000.00	\$	15,454.60	\$	3,863.65	\$	2,318.19	\$	21,636.44	LT
1366	Sidewalk	Sidewalk	0.01632593	\$	300,000.00	\$	4,897.78	\$	1,224.44	\$	734.67	\$	6,856.89	LT
1367	Sidewalk	Sidewalk	0.110154012	\$	300,000.00	\$	33,046.20	\$	8,261.55	\$	4,956.93	\$	46,264.68	LT
1368	Sidewalk	Sidewalk	0.009349252	\$	300,000.00	\$	2,804.78	\$	701.19	\$	420.72	\$	3,926.69	LT
1369	Sidewalk	Sidewalk	0.018926773	\$	300,000.00	\$	5,678.03	\$	1,419.51	\$	851.70	\$	7,949.24	LT
1370	Sidewalk	Sidewalk	0.167338856	\$	300,000.00	\$	50,201.66	\$	12,550.41	\$	7,530.25	\$	70,282.32	LT
1371	Sidewalk	Sidewalk	0.227639186	\$	300,000.00	\$	68,291.76	\$	17,072.94	\$	10,243.76	\$	95,608.46	LT
1372	Sidewalk	Sidewalk	0.002681934	\$	300,000.00	\$	804.58	\$	201.15	\$	120.69	\$	1,126.41	LT
1374	Sidewalk	Sidewalk	0.207045641	\$	300,000.00	\$	62,113.69	\$	15,528.42	\$	9,317.05	\$	86,959.17	LT
1375	Sidewalk	Sidewalk	0.033449184	\$	300,000.00	\$	10,034.76	\$	2,508.69	\$	1,505.21	\$	14,048.66	LT
1377	Sidewalk	Sidewalk	0.490969484	\$	300,000.00	\$	147,290.85	\$	36,822.71	\$	22,093.63	\$	206,207.18	LT
1378	Sidewalk	Sidewalk	0.043755783	\$	300,000.00	\$	13,126.73	\$	3,281.68	\$	1,969.01	\$	18,377.43	LT
1379	Sidewalk	Sidewalk	0.072116314	\$	300,000.00	\$	21,634.89	\$	5,408.72	\$	3,245.23	\$	30,288.85	LT
1383	Sidewalk	Sidewalk	0.602920171	\$	300,000.00	\$	180,876.05	\$	45,219.01	\$	27,131.41	\$	253,226.47	LT
1385	Sidewalk	Sidewalk	0.003542126	\$	300,000.00	\$	1,062.64	\$	265.66	\$	159.40	\$	1,487.69	LT
1387	Sidewalk	Sidewalk	0.040438804	\$	300,000.00	\$	12,131.64	\$	3,032.91	\$	1,819.75	\$	16,984.30	LT
1389	Sidewalk	Sidewalk	0.126141135	\$	300,000.00	\$	37,842.34	\$	9,460.59	\$	5,676.35	\$	52,979.28	LT
1390	Sidewalk	Sidewalk	0.119903909	\$	300,000.00	\$	35,971.17	\$	8,992.79	\$	5,395.68	\$	50,359.64	LT
1391	Sidewalk	Sidewalk	0.073267356	\$	300,000.00	\$	21,980.21	\$	5,495.05	\$	3,297.03	\$	30,772.29	LT
1392	Sidewalk	Sidewalk	0.26699852	\$	300,000.00	\$	80,099.56	\$	20,024.89	\$	12,014.93	\$	112,139.38	LT
1403	Sidewalk	Sidewalk	0.065478568	\$	300,000.00	\$	19,643.57	\$	4,910.89	\$	2,946.54	\$	27,501.00	LT
2176	Sidewalk	Sidewalk	0.069026886	\$	300,000.00	\$	20,708.07	\$	5,177.02	\$	3,106.21	\$	28,991.29	LT
2177	Sidewalk	Sidewalk	0.108064833	\$	300,000.00	\$	32,419.45	\$	8,104.86	\$	4,862.92	\$	45,387.23	LT
2178	Sidewalk	Sidewalk	0.25600907	\$	300,000.00	\$	76,802.72	\$	19,200.68	\$	11,520.41	\$	107,523.81	LT
2186	Sidewalk	Sidewalk	0.27473196	\$	300,000.00	\$	82,419.59	\$	20,604.90	\$	12,362.94	\$	115,387.42	LT
2189	Sidewalk	Sidewalk	0.118963326	\$	300,000.00	\$	35,689.00	\$	8,922.25	\$	5,353.35	\$	49,964.60	LT
2192	Sidewalk	Sidewalk	0.098722884	\$	300,000.00	\$	29,616.87	\$	7,404.22	\$	4,442.53	\$	41,463.61	LT
2193	Sidewalk	Sidewalk	0.018809964	\$	300,000.00	\$	5,642.99	\$	1,410.75	\$	846.45	\$	7,900.18	LT
2457	Sidewalk	Sidewalk	0.102574963	\$	300,000.00	\$	30,772.49	\$	7,693.12	\$	4,615.87	\$	43,081.48	LT
2458	Sidewalk	Sidewalk	0.050685236	\$	300,000.00	\$	15,205.57	\$	3,801.39	\$	2,280.84	\$	21,287.80	LT
2476	Sidewalk	Sidewalk	0.078201631	\$	300,000.00	\$	23,460.49	\$	5,865.12	\$	3,519.07	\$	32,844.69	LT
2489	Sidewalk	Sidewalk	0.14966025	\$	300,000.00	\$	44,898.08	\$	11,224.52	\$	6,734.71	\$	62,857.31	LT
2492	Sidewalk	Sidewalk	0.116356504	\$	300,000.00	\$	34,906.95	\$	8,726.74	\$	5,236.04	\$	48,869.73	LT
2493	Sidewalk	Sidewalk	0.115248836	\$	300,000.00	\$	34,574.65	\$	8,643.66	\$	5,186.20	\$	48,404.51	LT
2494	Sidewalk	Sidewalk	0.040230521	\$	300,000.00	\$	12,069.16	\$	3,017.29	\$	1,810.37	\$	16,896.82	LT
2504	Sidewalk	Sidewalk	0.131313489	\$	300,000.00	\$	39,394.05	\$	9,848.51	\$	5,909.11	\$	55,151.67	LT

2505	Sidewalk	Sidewalk	0.078003201	\$	300,000.00	\$	23,400.96	\$	5,850.24	\$	3,510.14	\$	32,761.34	LT
2506	Sidewalk	Sidewalk	0.027790534	\$	300,000.00	\$	8,337.16	\$	2,084.29	\$	1,250.57	\$	11,672.02	LT
2507	Sidewalk	Sidewalk	0.042888887	\$	300,000.00	\$	12,866.67	\$	3,216.67	\$	1,930.00	\$	18,013.33	LT
2508	Sidewalk	Sidewalk	0.06983191	\$	300,000.00	\$	20,949.57	\$	5,237.39	\$	3,142.44	\$	29,329.40	LT
2514	Sidewalk	Sidewalk	0.125101506	\$	300,000.00	\$	37,530.45	\$	9,382.61	\$	5,629.57	\$	52,542.63	LT
2521	Sidewalk	Sidewalk	0.074085993	\$	300,000.00	\$	22,225.80	\$	5,556.45	\$	3,333.87	\$	31,116.12	LT
2522	Sidewalk	Sidewalk	0.126731382	\$	300,000.00	\$	38,019.41	\$	9,504.85	\$	5,702.91	\$	53,227.18	LT
2542	Sidewalk	Sidewalk	0.031413142	\$	300,000.00	\$	9,423.94	\$	2,355.99	\$	1,413.59	\$	13,193.52	LT
2543	Sidewalk	Sidewalk	0.039120723	\$	300,000.00	\$	11,736.22	\$	2,934.05	\$	1,760.43	\$	16,430.70	LT
2544	Sidewalk	Sidewalk	0.074407918	\$	300,000.00	\$	22,322.38	\$	5,580.59	\$	3,348.36	\$	31,251.33	LT
2547	Sidewalk	Sidewalk	0.170445019	\$	300,000.00	\$	51,133.51	\$	12,783.38	\$	7,670.03	\$	71,586.91	LT
2548	Sidewalk	Sidewalk	0.214998391	\$	300,000.00	\$	64,499.52	\$	16,124.88	\$	9,674.93	\$	90,299.32	LT
2549	Sidewalk	Sidewalk	0.144306163	\$	300,000.00	\$	43,291.85	\$	10,822.96	\$	6,493.78	\$	60,608.59	LT
2559	Sidewalk	Sidewalk	0.042333324	\$	300,000.00	\$	12,700.00	\$	3,175.00	\$	1,905.00	\$	17,780.00	LT
2560	Sidewalk	Sidewalk	0.036378972	\$	300,000.00	\$	10,913.69	\$	2,728.42	\$	1,637.05	\$	15,279.17	LT
2579	Sidewalk	Sidewalk	0.051101454	\$	300,000.00	\$	15,330.44	\$	3,832.61	\$	2,299.57	\$	21,462.61	LT
2583	Sidewalk	Sidewalk	0.074433361	\$	300,000.00	\$	22,330.01	\$	5,582.50	\$	3,349.50	\$	31,262.01	LT
2584	Sidewalk	Sidewalk	0.068264949	\$	300,000.00	\$	20,479.48	\$	5,119.87	\$	3,071.92	\$	28,671.28	LT
2586	Sidewalk	Sidewalk	0.065132569	\$	300,000.00	\$	19,539.77	\$	4,884.94	\$	2,930.97	\$	27,355.68	LT
2587	Sidewalk	Sidewalk	0.071100193	\$	300,000.00	\$	21,330.06	\$	5,332.51	\$	3,199.51	\$	29,862.08	LT
2589	Sidewalk	Sidewalk	0.131772428	\$	300,000.00	\$	39,531.73	\$	9,882.93	\$	5,929.76	\$	55,344.42	LT
2590	Sidewalk	Sidewalk	0.067397351	\$	300,000.00	\$	20,219.21	\$	5,054.80	\$	3,032.88	\$	28,306.89	LT
2591	Sidewalk	Sidewalk	0.077909117	\$	300,000.00	\$	23,372.74	\$	5,843.18	\$	3,505.91	\$	32,721.83	LT
2593	Sidewalk	Sidewalk	0.06341794	\$	300,000.00	\$	19,025.38	\$	4,756.35	\$	2,853.81	\$	26,635.53	ST
2594	Sidewalk	Sidewalk	0.071108122	\$	300,000.00	\$	21,332.44	\$	5,333.11	\$	3,199.87	\$	29,865.41	LT
2595	Sidewalk	Sidewalk	0.089734131	\$	300,000.00	\$	26,920.24	\$	6,730.06	\$	4,038.04	\$	37,688.34	ST
2596	Sidewalk	Sidewalk	0.178332262	\$	300,000.00	\$	53,499.68	\$	13,374.92	\$	8,024.95	\$	74,899.55	LT
2597	Sidewalk	Sidewalk	0.160443214	\$	300,000.00	\$	48,132.96	\$	12,033.24	\$	7,219.94	\$	67,386.15	LT
2598	Sidewalk	Sidewalk	0.13377898	\$	300,000.00	\$	40,133.69	\$	10,033.42	\$	6,020.05	\$	56,187.17	ST
2600	Sidewalk	Sidewalk	0.069193046	\$	300,000.00	\$	20,757.91	\$	5,189.48	\$	3,113.69	\$	29,061.08	ST
2601	Sidewalk	Sidewalk	0.066074491	\$	300,000.00	\$	19,822.35	\$	4,955.59	\$	2,973.35	\$	27,751.29	ST
2960	Sidewalk	Sidewalk	0.051309286	\$	300,000.00	\$	15,392.79	\$	3,848.20	\$	2,308.92	\$	21,549.90	LT
4566	Sidewalk	Sidewalk	0.032245248	\$	300,000.00	\$	9,673.57	\$	2,418.39	\$	1,451.04	\$	13,543.00	LT
5770	Sidewalk	Sidewalk	0.144246211	\$	300,000.00	\$	43,273.86	\$	10,818.47	\$	6,491.08	\$	60,583.41	LT
9772	Sidewalk	Sidewalk	0.027719085	\$	300,000.00	\$	8,315.73	\$	2,078.93	\$	1,247.36	\$	11,642.02	LT
9773	Sidewalk	Sidewalk	0.031989934	\$	300,000.00	\$	9,596.98	\$	2,399.25	\$	1,439.55	\$	13,435.77	LT
0	Sidewalk	Sidewalk	0.176448501	\$	300,000.00	\$	52,934.55	\$	13,233.64	\$	7,940.18	\$	74,108.37	ST
0	Sidewalk	Sidewalk	0.168161987	\$	300,000.00	\$	50,448.60	\$	12,612.15	\$	7,567.29	\$	70,628.03	ST
0	Sidewalk	Sidewalk	0.52543782	\$	300,000.00	\$	157,631.35	\$	39,407.84	\$	23,644.70	\$	220,683.88	ST
0	Sidewalk	Sidewalk	0.130692434	\$	300,000.00	\$	39,207.73	\$	9,801.93	\$	5,881.16	\$	54,890.82	ST
0	Sidewalk	Sidewalk	0.196937813	\$	300,000.00	\$	59,081.34	\$	14,770.34	\$	8,862.20	\$	82,713.88	ST
0	Sidewalk	Sidewalk	0.329770746	\$	300,000.00	\$	98,931.22	\$	24,732.81	\$	14,839.68	\$	138,503.71	ST
0	Sidewalk	Sidewalk	0.438835311	\$	300,000.00	\$	131,650.59	\$	32,912.65	\$	19,747.59	\$	184,310.83	MT
0	Sidewalk	Sidewalk	0.406	\$	300,000.00	\$	121,800.00	\$	30,450.00	\$	18,270.00	\$	170,520.00	LT
0	Sidewalk	Sidewalk	0.406	\$	300,000.00	\$	121,800.00	\$	30,450.00	\$	18,270.00	\$	170,520.00	LT
0	Sidewalk	Sidewalk	0.8337	\$	300,000.00	\$	250,110.00	\$	62,527.50	\$	37,516.50	\$	350,154.00	LT
0	Sidewalk	Sidewalk	0.8337	\$	300,000.00	\$	250,110.00	\$	62,527.50	\$	37,516.50	\$	350,154.00	LT
16	Sidewalk	Walkway	0.034885942	\$	300,000.00	\$	10,465.78	\$	2,616.45	\$	1,569.87	\$	14,652.10	LT
22	Sidewalk	Walkway	0.150995901	\$	300,000.00	\$	45,298.77	\$	11,324.69	\$	6,794.82	\$	63,418.28	LT
1006	Sidewalk	Walkway	0.10647171	\$	300,000.00	\$	31,941.51	\$	7,985.38	\$	4,791.23	\$	44,718.12	LT
1079	Sidewalk	Walkway	0.079117473	\$	300,000.00	\$	23,735.24	\$	5,933.81	\$	3,560.29	\$	33,229.34	LT
1143	Sidewalk	Walkway	0.064121073	\$	300,000.00	\$	19,236.32	\$	4,809.08	\$	2,885.45	\$	26,930.85	LT
1376	Sidewalk	Walkway	0.253261626	\$	300,000.00	\$	75,978.49	\$	18,994.62	\$	11,396.77	\$	106,369.88	LT
1386	Sidewalk	Walkway	0.069959366	\$	300,000.00	\$	20,987.81	\$	5,246.95	\$	3,148.17	\$	29,382.93	ST
2588	Sidewalk	Walkway	0.131772428	\$	300,000.00	\$	39,531.73	\$	9,882.93	\$	5,929.76	\$	55,344.42	LT
4	TMP	Bike Lane	0.533317589	\$	29,000.00	\$	15,466.21	\$	3,866.55	\$	2,319.93	\$	21,652.69	LT

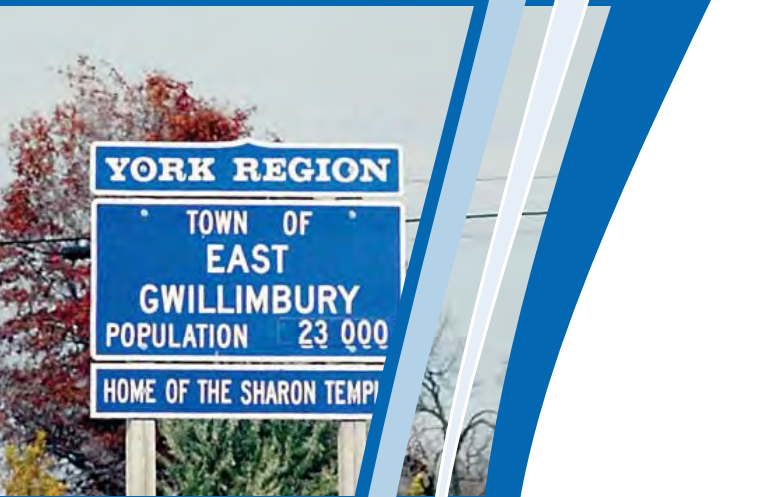
5	TMP	Bike Lane	1.090163189	\$	29,000.00	\$	31,614.73	\$	7,903.68	\$	4,742.21	\$	44,260.63	LT
6	TMP	Bike Lane	0.367014191	\$	29,000.00	\$	10,643.41	\$	2,660.85	\$	1,596.51	\$	14,900.78	LT
13	TMP	Bike Lane	0.889086767	\$	29,000.00	\$	25,783.52	\$	6,445.88	\$	3,867.53	\$	36,096.92	LT
14	TMP	Bike Lane	0.426359873	\$	29,000.00	\$	12,364.44	\$	3,091.11	\$	1,854.67	\$	17,310.21	LT
15	TMP	Bike Lane	0.397546822	\$	29,000.00	\$	11,528.86	\$	2,882.21	\$	1,729.33	\$	16,140.40	LT
16	TMP	Bike Lane	0.864559042	\$	29,000.00	\$	25,072.21	\$	6,268.05	\$	3,760.83	\$	35,101.10	LT
17	TMP	Bike Lane	3.437862196	\$	29,000.00	\$	99,698.00	\$	24,924.50	\$	14,954.70	\$	139,577.21	LT
18	TMP	Bike Lane	0.834333269	\$	29,000.00	\$	24,195.66	\$	6,048.92	\$	3,629.35	\$	33,873.93	LT
19	TMP	Bike Lane	1.595071184	\$	29,000.00	\$	46,257.06	\$	11,564.27	\$	6,938.56	\$	64,759.89	LT
20	TMP	Bike Lane	1.403807365	\$	29,000.00	\$	40,710.41	\$	10,177.60	\$	6,106.56	\$	56,994.58	MT
21	TMP	Bike Lane	0.393807089	\$	29,000.00	\$	11,420.41	\$	2,855.10	\$	1,713.06	\$	15,988.57	MT
22	TMP	Bike Lane	0.853237515	\$	29,000.00	\$	24,743.89	\$	6,185.97	\$	3,711.58	\$	34,641.44	LT
23	TMP	Bike Lane	0.302287591	\$	29,000.00	\$	8,766.34	\$	2,191.59	\$	1,314.95	\$	12,272.88	LT
24	TMP	Bike Lane	1.258780253	\$	29,000.00	\$	36,504.63	\$	9,126.16	\$	5,475.69	\$	51,106.48	MT
25	TMP	Bike Lane	0.256155572	\$	29,000.00	\$	7,428.51	\$	1,857.13	\$	1,114.28	\$	10,399.92	MT
30	TMP	Bike Lane	2.34266441	\$	29,000.00	\$	67,937.27	\$	16,984.32	\$	10,190.59	\$	95,112.18	MT
32	TMP	Bike Lane	2.058329475	\$	29,000.00	\$	59,691.55	\$	14,922.89	\$	8,953.73	\$	83,568.18	MT
38	TMP	Bike Lane	0.425869673	\$	29,000.00	\$	12,350.22	\$	3,087.56	\$	1,852.53	\$	17,290.31	LT
40	TMP	Bike Lane	0.795806184	\$	29,000.00	\$	23,078.38	\$	5,769.59	\$	3,461.76	\$	32,309.73	ST
41	TMP	Bike Lane	1.186823685	\$	29,000.00	\$	34,417.89	\$	8,604.47	\$	5,162.68	\$	48,185.04	MT
42	TMP	Bike Lane	0.777005874	\$	29,000.00	\$	22,533.17	\$	5,633.29	\$	3,379.98	\$	31,546.44	ST
44	TMP	Bike Lane	0.341939902	\$	29,000.00	\$	9,916.26	\$	2,479.06	\$	1,487.44	\$	13,882.76	LT
45	TMP	Bike Lane	1.46170957	\$	29,000.00	\$	42,389.58	\$	10,597.39	\$	6,358.44	\$	59,345.41	MT
46	TMP	Bike Lane	0.359769787	\$	29,000.00	\$	10,433.32	\$	2,608.33	\$	1,565.00	\$	14,606.65	ST
48	TMP	Bike Lane	1.728250062	\$	29,000.00	\$	50,119.25	\$	12,529.81	\$	7,517.89	\$	70,166.95	LT
219	TMP	Bike Lane	0.391854376	\$	29,000.00	\$	11,363.78	\$	2,840.94	\$	1,704.57	\$	15,909.29	MT
220	TMP	Bike Lane	1.261389758	\$	29,000.00	\$	36,580.30	\$	9,145.08	\$	5,487.05	\$	51,212.42	LT
254	TMP	Bike Lane	0.22662	\$	29,000.00	\$	6,571.98	\$	1,643.00	\$	985.80	\$	9,200.77	LT
0	TMP	Multi-Use Path	1.880961626	\$	375,000.00	\$	705,360.61	\$	176,340.15	\$	105,804.09	\$	987,504.85	LT
1	TMP	Multi-Use Path	0.540905726	\$	375,000.00	\$	202,839.65	\$	50,709.91	\$	30,425.95	\$	283,975.51	LT
2	TMP	Multi-Use Path	1.179219734	\$	375,000.00	\$	442,207.40	\$	110,551.85	\$	66,331.11	\$	619,090.36	LT
3	TMP	Multi-Use Path	0.388275619	\$	375,000.00	\$	145,603.36	\$	36,400.84	\$	21,840.50	\$	203,844.70	LT
7	TMP	Multi-Use Path	0.678509743	\$	375,000.00	\$	254,441.15	\$	63,610.29	\$	38,166.17	\$	356,217.62	LT
8	TMP	Multi-Use Path	0.48010382	\$	375,000.00	\$	180,038.93	\$	45,009.73	\$	27,005.84	\$	252,054.51	LT
9	TMP	Multi-Use Path	2.152474835	\$	375,000.00	\$	807,178.06	\$	201,794.52	\$	121,076.71	\$	1,130,049.29	LT
10	TMP	Multi-Use Path	1.070161481	\$	375,000.00	\$	401,310.56	\$	100,327.64	\$	60,196.58	\$	561,834.78	LT
11	TMP	Multi-Use Path	1.121474395	\$	375,000.00	\$	420,552.90	\$	105,138.22	\$	63,082.93	\$	588,774.06	MT
12	TMP	Multi-Use Path	0.306528331	\$	375,000.00	\$	114,948.12	\$	28,737.03	\$	17,242.22	\$	160,927.37	LT
27	TMP	Multi-Use Path	0.179559059	\$	375,000.00	\$	67,334.65	\$	16,833.66	\$	10,100.20	\$	94,268.51	LT
28	TMP	Multi-Use Path	2.260210777	\$	375,000.00	\$	847,579.04	\$	211,894.76	\$	127,136.86	\$	1,186,610.66	LT
29	TMP	Multi-Use Path	2.817582851	\$	375,000.00	\$	1,056,593.57	\$	264,148.39	\$	158,489.04	\$	1,479,231.00	LT
31	TMP	Multi-Use Path	2.048045297	\$	375,000.00	\$	768,016.99	\$	192,004.25	\$	115,202.55	\$	1,075,223.78	LT
33	TMP	Multi-Use Path	1.422947317	\$	375,000.00	\$	533,605.24	\$	133,401.31	\$	80,040.79	\$	747,047.34	LT
256	TMP	Multi-Use Path	0.836	\$	375,000.00	\$	313,500.00	\$	78,375.00	\$	47,025.00	\$	438,900.00	LT
34	TMP	Multi-Use Path	5.842061	\$	375,000.00	\$	2,190,772.88	\$	547,693.22	\$	328,615.93	\$	3,067,082.03	ST
35	TMP	Multi-Use Path	0.791145676	\$	375,000.00	\$	296,679.63	\$	74,169.91	\$	44,501.94	\$	415,351.48	MT
37	TMP	Multi-Use Path	0.784602806	\$	375,000.00	\$	294,226.05	\$	73,556.51	\$	44,133.91	\$	411,916.47	LT
39	TMP	Multi-Use Path	1.199506026	\$	375,000.00	\$	449,814.76	\$	112,453.69	\$	67,472.21	\$	629,740.66	MT
56	TMP	Multi-Use Path	2.034847986	\$	375,000.00	\$	763,067.99	\$	190,767.00	\$	114,460.20	\$	1,068,295.19	LT
58	TMP	Multi-Use Path	0.441900989	\$	375,000.00	\$	165,712.87	\$	41,428.22	\$	24,856.93	\$	231,998.02	LT
59	TMP	Multi-Use Path	2.277017421	\$	375,000.00	\$	853,881.53	\$	213,470.38	\$	128,082.23	\$	1,195,434.15	LT
60	TMP	Multi-Use Path	0.886064761	\$	375,000.00	\$	332,274.29	\$	83,068.57	\$	49,841.14	\$	465,184.00	LT
251	TMP	Multi-Use Path	1.261805384	\$	375,000.00	\$	473,177.02	\$	118,294.25	\$	70,976.55	\$	662,447.83	LT
210	TMP	Paved Shoulder	2.071011542	\$	375,000.00	\$	776,629.33	\$	194,157.33	\$	116,494.40	\$	1,087,281.06	MT
43	TMP	Signed Route	0.753466134	\$	1,200.00	\$	904.16	\$	226.04	\$	135.62	\$	1,265.82	LT

Table 3 - Summary of Recommended Active Transportation and Trails Network by Facility Type

Facility Type	Existing Length	Proposed Length	Total Length
Multi-Use Trail	63.3	34.2	97.5
Multi-Use Path	8.6	59.1	67.7
Protected Bike Lane	0.0	0.0	0.0
Cycle Track	4.1	0.0	4.1
Bike Lane	6.1	35.1	41.2
Paved Shoulder	36.2	32.4	68.6
Signed Route	2.9	33.0	35.9
Signed Route with Urban Shoulder	0.0	9.4	9.4
Sidewalk	150.0	30.1	180.1
Walkway	11.6	1.5	13.1
Footpath	8.2	0.0	8.2
Desire Line	0.0	98.6	98.6
Regional Proposed	0.0	126.1	126.1
Total	291.0	459.5	750.5

Table 4 - Summary of Recommended Active Transportation and Trails Network and Cost by Facility Type and Phase

Facility Type	Short-Term 0 to 5 years		Medium-Term 6 to 10 years		Long-Term 11 to 20+ years		Total	
	ST Length	ST Cost	MT Length	MT Cost	LT Length	LT Cost	Total Length	Total Cost
Multi-Use Trail	14.8	\$7,772,750	10.0	\$5,260,622	9.4	\$4,928,258	34.2	\$17,961,629
Multi-Use Path	17.1	\$8,961,779	7.2	\$3,763,038	34.8	\$18,292,252	59.1	\$31,017,068
Cycle Track	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
Bike Lane	4.3	\$172,764	13.1	\$531,853	17.8	\$722,230	35.1	\$1,426,848
Paved Shoulder	0.0	\$0	7.9	\$2,830,472	24.6	\$7,397,174	32.4	\$10,227,646
Signed Route	21.9	\$36,798	4.4	\$7,474	6.6	\$11,161	33.0	\$55,434
Signed Route with Urban Shoulder	9.4	\$2,826,282	0.0	\$0	0.0	\$0	9.4	\$2,826,282
Sidewalk	2.6	\$1,032,221	0.4	\$184,311	27.1	\$11,373,148	30.1	\$12,589,680
Walkway	0.1	\$56,016	0.5	\$193,794	0.8	\$344,663	1.5	\$594,473
Desire Line	0.2	\$0	1.3	\$0	97.0	\$0	98.5	\$0
Total	70.4	\$20,858,611	44.8	\$12,771,563	218.2	\$43,068,885	333.3	\$76,699,060



D16-010-39



Town of
East Gwillimbury

EAST GWILLIMBURY ACTIVE TRANSPORTATION AND TRAILS MASTER PLAN

Final Report



MMM GROUP

June 2012

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The Town of East Gwillimbury Active Transportation and Trails Master Plan presented in this report is the product of the hard work and effort of many people. The study team would like to thank the Mayor and Members of Council, the public, Town Staff, Trails Advisory Committee, agency representatives and stakeholders who gave their time and energy in the development of this planning study, especially those who participated in the public open houses, completed the online survey, and many others who provided written or verbal input to the study team. The Town of East Gwillimbury's Active Transportation and Trails Master Plan Team would like to express their appreciation to the following individuals that contributed to the development of this Plan.

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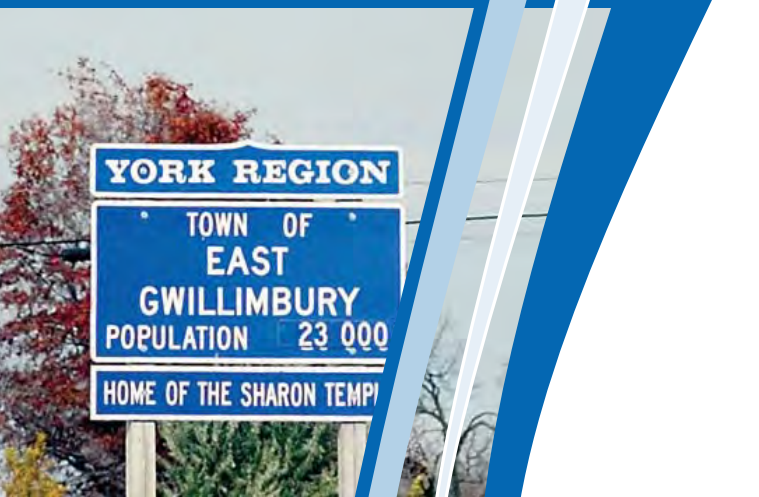
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Town of
East Gwillimbury

EAST GWILLIMBURY ACTIVE TRANSPORTATION AND TRAILS MASTER PLAN

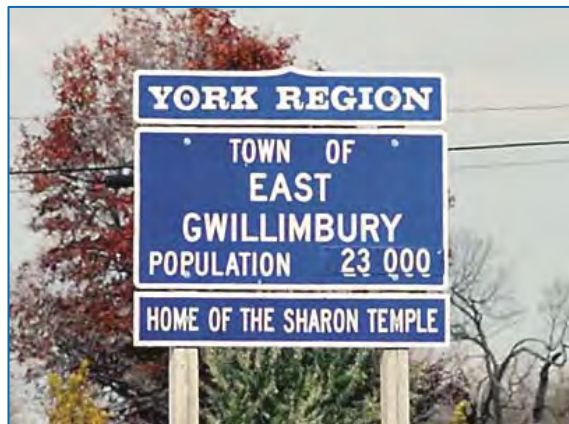
Executive Summary



June 2012

EXECUTIVE SUMMARY

The Town of East Gwillimbury has developed an Active Transportation (AT) and Trails Master Plan (ATTMP) to facilitate the development of a Town-wide network of active transportation and trail facilities over the next 25+ years. The AT and Trails Master Plan proposes planning, design and operations guidelines as well as supporting policies, recommendations and programs to encourage active transportation including walking and cycling as well as trail related activities. The Plan is also intended to support the Town's other sustainable growth management and "Healthy Communities" initiatives.



This study is intended to focus primarily on non-motorized travel modes (hiking, cycling, walking, etc.) on Town and Regional Roads, and on lands owned by the Town such as parks, public open space and woodlots. It also identifies potential trail corridors that are currently under private ownership that might be considered in the longer term if opportunities permit as 'desire lines'. It identifies priorities for network implementation projects over the next 25 years, determines an appropriate strategy for operations and maintenance, and reviews the current standards, by-laws, and programs for trails, cycling and walking. The Plan also includes supporting educational and safety-related policies, as well as programs that promote walking and cycling.

In January 2010, the Town retained active transportation specialists from the MMM Group and established a study team led by the Parks and Leisure Services Branch of the Community Programs and Infrastructure Department. Throughout the study process, the study team and consulting staff consulted with residents as well as the Town's Trails Advisory Committee and local stakeholders to develop and refine the recommended policies and the proposed network as outlined in the East Gwillimbury Active Transportation and Trails Master Plan (ATTMP).

Vision and Objectives

As part of the master planning process, a vision was developed by the Trails Advisory Committee which was reviewed, refined and confirmed as follows:

"The Plan identifies priorities for network implementation projects in phases over the next 25+ years and reviews the current standards, by-laws, and programs for trails, cycling and walking."

"The Town of East Gwillimbury supports active transportation and recreational trail use, including walking/hiking and cycling, as a means to promote healthy lifestyles, encourage sustainable land management, foster more environmentally friendly community design and reduce the number of single occupant motor vehicle trips. The Town achieves this through pedestrian, trail and cycling systems that are linked and integrated into a Town-wide active transportation and trails network that connects people with their communities, open space areas, significant natural, historic and recreational features and community facilities. The Town encourages barrier-free pedestrian and trail facility design, and through planning policy ensures that active transportation (sidewalks, trails and cycling) facilities are incorporated in new plans of subdivision and green space."

A set of objectives that support this vision for the Active Transportation & Trails throughout the Town were then developed and reviewed by Town staff and the Town's Trails Advisory Committee. These objectives include:

- Consult with East Gwillimbury residents, Council, key stakeholders, the local tourism industry, York Region, Lake Simcoe Region Conservation Authority, adjacent municipalities in York Region and other partners that could have a role in facilitating and promoting active transportation and trail use in East Gwillimbury;
- Build upon, enhance and improve connections to existing and previously proposed active transportation and trail facilities in the Town, including those proposed in Secondary Plans and draft plans of subdivisions approved or in the approval process at the time of the ATTMP study;
- Recommend actions to improve conditions for walking, cycling and active transportation in East Gwillimbury for people of all ages by providing an on-road and off-road active transportation and trails system which integrates a number of facility types for both recreation and utilitarian use and makes the best use of publicly owned lands, regardless of jurisdiction;
- Identify potential future trail corridors that are currently on private property as "desire lines" that might be considered in the future if opportunities arise;
- Identify the elements of an AT network that are appropriate for the Town that will improve consistency and coordination throughout the Town, and will provide appropriate connections to neighbouring municipalities;
- Develop a cost effective and practical implementation strategy that will identify priorities, annual costs, and best practices for facility design and support an improved AT network;
- Identify and recommend strategies and programs that East Gwillimbury and its partners can support to encourage more people to walk and bicycle more often for utilitarian and recreational purposes; and
- Identify roles and responsibilities for the Town and its other partners in facilitating walking, cycling and active transportation.

Existing AT Infrastructure and Expansion Opportunities and Challenges

A community profile of the Town of East Gwillimbury was generated based on selected indicators from the latest publically available Statistics Canada Census (2006) data to inform the study. The indicators selected and assessed were:

- Total population;
- Population density per square kilometre;
- Land area;
- Median age of the population;
- Median household income;
- Modes of transportation to work; and
- Mode share.

A review of existing active transportation and trail infrastructure and the challenges associated with expanding that infrastructure was also undertaken. In its current state, East Gwillimbury has several trails located within its greenway system. The existing network lays the foundation for a network of primarily off-road trail connections throughout the Town in the future. The Nokiidaa Trail follows the East Holland River and is a trail link that allows East



Gwillimbury residents and visitors to travel to neighbouring municipalities as well as areas of interest or key destinations within York Region. Paved shoulders on major collector roads allow pedestrians and cyclists to travel across the Town. They also provide cyclists and pedestrians with a safer route as a means of getting to their destination of choice.

East Gwillimbury has greenspace that is not currently designated or proposed to include a trail. Areas that include informal hiking paths may be used to connect the active transportation and trails network. Although, private lands often pose a barrier to connecting a network, private property rights including trespassing must be respected. Railway linkages such as the GO Transit line and Highway 404 running through East Gwillimbury are often significant barriers to active transportation and trails. That said there is a strong desire and need to cross these transportation corridors in several locations as part of the effort to create a comprehensive and connected cycling, pedestrian and trail network. Through extensive field investigation worn footpaths have indicated desire lines for potential trail linkages. In addition to the GO Transit linkage, the old rail corridor conversion into a hydro corridor, as well as the abandoned rail line (former radial line) from Davis Drive north through Mount Albert to Georgina are also considered key desired trail linkages throughout East Gwillimbury.

Watercourses throughout East Gwillimbury can also be seen as a challenge to pedestrians and cyclists. Some locations already have existing water crossings while others continue to be barriers and require further consideration when developing a fully connected active transportation and trails network.

Consultation

An important component of the study process for developing the Active Transportation and Trails Master Plan was consultation with municipal staff and Council, members of the public, the Trails Committee and local stakeholders. The involvement of members of the public was essential in creating an interest throughout the Town for the AT and Trails Master Plan, building momentum for the plan, and increasing awareness of the benefits of implementing active transportation and trails related facilities, routing and programming.

“A review of existing active transportation and trail infrastructure and the challenges associated with expanding that infrastructure was also undertaken. In its current state, East Gwillimbury has several trails located within its greenway system.”

An integral component of the consultation process was to draw upon the knowledge of the Trails Advisory Committee, the people who live and work in the Town of East Gwillimbury, as well as those who will be responsible for the implementation of the Master Plan. Meaningful and authentic consultation was the cornerstone in the development of East Gwillimbury’s AT and Trails Master Plan.

Consultation with members of the public was undertaken through two venues of consultation, an online questionnaire and two public information centres (PICs). In addition residents had the opportunity to submit comments and ideas to the study team over the course of the study.

A total of 70 people responded to the questionnaire. The questionnaire revealed that many residents recognize the benefits of AT and trails and support the municipal investment to improve AT and trail infrastructure in East Gwillimbury. In addition, results also show that many residents may be encouraged to use AT and trails more often if the Town invests in a more interconnected network. Respondents recognized some significant challenges in developing a municipal-wide AT and trail system throughout East Gwillimbury. Attendees of the Public

Information Centres were encouraged to provide their comments to the study team members through discussion with the study team member attendees, on comment forms as well as directly on the maps. The comments received at all venues of consultation were reviewed following submission and considered in detail for inclusion in the Master Plan report.

The Recommended Active Transportation and Trails Network and Design Features

The proposed active transportation and trails network for the Town of East Gwillimbury consists of pedestrian and cycling facilities including bike lanes, signed bike routes as well as multi-use trails. In addition, the network identifies a proposed series of desire lines for future single track hiking trails located on lands that currently are under private or other public ownership as well as components of the approved York Region Pedestrian and Cycling Master Plan (PCMP) network on Regional roads.

The pedestrian component of the network also proposes policies and recommendations for the Town to identify and complete missing links in the Town's sidewalk system and includes policy recommendations to support pedestrian friendly neighbourhood design, as well as a suggestion to establish a pedestrian charter. The pedestrian facilities which are proposed for the Active Transportation and Trails Master Plan includes the existing sidewalk and trail network along with eliminating missing sidewalk links on Town and Regional Roads. As noted above, it is important to acknowledge that the York Region Pedestrian and Cycling Master Plan, which identifies a cycling network and missing sidewalk links on Regional Roads, has been considered throughout the development of the AT and Trails Master Plan for East Gwillimbury.

The proposed East Gwillimbury Active Transportation and Trails Network presented in Chapter 4 of the Master Plan was developed using an approach which included the following steps:

- An inventory of existing conditions;
- The development of network guiding principles;
- Consultation with the Project Study Team, stakeholders and the public;
- The identification and assessment of network candidate routes;
- Development of a recommended draft route network;
- Recommended facility types by draft network route;
- The development of a phasing plan;
- A review and further consultation with the Project Study Team, stakeholders and the public; and
- The finalization of the network, facility types and phasing recommendations.

Chapter 5 of the Master Plan provides the Town with a compendium of best practices and suggested trail planning and design guidelines that describe how the key elements of the AT and Trail system should be constructed. This component of the plan is meant to be used as a 'toolbox' by staff when communicating with land developers, Council and the public. The design guidelines provided in this plan outlines various groups of trails users and their needs and necessary design parameters to address the needs of various user groups in further detail. Other key aspects of trail design are identified in this chapter such as accessibility, personal security, trail lighting, AT (active transportation) and Trail types, surface characteristics, trail dimensions, trail crossings of roads and railways, signing systems and trail rehabilitation.

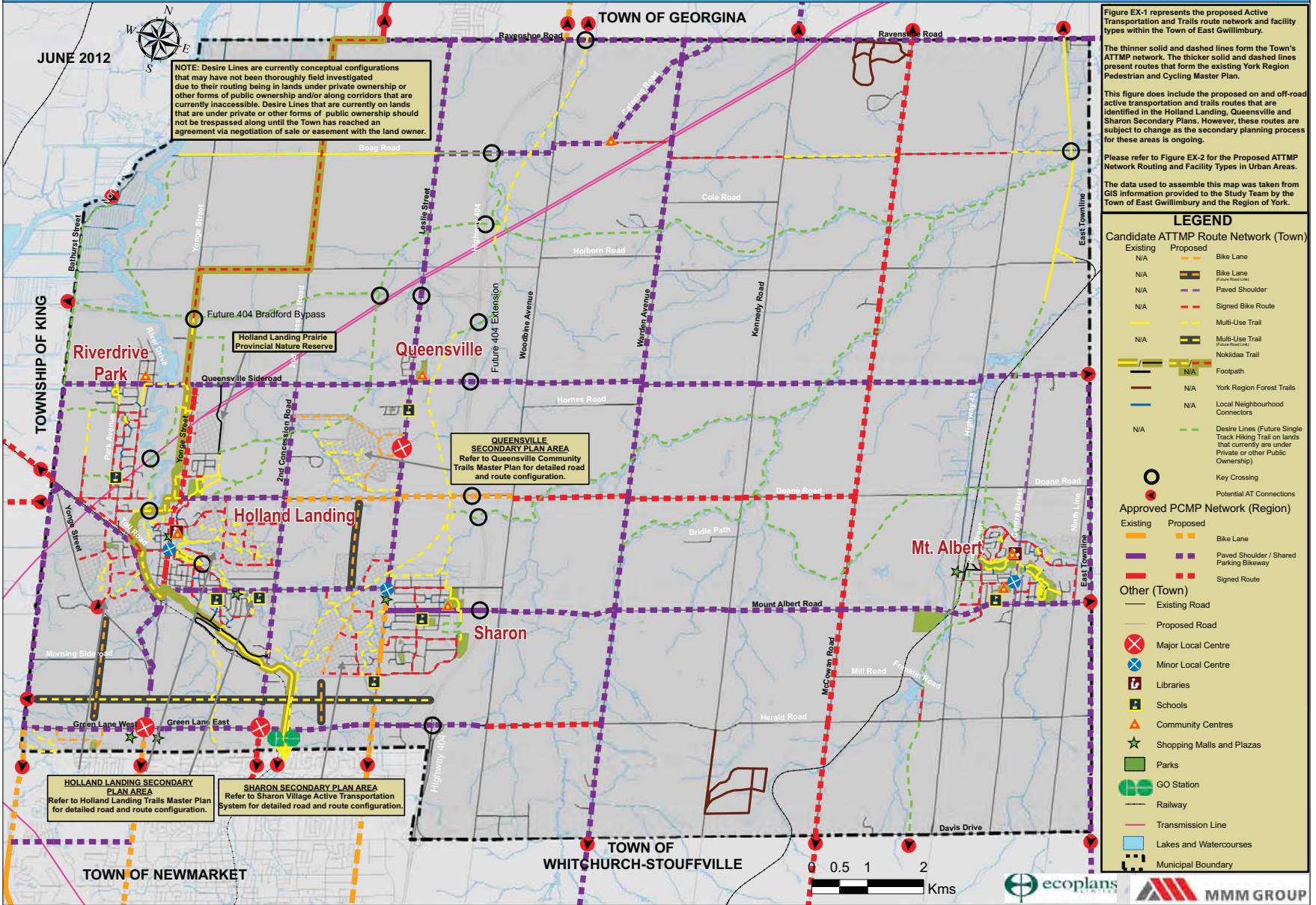


	Facility Type [Distance (Km)]									%
	Signed Bike Route	Multi-Use Trails	Desire Line	Bike Lane	Paved Shoulder	Foot Path	York Region Forest Trails	Local Neighbourhood Connectors	Total (Km)	
Existing	1.68	23.27	0.00	1.26	1.69	5.91	9.98	2.14	45.63	12%
Phase 1	31.42	9.17	12.38	8.61	28.48	*	*	*	90.05	22%
Phase 2	33.37	37.07	19.08	16.96	25.11	*	*	*	131.60	34%
Phase 3	16.73	7.23	49.23	*	48.06	*	*	*	121.24	31%
TOTAL (KM)	83.20	76.73	80.69	26.83	103.34	5.91	9.98	2.14	388.83	100%

*- please note that for there are no projects proposed pertaining to this facility type for development within this phase.

The facility types map included in this Executive Summary (EX-1 and EX-2) illustrate the existing and proposed routes, as well as routes in the Town of East Gwillimbury according to their respective facility type. The suggested facility types in the ATTMP Master Plan are primarily Bike Lanes, Signed Bike Routes, and Multi-use Trails. These routes complement Regional AT facilities that are outlined in the York Region PCMP, which are also shown on the map. The chart above lists the facility types in the proposed ATTMP network by distance.

TOWN WIDE: CYCLING + TRAIL ROUTES - Proposed ATTMP Route Network + Facility Types



URBAN AREAS: CYCLING + TRAIL ROUTES - Proposed ATTMP Route Network + Facility Types

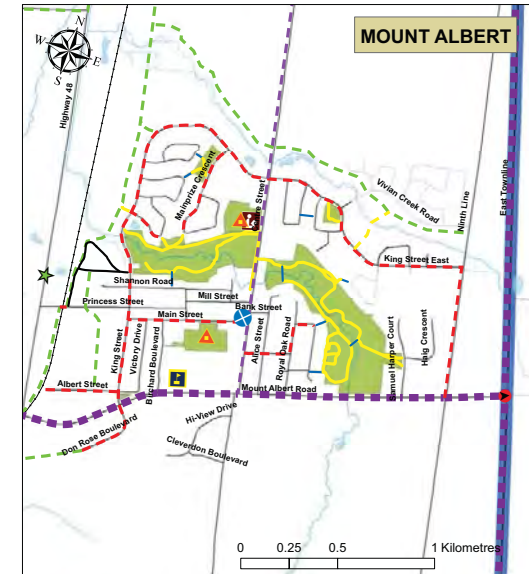
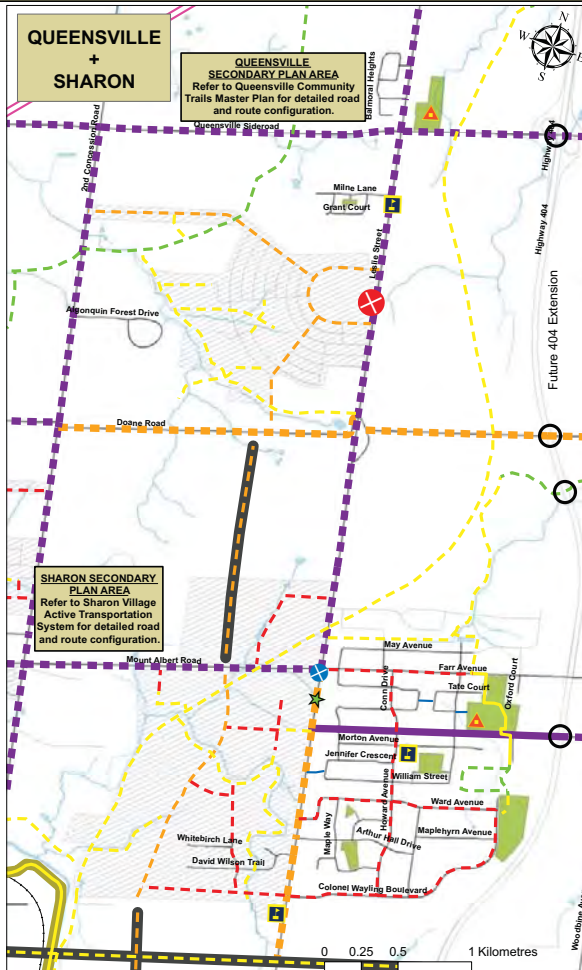
Figure EX-2 represents the proposed Active Transportation and Trails route network and facility types within the urban areas of Town of East Gwillimbury.

The thinner solid and dashed lines form the Town's ATTMP network. The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan.

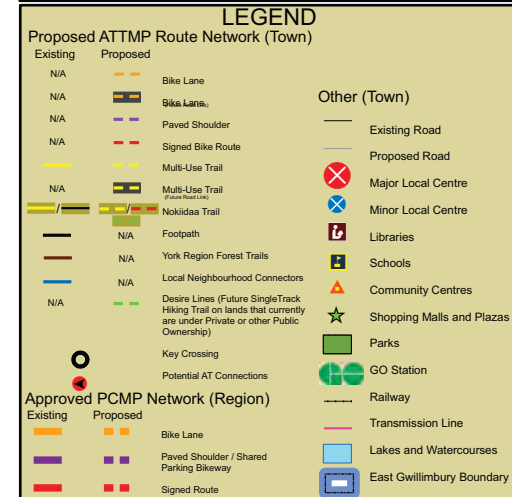
This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.

Please refer to Figure EX-1 for the Proposed ATTMP Network Routing and Facility Types throughout the entire Town of East Gwillimbury.

The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



NOTE: Desire Lines are currently conceptual configurations that may have not been field investigated due to their routing being in lands under private or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.



The Implementation Strategy

Chapter 6 of the Master Plan presents an implementation strategy that defines a proposed process, management structure and a set of steps considered necessary for implementation.

The East Gwillimbury Active Transportation and Trails Master Plan is a long term strategy for creating a connected network of trails over the next 25+ years. Its successful implementation requires champions and leadership as well as a proposed approach to move from the planning and design stage to funding and implementation. Implementation of the plan can only be accomplished through short, medium and long term actions under the leadership and guidance of Council, the Park Leisure Services Branch, Staff and the Trails Advisory Committee.

The Master Plan is not intended to be a static document. The timing and details related to implementation, particularly the exact location and alignment of recommended routes and selection of appropriate facility types will evolve through community consultation and technical review as part of the implementation process. Notwithstanding, it must be recognized that the extensive effort that established the overall direction for the network and the trails Network Planning Map must be respected when network modifications are being contemplated. It is important to note that the future phasing of the proposed active transportation and trail network and recommendations will ultimately be determined based on resources available at the time as well as decisions made by Town staff as well as members of Council.

The Implementation Strategy consists of three phases:

- Phase 1: (Short-term) 0 – 5 years
- Phase 2: (Mid-term) 6 – 10 years
- Phase 3 (Long-term) 11 - 25+ years

Implementation of recommended network routes can be achieved through a number of means such as approved capital budgets, the development of trail linkages by developers as a secondary plan process / development, the addition of signed bike routes, bike lanes and multi-use trails within current greenspace and planned road and right-of-way widening or resurfacing by the Town of East Gwillimbury as well as York Region. Once the Master Plan is approved it will provide the Town with a vehicle for accessing grants and partnership funds available through programs offered by the Federal, Provincial and Regional governments as well as provide corporations that support trails, active transportation and active living. Examples of those currently available are described more fully in Chapter 6 of the Master Plan report.

How Much Will It Cost to Implement?

It is estimated that the total investment to implement the ATTMP (infrastructure and outreach) is about \$23,984,213 over the next 25+ years. This cost consists of approximately \$22,734,213 for the proposed network, and \$1,250,000 for outreach. Out of the total investment of the 25+ year longer-term strategy, \$11,260,543 or 47% is estimated to be The Town of East Gwillimbury's share. The remaining \$12,723,670 or 53% would be the responsibility of York Region as the proposed facilities fall on roads under their jurisdiction and are part of the approved Pedestrian and Cycling Master Plan. A chart summarizing the 25+ year implementation strategy cost estimate can be found on the next page. For additional information please refer to Chapter 7 which details future investments in AT and Trails throughout the Town.

25+ Year Implementation Strategy Cost Estimate Summary

Jurisdiction	Cost						Total	(%)	Total Distance (Km)
	Short Term (0 - 5 yrs)		Mid Term (6 - 10yrs)		Long Term (10-25+ yrs)				
	Capital	Outreach	Capital	Outreach	Capital	Outreach			
East Gwillimbury	\$1,923,118	\$250,000	\$4,769,843	\$250,000	\$3,317,582	\$750,000	\$11,260,543	47%	209.36
York Region	\$4,589,200	\$0	\$3,295,600	\$0	\$4,838,870	\$0	\$12,723,670	53%	133.53
Total	\$6,762,318		\$8,315,443		\$8,906,452		\$23,984,213		
(%)	28%		35%		37%				

Monitoring Implementation and Performance Measures

It is proposed that the Town implement the town-wide active transportation and trails network infrastructure plan on an annual basis in accordance with the proposed phasing and available capital funding, and as authorized by Town Council. Collecting data to evaluate the different and changing aspects of pedestrian and cyclist behaviour will assist in evaluating the effectiveness and overall contribution of various activities to achieve the stated vision and objectives of the Plan.

Summary of Master Plan Recommendations

The East Gwillimbury Active Transportation and Trails Master Plan contains 55 recommendations and recommended guidelines pertaining to planning, design, implementation, and management of the active transportation and trail network. In addition, recommended Town practices, policies and initiatives relevant to trail and active transportation development are provided. A compilation of the proposed policies and recommendations for the Town of East Gwillimbury Active Transportation and Trails Master Plan can be found in Chapter 8 of the report.

1.0 EAST GWILLIMBURY'S ACTIVE TRANSPORTATION (AT) AND TRAILS PLAN



The Town of East Gwillimbury retained active transportation and trail planning specialists from the MMM Group and initiated a study in January 2010 to undertake an Active Transportation and Trails Master Plan. A study team was established, led by the Parks and Leisure Services Branch which included representatives from the consultant team as well as members of the Trails Advisory Committee.

The East Gwillimbury Active Transportation and Trails Master Plan was completed in the fall of 2011 and is a long-term (25+ year) plan that takes into account pedestrian and cycling related policies which affect the development of trail related facilities in East Gwillimbury including but not limited to the York Region Pedestrian and Cycling Master Plan. The Master Plan provides recommendations for a connected active transportation and trail network, the design of off and on-road trail and active transportation facilities, policies related to trail planning, potential education and promotion programs that support healthy living; as well as a phased implementation strategy.

The information outlined in Chapter 1 of the Master Plan will provide readers with a detailed description of the meaning of active transportation and trails, the benefits to investing in these facilities and programs throughout the Town, the study process which was undertaken to develop this document, the vision and goals of the study as well as an outline of each of the chapters of the East Gwillimbury Active Transportation and Trails Master Plan (ATTMP) Report.

1.1 What is the Active Transportation (AT) and Trails Master Plan?

The Town of East Gwillimbury has developed an Active Transportation (AT) and Trails Master Plan to facilitate the development of a Town-wide network of active transportation and trail facilities over the next 25+ years. This study is intended to focus primarily on non-motorized travel modes (hiking, cycling, walking, etc.) on Town and Regional Roads, and on lands owned by the Town such as parks, public open space and woodlots.

“A study team was established, led by the Parks and Leisure Services Department which included representatives from the consultant team as well as members of the Trails Advisory Committee.”

It also identifies potential trail corridors that are currently under private ownership that might be considered in the longer term if opportunities permit as ‘desire lines’. It identifies priorities for network implementation projects over the next 25 years, determines an appropriate strategy for operations and maintenance, and reviews the current standards, by-laws, and programs for trails, cycling and walking. The Plan also includes supporting educational and safety-related policies, as well as programs that promote walking and cycling.

The Town of East Gwillimbury recently undertook and completed an update to the Town's Official Plan (2010) as well as the Transportation Master Plan (2010), Community Park, Recreation and Culture Strategic Master Plan (2009) and the Natural Heritage System Study (2008). Each of these policy documents promotes sustainable development and the importance of developing trails and pathways throughout the Town, including active transportation, cycling and pedestrian facilities.

The York Region Pedestrian and Cycling Master Plan, approved in 2008, has provided the Town of East Gwillimbury and bordering municipalities within the Region with the framework for the development of a regional scale pedestrian and cycling network and facilities, primarily on Regional Road rights-of-way. In addition, the Region's Transportation Master Plan (2010) explores long-term policies and strategies for pedestrian and cycling facilities and promotes the importance of sustainable transportation choices.

The Provincial Government has also developed policies which call for the development of sustainable transportation and land use. These policies include the approved Greenbelt Plan and the Places to Grow Plan. These policies propose the intensification of existing urban and settlement areas within Ontario in a sustainable way that can be supported by improved public transit and active transportation infrastructure. A comprehensive, multi-faceted set of strategies that build upon policies already established in the Town's recently updated Official Plan and 2010 Transportation Master Plan is needed to service projected growth and provide a more sustainable transportation system. In addition, the Greater Toronto and Hamilton Area (GTHA) Regional Transportation Plan prepared by Metrolinx, recommends ten strategies, one of which is to build communities that are pedestrian, cycling and transit-supportive. While all of these policies play a role in the development of the Active Transportation and Trails Master Plan, it is important to establish a definition of Active Transportation for the Town of East Gwillimbury. By developing a definition for the term, the team could ensure continuity while developing the plan.

Active Transportation, as defined in the context of the East Gwillimbury Active Transportation and Trails Master Plan, is considered "Human-powered transport", the transport of person(s) using human muscle power such as walking, running, cycling, in-line skating and skateboarding. Active transportation in East Gwillimbury means:

- Active Commuting which involves journeys to and from work;
- Active Workplace Travel which includes trips during working hours such as the delivery of materials or attending meetings;
- Active Destination-Oriented Trips which includes trips to and from school, shops, visiting friends and running errands; and
- Active Recreation which involves the use of an active transportation mode for fitness or recreational pursuits, such as hiking and cycling.

Within this definition, Active Transportation can mean a number of things to many people. It is important to identify the benefits of engaging in active transportation on a recreational or day to day basis. These benefits range from general personal health to economic growth within a community. Each of these benefits will be outlined in further detail in the following section.

1.2 Benefits for Active Transportation and Trails

Active Transportation activities provide significant health and fitness, transportation, environmental, economic and tourism benefits. Municipalities, Counties and Regions in southern Ontario and throughout North America are implementing initiatives to promote and encourage active transportation activities as a feasible alternative to the private automobile for short-distance trips, and as a method of promoting a more active and healthy lifestyle.



1.2.1 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 incorporated into our daily activities. In addition, studies have shown that people who use active transportation are, on average, more physically fit, less obese and have a reduced risk of cardiovascular disease¹.

In 2001, approximately \$2.8 billion was spent on health care due to physical inactivity in Canada. That figure could be reduced by \$280 million if physical activity was increased by 10%². Our health system is shifting from protecting people from hazards in the environment to developing healthy environments in which people can live. Evidence suggests that improved cycling facilities lead to increased bicycle use³. 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. A more active population can in turn reduce the cost of medical care, decrease workplace absenteeism, and maintain the independence of older adults and younger children exploring potential new active transportation options.

“There is strong evidence to suggest that people who commute to work via cycling or walking are likely to be fitter and less likely to be overweight or obese.”

Sedentary lifestyles have serious consequences for public health. The most visible is the sharp rise in obesity across Canada in recent years. Almost half of Canadians ages 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). In Canada, the prevalence of obesity has more than doubled in the last 20 years (Katzmarzyk & Mason, 2006). Comparatively, 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. There is strong evidence to suggest that people who commute to work as a pedestrian or cyclist likely to be fitter and less likely to be overweight or

¹ Reynolds, Conor C.O., Meghan Winters, Francis J. Ries, and Brian Gouge. "Active Transportation in Urban Areas: Exploring Health Benefits and Risks." Editorial. National Collaborating Centre for Environmental Health June 2010: 1-15. <www.nccelh.ca>.

² The Business Case for Active Transportation, The Economic Benefits of Walking and Cycling; Section 4.7.2; Go for Green, March 2004

³ Bridging the Gaps: How the Quality of a Connected Bikeway Network Correlation with Increasing Bicycle Use, July 27, 2005, Mia Burke and Roger Geller

obese than those who use motorized modes¹. It is important to educate and inform adolescents at an early age about the importance of living healthy, active lifestyles.

There are other health benefits in addition to the physical fitness gains. 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. These can contribute to healthier and happier personal relationships, and improve work and school productivity.

Improving active transportation methods such as walking and cycling, and reducing the reliance on single occupant automobile use can help make communities more liveable by creating an environment that is pleasant, safer with reduced noise and pollution. This can help to encourage more social interaction within a neighbourhood and create a stronger sense of community. Active transportation (AT) and trail use modes can provide a form of mobility for people who do not have regular access to an automobile and live in communities with limited transportation choices.

Making strategic investments, through partnerships when feasible, in both infrastructure and outreach to support active transportation in daily commuting habits, fitness and active recreation can help to promote a healthy and active lifestyle for East Gwillimbury residents and can have other valuable benefits.

1.2.2 Transportation

Walking and cycling are both popular recreational activities and a means of transportation that are efficient, affordable and accessible. They are the most energy efficient modes of transportation that generate no pollution. The transportation benefits of walking, cycling and other active transportation modes include reduced road congestion and maintenance costs, less costly infrastructure, increased road safety and decreased user costs. In general, active transportation modes provide no emissions during use and have low lifecycle greenhouse gas emissions¹. 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 less than 3 km. Surveys show that 66% of Canadians would like to cycle more than they presently do. Seven in ten Canadians say they 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"⁴. These facts clearly demonstrate the potential for increasing the number of trips by bicycle in the Town of East Gwillimbury.

There is strong evidence that given complete networks of high-quality cycling routes, a significant number of people will cycle. The value of such complete networks is demonstrated in many communities such as Portland, Oregon; Davis, California; and Boulder, Colorado. With between 10% and 20% of trips by bicycle, these communities have the highest levels of bicycle usage in North America. This high level of cycling is facilitated by mature networks, which include bike lanes on almost all of their arterial roads and extensive off-road commuter bicycle paths. Residents can simply get on their bicycles with confidence knowing there will always be a safe route to their destination (British Columbia Cycling Coalition Budget Submission, 2007).

⁴ Ontario Trails Strategy, Ministry of Health Promotion, 2005, Province of Ontario.

The addition of even a small volume of traffic to a congested road can create enormous delays for all users. In fact, at capacity conditions, increasing traffic by 5% can reduce speeds by up to 25%. Congestion costs in Ontario were estimated to be \$6.4 billion annually and could grow by an additional \$7 billion annually by 2021 without increased investment in alternative modes of transportation⁵. Shifting a little traffic off busy roads can create substantial time savings for individuals as well as time-sensitive commercial vehicles⁶.



It has been estimated that due to rising gasoline prices, more than 10 million cars – mostly belonging to low income families – will disappear in the U.S. in the next five years, and a similar trend is expected in Canada (CIBC World Markets, 2008). Providing safe options for bicycle and pedestrian travel is going to become increasingly important.

Typical roadway funding requirements include maintenance costs, safety and enhancement costs plus the addition of roadway capacity through lane widening or additions. Furthermore, the costs for road construction, reconstruction and maintenance 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 little wear and tear on a road surface.

Road improvements to increase the safety of pedestrians and cyclists can and should enhance the safety of other road users. The U.S. Federal Highway Administration reports that paved shoulders on two-lane, rural roads have been shown to reduce run-off-the-road, head-on and sideswipe collisions by 30% to 40%. In addition, many municipalities have found that paved shoulders reduce maintenance costs related to shoulder deterioration, grading and snow removal.

A roadway can carry 7 to 12 times as many people per lane per hour by bicycle compared to that of motor vehicles 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 two additional motor vehicle travel lanes. A small portion of a municipality's transportation budget can be used to facilitate high levels of bicycle use.

“An emphasis on walking, cycling and other active transportation modes can result in a reduction in roadway costs.”

Another benefit of reduced car use is a decrease in the number of parking spaces required. For example, encouraging more people to walk and cycle to work could lead to a reduction in the number of parking spaces required at a place of employment. Bicycle parking facilities could be provided in an existing surface or underground parking lot with no additional parking lot expansion required.

⁵ Transportation Demand Management Strategy, City of Ottawa - TravelWise (Transportation, Utilities and Public Works), April 2003.

⁶ Transportation Demand Management Strategy, City of Ottawa - TravelWise (Transportation, Utilities and Public Works), April 2003.

1.2.3 Environment

Active Transportation activities are energy-efficient, non-polluting modes of travel. Short distance motor vehicle trips are the least fuel efficient and generate the most pollution per kilometre. These trips have the greatest potential of being replaced by walking or cycling trips and integrated walking-transit and cycling-transit trips.

Reducing the number of motor vehicles on the road decreases the number of pollutants released into the atmosphere by motor vehicles. The effects of climate change can be reduced by encouraging drivers to use other modes, or to travel outside rush hours. 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. This includes engine acceleration, tire/road contact, braking, horns and vehicle theft alarms. Bicycles make little noise, and are not disruptive to communities from a noise perspective. Automobile dependent communities require more land for road rights-of-way and parking than communities that are not as reliant on the automobile. Making communities less auto-dependant by providing infrastructure for alternative transportation modes, such as walking, cycling and public transit, can reduce the amount of land required to construct new communities, thus creating more compact subdivisions that make more efficient use of available land.

Given the important role that active transportation (walking and cycling) plays in reducing emissions of air pollutants and greenhouse gases, and fostering good health directly, it is important to create bicycle and pedestrian connectivity that has the potential to create a desirable cycling and pedestrian environment. A literature and best practices review suggests that the number of beginner or infrequent cyclists increases when:

- Neighbourhoods and communities accommodate a cycling network that includes bike lanes and off-road cycling or multi-use trails;
- Roads with speeds over 60km/h have separated lanes or wider paved shoulders that are part of the road, not sidewalk, infrastructure;
- Roads with speeds between 50-60 km/h have marked bicycle lanes;
- Roads with speeds under 40 km/h are shared;
- Priority is given to cyclists in intersections;
- Residents have access to trip end facilities such as secure long-term bicycle parking (e.g. lockers), secure short-term bicycle parking (e.g. bicycle racks), and showers in commercial buildings; and
- All streets, roadways, and designated bike routes are maintained to be free of deterrents to bicycling (such as potholes, debris, and overgrown landscaping).

In order to support the inclusion of these community design elements in future development in the Town of East Gwillimbury, it would be helpful if the Town incorporate active transportation (cycling and pedestrian) connectivity and safety for future planning applications⁷ in their planning policy. The Town has already developed and adopted many of these strategies in new policies (e.g. Green Building Policy 2012) or updated existing policies with amended recommendations or new wording.

1.2.4 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”⁸. These benefits include:

- Reduction in road construction, repair and maintenance costs;
- Reduction in costs due to air pollutants and greenhouse gas emissions;
- Reduction in health care costs with increased physical activity and reduced respiratory & cardiac disease;
- Reduction in fuel, repair and maintenance costs to users;
- Reduction of costs due to increased road safety;
- Reduction in external costs due to traffic congestion;
- Reduction in parking subsidies;
- Reduction of costs due to air pollution;
- Reduction of costs due to water pollution;
- The positive economic impact of bicycle tourism;
- The positive economic impact of bicycle sales and manufacturing;
- Increased property values along greenways and trails; and
- Increased productivity and reduction of sick days and injuries in the workplace.



“The construction of these active transportation facilities results in direct benefits such as jobs, including the supply and installation of materials.”

There is ample evidence that on and off-road active transportation facilities provide significant economic benefits for adjacent landowners and local businesses. Active Transportation provides benefits to the local economy during both construction and operation. The construction of these active transportation facilities results in direct benefits such as jobs, including the supply and installation of materials. Following construction, benefits emerge in the form of expenditures by active transportation facility users. A few examples include:

- The Adanac Bikeway in Vancouver was completed in 1993 and bicycle

⁷ Creating Walkable and Transit-Supportive Communities in Halton, Halton Region, February 2009

⁸ The Business Case for Active Transportation, Go for Green, Better Environmentally Sound Transportation – BEST, March 2004.

volumes increased 225% during the period from 1992 to 1996;

- Trails in New Brunswick employ around 1500 people for an average of six months per year;
- 70% of Bruce Trail users cite the trail as the main reason for visiting the area, and they spend an average of about \$20.00 per user per visit within a 10 km corridor on either side of the trail;
- Annual expenditures linked to La Route Verte rose to \$95.4 million in 2000, representing 2,000 jobs and \$15.1 million and \$11.9 million for the governments of Quebec and Canada, respectively;
- In 2002, Quebec hosted 190,000 bicycle tourists who spend an average of \$112 per day and an average of 6.5 nights compared to \$52 per day and an average of 3.1 nights spent by other tourists; and
- In Ontario, the Eastern Ontario Trails Alliance estimated that at the end of a ten year build-out period, 320 km of their system, constructed at a cost of \$5.4 million, will generate approximately \$36 million in annual economic benefits in the communities through which it passes, and create/sustain over 1,100 jobs.

Trails systems can have varied levels of attraction for tourists. They can be travel destinations in themselves, encouraging visitors to extend their stay in the area or enhancing business and pleasure visits. By increasing the level of tourist draw, travelers can be expected to stay longer, resulting in additional night's lodging and meals, a direct benefit to local businesses.

Bicycle manufacture, sales and repairs, as well as bicycle tourism, recreation and delivery services contribute to the economy with little to no public investment or subsidy. In 2002, Canadian households spent an average of \$42 on bicycles, parts and accessories for a total of approximately \$500 million⁹.

1.2.5 Tourism

It has been shown that there is a growing demand for cycling and eco-tourism throughout Southern 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 economic standing of the Town, County or Region it is emphasized or implemented in.

A study done by the Victoria Transport Policy Institute shows that walking and cycling facility improvements and promotion programs have a direct impact on economic development by increasing shopping opportunities and tourism activities. More specifically, "one study estimates that rail trails in Australia provide an average of \$51 to the regional economy per cycle tourist per day (Beeton, 2003)". A number of studies show a direct correlation between the implementation of well-planned, non-motorized transportation improvements and an increase in local tourism economies¹⁰.

In the United States, studies have shown that trails and greenways have been able to stimulate tourism and recreation-related spending and that trail and greenway systems have become the central focus of tourist activities in some communities. In these communities, this push in active tourism can be a key means of "kick-starting" the economy.

⁹ The Business Case for Active Transportation, Better Environmentally Sound Transportation - BEST, Go for Green, March 2004. Section 4.5.4, pg. 24

¹⁰ Litman, T. Quantifying the Benefits of Non-motorized Travel, Civtoris Transport Policy Institute (2010).

When looking at pedestrian, cycling and trail related tourism one must also look at the other expenditures associated with the trips. These include the food and beverage, maintenance, and lodging related costs which can be accrued over time. In one study undertaken throughout the United States, the expenditures on three multi-purpose trails were compared. On two rural multi-purpose trails in Iowa and Florida, the expenditures were US \$9.31 and US \$11.02 respectively. For an Urban multi-purpose trail in California, the expenditure was US \$3.97. Though lower for the urban trail, with higher visitation levels the expenditures can provide significant monetary benefit for the region¹².



Though tourism benefits from AT and Trail facilities have been shown to 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 to trail use and pedestrian and cycling activities there tends to be a continuous increase in the number of cycling tourists who will provide further benefits to their communities and the communities to which they visit.

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

“Though tourism benefits from AT and Trail facilities prove to 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.”

1.3 Why Does East Gwillimbury Need an AT and Trails Plan?

The Town of East Gwillimbury initiated the study to develop an Active Transportation and Trails Master Plan with the goal of encouraging residents to walk and cycle more often in East Gwillimbury and to support healthier communities. The goal of this long-term planning study is to identify a recommended future network of primarily off-road trails and on-road active transportation corridors that will connect East Gwillimbury's urban and rural communities and promote increased active transportation throughout the Town for both utilitarian as well as recreational purposes.

1.4 Vision and Objectives

An AT and Trails Master Plan for the Town of East Gwillimbury is to be guided by a strong set of objectives and principles, but it should also establish a vision for the future implementation and development of the plan. The following vision for the Active Transportation and Trails Master Plan was prepared in the initial stage of the study and confirmed through consultation with the study team, the Trails Advisory Committee, the public and local stakeholders.

“The Town of East Gwillimbury supports active transportation and recreational trail use, including walking/hiking and cycling, as a means to promote healthy lifestyles, encourage sustainable land management, foster more environmentally friendly community design and reduce the number of single occupant motor vehicle trips. The Town achieves this through pedestrian, trail and cycling systems that are linked and integrated into a Town-wide active transportation and trails network that connects people with their communities, open space areas, significant natural, historic and recreational features and community facilities. The Town encourages barrier-free pedestrian and trail facility design, and through planning policy ensures that active transportation (sidewalks, trails and cycling) facilities are incorporated in new plans of subdivision and green space.”

A set of objectives that support the vision for the Active Transportation & Trails Master Plan Study were developed and reviewed by Town staff and the Trails Advisory Committee. Consultation with York Region, adjacent municipalities, key agency staff (e.g. LSRCA, MTO, MOE etc.), stakeholder groups, other potential partners and the residents of East Gwillimbury, was an important component toward achieving the following objectives:

- Consult with the East Gwillimbury residents, key stakeholders, the local tourism industry, York Region, Lake Simcoe Region Conservation Authority, Council, adjacent municipalities in York Region and other partners that could have a role in facilitating and promoting active transportation and trail use in East Gwillimbury;
- Build upon, enhance and improve connections to existing and previously proposed active transportation and trail facilities in the Town, including those proposed in Secondary Plans and draft plans of subdivisions approved or in the approval process at the time of the ATTMP study;
- Recommend actions to improve conditions for walking, cycling and active transportation in East Gwillimbury for people of all ages by providing an on-road and off-road active transportation and trails system which integrates a number of facility types for both recreation and utilitarian use and makes the best use of publicly owned lands, regardless of jurisdiction;
- Identify potential future trail corridors that are currently on private property as “desire lines” that might be considered in the future if opportunities arise;
- Identify the elements of an AT network that are appropriate for the Town that will improve consistency and coordination throughout the Town, and will provide appropriate connections to neighbouring municipalities;
- Develop a cost effective and practical implementation strategy that will identify priorities, annual costs, and best practices for facility design and support an improved AT network;

- Identify and recommend strategies and programs that East Gwillimbury and its partners can support to encourage more people to walk and bicycle more often for utilitarian and recreational purposes; and
- Identify roles and responsibilities for the Town and its other partners in facilitating walking, cycling and active transportation.



1.5 The Study Process

As noted above, the Active Transportation and Trails Study for the Town of East Gwillimbury was initiated in January 2010. MMM Group Limited was retained by the Town of

East Gwillimbury to assist Town Staff and the Town's Trails Advisory Committee in the development of a comprehensive Master Plan to identify links and extension of existing trails and active transportation facilities, as well as new connections throughout the Town and to surrounding municipalities within the Region of York. The Active Transportation and Trails Master Plan is also designed to identify priorities for network implementation and appropriate levels of funding for operations. The Active Transportation and Trails Master Plan approach was comprised of two phases:

Phase 1: Background Review and Assessment – The first phase of the study included a comprehensive review of the background information provided to the study team with a focus on compiling and analyzing information related to active transportation and trails. The first phase of the study also defined and identified the consultation strategy, vision and set of objectives; reviewed and mapped the existing background materials; developed a set of route selection criteria and consulted with the public, council, trails committee as well as the study team members.

Phase 2: Development of the Active Transportation and Trails Master Plan – Based on the work undertaken and completed in Phase 1 of the study approach, a draft trails and active transportation network and supporting strategies and policies were developed in Phase 2. The Phase 2 Master Plan Report documents the existing context for the study, the network development approach that was followed, and the alternative AT and Trails facility types that are proposed to form the network. This phase also included the development of a set of Guidelines for AT and Trails Facilities, Planning and Design and a detailed Phased Implementation Plan. The Planning and Design Guidelines are in a separately bound Technical Appendix which is available at the Town's offices.

“The first phase of the study included a comprehensive review of the background information provided to the study team with a focus on compiling and analysing information related to active transportation and trails.”

1.6 What is In the Plan?

The Town of East Gwillimbury's AT and Trails Master Plan Report is comprised of nine sections which are equally important to the overall understanding of the AT and Trails Master Plan and its success. Section 1.1 to 1.5 have outlined the definitions, need and benefits of active transportation and trails within the Town, and provides a vision and set of objectives for the Master Plan.

[Section 2](#) details the existing active transportation and trails conditions within the Town as well as relevant Provincial, Regional and Municipal policies which impact the future development of an AT and Trails network and facilities.

[Section 3](#) provides further details on the plan's consultation process and the individual tasks which were undertaken throughout the study and the results which were gauged from each.

[Section 4](#) describes the recommended AT and Trails network and the types of facilities required for the various routes throughout the network.

[Section 5](#) details outreach and programming opportunities to complement the proposed AT and trail network for the Town.

[Section 6](#) examines the ways in which this Master Plan can be implemented and the various strategies that can be employed to ensure that the AT and Trails Network is a success. In addition, this section explores opportunities for outreach within the community and surrounding municipalities with regards to the active transportation and trails network.

[Section 7](#) outlines a proposed strategy for future implementation of the Master Plan and includes an estimated cost to build the network and undertake the recommended outreach strategies. In addition this section provides details regarding potential sources for partnerships and outside funding to assist with implementation.

[Section 8](#) provides a summary of all the recommendations found throughout Active Transportation and Trails Master Plan report.

Lastly, [Section 9](#) outlines the next steps which can be used to move forward with the implementation the AT and Trails Master Plan for the Town of East Gwillimbury as well as a set of performance measures which the Town can use to assess the level of success achieved throughout the implementation of the Active Transportation and Trails Master Plan.

2.0 EXISTING CONTEXT

2.1 East Gwillimbury and its Existing AT and Trails System

It is important to provide an existing context of the Trails and Active Transportation facilities and network within the Town of East Gwillimbury. This section provides an overview of the Town's demographics, the economy, modal split, and an estimate of the level of participation (walking and cycling) throughout the Town of East Gwillimbury.



2.1.1 Community Profile

A community profile was generated for the Town of East Gwillimbury based on selected indicators from the latest publically available Statistics Canada Census (2006) data. In addition to the data presented for the Town, similar data for the Regional Municipality of York has been included to provide further understanding of the context and impact East Gwillimbury has throughout the Region. The data generated for the Region is classified under York Region Health Unit. The indicators selected for comparison included:

- Total population;
- Population density per square kilometre;
- Land area;
- Median age of the population;
- Median household income; and
- Mode of transportation to work / mode share.

Table 2-1 compares Regional data to that of the Town. A number of conclusions have been drawn from this data with regards to the future of trail and active transportation facility development.

Table 2.1 – Comparative Statistics

Indicator	Regional Municipality of York	Town of East Gwillimbury
Total Population	892,712	21,069
Population Density (per square km)	506.7	86
Land area (square km)	1,761.84	245.06
Median age of the population	37.5	40.5
Median household income (2005)	\$28,829	\$35,019
Mode Share		
Car, truck, van as driver	337,280	9,305
Car, truck, van as passenger	35,685	820
Public Transit	44,995	310
Walked or Bicycled	12,050	305
All other Modes	3,225	70
Total	433,235	10,810

Source: Statistics Canada (www.statcan.ca), 2006 Census

As indicated in Table 2.1, the population of East Gwillimbury is estimated at (2006 Statscan) 21,069, accounting for 2.3% of York Region's population. This is a population growth of 2.5% (20,555) from the population documented in 2001. The Town has a population density of 86 persons per square kilometres over a land area of approximately 245 square kilometres. The Town presently (2008) estimates its population to be 22,000 residents, a level that is expected to increase significantly over the next 10 years once Municipal and Regional infrastructure servicing is extended.

Data shows the median age of the population as 40.5 for the Town, exceeding the median age of the population for York Region by 3 years. Though not a considerable amount, it is clear that like the Region and the Province, the Town needs to support an aging population. This is a key consideration to keep in mind as the master plan is developed, as the demand for facilities which are available and accessible by people of all ages and abilities increases. Though there is an aging population and the median age is slightly older than that of York Region and the Province, an influx of younger adults and young families can be expected. This is supported by the aging trends predicted for the nation which show an increase in the number of children (under 10 years old) and younger adults (20-34). It is also important to understand the role that income levels play in the amount of participation experienced by communities in leisure activities. East Gwillimbury has a

median household income of \$35,019, higher than that of the Province as well as the Region. This difference may indicate future opportunities for increased participation or financial commitment to leisure services, trails and active transportation facilities.

Figures 2-1 and 2-2 illustrate the preferred modes of transportation to get to work for the Town of East Gwillimbury as well as within the Regional Municipality of York.

Figure 2-1 – Mode Share; Transportation to Work for Town of East Gwillimbury

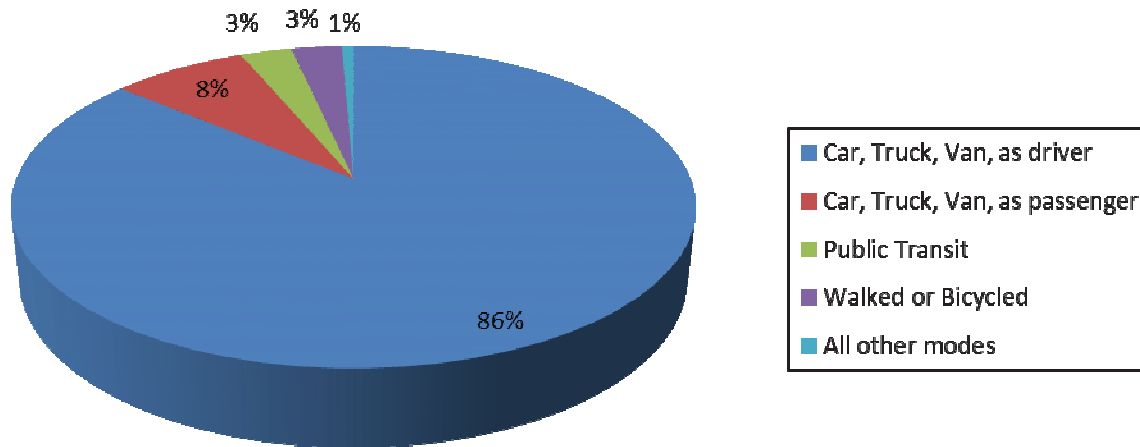
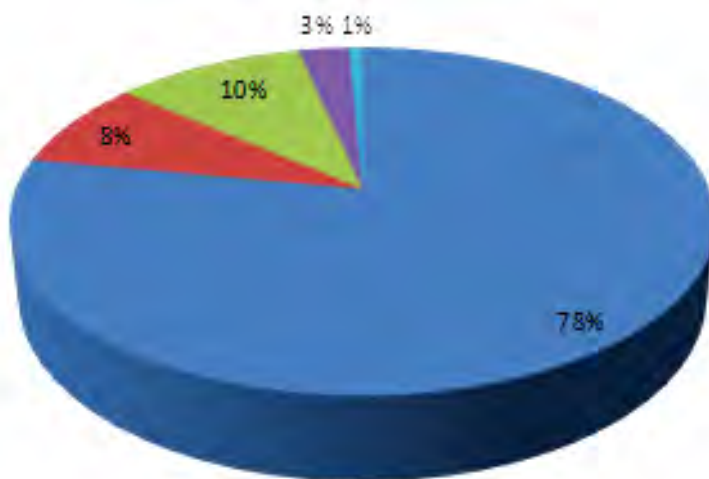


Figure 2-2 – Mode Share; Transportation to Work for Regional Municipality of York

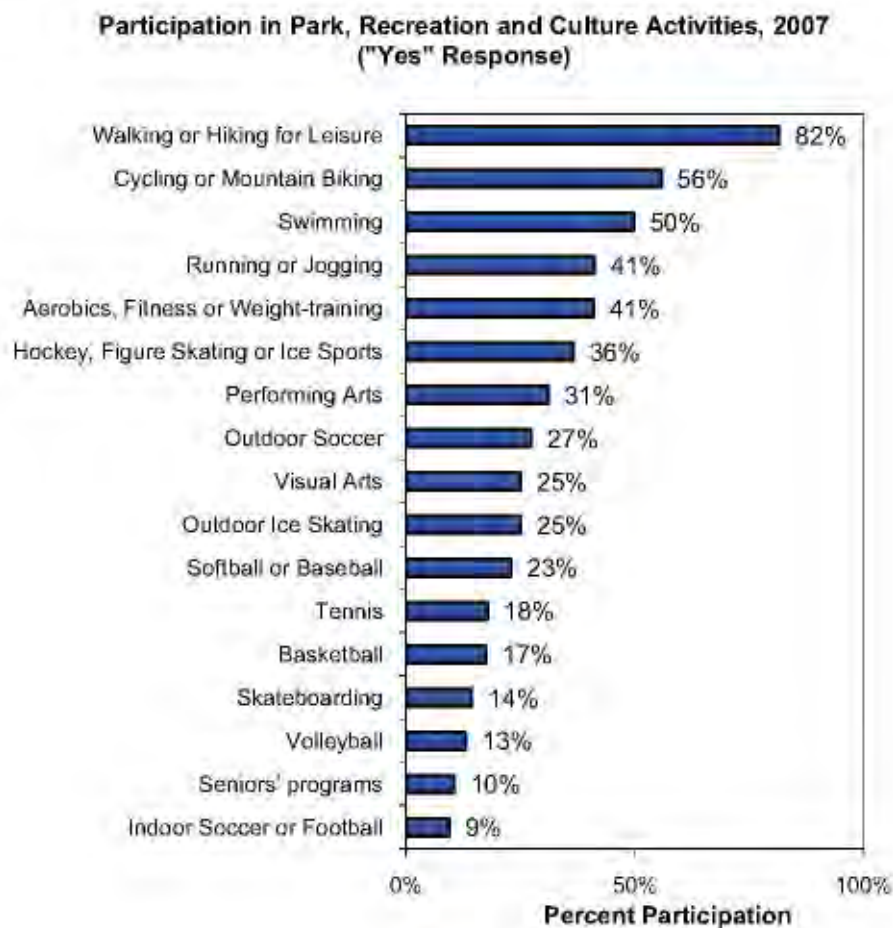


As illustrated in the figures above, there is clearly a preference towards automobile use as one’s primary mode of transportation to work for both the Town of East Gwillimbury as well as York Region. A high percentage of residents commute long distances to work which may be the reason behind the support for the

single occupant vehicle. However the data also suggests that there is a growing number of people using public transit and walking or cycling. With these trends increasing, there will continue to be an increasing demand for active transportation and trails networks and facilities.

Despite the dominant use of single occupant / motorized vehicles, there is a growing understanding for the need for active modes of transportation throughout the community. A statistically significant household telephone survey of East Gwillimbury residents was conducted in January 2008 for the Community Park, Recreation & Culture Strategic Master Plan. The survey sampled 384 randomly selected households as representative of the Town's population as well as representation from each of the settlement areas. The survey was intended to assess and document residents' participation levels in park, recreation and culture activities. These results are indicative of the support for active transportation and trails related facilities within the Town of East Gwillimbury. The results yielded the following outcome illustrated in Figure 2-3.

Figure 2-3 – Level of Participation in Park, Recreation and Culture Activities in 2007



Source: Community Park, Recreation & Culture Strategic Plan (2009)

As presented in the figure above, walking / hiking is identified as the most common leisure activity (82%) followed next by cycling (56%). It is interesting to note that the first 5 activities are considered unstructured, unprogrammed pursuits and of these 5 programs, 3 are considered non-motorized. The data gathered from this survey clearly shows the current and growing demand for such facilities throughout the community.

In addition to the data outlining the community profile for the Town of East Gwillimbury as well as survey results yielded from the survey undertaken for the Community Park, Recreation & Culture Strategic Master Plan, the following section will describe in some detail the existing trails and active transportation related facilities which are currently in place and being used by community members.

2.1.2 East Gwillimbury is Growing

As illustrated in section 2.1 there is currently a steady growth in population occurring throughout the Town of East Gwillimbury. East Gwillimbury has experienced fairly stable growth during the past fifteen years, growing from 18,367 residents in 1991 to 21,069 residents in 2006 and the estimated growth of 22,000 residents as of January 2008. However, this growth will only continue if servicing and infrastructure is developed by the municipality as well as York Region.



Future levels of population growth will be driven by the Town's location in the Greater Toronto Area, one of the fastest growing metropolitan areas in the country. Certain parts of East Gwillimbury, however, are subject to the provincial Greenbelt Act (2005) and Oak Ridges Moraine Conservation Act (2001) which limits the type and scale of future development activity in areas defined by these policies. By the year 2018, East Gwillimbury's population is expected to significantly increase to a population of around 29,795. As mentioned above, this will be dependent on future servicing as well as residential and growth employment plans.

Given this information, it is clear that with the increasing population in the Town of East Gwillimbury, there will be a continued demand for alternative modes of transportation such as AT and trails. These new facilities and routes should provide additional linkages that can be used to better connect the Town and its surrounding communities.

"In addition, future development of active transportation and trails related facilities is supported by the Region, through policies and networks recommended by the York Region Pedestrian and Cycling Master Plan as well as the York Region Transportation Master Plan."

2.2 Existing Policies and Initiatives

This section identifies and discusses key policies that directly influence trails and active transportation development in the Town of East Gwillimbury. These existing policies provide an understanding of the policy framework impacting the Town while establishing a base to build upon for the future AT and Trails facilities and programming.

Local policies like the East Gwillimbury Transportation Master Plan, and Community Park, Recreation & Cultural Strategic Master Plan, Trails System Master Plan, the Draft Natural Heritage System Background Study and the Town's Official Plan speak to and support the implementation of trails, as well as other pedestrian, cycling and active transportation facilities. In addition, future development of active transportation and trails related facilities is supported by the Region, through policies and networks recommended by the

York Region Pedestrian and Cycling Master Plan as well as the York Region Transportation Master Plan. Each of these policy documents reiterates the importance of developing trail and active transportation facilities for Town residents and visitors.

Federal

Transport Canada released a report in 2005 titled “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, implementable transportation plans that promote sustainable transportation on a federal level. Some relevant strategies and policies are presented in the following list.

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; and
- Recognize the impact of transportation related death and injury on quality of life and the economy. Set goals and objectives for multimodal road safety. Identify effective road safety strategies.

Modal Sustainability

- Identify strategies, policies, facilities and services to increase walking, cycling, other active transportation, 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 publishing 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

Bill 51 – Planning Reform

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 environmental sustainability design requirements for both individual buildings and entire neighbourhoods. It also adds sustainable development as a provincial interest in the Provincial Policy Statement.

Provincial Policy Statement

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 vision of the land use planning system in PPS is that the “long-term prosperity and social well-being of Ontarians depend on maintaining strong communities, a clean healthy environment and a strong economy”.

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.

“The Provincial Policy Statement promotes transportation choices that facilitate pedestrian and cycling mobility and other modes of travel.”

Municipal Act, 2001

The new Municipal Act, 2001 gives municipalities a broad new 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 Municipal Act, 2001 provides policies relating to the municipalities jurisdiction over municipal highways and the maintenance of those highways, which has an impact on cycling.



Highway Traffic Act

Bicycles are recognized as a vehicle, as defined in the Highway Traffic Act (HTA), which can operate on public roadways with the same rights and responsibilities as motor vehicles. However, bicycles are not permitted on controlled access freeways such as the 400-series highways and or any roadway designated by municipal by-laws. 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 regulating or prohibiting bicycles on highways.

Growth Plan for the Greater Golden Horseshoe

The Growth Plan for the Greater Golden Horseshoe was adopted in June 2006 under the provisions of the proposed Places to Grow Act, 2005. This Act implements the Province's vision for developing stronger communities and managing the growth within those communities. The Province requires municipalities to take into consideration the policies and directives of the Growth Plan in their planning activities.

The Growth Plan integrates and builds upon other key provincial initiatives, including the PPS, and municipal official plans must be in conformity with the Growth Plan. With respect to pedestrian and cycling, the Growth Plan envisions that "an integrated transportation network will allow people choices for easy travel both within and between urban centres throughout the region. Public transit will be fast, convenient and affordable. Automobiles, while still a significant means of transport, will be only one of a variety of effective and well used choices for transportation. Walking and cycling will be practical elements of our urban transportation systems. A healthy natural environment with clean air, land and water will characterize the Greater Golden Horseshoe". The Growth Plan provides broad-level policies that direct more sustainable growth and development in the Greater Golden Horseshoe and specific targets for implementation among municipalities.

Greenbelt Plan

Ontario's Greenbelt Plan is complementary to the Growth Plan for the Greater Golden Horseshoe by providing clear direction as to what and where land should be protected from growth in Ontario. It builds upon the policy framework established in the Provincial Policy Statement, provides additional ecological protection to lands covered in the Oak Ridges Moraine Conservation Plan and the Niagara Escarpment Plan, and supports and complements the Parkway Belt West Plan and Rouge Park Management Plans respectively. The vision of the greenbelt presented in the plan is to provide for a diverse range of economic and social activities associated with rural communities, agriculture, tourism, recreation and resource uses. The Culture, Recreation and Tourism goals for Ontario provided by the Greenbelt Plan relating to cycling and pedestrian movement include:

- Provision of a wide range of publicly accessible built and natural settings for recreation including facilities, parklands, open space areas, trails and water-based shoreline uses that support hiking, angling and other recreational activities; and
- Enabling continued opportunities for sustainable tourism development.

Ontario Parks

Provincial Parks and Conservation Reserve Act, 2006

The Provincial Parks and Conservation Act, 2006, is provincial legislation that provides a legal framework for managing Ontario's provincial parks and conservation lands with an emphasis on the maintenance and restoration of ecological integrity within provincial parks and conservation lands. The Act states, in section 2.2.2, that provincial parks and conservation areas should provide a stage for "ecologically sustainable outdoor recreation" and the economic benefits associated with outdoor recreation. Section 6 of the Act states that parks are "dedicated to the people of Ontario and visitors for their inspiration, education, health, recreational enjoyment...".



With the development of the Town's Active Transportation and Trails Master Plan, many of the goals set out in the Provincial Parks and Conservation Act will be supported, including but not limited to the promotion of outdoor recreation through the provision of trails and active transportation facilities and supportive programming. In addition, one of the key benefits of the development of active transportation and trails related facilities is the increased quality of life and health which is also one of the key goals of the Act.

Metrolinx

Metrolinx, formerly known as the Greater Toronto Transportation Authority, was established in 2006 by the Government of Ontario. This agency of the Provincial Government was created in response to the need for a centralized organization to improve the coordination and integration of all modes of transportation in the Greater Toronto and Hamilton Area (GTHA). Metrolinx was given a mandate to develop a Regional Transportation Plan (RTP) for the GTHA based on a seamless, integrated transportation network, with a real focus on public transit, that will allow people and businesses to move more easily from York and Durham, through Toronto, Peel, Halton and onward to Hamilton.

The RTP, adopted in November 2008 and entitled The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area, is primarily focused on enhancing and expanding public transit. In addition, the Plan includes a number of proposed initiatives related to sustainable transportation that include the implementation of active transportation (walking and cycling). The Plan explicitly notes that the active transportation network includes on and off-road trails that accommodate non-motorized travel. Included among the 10 "strategies" in the Plan are:

"The Regional Transportation Plan includes a number of proposed initiatives related to sustainable transportation that include the

- #2 – Enhance and Expand Active Transportation; and
- #7 – Build Communities that are Pedestrian, Cycling and Transit-Supportive.

Within each of these "strategies", the Plan lists a series of specific priority actions and supporting policies. Recommendations relevant to active transportation within the two strategies identified above include:

- Plan and implement complete, integrated walking and cycling networks for the

GTHA, including Toronto's PATH system, that address key barriers such as bridges over 400-series highways, rail corridors and major rivers, and missing sidewalks on major roads. The cycling networks will bring every GTHA urban resident to within a maximum of one kilometre of a dedicated bicycling facility. This will be supported by a provincial funding commitment increased over time to at least \$20 million per year for municipalities to complete the walking and cycling networks;

- Create pilot bike-sharing programs in major urban centres;
- Research, standardize and promote best practices to integrate walking and cycling in road design, such as scramble intersections, bike boxes, and signal prioritization;
- Implement or expand safe cycling training programs, similar to the Commuter Cycling Skills Course offered in the Vancouver area, or the CAN-BIKE courses offered by municipalities across Canada; and
- Undertake Active Transportation Master Plans and incorporate them into municipal Transportation Master Plans.

York Region

York Region is expected to be a key partner in developing and implementing the Town's AT and Trails Master Plan. The following policies have played a key role in the development of the active transportation and trails network and set of policies and recommendations.

York Region Pedestrian and Cycling Master Plan (2008)

The York Region Cycling and Pedestrian Master Plan is set to guide the Regional Municipality of York and its municipalities over the next 25 years and beyond to implement a comprehensive pedestrian system and on and off-road region-wide cycling network. The primary vision of the Master Plan is to create a pedestrian and cycling supportive environment that encourages both utilitarian and recreational travel by walking, cycling and using public transit. The cycling and pedestrian infrastructure is also included in the plan's implementation schedule. The plan will be implemented in three phases based on feasibility, infrastructure and political support. These include:

- The first two phases from a recommended ten-year implementation plan, including both infrastructure and program initiatives and associated costs; and
- Third phase: longer-term strategy (year 10 to 25).

Pedestrian and cycling infrastructure will include the implementation of multi-use trails, bike lanes, paved shoulders, signed-only routes and sidewalks. The Region has developed a number of on and off-road cycling and pedestrian facilities on Regional roads in a conceptual cycling and pathways network, with several routes through the Town of East Gwillimbury. The mapping presented in Section 4 includes these proposed routes. Relevant general recommendations from the Regional Plan include:

- Improve the integration of cycling with transit by encouraging YRT to continue implementing their bicycle racks on buses program (initiated in 2010) and improve bicycle parking and pedestrian and bicycle access at major transit stops and terminals;
- Investigate what other jurisdictions have learned in developing their own cycling maps;

- York Region would 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;
- 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;
- Work in conjunction with local municipalities to develop segments of the Regional network that are under local municipal ownership; and
- These principles, policy statements and infrastructure plans were key inputs to the Town's Active Transportation and Trails Master Plan.



Regional Official Plan

The York Region Official Plan (ROP) is a set of policies intended to help guide economic, environmental and community-building decisions affecting the use of land to the year 2026. The ROP provides two objectives that are related to cycling and walking:

- To ensure that roads are improved in a manner that is supportive of all modes of transportation including walking, cycling, automobile, transit and truck and that minimizes conflicts between these different modes; and
- To promote and facilitate walking, cycling and trails.

York Region Transportation Master Plan

“The York Region Transportation Master Plan (TMP) is a strategic planning document designed to define a long-term transportation vision and integrated road and transit network plan that will support growth in York Region to the year 2031. “

The York Region Transportation Master Plan (TMP) is a strategic planning document designed to define a long-term transportation vision and integrated road and transit network plan that will support growth in York Region to the year 2031. The TMP integrates transportation and land use planning and is founded upon Official Plan goals and policies.

The TMP provides a comprehensive Transportation Vision for the Regional Municipality of York, which is articulated in a set of desirable “end-states” dealing with:

- Reduced amounts of travel on a per person basis;
- Employer based Travel Demand Management (TDM) initiatives;
- Reduced dependence on automobiles;
- Universal access to public transit;

- Integrated transit services and fares among GO, TTC and other GTA transit operators serving York Region;
- Transit accessible human services;
- Efficient and safe movement of goods,
- Efficiently used infrastructure; infrastructure in a “state of good repair”;
- Strong protection for the environment;
- Adequate and dedicated long term funding sources; and
- Effective public consultation.

York Region’s Vision 2026 Strategy

York Region’s Strategic Plan (Vision 2026) acts as a blueprint for York by outlining key areas of focus and providing the framework for more detailed plans that will be undertaken by the Region.

The vision statement for Vision 2026 is: "York Region: Creating Strong, Caring and Safe Communities". This vision statement is supported by the following eight goals, which are further supported by a number of action areas. The action areas related to walking and cycling, which are intended to be the focus of municipalities in York Region, include:

- Encouraging pedestrian-friendly and transit-oriented neighbourhoods;
- Promoting alternative transportation methods that improve air quality, such as public transit and cycling;
- Supporting the efficient movement of people and goods in the Region through transportation enhancements;
- Ensuring mobility through accessible and affordable transportation;
- Encouraging the development of compact communities where people can walk to services; and
- Providing alternative forms of transportation such as walking and cycling.

York Region Sustainability Strategy

York Region has prepared a Sustainability Strategy, intended to provide a long-term framework for making smarter decisions about growth management and municipal responsibilities that better integrate the economy, environment and community. The strategy underscores the importance of recognizing how choices of everyday life can have lasting impacts on sustainability. The Sustainability Strategy is guided by the following principles:

- Provide a long-term perspective on sustainability;
- Evaluate using the triple bottom-line elements of environment, economy and community;
- Create a culture of continuous improvement: minimizing impact and maximizing innovation;
- Identify specific short-term achievable actions that contribute to a sustainability legacy;
- Set targets, monitor and report progress;
- Foster partnerships and public engagement;
- Raise the level of sustainability awareness through education, dialogue and reassessment; and
- Promote sustainable lifestyles and re-evaluation of our consumption and expectations.

The Sustainability Strategy outlines a number of actions to be taken by the Region. One of these actions is to promote the Region's Transit-Oriented Development Guidelines to provide opportunities to shape urban form that is transit-supportive, mixed-use and efficient, and provides a sense of place to residents and employees. Sustainable transportation is a key to achieving this action and a key to York Region's future growth. Another action was to prepare and adopt a York Region Pedestrian and Bicycling Master Plan, which will further support sustainable transportation, since this time a Pedestrian and Cycling Master Plan has been developed and adopted by Council within York Region.



Town of East Gwillimbury

Town of East Gwillimbury Official Plan (2010)

The Town of East Gwillimbury Official Plan was adopted in May 2010 and was developed to address priorities established through the Town's 2005 Strategic Plan. The goal of the Official plan was to review the out-dated policies associated with several community plans and address the inconsistencies between policy documents for the Town's various growth areas. The purpose of the newly adopted Official Plan is to provide direction and a policy framework for managing growth and land use decisions over the planning period to 2031. The policy framework ensures appropriate growth towards a sustainable community.

In order to ensure the sustainability for the future of the Town of East Gwillimbury, the Official Plan addresses transportation as a key area to consider and acknowledges the work completed for the Town's recently adopted Transportation Master Plan. More specifically, the Official Plan identifies the importance of promoting public transit, cycling and walking as more energy efficient, affordable and accessible forms of travel. Specific policies are outlined in section 7.2.4.1.9 (General Policies for Road Design and Construction) which identifies the provision of sidewalks and bicycle lanes on provincial highway 48 and Regional Arterial Roads, Major Collector Roads, Minor Collector Roads as well as sidewalks on at least one side of the street on all local roads. In addition, section 7.2.1, Transportation Demand Management also identifies the need for alternative forms of transportation to include walking and cycling. More specifically there is extensive reference to the provision of trails throughout the Town including but not limited to section 2.3, social sustainability, section 4.8, parks and open spaces, and 5.4.4, linkages.

The Official Plan also contains a number of schedules which illustrate the provision of new trails facilities. Schedule E-1, F and F-1 provide an inventory of the existing and proposed cycling and trails network throughout the Town as well as within the Urban Planning Areas. These proposed networks as well as the policies and recommendations were considered throughout the development of the Active Transportation and Trails Master Plan development process.

Town of East Gwillimbury Community Plans

Holland Landing / River Drive Park Community Plan (OPA 60)

The Holland Landing / River Drive Park Community Plan was approved by the Ontario Municipal Board in 1996. The plan recognizes the potential for the Holland Landing / River Drive Park area in community building. Though the population is below the necessary threshold for many facilities, it is anticipated that new developments permitted by this plan will allow the Holland Landing Community to accommodate a total of 16,000 residents. It is the intent of this plan to encourage the development of a more balanced community.

Mount Albert Community Plan (OPA 72)

The Mount Albert Community plan was adopted by council in 1989 and approved by the Ministry of Municipal Affairs in December 1994. The community plan outlined policies and guidelines to ensure a high quality of life, establish future development patterns to reflect the Community's goals and preserve and enhance unique attributes and characteristics of the Community of Mount Albert.

Queensville Community Plan (OPA 89)

The Ontario Municipal Board (OMB) approved the Queensville Community Plan (OPA 89) on April 7th, 1998. The goals in this community plan include:

- Conserving and improving the natural environment within the Community of Queensville at the local and regional levels. The interconnected open space system is intended to provide for active and passive recreational activities such as walking trails and bicycle paths;
- Developing and financing public facilities which include an arena, an indoor pool, a fitness centre, gymnasium and meeting rooms, a library, a fire station and vehicles, a public works facility and vehicles and a public transit facility and vehicles;
- Building elementary and high schools in conjunction with neighbourhood parks to maximize the use of public facilities; and
- Creating a well-balanced community through systematic staging of development.

Each of these goals reflect the objectives of the AT and Trails Master Plan in its promotion of the use of community facilities to link key destinations for residents and visitors.

“In order to ensure the sustainability for the future of the Town of East Gwillimbury, the Official Plan addresses transportation as a key area to consider and acknowledges the work completed for the Town’s recently adopted transportation master plan.”

Sharon Community Plan (OPA 122)

The Sharon Community Plan outlines policies with respect to community design, natural heritage, land use, servicing and transportation to guide the planning of the Sharon community. The community strongly values its unique heritage and therefore some of the goals of this plan include maintaining and enhancing Sharon's heritage foundation, strengthening existing linkages, and building a linked open space system to create a well-designed community. The community design strategy within this plan involves enhancing the Heritage District Area, the focal point of the community, through environmentally sensitive and pedestrian friendly developments.

Town of East Gwillimbury Strategic Plan

The Town of East Gwillimbury Strategic Plan establishes the framework for all projects and plans to be undertaken by the Town's departments. The plan is supported by five strategic pillars, three of which directly influence the development of the AT and Trails Master Plan:

- **Protecting and enhancing the environment:** This pillar supports the creation of a network of parks, trails, greenways, and links to public natural spaces;
- **Providing and advocating for quality programs and services to the community:** This pillar strives to cultivate a livable community which involves providing accessible recreation programs and services to residents, establishing policies to ensure friendly and safe neighbourhoods as well as working with other stakeholders to strengthen local and regional partnerships; and
- **Investing in municipal infrastructure:** This pillar serves to enhance existing infrastructure, plan for growth, and manage the Town's assets. More specifically, the Town is to develop plans to maintain, replace and upgrade existing infrastructure including roads, sidewalks and facilities by preparing a long term 20+ year assessment for full capital cost replacement for major facilities and major municipal infrastructure. In addition, the Town is to undertake studies to assess the Town's community facilities and infrastructure needs and to ensure green lands, transportation, community facilities and other infrastructures are integrated to accommodate growth.



East Gwillimbury Transportation Master Plan (May 2009)

The Town of East Gwillimbury's Transportation Master Plan was adopted in May 2010 and was developed to manage the increasing growth in a responsible manner, by engaging in sustainable transportation policies and initiatives. The plan was developed for a number of reasons; however, one specifically states that the plan is to ensure appropriate infrastructure and policies which support cycling and pedestrian opportunities as well as more efficient modes of travel.

“The cycling network outlined in the TMP identifies the need for on-road bike lanes, paved shoulders, signed-only cycling routes as well as multi-use trails.”

It is clear that throughout the development of the Transportation Master Plan there was a definite commitment to the promotion of non-motorized modes of transportation. Specifically these include recommended pedestrian and cycling improvements which promote the need for a variety of facility types such as sidewalks, multi-use trails, off-road trails, bike routes and bike lanes. The cycling network outline in the TMP identifies the need for on-road bike lanes, paved shoulders, signed-only cycling routes as well as multi-use trails. This network and facilities are identified on Figure 13-5 and were used as a basis for the development of the network and facilities for the AT and Trails Master Plan. In addition to the proposed pedestrian and cycling improvements, the TMP also identifies the need for related facilities such as showers, locker facilities and improved bicycle parking. The combination of the proposed network as well as facilities supports the growing demand for development which promotes healthy lifestyles, a key objective which is reiterated in the AT and Trails Master Plan.

[East Gwillimbury Community Park, Recreation & Culture Strategic Master Plan \(November 2009\)](#)

The Community Park, Recreation & Culture Strategic Master Plan was adopted in November 2009 and outlines the need and importance of the provision of trails and pathways throughout the Town of East Gwillimbury. The Master Plan is considered a tool to determine the needs and priorities related to services and facilities encompassing the parks, recreation and cultural demands of East Gwillimbury and provides an action plan for future facilities.

The telephone survey conducted for the Community Park, Recreation and Culture Master Plan indicates that there is a demand for walking, hiking, running and jogging facilities as well as facilities and trails for cycling or mountain biking. The Master Plan outlines actions for the future development of trails and necessary facilities which address these demands. Throughout the development of the AT and Trails Master Plan, this document was used as a key database for understanding the need for and future plans for the development of active transportation and trails related facilities and networks.

[East Gwillimbury Natural Heritage System Study \(May 2009\)](#)

The East Gwillimbury Natural Heritage System Study was developed and adopted in May 2009 as a review of natural heritage (environment) policies associated with the community plans and consolidated an approach to natural heritage protection that is consistent across the Town and with the Town's goal to be a leader in sustainability. The policy emphasizes sustainable development and environmental design and outlines criteria for the evaluation natural heritage features. These policies and design criteria can be applied and consulted throughout the development process of sustainable transportation modes for the AT and Trails Master Plan.

3.0 WHAT YOU TOLD US

An important component of undertaking the Active Transportation and Trails Master Plan was consulting with municipal staff and Council, members of the public, volunteer organizations, the Trails Advisory Committee and agencies. The involvement of the public and organized groups was essential in creating an interest throughout the Town with regards to the AT and Trails Master Plan while building momentum for the plan, and increasing awareness of the benefits of implementing active transportation and trails related facilities and networks.



Consultation is a key tool used to draw upon the knowledge of the Trails Advisory Committee as well as the people who live and work in the Town of East Gwillimbury, and those who will have an ongoing role in the implementation of the Master Plan.

The following internal and external consultation efforts were designed to obtain meaningful input regarding the network as well as the proposed recommendations and promotion and funding strategies. Each consultation technique was structured to engage various target audiences.

3.1 Consultation Strategy

In the initial stages of the study a consultation strategy was developed to guide and facilitate communications with internal and external stakeholders throughout the study process. The consultation strategy developed was designed to:

- Engage Town staff, Councillors, residents and stakeholders about the purpose, approach and findings of the East Gwillimbury AT and Trails Master Plan;
- Encourage stakeholders to participate in the study process;
- Promote active transportation and trail use, particularly walking and cycling for residents of all ages; and
 - Provide information related to the benefits of investing in active transportation and trails and encourage behaviours that help to reduce unnecessary single occupant vehicle use.

“Consultation is a key tool used to draw upon the knowledge of the Trails Advisory Committee as well as the people who live and work in the Town of East Gwillimbury, and those who will have a role in the implementation of the plan.”

The primary consultation techniques that were undertaken throughout the study included:

- Technical Advisory Committee and Trails Advisory Committee Meetings;
- A Public Awareness Campaign (including notices, Town website and study promotional business card)
- An Online Questionnaire;
- Two Public Information Centres; and

- A study webpage (link on the Town of East Gwillimbury website –

[http://www.eastgwillimbury.ca/Recreation_Leisure/Active Transportation Trails Master Plan.htm](http://www.eastgwillimbury.ca/Recreation_Leisure/Active_Transportation_Trails_Master_Plan.htm).

Technical Advisory and Trail Advisory Committee Meetings

The Technical Advisory Committee Meetings as well as the Trails Advisory Committee Meetings were attended by representatives from the Town including the Director of the Parks and Leisure Services and the Parks Supervisor as well as members of the Trails Advisory Committee. These meetings were used to review study materials over the course of the project and gave the members of the committee the opportunity to provide direct input on the study.

Study Webpage

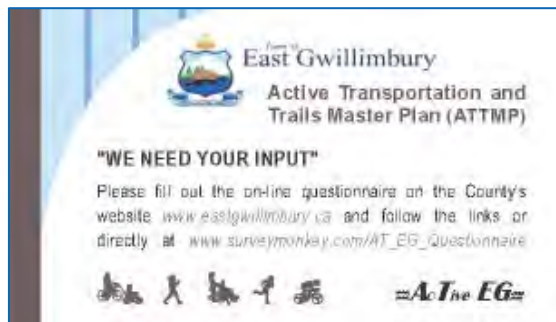
An information page on the Town of East Gwillimbury website [http://www.eastgwillimbury.ca/Recreation_Leisure/Active Transportation Trails Master Plan.htm](http://www.eastgwillimbury.ca/Recreation_Leisure/Active_Transportation_Trails_Master_Plan.htm) was developed and maintained exclusively for the Active Transportation and Trails Master Plan. Study updates and materials developed over the course of the study were posted on the Town’s website for public review. The website also served as a source of contact information for community members and stakeholders who required further information.

Study Notices

Notices were developed over the course of the study which promoted key information and the necessary contact information if individuals required or were looking to acquire additional information. Four notices were developed, one to mark the commencement of the study, two others promoting the Public Information Centres and a final notice to mark the completion of the study. It is important to note that the notice of study commencement was placed along the Nokiidaa Trail as well as at existing trail gateways throughout the Town of East Gwillimbury.

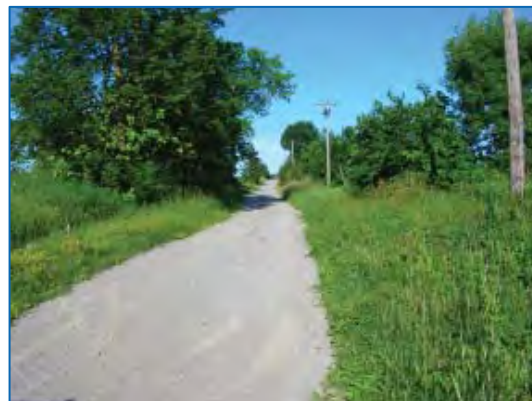
Promotional Business Card

Another promotional tool developed for the study was a “promotional business card” which provided the link for the study website and the online questionnaire as well as contact information for the study’s project manager from the Town as well as the consultant team. The promotional cards were distributed at the two Public Information Centres and were used to increase awareness for the study over its course.



3.2 Online Questionnaire

In order to better understand public attitudes toward active transportation and trail usage within East Gwillimbury, an online web based questionnaire was developed and maintained throughout the study. The questionnaire sought to engage the public and stakeholders and obtain their views on what an appropriate active transportation and trail system for East Gwillimbury should look like. The questionnaire was posted in February 2010 and was available to respondents until November 2010. A total of 70 responses were received during this time. Although it was not statistically valid, the questionnaire was very useful for informing the study team and identifying additional candidate routes for investigation in the field. A summary of the findings from the online questionnaire can be found in Appendix A.



3.3 Public Information Centres

Two Public Information Centres (PICs) were held at key points throughout the development of the Active Transportation and Trails Master Plan. The PICs were organized in an “open house” format and provided the opportunity for members of the public to provide their input on the progress and components of the active transportation and trails master plan.

The first public information centre was held on April 21, 2010 at the Holland Landing Community centre from 7:00 p.m. to 9:00 p.m. A set of display boards were prepared summarizing the findings to that point in the study. These displays included the draft vision and goals for the study, the route selection principles and network development approach, and provided examples of active transportation and trail facility types (i.e. off-road trails, on-road signed bike routes with paved shoulders and bike lanes in urban areas). In addition to these materials there were a number of maps on display illustrating the existing trails as well as some potential new primarily off-road active transportation and trail routes identified for future investigation. Attendees were encouraged to provide their comments directly on the maps with regards to their thoughts on the future active transportation and trails system. In addition to the displays, a computer station was set up for the on-line questionnaire and on a separate station a digital presentation ran for the duration of the event which provided descriptions of different active transportation and trail design best practice design guidelines being considered for the East Gwillimbury Active Transportation and Trails network.

“Attendees were encouraged to provide their comments directly on the maps with regard to their thoughts on the future active transportation and trails system.”

Three representatives from the consultation team were in attendance for the duration of the event in addition to members of the study team, representatives from Council and the Mayor. It was estimated that approximately 30 people reviewed the displays and / or spoke with one or more of the project representatives. Comment forms were also available along with the study business card which provided the contact information for the study team and Town’s Project Manager.

The second public information centre was held on May 14, 2011 at the Sports Complex. In addition to the residents in attendance the PIC was also attended by local councillors and was held in conjunction with a Public Works event. The second public information centre focused on presenting the draft network to the public. Display boards were presented outlining the project schedule, how the public was engaged, what the public told the study team, the network development approach, the recommended network and phasing plan, as well as key study recommendations. Once again, participants were encouraged to provide comments directly on maps and to fill out comment forms available. All comments received have been documented in the Project Record.

3.4 Summary of Public Input

This section highlights some of the key findings and provides a summary of commentary provided throughout the study. Based on the comments received from the online questionnaire as well as the public information centres some locations within the Town have been identified where there is increased demand for active transportation and trail development in the future.

Online Questionnaire Results

The questionnaire revealed that many residents recognize the benefits of AT and trails and generally support a municipal investment to improve AT and trail infrastructure in East Gwillimbury. In addition, results also suggest that many residents could be encouraged to use AT and trails more often if the Town invests in a more interconnected network. Respondents recognized some significant challenges in developing a municipal-wide AT and trail system throughout the Town. The questionnaire results provided the study team with useful information including:

- Frequency of use;
- How respondents perceived the existing facilities (AT and trail);
- Types of uses that should be encouraged on East Gwillimbury's active transportation and trails system;
- Perceived challenges and opportunities to improve the active transportation and trail system; and
- New locations and missing links for the active transportation and trails system.

The following is a summary of the key findings from the survey:

Over 91% of survey respondents agreed that the Town of East Gwillimbury should invest in improvements that provide opportunities for trail and active transportation in the Town as illustrated in Figure 3-1.

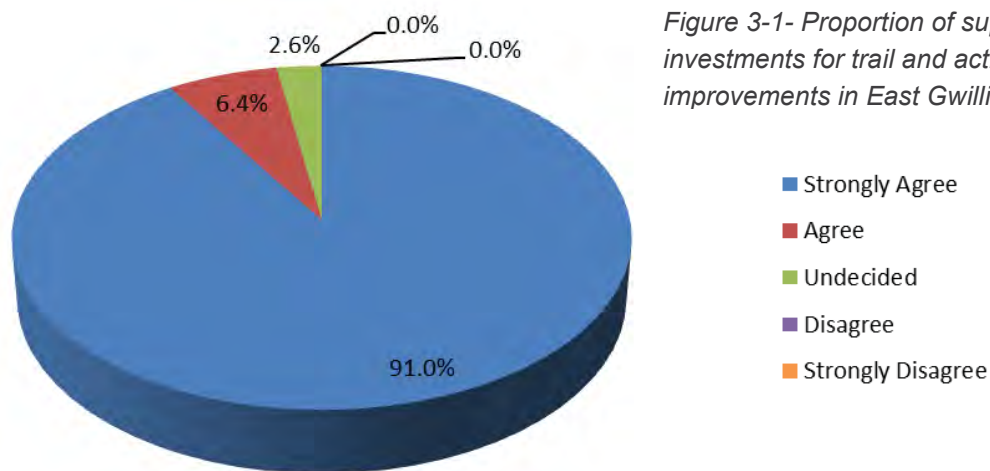


Figure 3-1- Proportion of support for making investments for trail and active transportation improvements in East Gwillimbury

- The primary uses for existing AT and trails systems in East Gwillimbury are cycling, walking and jogging. 52% of respondents indicated that they cycle at least a few times a week and 39% of respondents walk or jog. Hiking (21%) and cross country skiing (13%) are less common occurrences on a weekly basis.
- An overwhelming 79% of respondents feel that cycling should be considered the first priority in the development of an Active Transportation and Trails Master Plan for the Town of East Gwillimbury followed by walking or jogging (65%) and hiking (51%).
- Recreation or fitness is a primary motivator for AT and trails use with 93% of respondents indicating that it motivates them to do so most often. As well, at least 43% of respondents are at least sometimes motivated to use AT and trails for destination oriented trips, which includes trips to and from shops, visiting friends or running errands. However, trips for commuting and workplace travel during the work day are currently not motivators for AT and trail use in East Gwillimbury. The comparison of responses is illustrated in Figure 3-2.

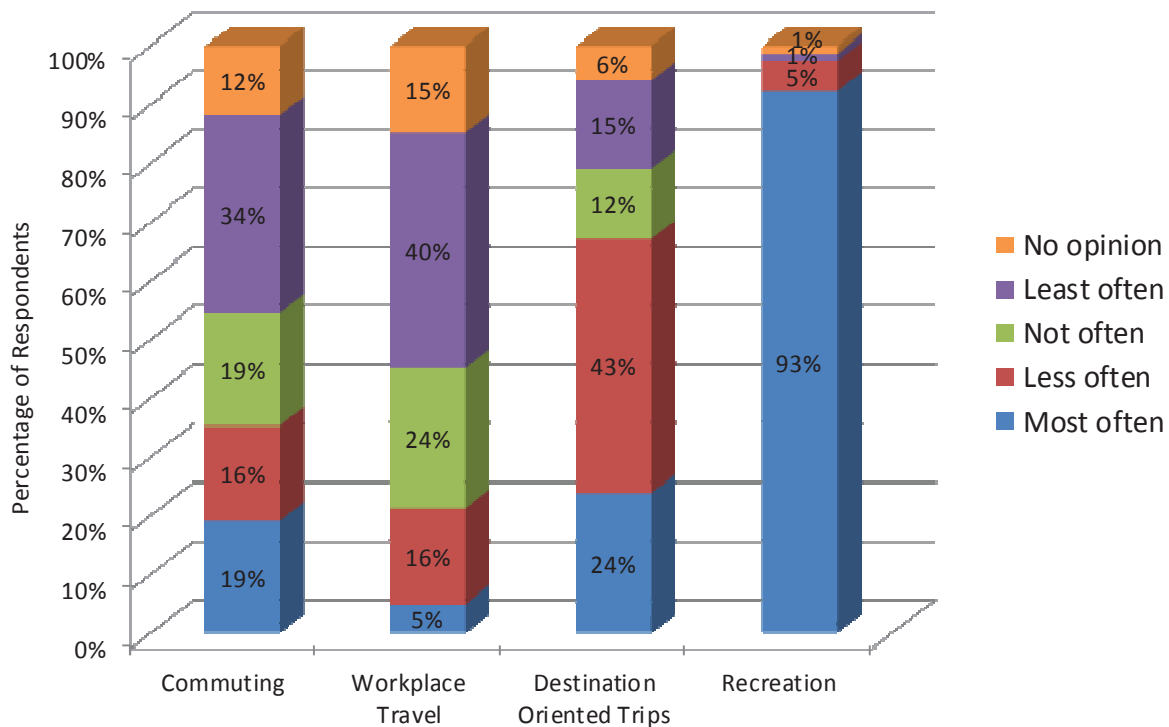


Figure 3-2 - Motivators for AT and trails use in East Gwillimbury

The following three improvements were selected as the most important by respondents for encouraging AT and trail use in East Gwillimbury:

- More bike and pedestrian trails (63%)
- More bike lanes or paved shoulders (60%) and

- More recreational multi-use hiking and cycling trails (54%).

Additionally, the majority of respondents also indicated that better education for all users of the road, better connections to key destinations, access to AT and trails route map and the provision of secure bicycle parking would encourage further AT and trail use.

Respondents indicated they are most comfortable with cycling on roads with bike lanes or paved shoulders (52%) and walking and cycling and biking / walking on multi-use trails (54%). In contrast, approximately 51% of respondents are least comfortable with cycling and sharing the road with motor vehicle traffic on major roads without cycling facilities.



The majority of respondents indicated that an AT and trail system should be developed for the Town of East Gwillimbury for the following reasons (listed in order from greatest importance to least importance):

- To provide places to walk and cycle within communities (75% of respondents)
- To improve quality of life and health of East Gwillimbury residents (72% of respondents)
- To improve walking and cycling as transportation options (66% of respondents)
- To provide access to natural areas and Town/Regional forests (46% of respondents)
- To connect communities to each other (41% of respondents)
- To provide access to historic / cultural destinations and support tourism (21% of respondents)

Respondents were also given the opportunity to highlight key destinations and connections that should be considered within the overall cycling network. Respondents suggested several preferred corridors for potential cycling routes, these included: various routes along Mt. Albert Road, Green Lane and Leslie Street to Green Lane and Yonge Street to allow access to the East Gwillimbury GO Station, Yonge Street from Holland Landing to Green Lane, and completing the radial line connection to Queensville. Comments provided were taken into consideration throughout the network development process outlined in Chapter 4.

“Attendees of the Public Information Centres were encouraged to provide their comments to the study team members through talking with the study team, in writing by filling out the comment forms provided and by writing their comments directly on the maps.”

Public Information Centre Results

Attendees of the Public Information Centres were encouraged to provide their comments to the study team members through talking with the study team, in writing by filling out the comment forms provided and by writing their comments directly on the maps. The following summarizes some of the results and input provided at each of the Public Information Centres.

PIC #1

- Add network connection running north / south from Ravenshoe Road to Boag Road and west of Catering Road;
- Extend the proposed trail north from Boag Road to Ravenshoe Road. This trail will be parallel to the proposed extension of Highway 404;

- Include the missing bridge at the intersection of the trail west of East Townline Road and the proposed trail south of Boag Road (Sutton / Zephyr Trail);
- Connect the existing trail west of East Townline to the proposed trail on Franklin Road crossing Mount Albert;
- Include the missing facilities and correct some labelling issues on the maps; and
- Several additional trail links were suggested:
 - A linkage eastward from the sidewalk along Toll Road
 - A route originating from Oriole Park and continuing southward, running parallel to the Holland River.

PIC #2

- Revise alignment of proposed N/S road in Sharon (between Doanne Road and Mount Albert) to connect to one road east off of Mount Albert Road from where it currently connects;
- Remove trail loop north of the new bridge along the Nokiidaa Trail as the solid black footpath line is on private property; and
- Add as a desire line in the Bathurst Street corridor north from Queensville Sideroad a connection as a desire line that extends north and then crosses the water course into Simcoe County.

4.0 THE PROPOSED AT AND TRAILS NETWORK

The following sections in this chapter of the report describe the proposed Active Transportation (AT) and Trails network for the Town of East Gwillimbury, destinations, opportunities and barriers that were identified and the approach taken to develop the recommended network. The network is based on a grid of north-south and east-west routes that build upon existing transportation corridors and linear park, valley and utility corridors. In addition, this chapter also provides further detail on the facility types that are proposed to form the recommended network. For more information on proposed and potential facility types please see the separately bound Appendix.



The proposed active transportation and trails network consists of designated cycling facilities including signed only cycling routes, paved shoulder bikeways, cycle lanes, separated bikeways and off-road cycling routes such as paved and granular surfaced multi-use trails. The pedestrian component of the network focuses on policies and recommendations for the Town to identify and complete missing links in the Town's sidewalk system and includes policy recommendations to support pedestrian friendly neighbourhood design. The pedestrian facilities which are proposed for the Active Transportation and Trails Master Plan includes the existing sidewalk and trail network along with eliminating missing sidewalk links on Town and Regional Roads. It is important to acknowledge that the York Region Pedestrian and Cycling Master Plan, which identifies a cycling network and missing sidewalk links on Regional Roads, has been considered throughout the development of the AT and Trails Master Plan for East Gwillimbury.

The AT and Trails Master Plan outlines a number of policies and recommendations that encourage the improvement of pedestrian facilities in urban areas to complement the Town's recently adopted Official Plan and Transportation Master Plan. The range, type and density of recommended pedestrian infrastructure will vary depending on the location of the urban areas and the density and range of land uses in each. Part of this support includes recommendations for a network of primarily off-road trails and active transportation facilities that provide increased connectivity throughout the Town as well as to bordering municipalities. Active transportation is generally defined as:

- **Active Commuting** - which involves journeys to and from work;
- **Active Workplace Travel** - which includes trips during working hours such as the delivery of materials or attending meetings;
- **Active Destination Oriented Trips** - which includes trips to and from school, shops, visiting friends and running errands; and
- **Active Recreation** - which involves the use of an active transportation mode for fitness or recreational pursuits, such as hiking or cycling.

4.1 The Network Development Approach

An approach used to establish the recommended active transportation and trails network was iterative, as was the process for identifying proposed facility types and the costing and implementation for the AT and Trails Master Plan for the Town of East Gwillimbury. The AT and trails network development approach included the following steps:



1. Collect and Assemble Background Information

The network development process was initiated with the consolidation and digital mapping of all previously planned active transportation (pedestrian and cycling) and trails facilities in the Town of East Gwillimbury as well as connections to the surrounding municipalities within York Region. These included both on and off-road facilities provided by Town Staff and the Trails Advisory Committee.

2. Review Consolidated Base Mapping with Trails Advisory Committee

The Base mapping generated by the Trails Advisory Committee and the study team was reviewed with the Trails Advisory Committee with the goal of clearly understanding current AT and trail opportunities as well as any previously approved plans in place for related facilities. These facilities can include those within the road right-of-way as well as those outside of the road right-of-way.

3. Develop Route Selection Principles

A set of qualitative principles was developed to guide the selection of routes for consideration at the Candidate Routes level (see section 4.1.2). These principles were reviewed with Town Staff as well as the Trails Advisory Committee and public and were then revised where applicable. These principles should also be utilized and referred to in the future when changes to the route network are being contemplated, and again as part of the preliminary design stage to ensure that the route still satisfies these principles.

4. Prepare Candidate Routes Mapping using the following inputs:

- Consolidated base mapping;
- Route selection principles;
- Consultation with the Trails Advisory Committee;
- Expertise of the Study Team; and
- Desktop analysis using the Town's high resolution aerial Imagery and street view images (where available) in Google Earth.

5. Direct input to the proposed network and route selection principles

Town staff members were consulted and input was provided by the Trails Advisory Committee. In addition, input was received from the public based on comments provided at the first Public Information Centre held in April 2010. The network was then further refined through responses from an online questionnaire (see Appendix A) as well as comments received following the Public Information Centre.

6. Field Review and assess Candidate Routes

Once developed, the candidate routes identified for the AT and Trails Master Plan were reviewed and assessed in the field by the study team. The field investigation steps included:

- Travel and collect information for each candidate route (ground-proof in the field); and
- Apply the route selection criteria, information collected in the field combined with the technical expertise of the study team, plus input from the Trails Advisory Committee and the public.

7. Accept or reject each candidate route based on Step 6 and map the recommended route network

8. Suggest an appropriate Facility Type

The route network was then assessed to identify the appropriate facility types for each segment. These were based on the following for each route in the network based on the results of Steps 1 through 7 and consideration of a number of factors including:

- Location/Setting (urban area vs. rural area, within road right-of-way vs. outside of road right-of-way-e.g. in a park or utility corridor);
- Facility Type Noted in any Relevant Environmental Assessment (where applicable);
- Planned Facility Types; provided by local municipal representatives on the Steering Committee (where applicable);
- Current Road Cross Sections;
- Curbed vs. shoulder and ditch;
- Permitted on-street parking vs. prohibition of on-street parking;
- Single lane in each direction vs. multiple lanes in each direction. For example in urban areas where there may be 4 or 5 five lane roadway with a wide enough curb lane and a posted speed of 50 km/h, a signed route with Sharrow lane markings would be viewed as a suitable facility type, allowing for cyclists to share the lane with vehicles and for vehicles to appreciate the anticipated travel patterns of cyclists on the roadway;
- Current lane widths - in particular those locations where other data collected suggested that a bicycle lane would be preferred and that field observations revealed the potential to add bicycle lanes through simply repainting lane markings. It should be noted that in areas where there is a wide enough curb lane for vehicles and cyclists to share, the preference would be to recommend a higher order facility such as a standard on buffered bike lane (1.5 m bike lane and 0.5 m buffer). However, where the recommended minimum of 1.5 m for a designated bike lane is not available a lower order facility type such as a signed route with or without shared lane markings and signage should be considered;
- Current Character of the Corridor;
- Land uses along corridor/type of destinations along the route or nearby the route;
- Number of road intersections and/or private entrances along corridor;
- Facility type that is being connected to (where they currently exist/where applicable);
- Distance from key destinations not directly on proposed corridor;
- Current Traffic Characteristics;
- Traffic volume (where data is available and was provided);
- Commercial vehicle/heavy vehicle/transit vehicle percentage (where data is available and was provided);

- Posted speed limit;
- Operating speed and speed differential between cyclists and motor vehicles;
- Field observations;
- Right-of-way width;
- Distance to nearest proposed route; and
- Technical expertise of the study team.

The observations by the study team were then balanced by comments received from Town and the Trails Advisory Committee, as well comments received from the public and local stakeholders.



9. Review Suggested Facility Type with the Trails Advisory Committee

The suggested facility type is a tool to be used at the master planning level to develop an order of magnitude cost estimate for the implementation of the network.

It is also important to note that as part of the implementation of each route segment, a more detailed assessment will be undertaken at the segment specific level to confirm the route and facility type for the purposes of detail design. This 5 step process will be clearly described in the Implementation chapter of the East Gwillimbury AT and Trails Master Plan Report (see Chapter 6).

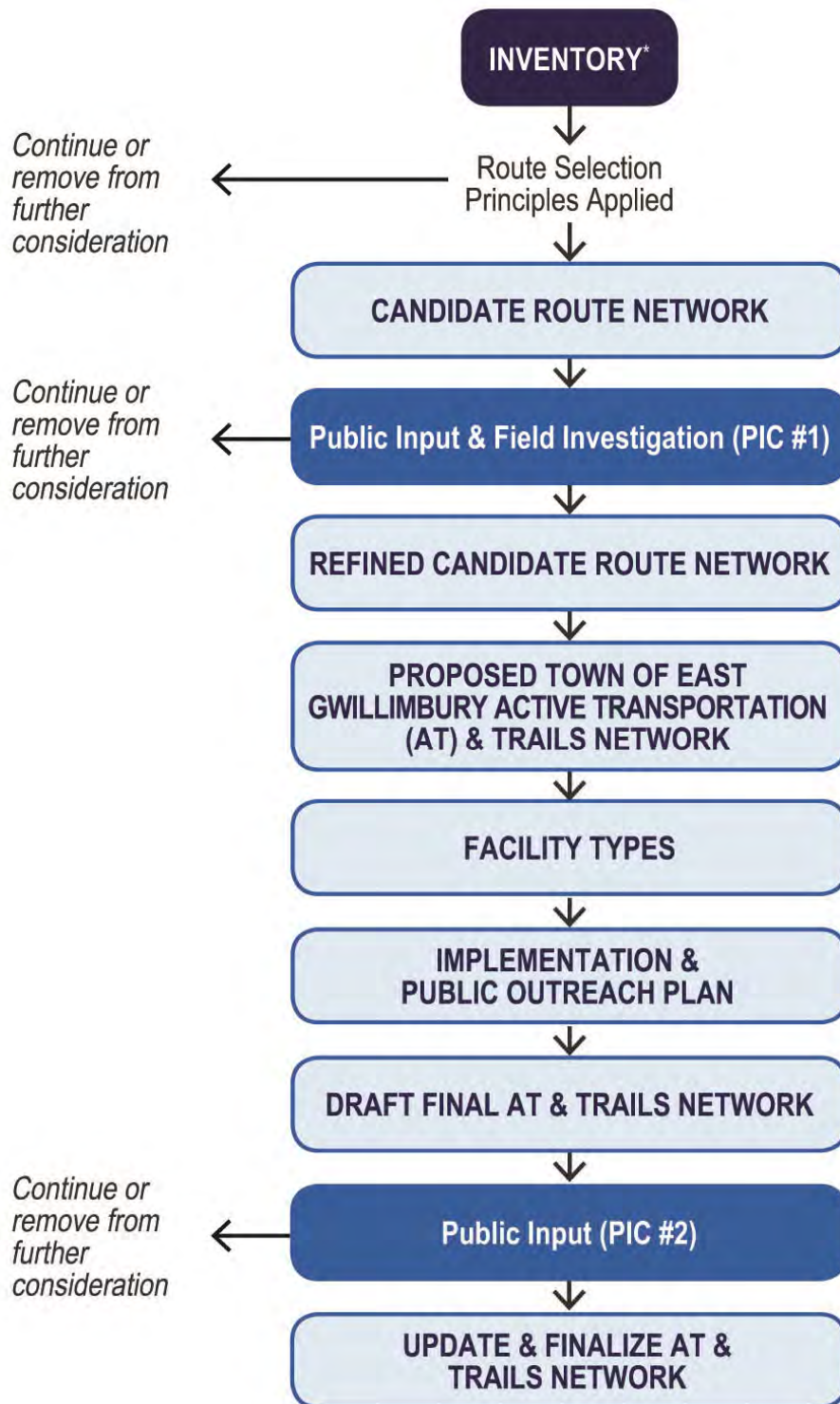
10. Implementation/Phasing Plan

The implementation and phasing plan for the AT and Trail Network for East Gwillimbury was developed to guide the short, medium and long-term development of the proposed routes and facilities throughout the Town. In addition, policies and recommendations were developed to guide the future development and implementation of active transportation and trail facilities. Further detail on the implementation and phasing plan for the Town can be found in Chapter 6 of the report.

11. Direct Input on the Candidate Routes and Recommendations

Input regarding the draft candidate routes as well as the proposed AT and Trail related recommendations from the Town were gathered through direct discussion with the Trails Advisory Committee. The public as well as local stakeholders were able to provide their comments on the proposed network through a second round of public information centres held in May 2011. Results from the online questionnaire were also utilized throughout this stage of the study. Input from the public, Town staff, the Trails Advisory Committee, stakeholders as well as the online questionnaire are summarized in Chapter 3 of the report.

The proposed active transportation and trails network is a key outcome of this study, and consists of both on and off-road active transportation and trails facilities. The following figure, Figure 4-1 Network Development Process, is an illustration of the network development process. The figure identifies the key steps of the study as well as ways in which potential routes were removed or determined.



* Existing and previously planned routes, local policies and plans and steering committee input.

Figure 4-1 - East Gwillimbury Active Transportation and Trails Master Plan Network Development Process

Recommendation(s):

- 4.1 The AT and Trails network as identified in the East Gwillimbury Active Transportation and Trails plan should be adopted in principle by the Town as a blue print for the development of a comprehensive AT and Trails network throughout the Town of East Gwillimbury.

4.1.1 Inventory of Existing Conditions



As illustrated in the network development process outlined in the previous section, the first key step in developing the active transportation and trails network included the preparation of an inventory of existing and previously proposed pedestrian, cycling and trails facilities in East Gwillimbury. This was a crucial step to understanding where and what types of facilities exist or have been proposed throughout the Town.

The Town and Region of York provided the study team with a Geographic Information System (GIS) database and digital aerial photography for the entire municipality. The information included:

- Existing and proposed roads;
- Existing sidewalks and walkways;
- Points of interest and attractions (including community centres and schools);
- Existing and proposed trails; and
- Parks, lakes and watercourses.

A significant number of background materials were reviewed in developing the inventory of existing and previously proposed facilities. The following sources were considered in preparing the inventory mapping:

- Town of East Gwillimbury Transportation Master Plan;
- York Region Pedestrian and Cycling Master Plan;
- York Region Transportation Master Plan;
- Everyday Guide to the York Regional Forest;
- Town of East Gwillimbury Community Parks, Recreation & Culture Strategic Master Plan;
- Town of East Gwillimbury Draft Consolidated Official Plan;
- Town of East Gwillimbury Trails System Master Plan; and
- Town of East Gwillimbury Draft Natural Heritage System Background Study.

All of the information available was used to prepare context maps illustrating existing and previously planned pedestrian and cycling facilities in the Town of East Gwillimbury.

Existing Cycling Context

Figure 4-2/2A illustrates the existing cycling context within the Town of East Gwillimbury, this map includes other relevant features, such as municipal boundaries, the street network, GO Transit station, parks, lakes and watercourses.

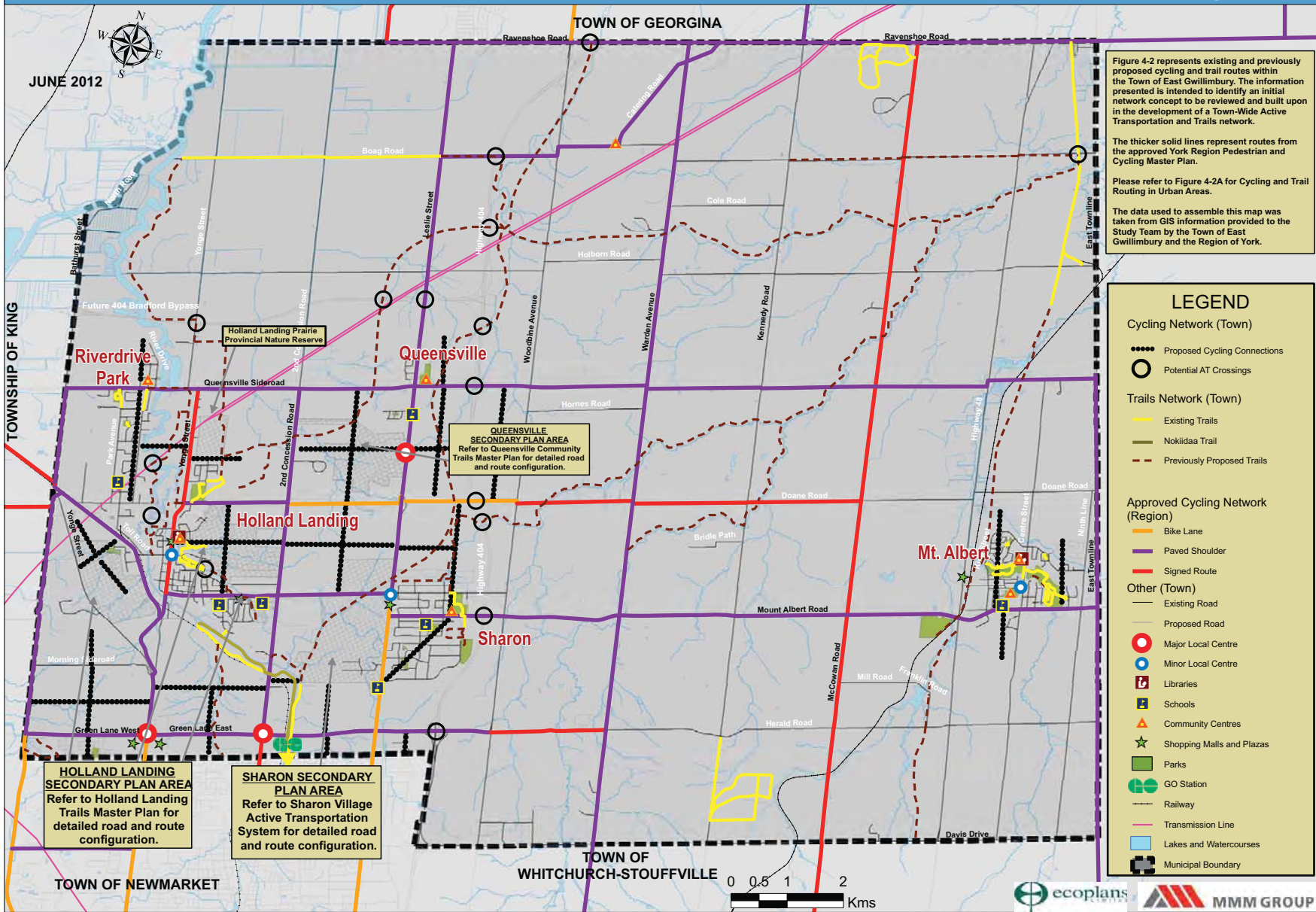
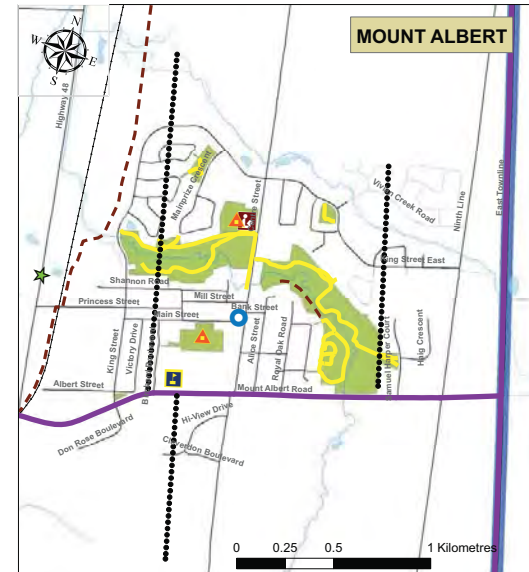
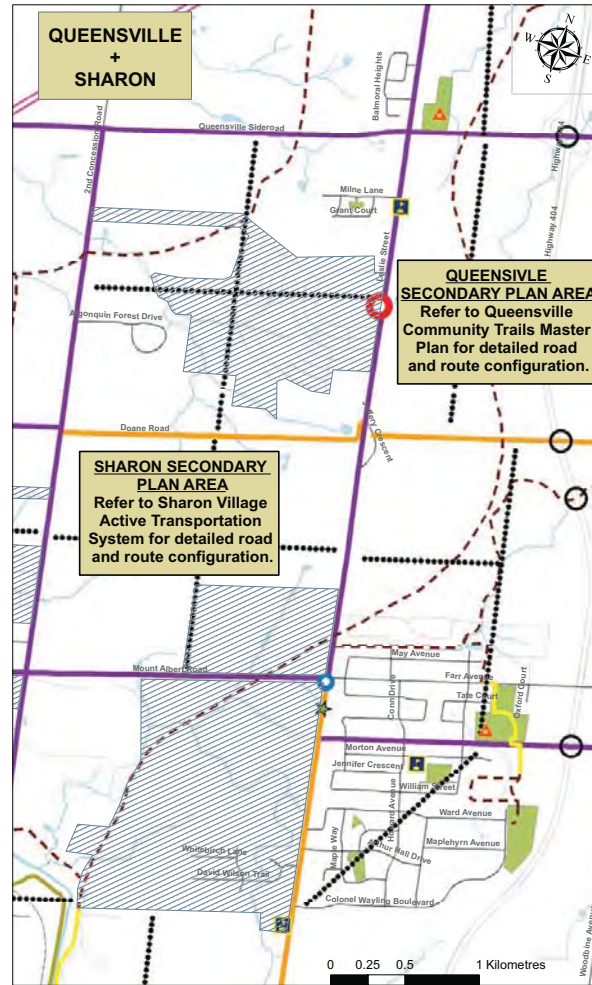


Figure 4-2A represents existing, previously planned cycling and trail routes located with the urbanized areas of the Town of East Gwillimbury. The information presented is intended to identify an initial network concept to be reviewed and built upon in the development of the Town Wide Active Transportation and Trails network.

This figure does not include all of the proposed active transportation, trails and road routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans, as the planning and development process is still ongoing for many of these areas.

Please refer to Figure 4-2 for Cycling and Trail Routing in the entire Town of East Gwillimbury.

The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York



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Existing Pedestrian Context

The existing pedestrian context within the Town of East Gwillimbury, which includes existing and previously planned sidewalks and trails, is illustrated in **Figure 4-3/3A**. Also shown on this map are other relevant features, such as municipal boundaries, the street network, GO Transit station, parks, lakes and watercourses.



Key Destinations and Points of Interest

When developing and improving an AT and trails network, it is also important to identify major or potential attractions and destinations. These include key recreational, commuter and utilitarian destinations for pedestrian and cyclists as well as popular equestrian routes and natural areas such as parks and conservation areas, public lands, natural heritage areas, environmentally sensitive lands and prominent vistas. Other attractions and destinations typically located in urban areas include major commercial and employment centres, educational institutions, municipal buildings and civic centres including libraries and recreational facilities. Key attractions and destinations throughout the Town include the following:

- Municipal parks and conservation areas;
- Commercial areas and shopping plazas;
- Major employment areas or zones;
- Community and Recreation centres;
- Important cultural destinations/landmarks such as the Sharon Temple, public libraries, community centres, downtown core areas, churches and heritage buildings; and
- Elementary schools.

This information was reviewed and updated based on input from stakeholders and the public, and then used in association with other route selection criteria to identify potential trail links in the existing pedestrian system. In addition, it was also used to identify potential cycling routes that could be created or expanded to form part of a future Town-wide active transportation and trails network and to assist in confirming existing or proposed pedestrian and cycling routes and identify deficiencies or areas where improved pedestrian and cycling access may be warranted.

Barriers

Another key element of assessing the existing conditions for East Gwillimbury was the identification of significant barriers. Areas that were noted by staff, the project steering committee and public as particularly challenging were examined during the field investigations to identify opportunities to overcome them during the route selection stage.

Barriers to walking and cycling that exist in the Town of East Gwillimbury include highways, railways, wetlands and water courses. Other barriers related to walking and cycling and that may deter less-experienced users include cycling along narrow arterial and collector roads, lack of designated on-road

TOWN WIDE: PEDESTRIAN SYSTEM + TRAIL ROUTES - Existing Context

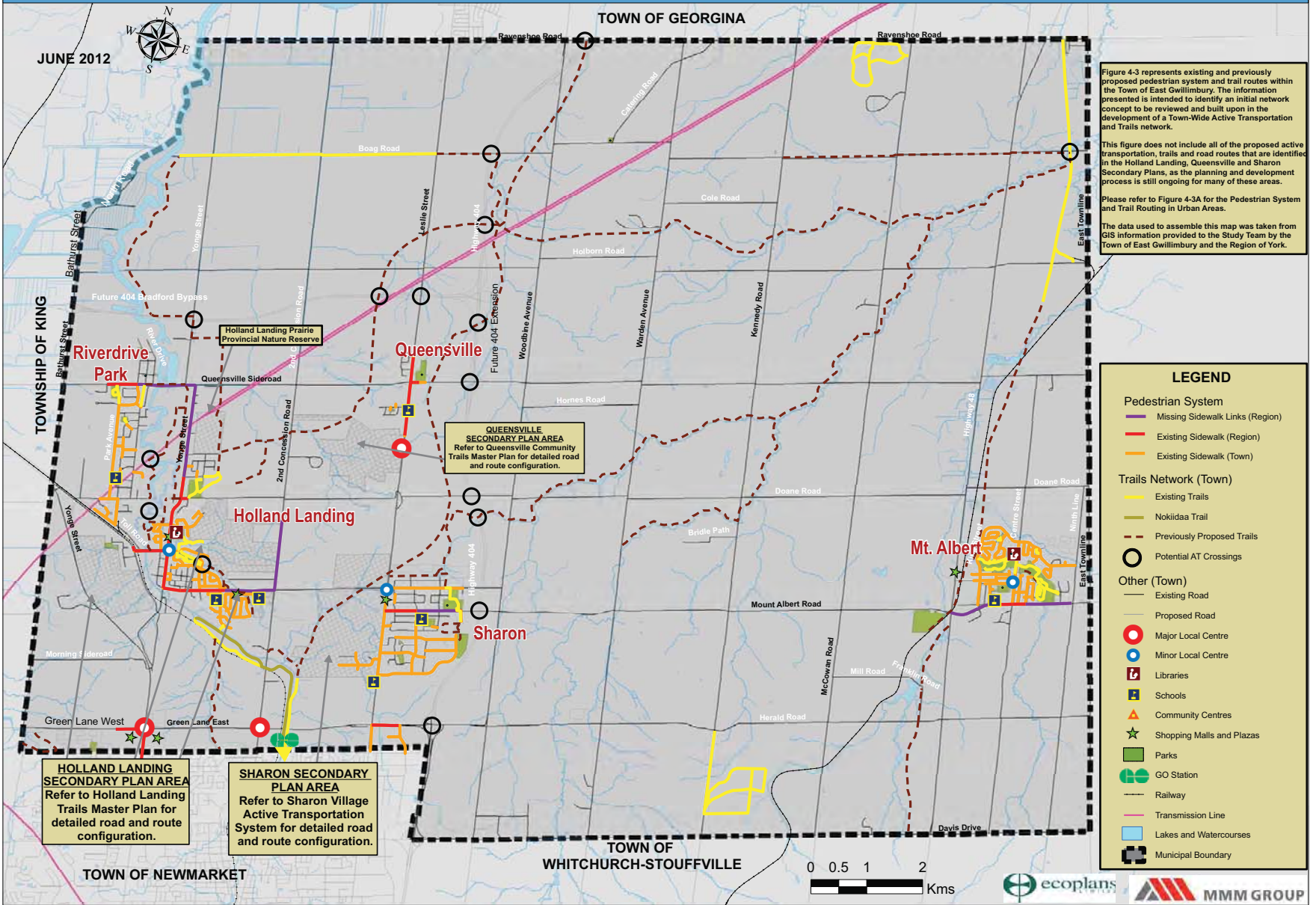
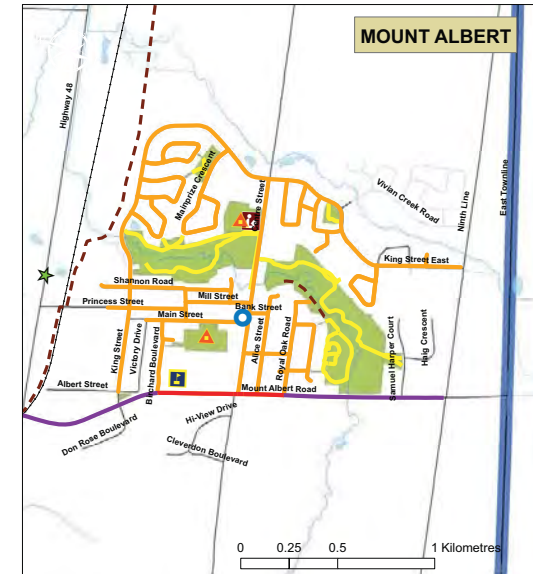
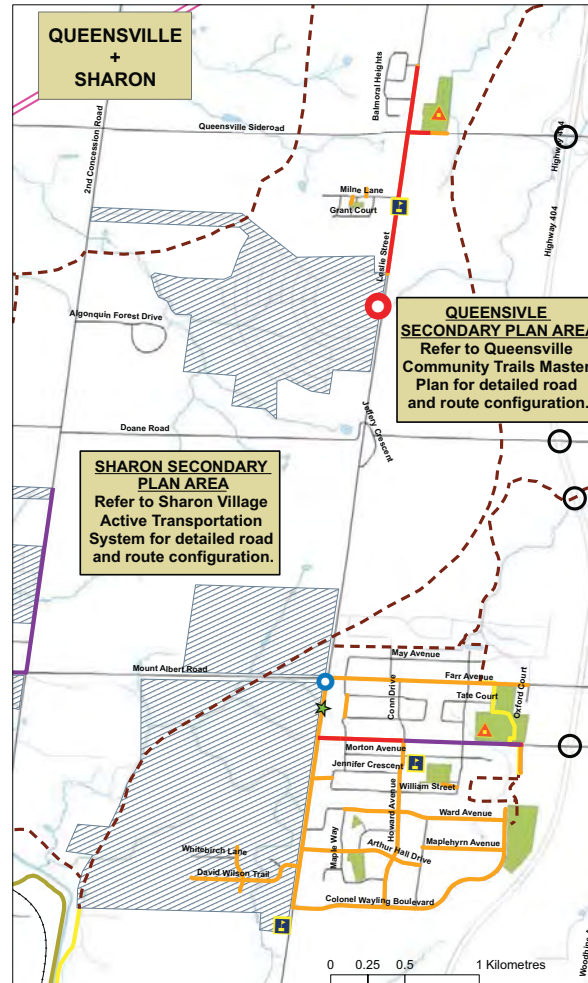
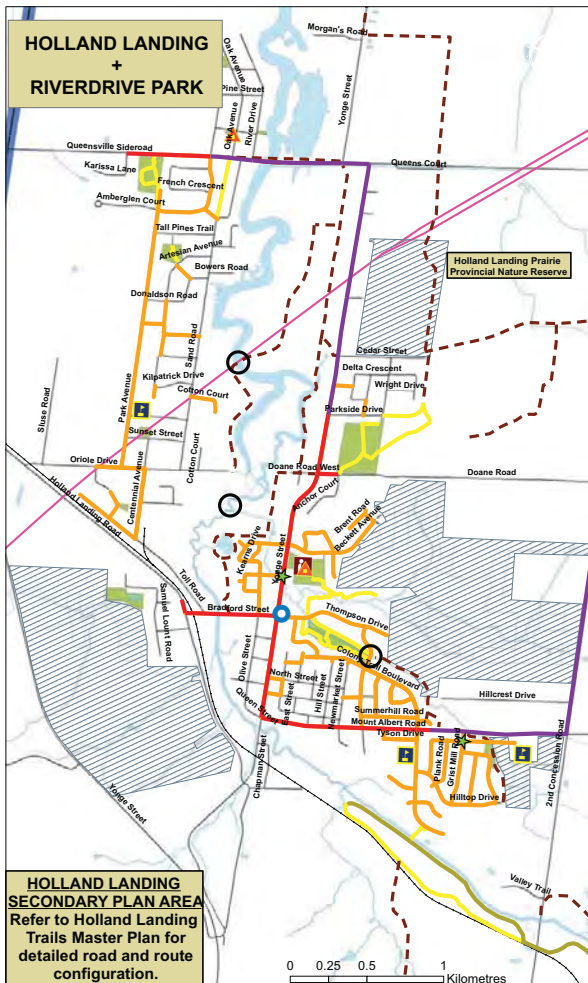


Figure 4-3A represents existing, previously planned pedestrian and trail routes located with the urbanized areas of the Town of East Gwillimbury. The information presented is intended to identify an initial network concept to be reviewed and built upon in the development of the Town Wide Active Transportation and Trails network.

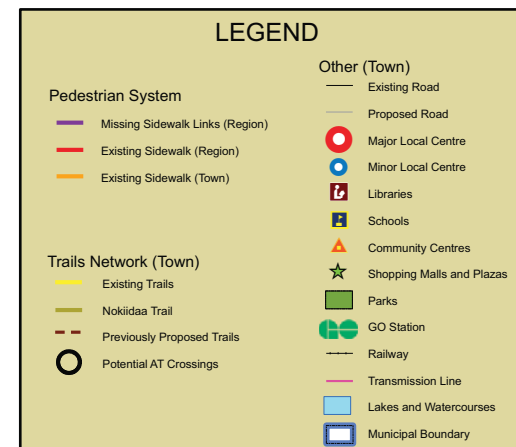
This figure does not include all of the proposed active transportation, trails and road routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans, as the planning and development process is still ongoing for many of these areas.

Please refer to Figure 4-3 for Pedestrian System and Trail Routing in the entire Town of East Gwillimbury.

The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.

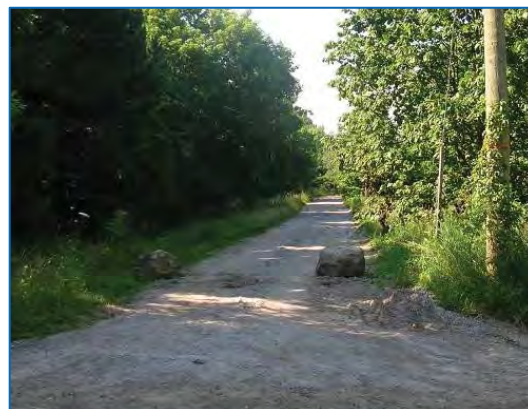


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cycling facilities and/or connectivity, narrow bridge underpasses and trails with difficult terrain. Some of these barriers that exist in the Town of East Gwillimbury include:

- The CN/GO railway corridor;
- Major roadways such as sections of Green Lane on the southern boundary of the Town;
- Watercourses particularly in the north eastern region of the Town;
- Highway 404;
- Attaining private lands sections of the network;
- Steep valley lands;
- Steep slopes on some roads;
- Conflict between different user groups on hiking trails (pedestrian and cyclists); and
- Lack of connectivity between routes.



4.1.2 Route Development and Selection Principles

The following is a list of guiding principles used to develop East Gwillimbury's Active Transportation and Trails Master Plan network. These principles were reviewed and refined, and then confirmed by the study team based on observations of existing conditions, public consultation and the review of the background documents.

- **Safety:** Reducing risks to users and providing comfortable facilities will be key considerations when selecting routes for the network. The confidence and acceptance of the network can be instilled in users by reducing real and perceived risk.
- **Visible:** The routes should be a visible component of the transportation system.
- **Direct / Connected:** The network should link communities, key destinations and connect with local municipal on and off-road networks.
- **Destinations:** Active Transportation and trails routes should provide access to major destinations in the town and adjacent municipalities including natural, cultural and service facilities, as well as routes to schools, community and neighbourhood parks and shopping facilities.
- **Integration with other modes:** The active transportation and trails network should be integrated with other modes of transportation, particularly public transit. Routes should be selected to provide access to transit stops and stations.
- **Attractive and Scenic:** Active Transportation and trails routes should take advantage of attractive and scenic areas, views and vistas.
- **Diverse:** The active transportation and trails network should provide a diverse on and off-road walking and cycling experience throughout the Town and local municipalities.
- **Easily accessible:** Active Transportation routes should be easily accessible from local neighbourhoods within the town, and every effort should be made to integrate these routes with local area networks.

- **Different routes for different users:** The pedestrian, trail and cycling systems that form the network should appeal to a range of user abilities and interests. This requires the design of a variety of route types.
- **Cost Effective:** The cost to implement and maintain the proposed AT and Trail network facilities and supporting programs should be phased over time and designed to be affordable and appropriate in scale for the Town. Opportunities for partnership funding from other non-local government sources (e.g. Provincial and Federal Governments, York Region, LSRCA and the private sector) should be pursued.
- **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.



4.1.3 Candidate Routes

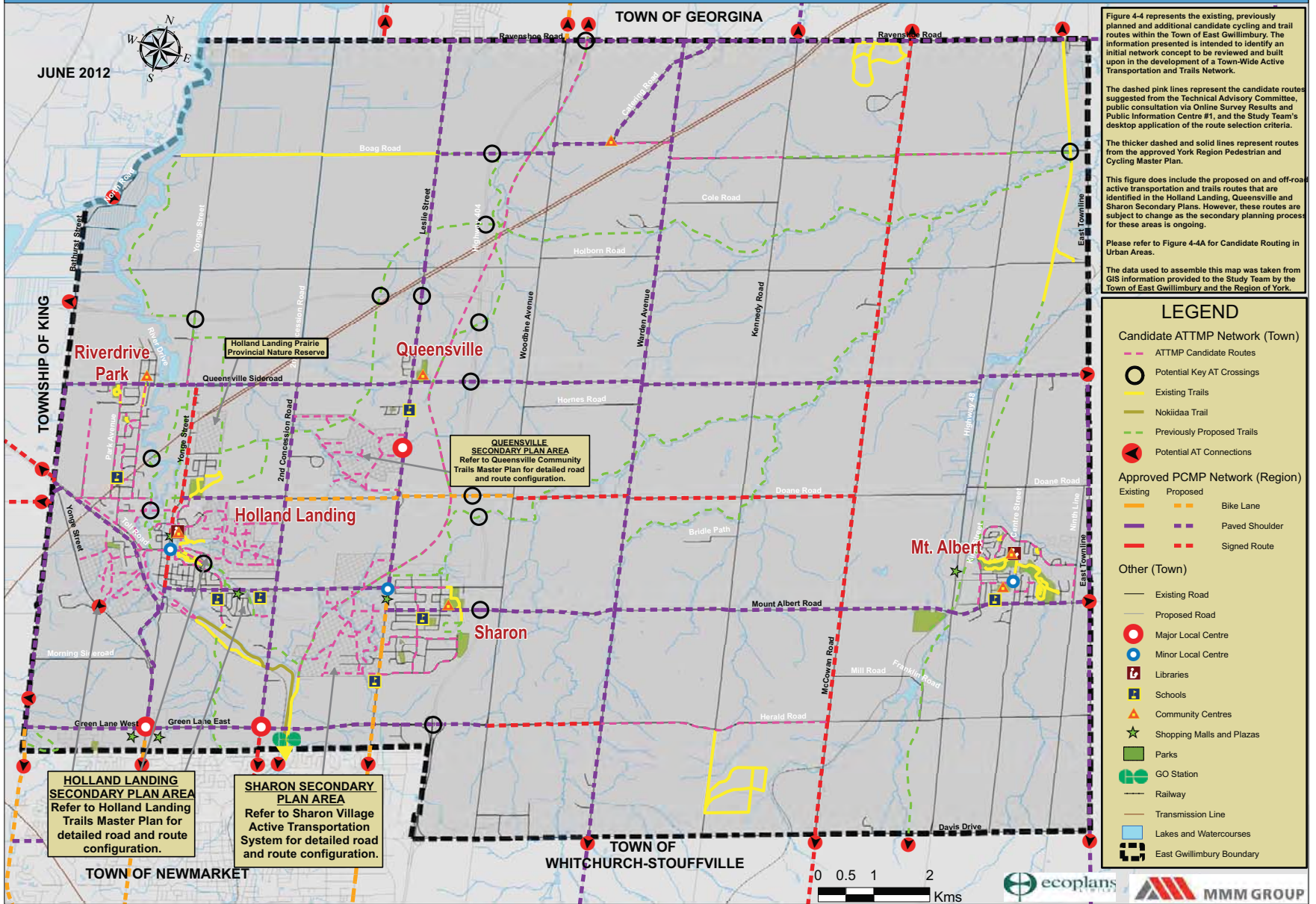
A set of on and off-road candidate routes were identified and mapped using the information collected as part of this study. This task also included input from the Trails Advisory Committee, the route selection criteria, as well as input from Town Staff and members of the public.

The candidate routes were further refined based on public input received following the Public Open House held in April 2010 as well as comments from 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 active transportation and trails 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 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 active transportation and trails network. The pedestrian system component of the study focused on trails and recommendations to eliminate missing sidewalk links. **Figure 4-4/4A** illustrates the candidate route network.

Potential active transportation and trail routes were further screened by revisiting the route selection principles and through additional field investigation. In addition, the routes were also screened based on additional input from local trails committees and Town staff. Those candidate routes considered less desirable compared to a parallel route were then eliminated from further consideration. A refined route network was then identified along with proposed facility types, which formed a proposed Draft Active Transportation and Trails network for the Town.

Figure 4-4



East Gwillimbury Active Transportation & Trails Master Plan

URBAN AREAS: CYCLING + TRAIL ROUTES - ATTMP Candidate Route Network Concept

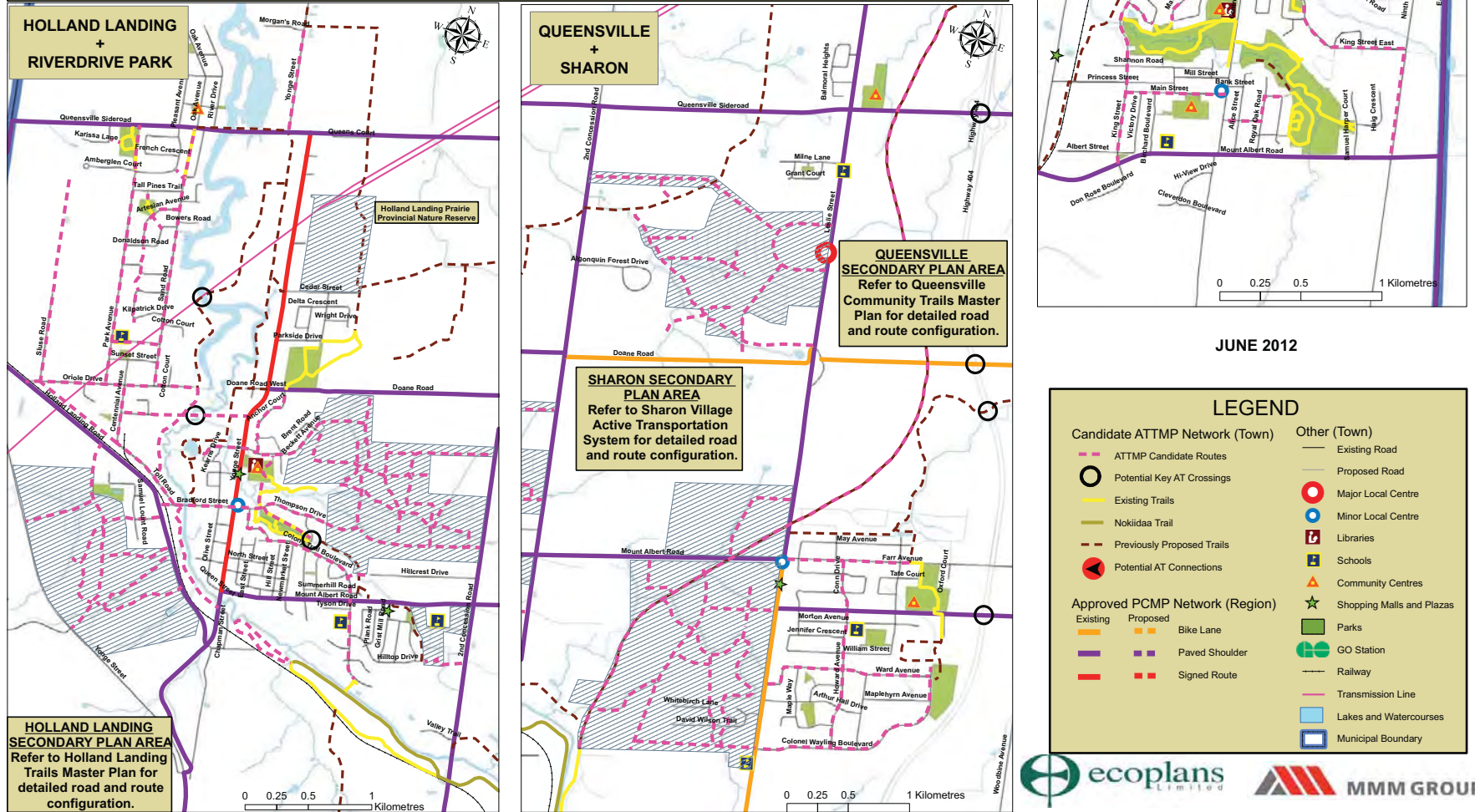
Figure 4-4A

Figure 4-4A represents the existing, previously planned and candidate cycling and trail routes within the Town of East Gwillimbury. The information presented is intended to identify an initial network concept to be reviewed and built upon in the development of a Town-Wide Active Transportation and Trails Network.

The dashed pink lines represent the candidate route suggested from the Technical Advisory Committee, public consultation via Online Survey Results and Public Information Centre #1, and the Study Team's desktop application of the route selection criteria.

This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing. Please refer to Figure 4-4 for Cycling and Trail Routing in the entire Town of East Gwillimbury.

The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



The draft network was then presented to the public at a second public information centre held at the opening of East Gwillimbury's newly renovated Sports Complex on May 14th, 2011. The input received was documented and assessed as part of the finalization of the proposed network.

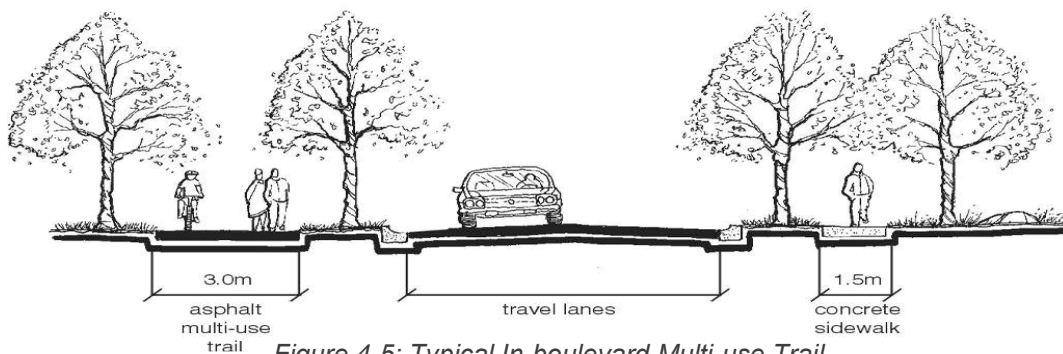
4.1.4 Proposed Facility Types

Proposed network facility types are fully addressed in the network Design Guidelines (separately bound Technical Appendix¹). The following highlights key facility types proposed for the Town of East Gwillimbury.

Multi-use Trails & Hiking Trails

A multi-use trail is a facility that is separate from the travelled 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, skateboarders, equestrians and snowmobiles where trail surfaces permit. Town staff should review the mix and range of users permitted on multi-use trails following the adoption of the AT and Trails Plan. Multi-use trails located in parks primarily serve recreational users but may also serve active commuting, active workplace travel and active destination oriented trips. These can include trails along valley lands, river and canal corridors, active or abandoned rail lines, hydro corridors and other linear routes. In some areas, where trail use is expected to be high and adequate space exists, it may be appropriate to provide physically separated trails within the same corridor to create opportunities for both higher speed users (e.g. cyclists) and lower speed users (e.g. pedestrians). Where this design treatment is appropriate, separation of the two facilities can be created by distance, grade, or planted buffers. Signs to identify permitted uses for each trail should be used to communicate intent and ensure the integrity of the separated system.

Like cyclists using the road, trail users on boulevard multi-use trails or pedestrians on sidewalks have the right-of-way as they intersect private driveways. That said, every intersection, including driveways and intersecting roadways are a potential conflict point. Intersecting roadways are a particular concern as motor vehicles making right hand turns may not be anticipating the speed at which some users of the boulevard multi-use trail may be traveling (i.e. cyclists and in-line skaters). **Figure 4-5** illustrates a typical in-boulevard multi-use trail. Typical multi-use trails for cycling purposes should have a minimum 3.0m width to facilitate two-way travel. The width of the trail may be widened to accommodate a higher volume of users.



¹ Town of East Gwillimbury Active Transportation and Trails Master Plan, Technical Appendix: Draft AT and Trail Design Guidelines, 2010

The following are some general roadway conditions where the application of a boulevard trail may be considered:

- Urban arterial, collector or rural roads where there is ample right-of-way between the edge of the road (curb for urban cross section and shoulder for rural cross section) and the limit of the right of way to maintain a minimum separation between the road and the trail;
- Routes that provide connections between important destinations or links between off-road trails where no parallel route(s) exist nearby;
- Routes that are intended to provide short connections between long off-road trail segments (i.e. 4 – 6 blocks or less where other alternatives are not available); and
- Along corridors where there are limited commercial or residential driveway crossings.

In areas where adequate space does not exist to create the desired separation between the back of the curb and the trail it is possible, but not preferred to develop the multi-use trail directly abutting the back of the curb. Where the desired separation cannot be achieved, some form of a setback is still recommended (i.e. flexible bollards, coloured concrete strip, painted line etc.).

In addition to the development of multi-use trail facilities, those areas identified as desire lines on the network concept may be developed in the future as hiking trails or footpaths. Footpaths and hiking trails are typically narrow single-track routes with a soft surface (earth or granular) and depending on the location may be designed for pedestrian use only. Existing and future footpaths and hiking trails should be built into the secondary system in open spaces and woodlots where feasible.

In valleys and open spaces, typical off-road trail designs include hiking and walking trails. Other possible variations include snowmobile, cross-country skiing, and cycling trails, however, these latter two would likely be located in rural areas and conservation lands. It should be noted that although the Town of East Gwillimbury has a designated snowmobile trail network, this was not assessed as part of the Active Transportation and Trails Master Plan as the focus was on non-motorized active transportation and pedestrian trails.

The following **Figures 4-6 and 4-7** illustrate the typical off-road trail designs in rural areas as defined by the Toronto and Region Conservation Authority, (TRCA) Trail Planning and Design Guidelines.

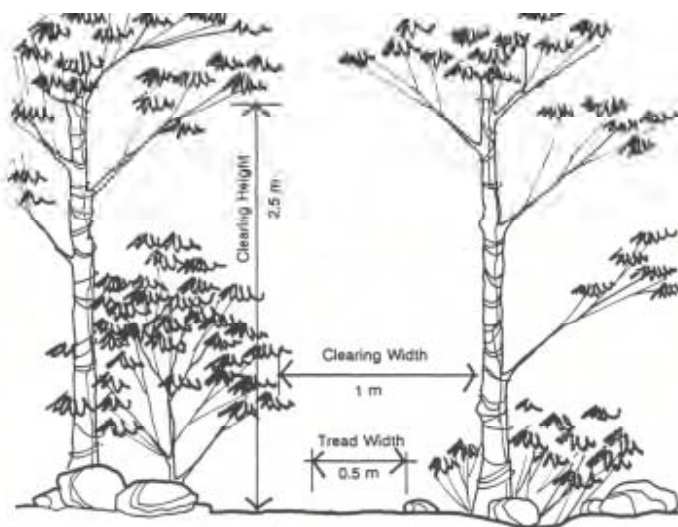


Figure 4-6 Hiking Trail Cross Section

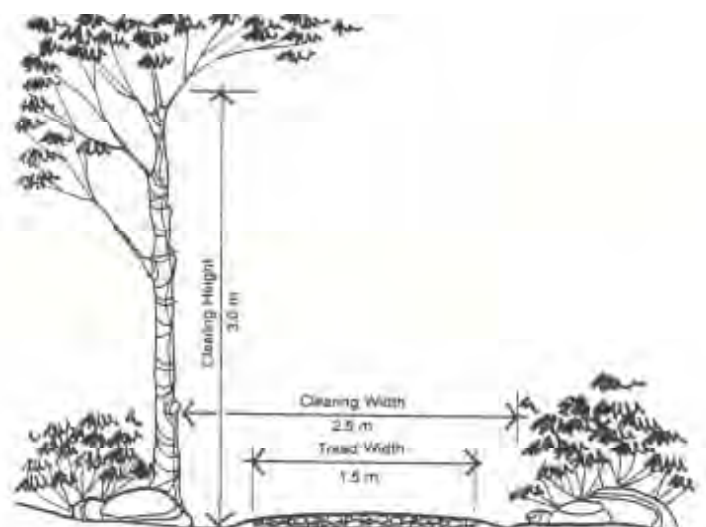


Figure 4-7 Walking Trail Cross Section

The development of such facilities will be determined through the application of the route selection principles as well as the implementation process. Furthermore, permission will be required for use and / or a strategy may need to be developed to secure access across land in private ownership (illustrated on the network mapping as desire line connections). Potential land acquisition and securement strategies as well as the implementation process for the network for the AT and Trails Master Plan are outlined in further detail in Chapter 6.

Rails with Trails

The network as proposed includes trails along abandoned railway corridors. At some point in the future there may be an opportunity to develop “rail with trails” where rights-of-way for trail corridors are wide enough to safely accommodate a multi-use trail as well as rail operations, while other existing rail corridors may be too narrow to have a trail and active rail line in the same corridor. This can be an issue if an abandoned rail corridor is developed as a trail and then a decision is made to re-introduce an active rail service in the future. A number of municipalities are now considering “rails with trails”, particularly for low volume, low speed rail lines and light rail transit corridors.

If a trail in an active rail corridor is planned, the trail should also be physically separated from the rail facility. This can be accomplished through the provision of planted berms where sufficient right-of-way exists. In locations with constrained rights-of-way, a barrier or fence is a more feasible way to safely separate trail users from active rail traffic. Crossings of the active line should be minimized and must be properly designed which will include an approval process with the owner/rail agency. An example of a rail with trails cross section is included below in **Figure 4-8**.

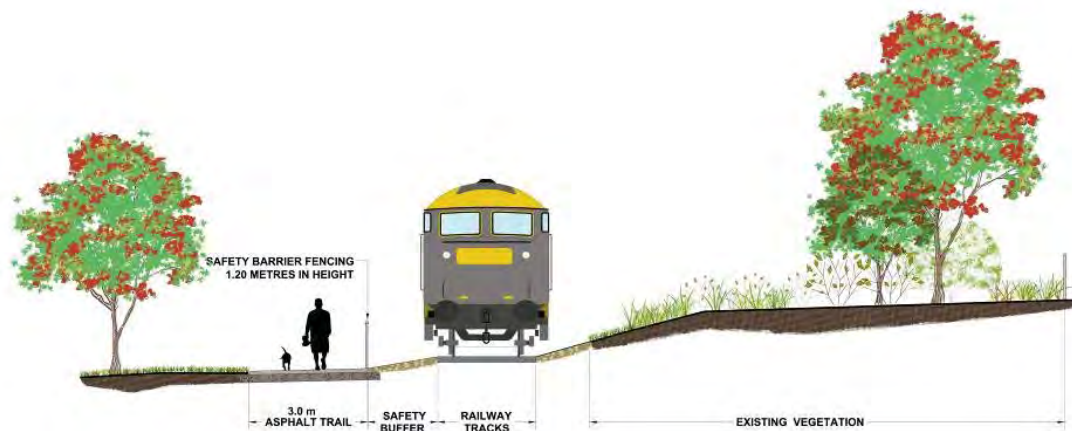


Figure 4-8: Rails with Trails Cross Section, Guelph, ON

On-road Routes

Bicycles are designated as a vehicle under the Highway Traffic Act (HTA) and as such, cyclists are required to obey all of the same rules and regulations as automobiles when operating on a public roadway. The Ministry of Transportation (MTO) and the Transportation Association of Canada (TAC) have developed standards for the design of on-road facilities and signing for on-road-bicycle systems. In addition to the commonly encountered situations to which relatively simple guidelines can be applied, there are often

situations where the proper design requires a bicycle system design specialist who is familiar both the common guidelines, and innovative techniques, successfully applied elsewhere.

Conventional and Buffered (Separated) Bike Lanes

Bike lanes are typically located on urban cross-section roads (with curb). The diamond symbol and bicycle symbol painted on the pavement, in addition to roadside signs should be used, particularly on roads with higher traffic volumes, operating speeds and higher commercial vehicle percentages. In areas where on-street parking is permitted, continuing the bike lane is the ideal method where space permits. Where road right-of-way widths are limited, where narrowing or removing traffic lanes are not feasible, and/or where the relocation or removal of parking is not an option, the bike lane must be properly terminated. The Bikeway Traffic Control Guidelines for Canada (Transportation Association of Canada 1998) should be consulted for additional details and specifications. Bike lanes on higher volume or higher speed major roadways may also take the form of buffered bike lanes. A buffered bike lane includes an additional 0.5 m to 1.0 m buffer between the 1.5 m bike lane and adjacent motor vehicle lane.

Buffered bike lanes are recommended where feasible, and provide a separation between motor vehicles and cyclists that is believed to create a more secure and comfortable environment for cyclists. Physically separated bike lanes (i.e. cycle tracks) may also be an option, especially for new roads or when roads are to be widened. The separately bound Technical Appendix which presents the design guidelines proposed provides a more detailed description of these facility types.

Bike Lanes with On-Street Parking

In some urban locations it is necessary to provide a bike lane adjacent to on-street parking. Bike lanes on roads with on-street parking are located to the left of and adjacent to vehicles parked along the curb. However, the bike lane can also take the form of a cycle track and be situated between the boulevard and the row of parking. Designing this type of cycling facility must take into consideration the potential hazard to cyclists of car doors opening into the traveled portion of the bike lane. In order to allow clearance for vehicle doors, and to minimize collisions with cyclists, the combined bicycle/parking lane should be a minimum of 4.0 m wide. This width allows for a 1.8 m bike lane and a 2.2 m wide curb side-parking stall. The extra distance added to the typical 2.0 m wide parking stall provides space for the opening of car doors, and encourages cyclists to travel a safe distance from the parked vehicles. Bike lanes on roads with on-street parking should be considered in commercial and residential areas where the demand for, and turnover of parking is high, and where commercial and residential property owners may not accept the reduction or prohibition of on-street parking. **Figure 4-9** illustrates a typical bike lane with on street parking.

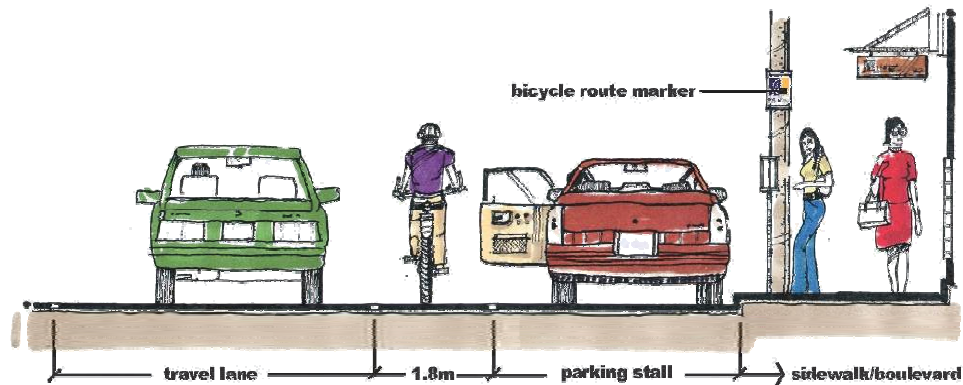


Figure 4-9: Typical Bike Lane with On Street Parking

Paved Shoulders and Signed Bike Routes

Paved shoulders provide a space for cyclists on rural cross-section roads (with shoulders, no curb and gutter). Pedestrians can use partially paved or granular shoulders where necessary (pedestrians should travel in a direction facing traffic / cyclists travel in the same direction as traffic). Partially paved shoulders (1.5m to 2.0m of the existing granular shoulder is paved or all of the shoulder if it is narrow) are typically recommended on rural cross section roads where traffic volume and speed are moderate to high. Poor sight lines and high truck volume are additional situations where paved shoulders should be considered. **Figure 4-10** illustrates a typical paved shoulder.

Signed Routes with paved shoulders are an important part of the Active Transportation network in rural areas. Where funding is limited, adding or improving shoulders on uphill sections will give slow moving cyclists needed manoeuvring space and may decrease potential conflicts with faster moving motor vehicle traffic. On rural roads, a marked edge line is typically used to designate a paved shoulder. Signs are used to designate the route and indicate the presence of cyclists.

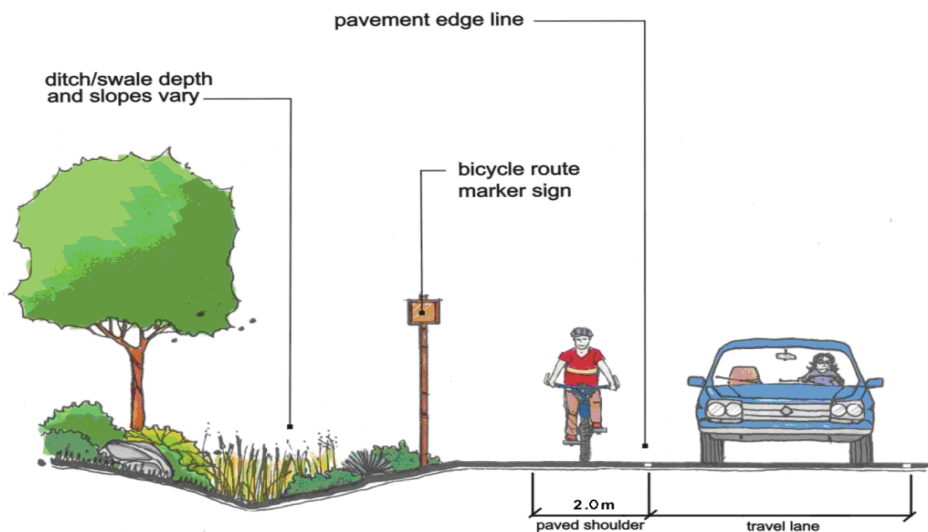


Figure 4-10: Typical Paved Shoulder

Signed Routes

Signed routes are typically found along roads where traffic volumes and/or vehicle operating speeds are low. Typical of quieter residential streets (low volume and low speed), core urban areas (higher volume and low speed) and lower order rural roads (low volume and moderate speed), cyclists can share the road with motor vehicles and there is no need to create a designated space for cyclists. Signs located at intersections and at regular intervals in rural areas help users navigate through the system.

In areas where the pavement width is narrow, “share the road” signs can also be erected along the road side to encourage cooperative behaviour between cyclists and motorists.

Signed bicycle routes with wide curb lanes should be encouraged for all classes of roads to provide cycling friendly streets, whether they are designated as part of the cycling network or not. **Figure 4-11** illustrates a signed only bike route on a road with wide curb lanes.

Research indicates that as lane widths exceed 4.0m it leads to confusion and improper lane use by motor vehicles in congested urban environments, and may encourage unsafe passing manoeuvres and higher speeds. The recommended curb lane width for roads that are proposed for designation as on-road cycling routes is 3.5m to 4.0m.

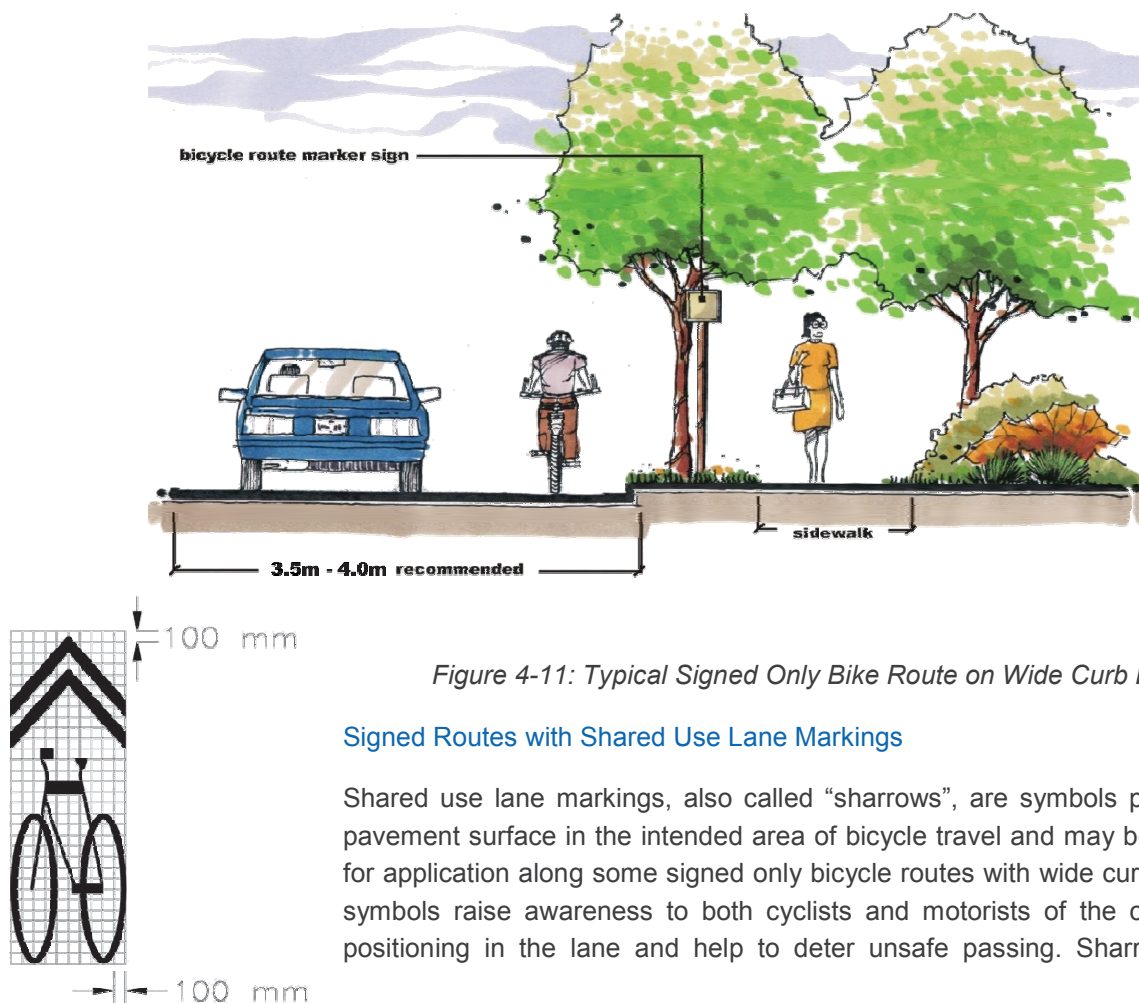


Figure 4-11: Typical Signed Only Bike Route on Wide Curb Lanes

Signed Routes with Shared Use Lane Markings

Shared use lane markings, also called “sharrows”, are symbols placed on the pavement surface in the intended area of bicycle travel and may be appropriate for application along some signed only bicycle routes with wide curb lanes. The symbols raise awareness to both cyclists and motorists of the correct cyclist positioning in the lane and help to deter unsafe passing. Sharrows may be

considered as an additional measure for certain roads (context specific) that are signed routes where vehicle speeds or traffic volumes are high but where there is insufficient width to accommodate a bike lane (e.g. arterial and collector roads).

Roads that are presently not suitable for on-road cycling facilities but are recommended for implementation in the future should be upgraded to at least minimum standards before being signed as part of the cycling/active transportation network. For example, if the right-of-way available to cyclists is too narrow, traffic volumes are high, or if the roadway is in poor condition, these routes should not prematurely be signed or identified as part of the network.

Pedestrian Facilities

A sidewalk is located within the road right-of-way but separate from the travelled portion of the roadway. Sidewalks are typically concrete, 1.5 m (the typical minimum width for new sidewalks) and are designed primarily for pedestrians. Existing and future sidewalks should be incorporated into the Active Transportation network in urban areas for all system segments proposed within road rights-of-way. Sidewalks are preferred on both sides of all streets in the urban areas that are designated Active Transportation routes (for both new street construction and retrofitting of existing streets).

Where this cannot be achieved a sidewalk should be provided on at least one side for all streets other than laneways. On laneways where traffic volume is extremely low, pedestrians can safely share the street with motor vehicles. In older and established neighbourhoods, the cost of installing sidewalks and opposition by residents may be significant challenges encountered in the decision to add sidewalks or not in these neighbourhoods.

Once sidewalks are constructed within the public right-of-way (either Town or Regional right-of-way), the Town assumes responsibility for all future repair, reconstruction, maintenance, and operation during the life of the asset. Therefore, it is important that long-term financial liability be recognized when the Town decides when and where sidewalks are required. A “buffer” zone should also be provided between the sidewalk and roadway where possible to separate pedestrians from the road. Buffer zones may vary depending on the nature of the area they serve.

4.2 The Network Concept

4.2.1 Cyclists

Cyclists come in all ages, shapes, sizes and skill levels and they have different reasons for cycling which range from basic transportation to recreation and physical fitness. The cycling population can generally be divided among the following four groups.

- **Group 1:** the “Strong and Fearless” -This small sector (i.e. 1-2%) of the population are typically highly experienced cyclists, many of whom have been riding for years. They are often quite comfortable riding with traffic, even on arterial roads without facilities such as bike lanes. Within this group are those who ride year-round regardless of weather or road conditions. There are also those who feel that dedicated cycling facilities are not needed, as they do not want to be relegated to bike lanes and trails, they are quite aware of their rights as cyclists (under the Highway Traffic Act) and prefer to operate in traffic with vehicles.

- **Group 2:** the “Enthusied and Confident” -Typically in the range of 5 to 10% of the population, these cyclists may ride regularly or infrequently, they generally are comfortable riding on trails and quieter streets without facilities and appreciate the addition of facilities to busier roads, often noting that proper cycling facilities might encourage them to cycle more regularly.
- **Group 3:** the “Interested but Concerned” – This fairly large sector of the population (as high as 60%), ride infrequently and note that they like to cycle but are afraid to ride in traffic. They typically indicate a preference for pathways and trails, and some note that designated on-road facilities improve their perception of safety, and that designated on-road facilities might encourage them to ride more often. A fairly low percentage of this group ride regularly.
- **Group 4:** the “Non cyclist” – Approximately 30% of the average population is not interested or may not be physically able to cycle.



Recognizing that there is a wide range of experience, skill and confidence levels among cyclists, and that 60-75% of the population may fit into Groups 2 and 3, the provision of a comprehensive network of facilities has strong potential to lead to greater participation in cycling by a broad sector of the population. A network of active transportation and trail facilities which accommodate all levels of cyclists is needed to develop a connected system linkage to overcome barriers and create links within the Town of East Gwillimbury, while the same time promoting connections to the surrounding municipalities.

4.2.2 Pedestrians

Improving conditions for pedestrians is more than just creating a network of connecting pedestrian facilities such as sidewalks and trails. 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. As the Town of East Gwillimbury continues to grow, develop and expand, these concepts must be considered at all stages of development. The concept of “every street should be viewed as a pedestrian street” is a notion that was adopted by the York Region Pedestrian and Cycling Master Plan and should be adopted as part of the Town’s Plan. One of the primary goals of the plan is to improve the environment for pedestrians of all ages, levels, create a system that is accessible for all types of users and encourage more people to walk more often.

Key goals of the pedestrian component of the AT and Trail Plan for the Town of East Gwillimbury, include improvements to sidewalks on Regional and Local roads and pedestrian infrastructure connections to public transit stops and transit stations as well as the support of pedestrian friendly urban design and streetscaping, the improvement of pedestrian connectivity and accessibility and elimination of missing links. These goals are described in further detail below.

Complete Missing Sidewalk Links

A key step to improving conditions for walking in the Town is the process of identifying missing links in the existing sidewalk system on local roads. Missing links in the sidewalk system can act as barriers and can discourage walking which is especially critical in the urban areas of East Gwillimbury.

A comprehensive and connected sidewalk system is also critical to supporting public transit use as well as the use of other active transportation facilities. 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 dependent upon one another.



It is recommended that the Town of East Gwillimbury update their sidewalk inventory mapping to include sidewalks proposed in the new development areas of the Town. With this information along with the existing sidewalk network, the Town will be in a better position to identify and map missing links.

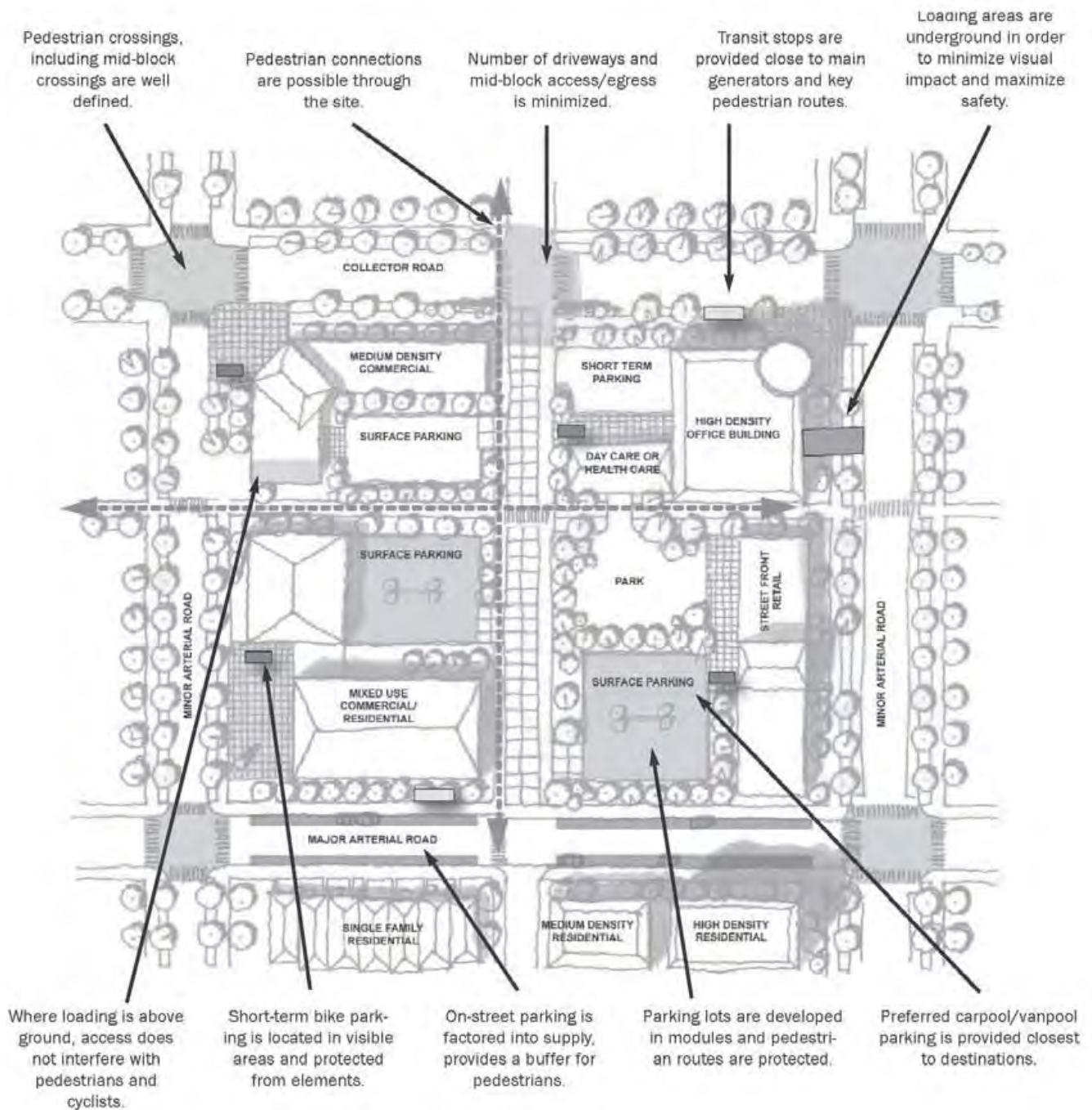
Improve Urban Design and Streetscaping for Pedestrian Areas

As mentioned previously, improving pedestrian activity in the Town of East Gwillimbury is more than just installing a sidewalk along a street. It is creating a street and infrastructure that encourages walking. This can be accomplished through adopting appropriate urban design and streetscape design guidelines and practices that address aspects such as the provision of pedestrian amenities along walking corridors such as benches and patios, creating lively urban streets with viable retail shops abutting the sidewalk. In order to make areas more pedestrian-friendly, the Town should encourage more compact development forms, particularly along collector and arterial roads that may have previously been designed specifically with the automobile and little consideration for pedestrians.

Pedestrian Connections in New Development Areas

As the Town continues to develop and expand there is an increasing demand for pedestrian connections within new development areas specifically those commercial and industrial areas which prove to be key destinations for day to day activities. For large format commercial developments that implement surface parking lots there is an increasing demand for safe connections for pedestrians to decrease the use of parking isles as routes. It is important to provide pedestrians with direct and separated pedestrian connections to ensure that there is a safe and efficient link for pedestrians to the commercial developments as well as local transit stops. Please see the following graphic which illustrates the application of site layout design elements that encourage walking, cycling and public transit access. Further information on this type of development can be found in Section 6.3 of the Master Plan.

Promoting Sustainable Transportation Through Site Design



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

Improve Pedestrian Connectivity and Accessibility

Connectivity for pedestrians is very important. Unlike cyclists, pedestrian trips are usually short and connections that are out of the way or circuitous may discourage walking. Pedestrian facilities, particularly sidewalks and connectivity to 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 shopping areas, commercial and employment areas. Pedestrian connections should be facilitated in urban centres through the further exploration of networks sidewalks, and in rural areas through the development of paved shoulder facilities.



Recommendation(s):

- 4.2 The route development and selection principles identified in this plan should be considered when future network changes are contemplated, new opportunities identified and when individual routes are entering into the detailed planning and design stage of implementation.
- 4.3 The mix and range of uses (pedestrian, cycling, in-line skating, skateboarding, equestrian, snowmobile, etc.) permitted on multi-use trails should be reviewed by Town staff following adoption of the AT and Trails Plan. The Town should install signs at key gateways and access points to convey the types of uses permitted or designed for the trail and if the trail is designated as accessible.
- 4.3 That the Town of East Gwillimbury recognize that the Active Transportation and Trails network will change over time through the addition of missing links and opportunities offered by unopened road allowances, hydro rights-of-way, existing or abandoned rail corridors, open green space and future roadway improvements.
- 4.4 Update the town's sidewalk inventory to include sidewalks proposed in the new development areas, and once completed, identify missing sidewalk links so they can be prioritized for future development/implementation.
- 4.5 The Town should ensure the safe movement of pedestrians throughout the municipality by providing safe pedestrian facilities such as:
 - Sidewalks of sufficient widths;
 - Stairs and ramps of sufficient width; and
 - Protective barriers between streets and sidewalks.
- 4.6 Consider the application of the Institute of Transportation Engineers (ITE) recommended practices for the application of site design guidelines that "Promote sustainable transportation through site design"¹.

¹ Institute of Transportation Engineers Smart Growth Task Force, Smart Growth Transportation Guidelines: An ITE Recommended Practice. (USA, 2010).

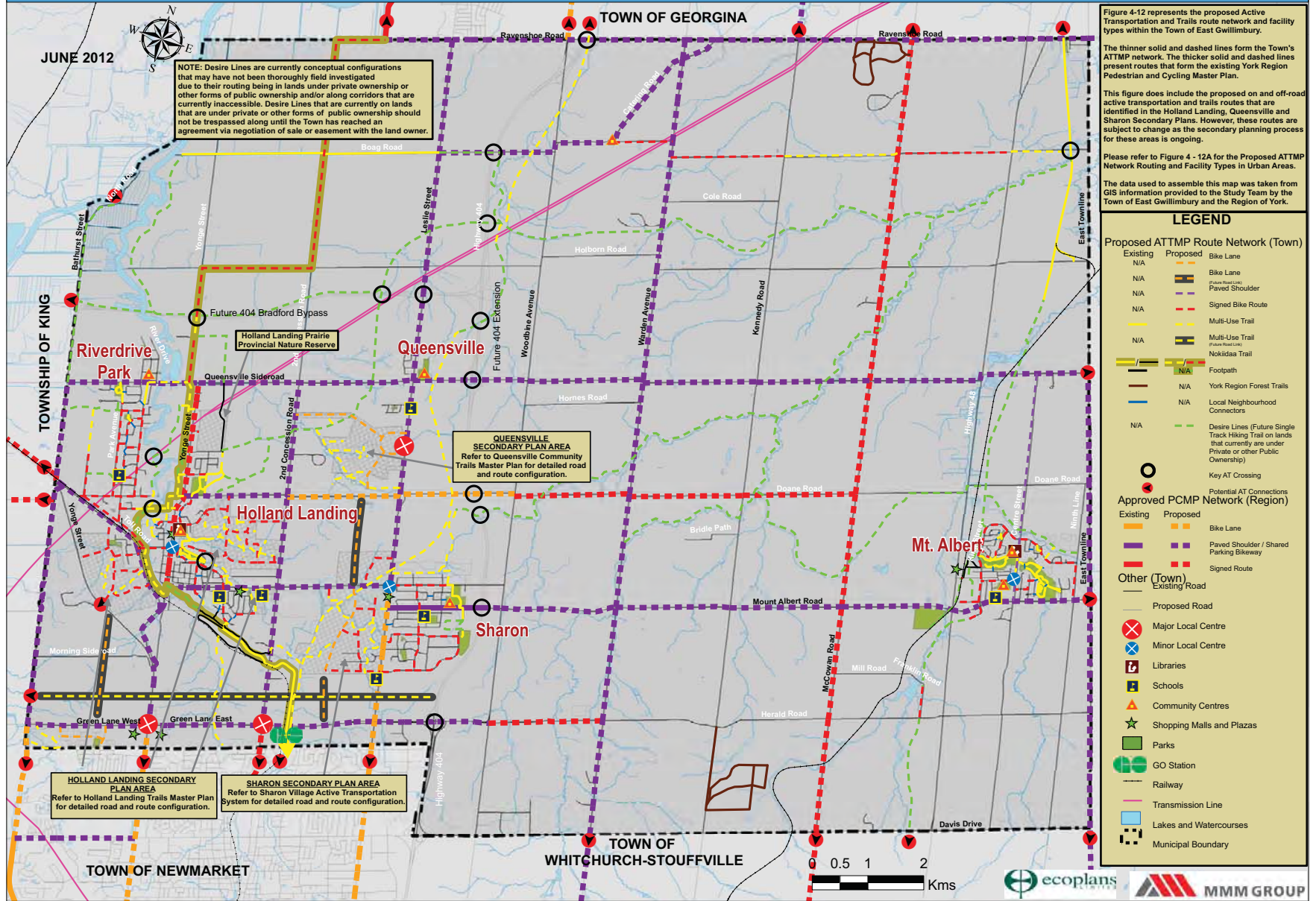
4.3 The Proposed Active Transportation and Trails Network

One of the primary objectives of the Active Transportation and Trails Master Plan for the Town of East Gwillimbury, is to provide a convenient and continuous Town-wide active transportation and trails network that minimizes risk to users and is integrated with other facilities (Regional, bordering municipalities, transit, end of trip facilities, etc.). The network development approach as described in Section 4.1, was used to establish the AT and Trails network for the Town of East Gwillimbury.

An initial candidate route map, illustrated in **Figure 4-4/4A**, was developed and reviewed by the study team, and then field investigated in the spring of 2010. Alternative (candidate) routes were assessed based on the route selection principles and field work observations. Comments received from stakeholders and the public, including results from the online questionnaire and Public Information Centre of April 21, 2010, as well as other correspondence, were also assessed. Where suggestions were consistent with the route selection criteria, a route was added to the recommended network. The draft network was then refined based on additional input received from Town staff, the public and stakeholders, as well as the results of field investigations. The revised network was then provided to stakeholders for review and comment, and was presented at a second Public Information Centre on May 14th, 2011 for public comment. The input received was documented and assessed and the network was further refined and then finalized.

Figures 4-12/12A illustrate the Proposed Active Transportation and Trail Route Network and Facility Types. Please note that the 'Desire Lines' identified on these figures are currently conceptual configurations that may not have been field investigated due to their routing being on lands under private or other forms of public ownership and / or along corridors that were inaccessible to the study team.

TOWN WIDE: CYCLING + TRAIL ROUTES - Proposed ATTMP Route Network + Facility Types



URBAN AREAS: CYCLING + TRAIL ROUTES - Proposed ATTMP Route Network + Facility Types

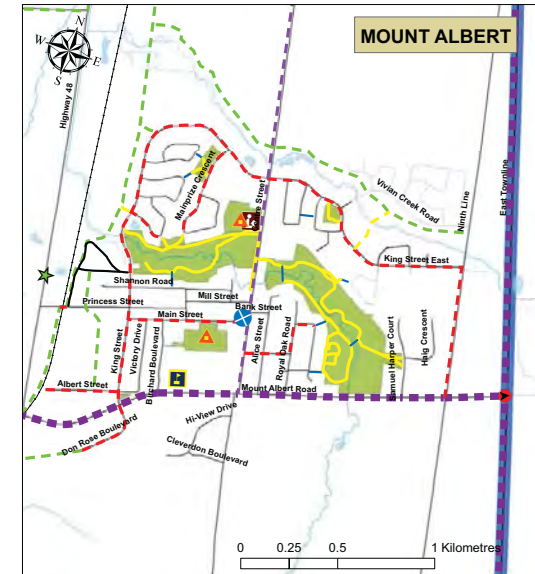
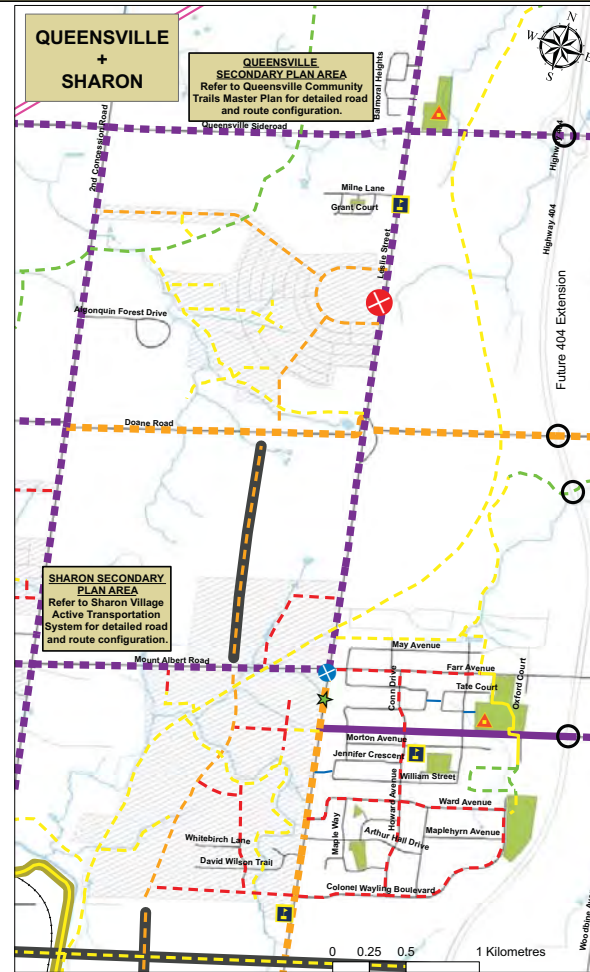
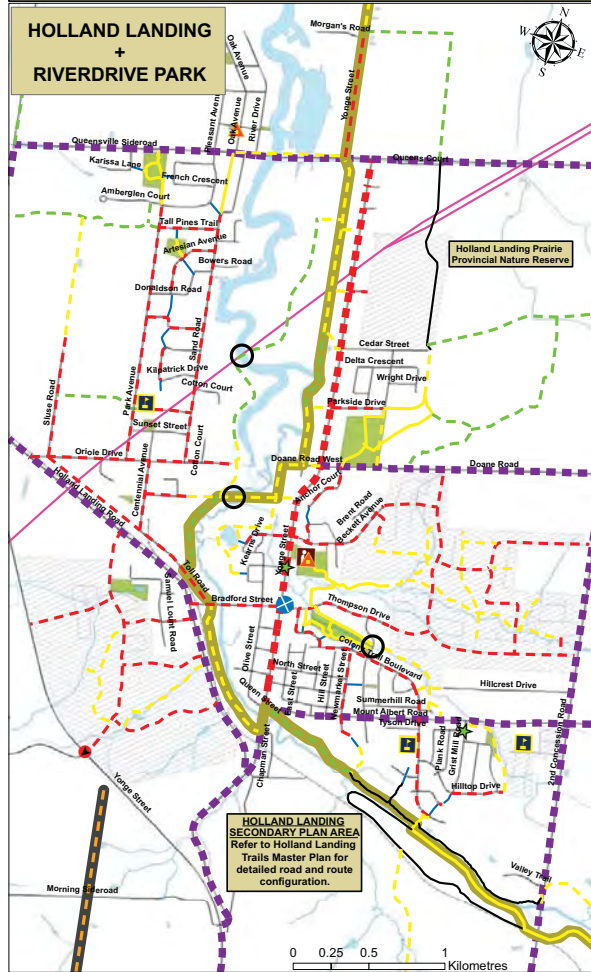
Figure 4-12A represents the proposed Active Transportation and Trails route network and facility types within the urban areas of Town of East Gwillimbury.

The thinner solid and dashed lines form the Town's ATTMP network. The thicker solid and dashed lines present routes that form the existing York Region Pedestrian and Cycling Master Plan.

This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.

Please refer to Figure 4 - 12 for the Proposed ATTMP Network Routing and Facility Types throughout the entire Town of East Gwillimbury.

The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



NOTE: Desire Lines are currently conceptual configurations that may have not been field investigated due to their routing being in lands under private or other forms of public ownership and/or along corridors that are currently inaccessible. Desire Lines that are currently on lands that are under private or other forms of public ownership should not be trespassed along until the Town has reached an agreement via negotiation of sale or easement with the land owner.

Proposed ATTMP Route Network (Town)		Other (Town)	
Existing	Proposed	Existing Road	Proposed Road
N/A	Bike Lane	Major Local Centre	Minor Local Centre
N/A	Bike Lane (Paved/Shared)	Libraries	Schools
N/A	Paved Shoulder	Community Centres	Shopping Malls and Plazas
N/A	Signed Bike Route	Parks	GO Station
N/A	Multi-Use Trail	York Region Forest Trails	Railway
N/A	Multi-Use Trail (Future Road Lane)	Local Neighbourhood Connectors	Transmission Line
N/A	Nokidasa Trail	Desire Lines (Future SingleTrack Hiking Trail on lands that currently are under Private or other Public Ownership)	Lakes and Watercourses
N/A	Footpath	Key AT Crossing	East Gwillimbury Boundary
N/A	York Region Forest Trails	Potential AT Connections	
N/A	Local Neighbourhood Connectors	Approved PCMP Network (Region)	
N/A	Desire Lines (Future SingleTrack Hiking Trail on lands that currently are under Private or other Public Ownership)	Existing	Proposed
N/A	Key AT Crossing	Bike Lane	Bike Lane
N/A	Potential AT Connections	Paved Shoulder / Shared Parking Bikeway	Signed Route
N/A	Approved PCMP Network (Region)	Signed Route	
Existing	Proposed		
Bike Lane	Bike Lane		
Paved Shoulder / Shared Parking Bikeway	Paved Shoulder / Shared Parking Bikeway		
Signed Route	Signed Route		

Table 4.1 presents the Facility Types by Distance for the Proposed Active Transportation and Trail Route Network.

FACILITY TYPES BY DISTANCE (KM)					
FACILITY TYPE	EXISTING		PROPOSED		TOTAL (KM)
	Region	Town	Region	Town ¹	
Bike Lane	1.26	-	9.71	15.86	26.83
Signed Bike Route	1.68	-	26.28	55.24	83.20
Paved Shoulder	1.69	-	97.54	4.11	103.34
Multi-Use Trails ²	-	23.27	-	53.46	76.73
Desire Lines	-	-	-	80.69	80.69
Footpath ³	-	5.91	-	-	5.91
York Region Forest Trails ⁴	9.98	-	-	-	9.98
Local Neighbourhood Connectors ⁵	-	2.14	-	-	2.14
TOTAL (KM)	14.61	31.32	133.53	209.36	388.83

NOTES

1 – Active Transportation routing and facility types proposed for Holland Landing, Sharon West and Queensville Secondary Plans are subject to change as part of the Secondary Planning process. Proposed totals include distances for future road links.

2 – 3.0 km of Multi-Use Trails are part of the Existing Nokiddaa Trail

3 – 2.1 km of Footpaths are part of the Existing Nokiddaa Trail

4 – York Region Forest Trails that lie within the Town of East Gwillimbury are included in the Regional column.

5 – Local Neighbourhoods connectors are primarily laneways or pathways found in existing residential neighbourhoods.

The recommended network is composed of a mix of on-road and off-road facilities designed to respond to the needs of a range of users (i.e. recreation and utilitarian/commuter), age and skill levels. Given there is no one facility type that meets the needs of all users, route and facility selection was based on the route selection principles established and confirmed with staff, the steering committee and the public during the early stages of the study. This also included the study team’s judgement regarding the types of users who would be most

likely use to use the facilities given the location. For example, young children (11 and under), new adult cyclists and some older adults often note that they would prefer to cycle on multi-use trails in parks or in roadway boulevards or on facilities separated from motor vehicle traffic on “busy” roads. On the other hand more experienced commuter cyclists often note that they prefer the most direct route, want to operate their bike as a vehicle and prefer bike lanes (or paved shoulders on roads without curbs) while other experienced cyclists are generally comfortable sharing a travel lane with motor vehicle traffic, but would prefer a slightly wider lane for this purpose.



Some pedestrians indicated a preference to walk on trails and sidewalks where cycling was prohibited while other pedestrians were comfortable with the option of sharing an in-boulevard multi-use trail with other trail users (cyclists, joggers, in-line skaters etc.) on one side of the road, while still having the choice to walk on the other side of a road on a dedicated pedestrian sidewalk.

In developing this network plan the study team made every effort to balance the needs of users with appropriate routes and facility types. The complete recommended AT network should be viewed as a connected system of different facility types that are designed to be comfortable and convenient for both existing and future users. However, the AT network has also been designed to evolve as new opportunities to create connections arise. For example a route on a roadway that is proposed to have bike lanes installed based on the network developed for the AT and Trails Master Plan may be built with a physically separated cycle track, in-boulevard multi-use trail or separated cycling and pedestrian facilities in the boulevard in the future.

4.3.1 Network Features

Within the Town of East Gwillimbury, the majority of active transportation routes found in rural areas will consist primarily of on-road routes as well as “desire lines” identifying potential trail development opportunities. With the implementation of the Active Transportation and Trails Master Plan, and as the population of East Gwillimbury grows over the next two decades it is anticipated that pedestrian activity will significantly increase in and around urban / built up areas. In addition, pedestrians will also utilize key destinations within rural areas, such as York Regional Forests and the Holland Landing Prairie Provincial Nature Reserve as well as Conservation Areas found within the Town (e.g. Rogers Reservoir and Holland Landing).

Recommended active transportation routes proposed for development in rural areas are based on the application of the route selection principles and are intended to facilitate connections between the built-up / urban areas; an evenly spaced set of east-west and north-south routes; and opportunities for loops of varying lengths and connections to various destinations. The proposed active transportation and trails network for the Town of East Gwillimbury is complementary to the routing identified in the approved York Region Pedestrian and Cycling Master Plan. Some key features of the network are described below.

Key routes/spines include:

- The north expansion of the Nokiidaa Trail along the Holland River;
- Boag Road, from the Holland River in the west to Highway 48 in the east;
- The Abandoned Rail Line from Davis Drive North through Mount Albert to Georgina;
- The Hydro 1 Corridor crossing the Town;
- The Privately Owned lands in Holland River Valley East of Old Young;
- The development of a multi-use trail, east of Leslie Street, north of Sharon into the Town of Georgina; and
- The development of a year-round trail in the Holland Landing Prairie Provincial Nature Reserve (an informal trail already exists). It should be noted that the design, route configuration and subsequent usage of the Reserve is subject to the approval of the provincial Ministry of Natural Resources in partnership with the Town of East Gwillimbury.



A number of recommended rural on-road routes are proposed to have paved shoulders, however, in locations where traffic volumes are lower the implementation of signed routes are sufficient. In addition, where “Share the Road” signage has already been implemented, it is recommended that bike route signs accompany them.

With the implementation of the east-west and north-south routes within the urban and built up areas within the Town of East Gwillimbury, the intent of the proposed network is twofold:

- To provide direct connections through the built-up areas along designated and recognizable routes; and
- To link existing built-up areas with the proposed Active Transportation and Trails routing found in the developing urban areas such as the Holland Landing and Sharon Secondary Plans.

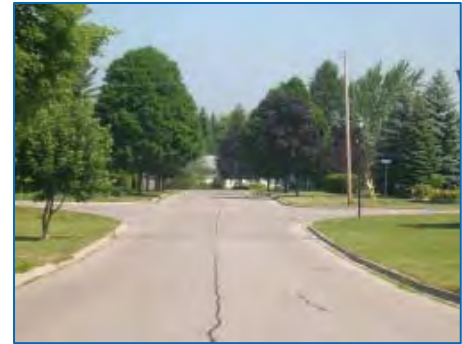
In transition zones between urban and rural areas where active transportation routes are recommended, the plan proposes a designated facility for cyclists (e.g. bike lane, signed route, paved shoulder), and sidewalks to accommodate pedestrians. In some locations facilities will be added as part of road reconstruction, however, in some locations the transition can be accomplished through the reorganization of pavement markings, without the need for road redesign/widening.

Recommendation(s):

- 4.7 The Town should consider upgrading gravel-surfaced roads that are identified in the network to hard surface when the opportunity for reconstruction arises and asphalt is warranted.
- 4.8 The Town should integrate the network and policies identified in the East Gwillimbury Active Transportation and Trails Master Plan with current Transportation Demand Management (TDM) strategies and explore future TDM opportunities with the help of Smart Commute and the Regional Municipality of York.

4.9 The Town should work with developers to give priority to pedestrian and cyclist circulation patterns on site plans for future development to create sufficient bicycle and pedestrian connections to adjacent developments.

4.10 The Town should consider the research of local desire lines in rural areas as possible lower cost tertiary level trails. In the future, the Town could choose to upgrade these to secondary or primary routes as the network evolves.



4.11 The Town should promote inter-municipal connectivity through the consideration of surrounding municipal active transportation and trails initiatives when implementing the proposed Active Transportation and Trails Network in East Gwillimbury.

The Implementation Strategy set out in Chapter 6.0 of this Master Plan provides a recommended process to review and confirm or adjust the route and facility type as required at the time each network segment is scheduled for implementation.

5.0 PROGRAMMING & OUTREACH FOR AT AND TRAILS IN EAST GWILLIMBURY

5.1 AT and Trails Outreach

By adopting the ATTMP, the Town of East Gwillimbury has the opportunity to create an environment more supportive of active transportation and trails development. Infrastructure such as sidewalks, trails, bike lanes, benches and sign

treatments all contribute to an improved active transportation and trails system, but these alone will not produce a fully supportive system for the Town. East Gwillimbury should continue to explore opportunities to expand upon its leadership role and develop, implement and promote outreach programs with York Region and other partners to help educate residents about the public health, financial and environmental benefits that participating in active transportation and trails initiatives provide.

The framework set out in this section recommends the implementation of new programs and the continuation of some existing initiatives in the areas of education, encouragement and enforcement. These programs will support the many benefits of active transportation and trails development. A key objective of this outreach strategy is to develop and enhance education programs that are targeted to both existing and future active transportation users.

5.1.1 Education

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

“The framework set out in this section recommends the implementation of new programs and the continuation of some existing initiatives in the areas of education, encouragement and enforcement.”

A recent study by the World Cancer Research Fund and the American Institute for Cancer Research suggests that “about a third of the 12 most common cancers in developed countries could be avoided through diet, exercise and weight control”. (Food, Nutrition and the Prevention of Cancer: A Global Perspective, 2009). The study offered recommendations to help reduce certain types of cancers through government and business initiatives. These include the requirement of widespread dedicated walking and cycling facilities throughout built and external environments, and the use of financial and other incentives to encourage healthy eating, active commuting and reduced motorized transportation. These recommendations are supportive of the education recommendations for East Gwillimbury.



Active Transportation and Trails Education Information

Making information easily available is a core element of any educational strategy. The Town should support the implementation of active transportation and trail education programs and partner with other groups, York Region Public Health Service, and agencies to educate residents on walking and cycling. East Gwillimbury could follow the examples of other municipalities and organizations in developing a variety of educational materials. Examples of such materials from other jurisdictions are numerous, and could be adapted for a nominal cost for use in East Gwillimbury. 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 and the Canadian Safety Council, as well as private sector sponsors. This underscores the importance of cooperation and the need to share expertise and resources.

Newsletters or digital e-newsletters could focus on active transportation and trails, 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. They could also include information about initiatives by others, for example walking and cycling events (local trail organizations, charities, etc.), bike racks on buses (YRT, VIVA and GO Transit), bicycle parking at local destinations (businesses and Town / Regional facilities) and the benefits of walking and cycling (York Region Health Service, Health Canada, etc.).

The Town could also adapt/develop guide brochures for active transportation that address specific concerns, such as those related to:

- Implementation of the Active Transportation and Trails Plan;
- Pedestrian and cyclist safety;
- Walking or cycling to school or work;
- 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-road and off-road routes;
- The benefits of active transportation (health, financial, environmental, etc.); 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 age group being targeted, such as children and seniors as well as those individuals where English is not their primary language. In many of these cases both the information as well as the layout for the newsletter or promotional brochure can be updated to reflect these groups.

Distributing Active Transportation and Trails Education Information

Information on pedestrian and cycling education could be provided to residents, employees and visitors to East Gwillimbury through the following methods:

- The Town's website, ideally via a specific web page(s) dedicated exclusively to active transportation and trails issues, with posted information, downloadable files, and links to other relevant walking and cycling-related websites. The Region of Peel has created a "Walk and Roll" website as part of the municipalities' strategy to reach out and share information on the benefits of walking and cycling. East Gwillimbury might

consider approaching York Region to develop a similar website for York Region residents and visitors. www.walkandrollpeel.ca;

- The production of hardcopy pamphlets and brochures to inform and educate residents on safe operating procedures for pedestrians, cyclists and other road and trail users, which could be made available at Town facilities (e.g. Town Hall, community centres, arenas, libraries, etc.), delivered as part of mailings (e.g. Councillor newsletters, resident information mailings, etc.), distributed at events (e.g. Town Public Works Week event, Canada Day celebrations, etc.) and circulated through community partners (e.g. York Region, York Regional Police, York Region Transit, etc.); and
- The implementation of education programs through partnerships between the Town and Region of York, and other groups to educate East Gwillimbury residents on active transportation and trails in general.



Education of Children

The mobility needs of children are often overlooked in transportation and land use planning. The Town should continue to encourage children to use sustainable modes of transportation such as walking, cycling and public transit, and reduce their auto-dependency (through their parents) so they may be more inclined to choose active modes of transportation when they are adults. The University of Winnipeg-based Centre for Sustainable Transportation has studied these issues and produced Child and Youth Friendly Land Use Transport Planning Guidelines for Ontario. This document describes reasons why land use and transport planning should be made more child and youth friendly and provides 27 implementation guidelines for municipalities and other agencies to consider. Key excerpts from the Guidelines include:

- Identify where children and youth want to go or need to go and, to the extent possible, provide ways of getting there by foot;
- Explore pedestrian routes used or to be used by children to ensure that they are as usable by them as possible;

“The Town should continue to encourage children to use sustainable modes of transportation such as walking, cycling and public transit, and reduce their auto-dependency so they may be more inclined to choose active modes of transportation when they are adults.”

- Explore pedestrian routes to be used by children to ensure that they are as safe for them as possible;
- For younger children, arrange walking buses (a coordination service which organizes children in groups, led by an adult or multiple adults, to facilitate a safe walk to school) and other means of supervision;
- Ensure that sidewalks are always cleared of snow;
- For older children and youth, ensure that destinations that cannot be a walk away are no more than a bicycle ride away;
- For younger children, ensure that sidewalks are suitable for their tricycles and bicycles;
- Ensure that bicycle riders are well provided for at intersections and have sufficient priority for forward movement; and

- At destinations, provide secure, convenient bicycle parking.

These guidelines should be considered by the Town as walking and cycling educational materials are developed, particularly for those that specifically target children and youth.

Recommendations:

- 5.1 The Town staff in collaboration with the Town's new Active Transportation and Trails Advisory Committee should work to educate children on the use of trails and sustainable modes of transportation (e.g. walking and cycling facilities) where possible, and reduce their auto dependency (through their parents).
- 5.2 The Town should consider the implementation of cycling and pedestrian/trail education programs and partner with York Region, York Region Public Health Service, not-for-profit organizations, school boards and agencies to educate residents on walking and cycling.
- 5.3 Develop and distribute newsletters and/or education/promotional materials to promote and educate the public on AT and trail use opportunities, recommendations for routes and destinations and updates on available routes. These initiatives are proposed to be undertaken as a combined effort between the Town and a promotion group such as the York Region Public Health and Safety Services.
- 5.4 Utilize educational programming and materials to promote and inform people of the benefits of AT and trail use on community health, environment, economy and sustainability throughout the Town.

5.1.2 Encouragement

People will only consider walking and cycling for recreational or utilitarian purposes if they perceive it to be convenient, safe and comfortable.

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 (CBSM) ¹. CBSM is a practical approach that stresses direct contact among community members and focuses on removing structural barriers that prevent people from changing their behaviour. A CBSM program involves five steps:

1. Identify the desired behaviour change;
2. Identify barriers;
3. Design the program;
4. Pilot the program with a small segment of the community; and

¹ Transport Canada Urban Transportation Showcase Program. "The Role of Community-based Social Marketing in Supporting Active and Sustainable Transportation", May 2008.

5. Evaluate and improve the program on an ongoing basis as it is implemented.

A number of examples of CBSM programs from other communities show how public attitudes and behaviours can effectively be influenced, and include “tools” such as:

- Obtaining a commitment – People are asked to pledge or agree to carry out a specific action (example: the 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 (example: the 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 (example: the 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, be it transit maps, cycling guides, trail maps, bike shop discount coupons, etc.).
- Norm appeals – Making group standards, or the behaviour and attitudes that people observe around them, more apparent to encourage a desired behaviour (example: 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, which they often respond best to because it comes from someone they trust (example: the 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 (example: British Columbia’s “Bike Smarts” program provided specific information about bicycle safety to parents and children, 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 (example: 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 behaviour changes (example: the successes of the City of Boulder’s “Go Boulder” program were publicized in local newspapers and on the community television channel, highlighting the results of the program’s initiatives aimed at encouraging residents to shift to more sustainable travel modes).



“A number of examples of Community Based Social Marketing programs from other communities show how public attitudes and behaviours can effectively be influenced.”

The Town should explore the application of the CBSM principles in its marketing and promotional efforts related to the ATTMP.

Leadership 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 Town of East Gwillimbury can show leadership in promoting walking and cycling and 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. The Town of East Gwillimbury is already leading by example through its support and participation in Smart Commute Central York, the local Transportation Management Association (TMA). Smart Commute Central York is a non-profit association based in Aurora, Newmarket and East Gwillimbury that helps employers and employees with commuting options that reduce traffic congestion and improve the environment. The organization's initiatives include encouraging walking and cycling as more sustainable modes of transportation through events such as the "Car Free Day" and "Bike to Work Day", which the Town already supports and participates in. The Town's existing role as a partner in Smart Commute Central York represents an opportunity for synergies in terms of the development and distribution of promotional materials related to utilitarian (commuting) walking and cycling in East Gwillimbury. The Town should capitalize on this existing relationship when refining and implementing its outreach strategy for encouraging walking and cycling.

End-of-Trip Facilities

The use of the pedestrian system and cycling network can be encouraged by making their use more convenient for users through the provision of end-of-trip facilities. These facilities provide support to users at destinations, which in many cases is essential to facilitating walking and cycling.

End-of-trip facilities that encourage walking and cycling include:

- Showers and change facilities at workplaces, which help promote walking and cycling for utilitarian purposes. Lockers 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 / students commuting by foot, bicycle or in-line skates should be encouraged to offer these facilities.
- Bike racks can be provided for short term use, while bike lockers or a bike cage are more appropriate for long-term use. In any case, convenient and secure bicycle parking and storage is a necessity for most cyclists.

The development of end-of-trip facilities in future developments should be a priority for the Town in implementing the ATTMP. These facilities encourage active transportation by making these modes more feasible and convenient for residents and workers.

Active Transportation and Trails Maps

The Town of East Gwillimbury "Trail Map" illustrates the natural and on-road trails that are currently available to residents and visitors for use throughout the Town. The information provided on the map includes details of 6 major trails including their length and location. In the future, consideration should be given to showing transit

information on the map such as local YRT routes. In addition to the “Trails Map” the Town should consider the development of a cycling map that educates and informs residents and visitors of the local cycling opportunities.

Alternatively, walking, cycling and trails information could be combined, generating a single map for all active transportation and active recreation modes and opportunities throughout the Town. However, if developed, the Town should ensure clarity and legibility of the information provided and network illustrated.



The Town should ensure that the map(s) be updated every one to two years thereafter. The maps could be made available to the public at a nominal fee to generate revenue which can be reinvested in the development of future map editions and/or used to fund educational initiatives. Alternatively, the maps could be provided at no cost and provided to residents and visitors at key locations throughout the Town such as community centres, local rinks, at trailheads or municipal offices.

Active and Safe Routes to School

Children’s daily trips to and from school represent a significant opportunity for increasing walking and cycling in East Gwillimbury. The trips made most regularly by children are to and from school, although these trips are fewer and less often made by walking or cycling. In a typical community, 20-25% of person trips during rush hour (peak period) are travelling to and from school². Active and Safe Routes to School (ASRTS) is a program administered by Green Communities Canada that promotes the use of active and efficient transportation for the daily trip to school, addressing health and traffic safety issues while taking action on air pollution and climate change.

“Alternatively, walking, cycling and trails information could be combined, generating a single map for all active transportation and active recreation modes and opportunities throughout the Town.”

The Town should work with ASRTS, the York District School Board, York Catholic District School Board, and local schools to implement initiatives such as IWALK (International Walk to School Day), Walking School Buses, Walking/Wheeling Wednesdays, neighbourhood walkabouts, and other initiatives aimed at encouraging children to walk and cycle to and from school more often.

Recommendations:

5.5 The Town should apply the principles of Community-Based Social Marketing (CBSM) in its marketing and promotional efforts related to the East Gwillimbury Active Transportation and Trails Master Plan.

5.6 The Town should explore efforts and further partnerships with Smart Commute Central York to promote active transportation activities and alternative transportation choices in the Town of East Gwillimbury.

² Active and Safe Routes to School (Green Communities Canada). “Ontario Walkability Study”, May 2001.

- 5.7 The Town should further promote active transportation activities through the production of their Parks & Trails (pedestrian) map and work to revise it to include cycling facilities. Town staff should work with local cycling and hiking groups and consider updating the map once every two years to ensure new routes and connections are illustrated as identified in the East Gwillimbury Active Transportation and Trails Master Plan.
- 5.8 The Town should work with Active and Safe Routes to School (ASRTS), the York Region District School Board, York Region Catholic District School, and local schools to implement ASRTS initiatives and programming to encourage children in East Gwillimbury to walk and bike to and from school more often.
- 5.9 The Town 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 (where available for longer distance trips).
- 5.10 The Town and its respective partners should make the development of end-of-trip facilities a priority during the planning and implementation of active transportation and trails facilities; and
- 5.11 The Town should explore partnerships with local public and private organization and integrate end-of-trip facilities into active transportation and trail promotional strategies and initiatives.

5.1.3 Enforcement

In addition to education and encouragement, enforcement is important to pedestrian and cycling safety with the principle objective of reducing incidents causing property damage, injury and death. Enforcement should be applied to on and off-road segments of the proposed active transportation network. It is important to note that enforcement should be applied to all road and pathway users.

Ontario Highway Traffic Act

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 other road users. Cyclists charged for disobeying traffic laws will be subject to a minimum set fine and a Victim Surcharge fine of \$20.00 for most offences (please note set fines below are subject to change.) The following are key sections of the HTA concerning cyclists:

- **HTA 144/136 – Traffic signals and signs** – stop for red lights and stop signs and comply with all other signs. Set fine: \$85.00.
- **HTA 153 – One way streets** – ride in the designated direction on one-way streets. Set fine \$85.00.
- **HTA 147 – Slow moving traffic travel on right side** – any vehicle moving slower than the normal traffic speed should drive in the right-hand lane, or as close as practicable to the right edge of the road except when preparing to turn left or when passing another vehicle. Cyclists must ride far enough out from the curb to maintain a straight line, clear of sewer grates, debris, potholes, and parked car doors. They may occupy any part of a lane when personal safety warrants it, however must be reminded to never compromise their safety for the convenience of a motorist approaching from behind. **Set fine: \$85.00.**
- **HTA 142 – Signalling a turn** – before turning, cyclists must shoulder check and signal their turn. Cyclists can use their right arm to signal a right turn. **Set fine: \$85.00.**

- **HTA 140/144 (29) – Crosswalks** – cyclists must stop for pedestrians at crosswalks and walk their bicycles across the road when crossing at a crosswalk. **Set fine: \$85.00.**
- **HTA 175 (12) – Stopped school buses** – stop for stopped school buses when the upper alternative red lights are flashing and the stop arm is out. **Set fine: \$400.00.**
- **HTA 62 (17) – Lights** – a bike must have a white front light and a red rear light or reflector, and white reflective tape on the front forks and red reflective tape on the rear forks when being used between ½ hour before sunset and ½ hour after sunset. **Set fine: \$20.00.**
- **HTA 75 (5) –Bell** – a bike must have a bell or a horn in good working order. **Set fine: \$85.00.**
- **HTA 64 (3) – Brakes** – a bike must have at least one brake system on the rear wheel. When brakes are applied they must allow the rider to skid on dry, level pavement. **Set fine: \$85.00.**
- **HTA 218 – Identification** – Cyclists must stop and identify themselves when required to stop by police for breaking traffic laws (i.e. Correct name and address). **Set fine: \$85.00.**
- **HTA Reg. 630 – Expressways** – Bicycles are prohibited on expressway/freeway highways such as the 400 series and the QEW, and on roads where “No Bicycle” signs are posted. **Set fine \$85.00.**
- **HTA 178 (2) – Passengers** – Passengers are not allowed on a bicycle designated for one person. **Set fine: \$85.00.**
- **HTA 178 (1) – Attaching to a vehicle** – Cyclists are not permitted to attach themselves to the outside of another vehicle or streetcar for the purpose of “hitching a ride”. **Set fine: \$85.00.**
- **HTA 104 – Helmets** – Every cyclist under the age of 18 must wear an approved bicycle helmet. Parents or guardians shall not knowingly permit cyclists under sixteen to ride without a helmet. **Set fine: \$60.00.**
- **HTA 179 – Dismounted bicyclist** – Cyclists are required to ride on the right-hand side of the road. If walking a bike on a highway where there are no sidewalks, the cyclist is considered a pedestrian and should walk on the left-hand side of the road facing traffic. If it is not safe to cross the road to face traffic, the cyclist may walk your bike on the right-hand side of the road. **Set fine: \$35.00.**



The following are not considered bicycles and are subject to different rules for use: Limited-speed motorcycles, Motor-assisted bicycles (mopeds), Low-speed vehicles, Electric and motorized scooters (go-peds), pocket bikes and Segway Human/Personal Transporter. For more information on the rules of use for these types of vehicles please visit www.mto.gov.on.ca.

York Regional Police

The responsibility for enforcement rests primarily with the York Regional Police, who are already active in educating and enforcing pedestrian and cycling safety in East Gwillimbury. As with each district within York Region, East Gwillimbury has a Community Oriented Response or “COR” Unit. These units use officers on bicycles during the cycling season to undertake traffic enforcement, patrol special events, and patrol parks at night alongside municipal by-law officers. There are also Street Beat officers, teaching safety information to

secondary school students in the Town. York Regional Police Services also offer safety information on their website www.police.york.on.ca.

The York Regional Police are also partners in the Town of East Gwillimbury Road Watch program, a community driven program that provides citizens with a means to report dangerous or unlawful driver behaviour. This program is another tool that supports enforcement of proper use of the Town's pedestrian and cycling network, particularly related to the behaviour of motorists. This initiative could be complemented by the Share the Road organization's initiatives to support education of cyclists, pedestrians and other road users on the ways each user group can use the road safely.

To strengthen the effectiveness of enforcement in East Gwillimbury, the Town, in association with York Regional Police Services, should consider the following:

- The creation of cycling patrols and safety blitzes along walking and cycling routes and pathways enforcing safe operating procedures for pedestrians, cyclists and other sidewalk, road and pathway users;
- The collection of accurate cycling collision data in an effort to 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.

Town By-Law Enforcement Officers

The enforcement activities of York Regional Police may be supplemented by the Town's by-law enforcement officers, although Town by-laws generally do not relate to pedestrian and cycling issues. In some cases, like when a parked vehicle obstructs a sidewalk and interferes with pedestrian access their involvement may be required.

Recommendations:

- 5.12 The Town should continue to work with York Regional Police to be an active member in the development and delivery of cycling and walking-related safety programs.
- 5.13 Enforcement activities from the York Regional Police should be supplemented by the Town's by-law enforcement officers for issues relating to sidewalk obstruction, misuse of bicycle and pedestrian facilities and the misuse of trails.
- 5.14 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:
 - Exemptions from turn prohibitions for cyclists;
 - Bicycle detection at intersections; and
 - Enforcing speed limits on roadways where observed speeds exceed acceptable levels.

5.1.4 Working with Others

As indicated above, the Town of East Gwillimbury will need the cooperation of outside agencies, volunteer groups and individuals to achieve the positive results expected from active transportation education, such as an increase in the number of cycling and pedestrian trips. The Town should work with partners that have similar mandates in order to ensure consistent messages and avoid duplication of efforts.

To help generate and maintain interest in active transportation activities, East Gwillimbury should continue to work with others, such as York Regional Police, school boards, York Region Health Services Department, Smart Commute, Metrolinx, Ministry of Transportation, Ministry of Health Promotion, neighbouring local and regional municipalities, Ontario Parks, Lake Simcoe Region Conservation Authority, CN Rail and local and provincial cycling organizations to promote and encourage active transportation.



Recommendation:

- 5.15 The Town should continue to develop partnerships with outside agencies, volunteer groups, individuals as well as regional representatives to promote and educate residents on active transportation and trail use throughout the Town.
- 5.16 The Town should approach York Region to develop, in partnership with local municipalities, an Active Transportation website for residents, possibly modelled after the Region of Peel's Walk and Roll website (www.walkandrollpeel.ca).

6.0 IMPLEMENTING THE PLAN

It is proposed that the Town of East Gwillimbury Active Transportation and Trails Master Plan (ATTMP) be adopted in principle and assumed as the Town's long-term strategy to improve conditions for active transportation and trails within the Town of East Gwillimbury. The ATTMP has been designed to be flexible so that the Town and its surrounding municipal partners (Town of Georgina, Township of Uxbridge, Township of King, Town of Newmarket, Town of Bradford West Gwillimbury, Town of Whitchurch-Stouffville and Simcoe County) as well as the Region of York can adapt to changes, constraints, available budget resources and opportunities as they arise, such as the proposed Lake Simcoe to Lake Ontario Recreational Trail Route.



This section of the Master Plan outlines a proposed strategy for implementing the proposed actions presented in the ATTMP. The implementation strategy is designed to be fiscally responsible, coordinated with other long term capital investments and respectful of the fact that a significant investment is proposed and could take the Town twenty-five years or more to complete. Due to its long term nature, it is recognized that the plan should be updated every five years, allowing the proposed network to change and evolve accordingly. A specific end date for implementation is not defined. It is important to note that the future phasing of the proposed active transportation and trail network and recommendations will ultimately be determined based on resources available at the time as well as decisions made by Town staff as well as Town Council.

The Plan has been designed to be flexible in order to adapt to constraints, opportunities and Council decisions and funding priorities. Phase 1 projects, pending Councils approval, are recommended to be implemented in the first five years. The phased implementation strategy proposed in the ATTMP is intended to be a guideline for Town staff and Council to consider when scheduling and budgeting annual active transportation and trails related projects.

“The implementation strategy is designed to be fiscally responsible, coordinated with other long term capital investments and respectful of the fact that a significant investment in proposed and could take the Town twenty-five years or more to complete.”

The plan proposes three phases for implementation:

1. Short-term (Phase 1: 0-5 years);
2. Mid-term (Phase 2: 6-10 years); and
3. Long-term (11 - 25 + years).

As noted above, the implementation strategy presented in this Master Plan defines a proposed process, management structure and a set of steps considered necessary for implementation. In addition, a cost estimate is also included for the proposed infrastructure and programming actions (Section 7.0) that fall within the short term phase (within the first five years following adoption and implementation), the mid-term phase and the longer-term phase for which funding will need to be confirmed by Council on an annual basis.

The success of the ATTMP should be maintained on an annual basis by applying and assessing a series of performance measures (see Chapter 9.0) as well as tracking the ease with which it is being integrated with other municipal capital and operational initiatives. Ease of implementation can be measured by a broad range of criteria, particularly through the following five criteria:

- The quality and clarity of the ATTMP in terms of its vision, the principles and goals that guide it, and the set of proposed actions and policies that comprise the Plan;
- A practical strategy that identifies a proposed approach, including guidelines to implement the ATTMP, and addresses priorities and phasing;
- An effective and efficient administrative structure responsible for implementing all components of the ATTMP, as well as for coordinating multi-departmental and jurisdictional resources, including funding commitments;
- Funding the entire ATTMP within the recommended timeframe by East Gwillimbury Council with support from other potential partners, including York Region, Metrolinx, Ontario Ministry of Transportation, the Provincial and Federal Governments, and other partners; and
- Monitoring of the ATTMP to assess implementation results and to serve as feedback to refine on-going implementation and support the plan evolving over time.

The preceding sections of the ATTMP when taken together form a comprehensive and concise plan to improve conditions for active transportation (walking and cycling) and trails in East Gwillimbury that is based on a vision, goals and a set of supporting guidelines and proposed actions. The focus of this implementation Chapter of the ATTMP is to present a phased implementation strategy that can be integrated with other municipal capital and operational initiatives, recommend an outreach strategy, outline a suggested administrative process to facilitate implementation and maintenance of the network, and provide the Town and its partners with the tools necessary to implement the ATTMP.

Recommendation(s):

- 6.1 The Town should adopt in principle the 25+ year active transportation and trails network implementation strategy identified in the ATTMP and include it as a schedule in the Town's Official Plan (when next updated); and
- 6.2 The Town's Parks and Leisure Services Branch should coordinate active transportation and trail network implementation with the Town's Community Programs and Infrastructure Department's capital programs and traffic engineering timeline as well as the 10 year capital works program for the Regional Municipality of York.

6.1 Managing Implementation

A successful active transportation, trail, pedestrian or cycling master plan requires champions and leadership to move from the planning and design stage to the funding and implementation stage. The formal relationships between individuals and organizations and their operational practices are important factors in determining whether an active transportation or trails initiative will proceed and be successful. Maximizing participation and removing obstacles to the flow of information between participants are two of the main objectives in managing implementation.



The ATTMP is more than a proposed network of on and off-road pedestrian / trail and cycling facilities. It is a Plan that recognizes the economic, health and quality of life benefits that walking and cycling offer, proposing a set of actions that promote these forms of transportation in as safe a way possible.

While Town staff, led by the Parks and Leisure Services Branch in the Community Programs & Infrastructure Department, will oversee the implementation of the ATTMP, they will also require ongoing support from and communication with the Town's Trails Advisory Committee (proposed rescoped AT and Trails Advisory Committee), York Region, adjacent local municipalities, and other organizations and advocacy groups.

The successful implementation of the ATTMP will require a strong working relationship between Town and Regional municipal staff as well as agencies (such as GO Transit), conservation authorities, developers and the public.

6.1.1 Who Does What?

An efficient reporting and implementation structure is vital to ensure that the decision-making process associated with the implementation of the ATTMP is managed and all relevant Town and Regional municipal departments are appropriately engaged. A suggested structure for managing and implementing the ATTMP is illustrated in **Figure 6.1**.

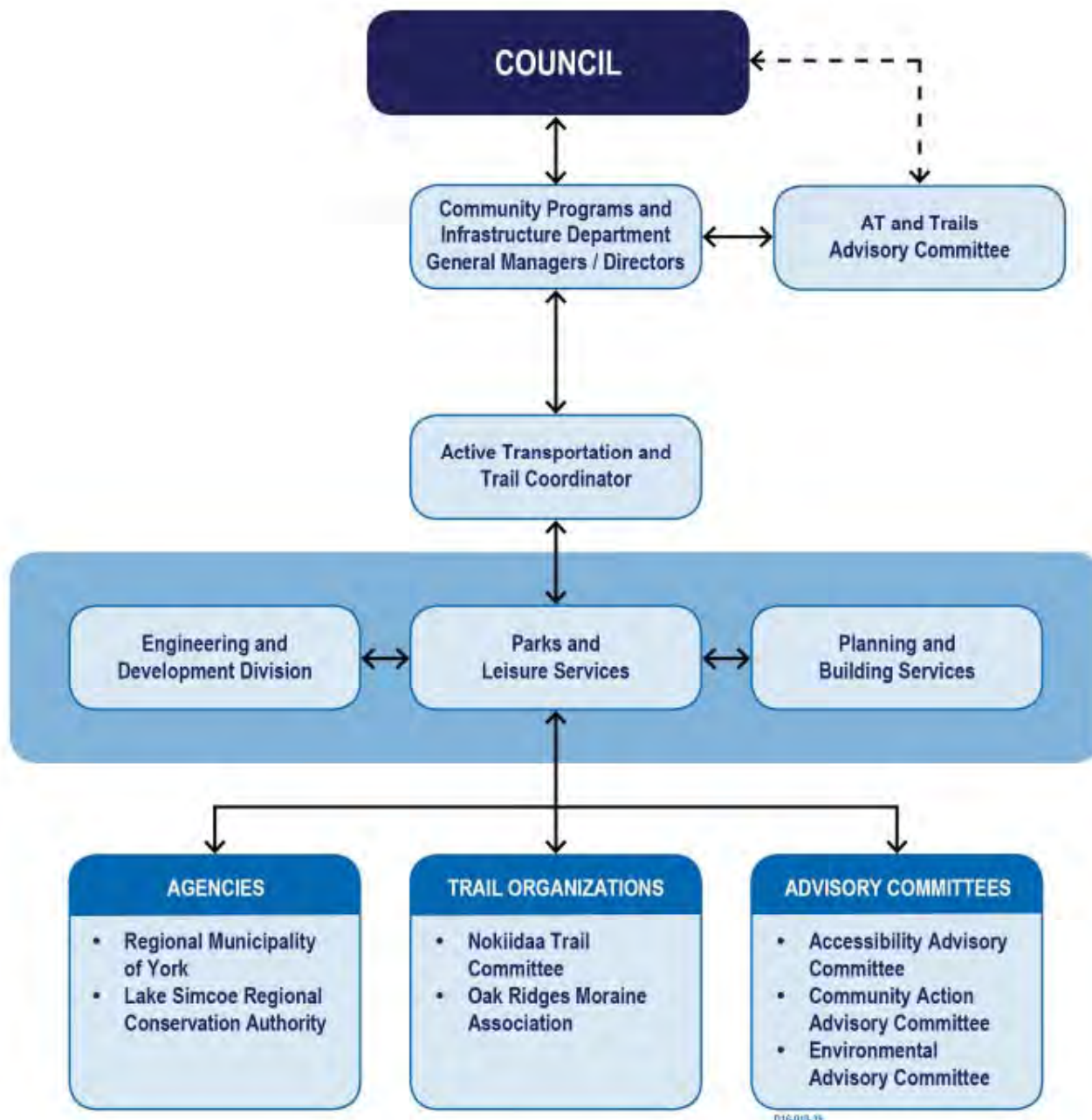
The successful implementation of the ATTMP will require a strong working relationship between Town and Regional municipal staff as well as agencies (such as GO Transit), conservation authorities, developers and the public.

The Director of Parks and Leisure Services through the Town's Community Programs & Infrastructure Department would lead a core team that would oversee and make recommendations regarding funding and priorities associated with the ATTMP, as well as other Town Transportation Demand Management and sustainable transportation initiatives, as required.

More specifically, the team would be led by an Active Transportation and Trail Coordinator who would be the "champion" for active transportation and trail development throughout the Town. It is suggested that this responsibility be assigned to an existing staff member. In the future there may be opportunities for a new staff role, however, this will ultimately be determined based on future funding options and decisions by Town staff and Council members. The coordinator would be supported by the renamed Active Transportation and Trails Advisory Committee which could include representatives from Town departments,

agencies, interest groups and trail related committees. The Town could explore the inclusion of a representative from the Region of York. The Coordinator and Committee members could work together to develop a committee mandate as well as a set of objectives for long term initiatives with regard to active transportation and trail development. The proposed structure identified in **Figure 6.1** is intended as a suggestion only, and Town staff should select the right reporting model that is efficient and inclusive of affected departments.

Figure 6.1 Suggested Structure for Managing ATTMP



D16-013-11

Recommendation(s):

6.3 The Town should rescope the role of the existing Trails Advisory Committee and establish the Active Transportation and Trails Advisory Committee. It is proposed that this AT and Trails Committee include town staff members, such as Planning and Development as well as representatives from York Region Planning, York Region Health, Lake Simcoe Region Conservation Authority, interested residents and other stakeholders as determined by the Town.



6.4 The Town should initially assign the responsibility of “Active Transportation and Trail Coordinator” to an existing staff position. This staff member should be responsible for the “championing” of AT and Trail related issues, initiatives and programming throughout the Town. It may be necessary in the future to consider adding an additional staff position to assist in this staff role; and

6.5 The “Active Transportation and Trail Coordinator” should be responsible for the implementation and follow-up of the ATTMP at the Town level and provide updates on the progress of the study when necessary to Council on annual basis.

6.1.2 A Network Management Tool

The proposed active transportation and trails network for the ATTMP was developed using the Town’s Geographic Information System (GIS) base. This digital GIS based network map provided to the Town as part of the ATTMP can also be used as a trail and cycling facility management tool. A database is associated with the map information and includes a number of different attributes. For example, the network has been divided into segments, each specifying a length of the segment and the facility type proposed, as well as the phase in which the route and facility is proposed to be implemented.

During the implementation process, Town staff can use this tool to assist in confirming the feasibility of pedestrian and cycling routes and facilities and the proposed schedule (Phases 1 or 2) for implementation. The GIS tool can also be used to track and document new segments as they are implemented. Updating the facilities component of the ATTMP on a regular basis will significantly reduce the effort and cost to update the entire ATTMP, which is recommended to occur every five years. The Town has the option to use this GIS information as the basis for an interactive map which could be made available online for public viewing. This

The proposed active transportation and trails network for the ATTMP was developed using the Town’s Geography Information System (GIS) base.

would be useful to the public and developers and would also serve as a ‘quick reference’. The data might also be shared with Google, which has been collecting data from municipalities across Canada to add to online Google maps.

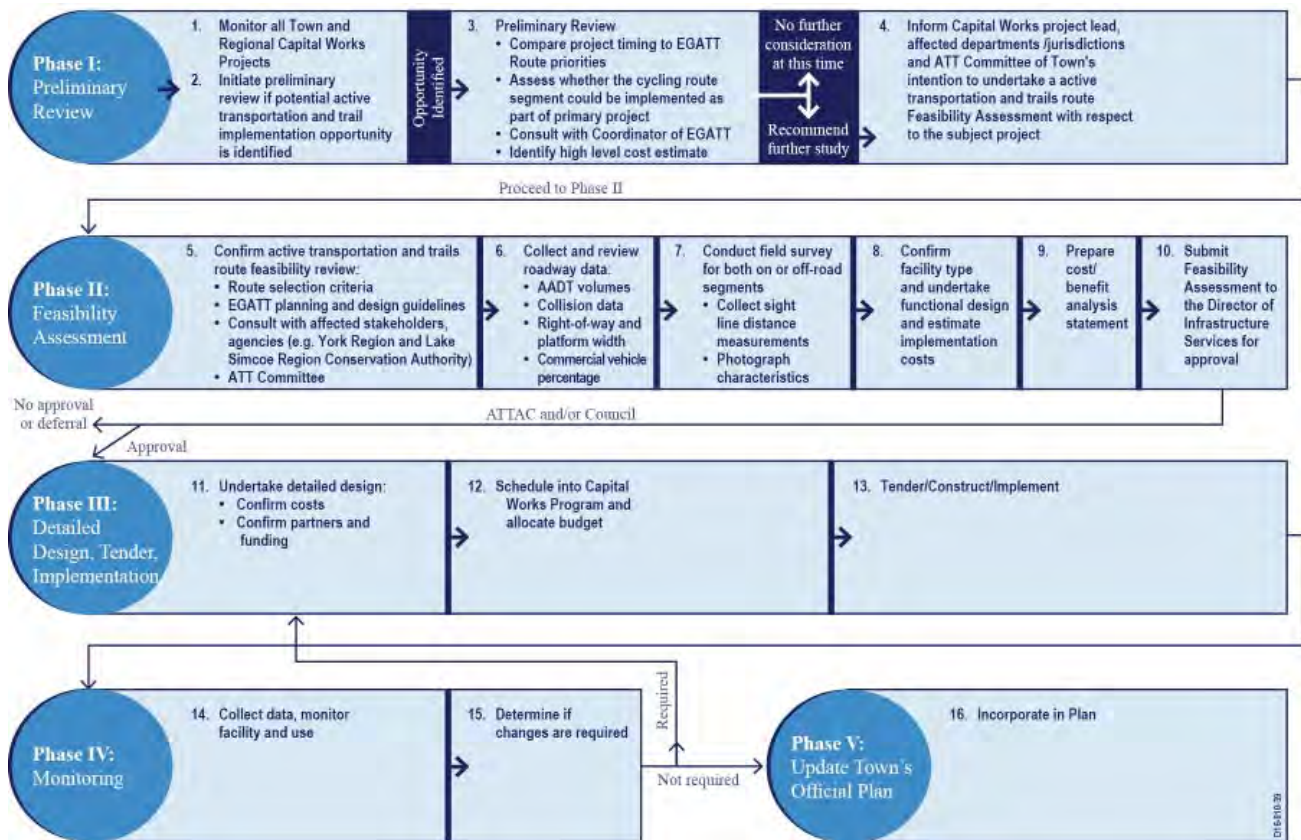
Recognizing that not all Town staff will have access to GIS software, key components of the database and map provided in a KML format will allow anyone with access to Google Earth digital aerial photography over the internet (this is currently a free service) to overlay the network route and facility information on an aerial photo of the Town of East Gwillimbury.

6.1.3 A Five-Step Network Implementation Process

The ATTMP is not intended to be a static document. The timing and details related to implementation, particularly the location of recommended routes and pedestrian and cycling facility types should and will evolve through community consultation and technical review during the implementation. At the same time, however, the extensive community and stakeholder effort that established the overall direction for the ATTMP should be respected. It should also be recognized that the active transportation network and priorities recommended in the ATTMP might evolve through the environmental assessment, planning and capital budget processes.

Central to the proposed implementation process tool is a proposed guideline that would require that the ATTMP be reviewed and given consideration when Town or Regional Roads or other capital infrastructure projects are identified or scheduled. This should include the Town and Region's asset management program for reconstructing or resurfacing roads, any investigation of potential new road alignments or the reuse and/or selling of abandoned rail and utility corridors. The objective is to ensure that Town assets, particularly roads designated in the ATTMP for future pedestrian and cycling routes, are given due regard when planning, designing and budgeting larger capital road/infrastructure projects. This step should also apply to Town planning studies or studies initiated by York Region in which the Town is a partner. Without this step, network opportunities could be lost and cost efficiencies not realized. Building upon this central recommendation, **Figure 6.2** outlines a proposed process tool for guiding the implementation of active transportation network facilities in East Gwillimbury. It is recommended that Town staff review this tool and adapt it as necessary to suit their needs.

Figure 6.2 Proposed Implementation Process Tool



The process comprises five parts and is a step-by-step mechanism to confirm the feasibility of each route recommended in this report at the time implementation is proposed. It will assist Town staff from affected departments to work together, to share information and to facilitate the implementation of the ATTMP. Changes to policies and the network should also be considered through the Town's Official Plan, and Transportation Master Plan reviews conducted every five years. Each part of the network implementation process is described in the following sections.



Part I: Preliminary Review

The first step in implementing segments of the ATTMP is to identify and communicate opportunities. As part of the ATTMP, all Town and Regional road projects scheduled in East Gwillimbury, including the capital roads forecast should be monitored. When a project involving a corridor or road proposed for a pedestrian or cycling route identified in the ATTMP is advanced to the planning stage, or an opportunity to establish a new route not identified in the ATTMP comes forward, the Active Transportation and Trails Coordinator should undertake a Part 1 Preliminary Review. This review should:

- Identify the jurisdictions involved in a project;
- Compare the timing of the project to the short and long term implementation priorities identified in the ATTMP;
- Assess whether the nature of the project may permit implementation of the preferred pedestrian or cycling facility type in a cost effective manner; and
- Inform the project lead and affected departments whether or not a feasibility assessment should be undertaken to confirm the feasibility and costs for implementing the proposed cycling route as part of the subject project.

The key aspect of this initial part is communication. Staff from various departments should report all upcoming projects that may involve or impact a pedestrian or cycling facility designated in the ATTMP. From this point forward, the Active Transportation and Trails Coordinator would be expected to work through the remaining three parts of the implementation process with various departments at the Town and Regional level as appropriate.

“Changes to policies and the network should also be considered through the Town’s Official Plan, and Transportation Master Plan reviews conducted every five years.”

Part II: Feasibility Assessment

If a pedestrian or cycling project is confirmed through the preliminary review process (Part I), the Coordinator should lead Town staff in undertaking a Feasibility Assessment. This should include the following steps:

- Confirm the feasibility of the route based on a review of the ATTMP and supporting route selection and planning and design criteria, as well as other relevant information.
- Collect or confirm current roadway characteristic information including AADT volumes, collision data and the commercial vehicle percentage.

- Conduct a field check for both on and off-road route segments to identify any other issues that should be considered and to measure sight line distances (if applicable).
- Undertake a functional design for the on or off-road cycling facility segment and estimate implementation costs, including construction and signing.
- Prepare a cost/benefit analysis statement. This “statement” should comment on the following:
 - The timing for implementing the proposed pedestrian or cycling facility;
 - Costs and efficiencies achieved;
 - Identify any less costly alternatives and how they may fit within the overall pedestrian and cycling network plan;
 - Provide recommendation on how to proceed; and
 - Submit the Feasibility Assessment to the Coordinator, and then to the Commissioner of Infrastructure and Transportation Services for approval.

This process typically takes place in conjunction with, or as input to, a roadway or public works Class EA or functional design process whereby design alternatives are prepared. The design for the pedestrian and cycling portion of the facility should be in accordance with Town Planning, Design and Operation Guidelines, as well as other relevant regional, provincial and national design standards.

Priority consideration should be given to situations where there is a clear community demand for pedestrian and cycling facilities. If site-specific circumstances prevent a facility from being constructed in association with a particular improvement project being considered, other nearby parallel routes on both Town and Regional Roads should be closely examined at this time for their suitability.

Part III: Detailed Design, Tender and Implementation

Once a pedestrian and/or cycling route segment has been approved for implementation, the necessary detailed design should be completed. This step is typically done as part of the detailed design for the primary capital roads project, such as a road widening and does not require additional resources. This third part of the process should also include confirming details with regard to partners (if any) and cost sharing. The project should then be scheduled into the Town’s Capital Roads Program and a suitable budget should be allocated. The final step involves tendering the project (if not undertaken by the Town in-house) to a contractor, and then construction / implementation.

It is possible that following the detailed design stage, the decision is made not to proceed with the facility or preferred facility type because of the cost, preference of Council, or other constraints that may arise through the detailed design process. If this occurs, the network should be updated and an alternative route should be proposed.

Part IV: Monitoring Phase

Once pedestrian and cycling facilities have been constructed, their design and use should be monitored to ensure they function in the manner intended. When necessary, the facilities should also be upgraded and maintained to ensure continued safe use by users. Monitoring should also ensure that the facility design guidelines remain current. This step will involve collecting data to assist in the monitoring task.

Part V: Town Official Plan

The fifth part of the implementation process includes updating the Town's Official Plan to account for changes in policy and network routes.

Recommendation(s):

6.6 The AT and Trail Coordinator and AT and Trails Advisory Committee should review the proposed five-step process tool as a means of guiding the implementation of active transportation and trail network facilities in the Town of East Gwillimbury and adapt it as necessary.

6.7 Buffered bike lanes are recommended where feasible, and provide a separation between motor vehicles and cyclists that is believed to create a more secure and comfortable environment for cyclists. Physically separated bike lanes (i.e. cycle tracks) may also be an option, especially for new roads or when roads are to be widened.



6.1.4 Land Acquisition / Securement Strategies

Although much of the recommended network lies on lands that are currently in public ownership there are some areas of the Town where a trail connection is desired yet there is no public land available at the present time. Some of these connections are located along natural heritage corridors (i.e. creeks and valleys) in land that is presently rural / agricultural. At some time in the future it is anticipated that many of these natural heritage areas will become part of the urban fabric and at that time these corridors would be set aside along with a suitable buffer. These corridors could accommodate active transportation or trail connections that are compatible with the policies and trails in the Town's Natural Heritage System Study.

There are a number of other locations throughout the Town where the land is rural or has already been urbanized, yet a future pathway connection is desired and no public land exists. To realize the full build out of the network and complete proposed connections across these lands permission for access or a strategy to secure ownership may be required. Some of these parcels have been identified in other planning policy documents. A range of strategies may be available to acquire or use lands through, from legal access (easement) agreements to purchase of lands by the Town.

The following tables describe a range of securement techniques available to the Town for making key connections in the multi-use pathway network on lands that are currently in private ownership.

Table 6-1. Technique: Purchase

Description	Purchase of land at fair market value. Includes “First Right of Refusal”
Type of Land that Strategy can Typically be Applied To	Any greenspace, particularly those requiring environmental protection.
Advantages/Disadvantages	Municipal or other group directly acquires land. Permanent protection and public access.
Legislative Basis	Municipal Act (right of municipality to acquire and dispose of own land) and right of municipality to levy local improvement charge on benefiting land
Administrative Considerations	<ul style="list-style-type: none"> • Municipal government Land Trusts • Non-Profit Groups (e.g. The Nature Conservancy) • Community Co-operative • Partnerships
Other Considerans	<ul style="list-style-type: none"> • The Town can purchase properties within a neighbourhood that are listed for sale, and divide the side and/or rear lot to accommodate a block for future trail development through a minor variance of creation of an easement. This strategy is dependent on monitoring properties as they become available and the assembly of a corridor may have to take place over a number of years. • The Town may compensate a homeowner for the portion of their land required for trail development. In this case the homeowner and Town would obtain separate appraisals and negotiate a reasonable price based on the independent results.

Table 6-2. Technique: Land Exchange

Description	Lands or interest in land can be traded to achieve mutual interests, and net differences in values can then be settled
Type of Land that Strategy can Typically be Applied To	Any land or land use greenspace or other type of use including housing.
Advantages/Disadvantages	<p>Same cost as purchase; permanent protection; public access possible.</p> <p>Must be equitable for both parties to be attractive.</p>
Legislative Basis	Municipal Act (right of municipality to acquire and dispose of own land).
Administrative Considerations	Municipal most common – public ownership.

Table 6-3. Technique: Donation/Bequest

Description	Land or interests in land donated during an individual's lifetime or by private corporation or as a bequest as part of an estate. The donor may opt to retain use of land until death.
Type of Land that Strategy can Typically be Applied To	Any land or land use greenspace or other type of use including housing.
Advantages/Disadvantages	Low cost/ permanent protection and public access. Tax benefits for donor. Lands must meet Federal Tax rules for donation in order to qualify for tax exemptions.
Legislative Basis	Municipal Act Income Tax Act
Administrative Considerations	All of the above Both public and private ownership.
Other Considerations	The Town may coordinate an agreement with a homeowner whose property is potentially impacted by trail development to pay their property and land taxes until such a time when the homeowner sells or relocates at which time their property is gifted to the Town.

Table 6-4. Technique: Parkland Dedication

Description	Lands dedicated to municipality for parkland purposes as a result of subdivision development. Usually relates to recreation land but may be used to acquire natural areas.
Type of Land that Strategy can Typically be Applied To	Any greenspace, but usually active parkland.
Advantages/Disadvantages	Provides parkland in growing communities: Can be converted to cash for more flexibility. Planning Act limits amount of land that can be required at no charge.
Legislative Basis	Planning Act
Administrative Considerations	Municipal Ownership
Other Considerations	The Town may coordinate an agreement with a homeowner whose property is potentially impacted by trail development to pay their property and land taxes until such a time when the homeowner sells or relocates at which time their property is gifted to the Town.

Table 6-5. Technique: Traditional Land Use and Other Regulatory Controls

Description	Use of land use planning (Official Plan/Zoning/ Subdivision Watershed and Sub-watershed Plans) and other regulatory controls. Land Ownership does not change.
Type of Land that Strategy can Typically be Applied To	Any greenspace if designation or zoning is not successfully challenged.
Advantages/Disadvantages	Intent for the land is provided in the Official Plan. Permanent protection can be achieved. May not be popular and does not provide for public access. May trigger requests for financial compensation or purchase.
Legislative Basis	Planning Act Conservation Authorities Act Fisheries Act Aggregate Resources Act
Administrative Considerations	Municipal, Province, Conservation Authorities. Usually private ownership or public ownership other than the Town.

Table 6-6 Technique: Sale with Restrictions (Including acquisition and resale)

Description	Land can be sold with restrictions in place to control future uses.
Type of Land that Strategy can Typically be Applied To	Greenspaces requiring environmental protection where public access may not be as critical.
Advantages/Disadvantages	Generates revenue while maintaining greenspace; permanent protection; public access can be negotiated. Restricted land more difficult to sell, limited market and reduced value.
Legislative Basis	Municipal Act Conservation Land Act
Administrative Considerations	Municipal/Provincial Government

Table 6-7 Technique: Land Trust

Description	Non-profit organizations dedicated to conserving open space, natural areas, etc.
Type of Land that Strategy can Typically be Applied To	Usually land needing environmental protection or recreational multi-use pathways.
Advantages/Disadvantages	High profile grass-roots organization. Provides permanent protection and public education. Limits public access. Needs high profile and independence to get funds.
Legislative Basis	N/A
Administrative Considerations	Generally non-profit, incorporated community organization or a chapter within an existing organization

Table 6-8 Technique: Corporate Landowner Agreement/ Condominium Agreement

Description	Similar to Land Trust Conservation land can be owned by a shareholder's corporation or condominium devoted to the protection and management of the lands.
Type of Land that Strategy can Typically be Applied To	Any greenspaces.
Advantages/Disadvantages	An alternative to government ownership and management; no cost; flexible; management costs borne by those directly benefiting. Protection not guaranteed. Little used; no guarantee of public access, needs a willing corporate entity.
Legislative Basis	Corporations Act Condominium Act
Administrative Considerations	Private landowners, would not involve public ownership.

Table 6-9 Technique: Conservation / Public Access Easement

Description	Agreements that restrict uses for conservation or public access purposes, and when registered on title, they bind both current and future landowners.
Type of Land that Strategy can Typically be Applied To	Usually land needing environmental protection as well as heritage buildings.
Advantages/Disadvantages	Low cost; may be more acceptable to landowner; can provide permanent protection. Cost of easements may be as great as purchase; public access may be limited; requires ongoing monitoring; not extensively used in Ontario.
Legislative Basis	Ontario Heritage Act; Ministry of Government Services Act Ontario Conservation Land Act
Administrative Considerations	Only government agencies and registered charities including land trusts. Private ownership

Table 6-10 Technique: Restrictive Covenant

Description	A condition on title that restricts the landowner's use of land or assigns certain rights or access to an adjacent landowner. Applicable where a government wishes to control land use but not own the land.
Type of Land that Strategy can Typically be Applied To	Usually land needing environmental protection.
Advantages/Disadvantages	Low cost; can provide permanent protection. Can only be used under certain conditions; unlikely to be able to specify long-term management obligation. Public access not likely.
Legislative Basis	Common Law
Administrative Considerations	Any government or conservation authority. Private ownership

Table 6-11 Technique: Lease /License

Description	A lease gives exclusive rights to use of land for a specified term and cost. Licenses give permission to use a property for a purpose but not exclusive rights and does not bind future owner.
Type of Land that Strategy can Typically be Applied To	Any land
Advantages/Disadvantages	Public access can be negotiated Agreement must be renewed periodically; may not protect land in perpetuity.
Legislative Basis	N/A
Administrative Considerations	Legal lease or license agreement between parties. Private or public ownership.

Table 6-12 Technique: Incentives/ Assistance

Description	Tax or management incentives to encourage retention/ restoration of natural areas. Usually linked to land use restrictions such as Provincial policy and zoning. i.e. Tax Rebates/ Credits/ Management Agreements/ Funding Assistance
Type of Land that Strategy can Typically be Applied To	<ul style="list-style-type: none"> Usually land needing environmental protection.
Advantages/Disadvantages	<ul style="list-style-type: none"> Lower cost and non-confrontational; willing landowner agreement. Difficult to monitor compliance; does not provide public access or permanent protection. Lost tax revenue.
Legislative Basis	<ul style="list-style-type: none"> Woodlands Improvement Act; Game and Fish Act; Conservation Authorities Act; Conservation Land Act.
Administrative Considerations	Ministry of Natural Resources Conservation Authorities Private ownership

Table 6-13 Technique: Stewardship

Description	Private land owner care and protection of land. Can be linked to incentives. Provides support/education for owner.
Type of Land that Strategy can Typically be Applied To	Usually land needing environmental protection.
Advantages/Disadvantages	Voluntary. Least costly; non-threatening; builds rapport. Not permanent. No public access or protection.
Legislative Basis	N/A
Administrative Considerations	Private although all levels of government publicize and provide support.

Recommendation(s):

- 6.8 Review and select an acquisition/land securement strategy for proposed active transportation and trail routes on privately owned lands based on the information provided and techniques described in the master plan.

6.2 Building the Network

The network is intended to build upon the networks recommended in the East Gwillimbury Transportation Master Plan (May 2009), the York Region Transportation Master Plan, the York Region Pedestrian and Cycling Master Plan (2008), the significant trail work that other local municipalities, agencies and organizations have completed over the years, recent information gathered by the study team through consultation with staff, the project Steering Committee and the public, and the study team’s expertise related to the most recent research and trends in the evolution of bikeway and trail design.

6.2.1 Network Implementation Schedule

“The ATTMP should be reviewed and given consideration when addressing local municipal or regional roads and other capital infrastructure projects when identified and scheduled within the Town of East Gwillimbury.

Figure 6-3/3A depicts existing active transportation and trail facilities as well as proposed new routes and facilities by implementation phase: short-term (Phase 1: 0-5 years), mid-term (Phase 2: 6-10 years) and longer term (Phase 3: 10+ years). Each of the phases is distinguished according to colour. The ultimate cycling network (following build-out) would be represented by the combination of all of the colours.

The implementation strategy is designed to be flexible. Timing and implementation priorities are suggested based on the approach described in Subsection 6.1.3, however the annual implementation of individual on and off-road segments (which will continue to be integrated with Town and Regional capital works programs) will have to be reviewed and confirmed at the time of implementation. Some segments may require additional consultation, and the

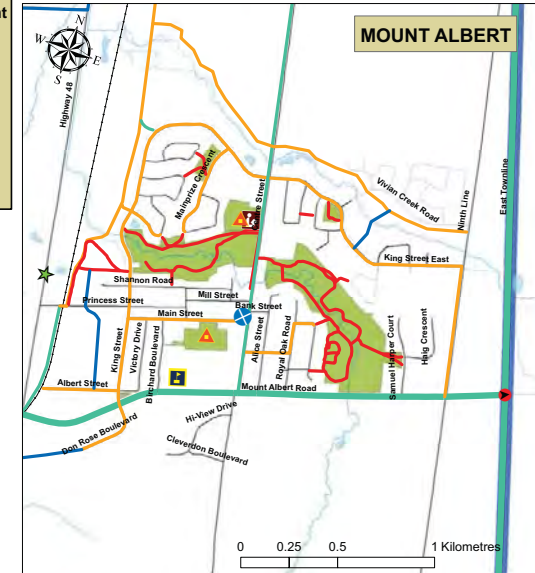
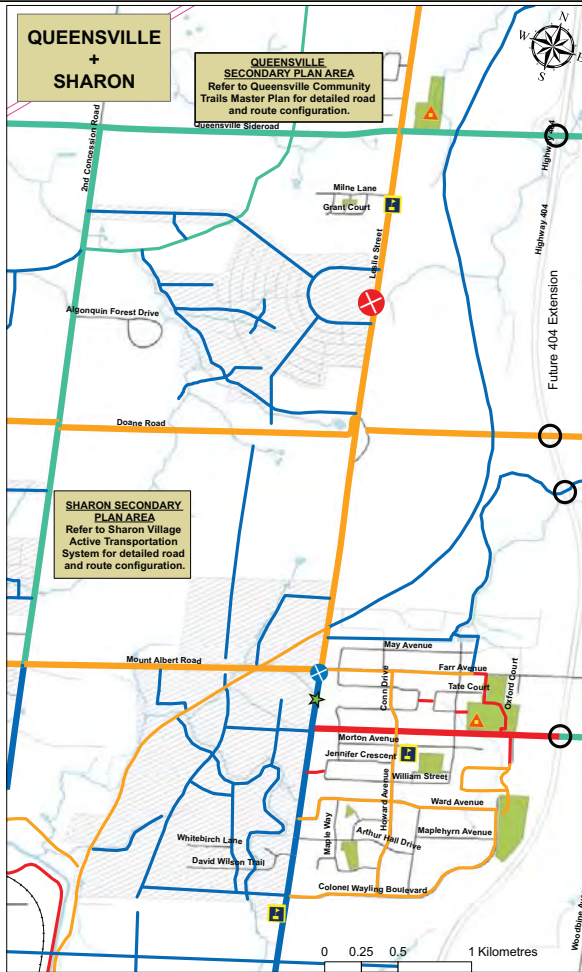
URBAN AREAS: CYCLING + TRAIL ROUTES - Implementation Priorities

Figure 6-3A represents the preliminary active transportation and trails route implementation priorities for the Town of East Gwillimbury. The solid lines represent the implementation priorities currently being considered by the Study Team. The thicker solid colour lines identify the priorities for the already approved York Region Pedestrian and Cycling Master Plan network.

This figure does include the proposed on and off-road active transportation and trails routes that are identified in the Holland Landing, Queensville and Sharon Secondary Plans. However, these routes are subject to change as the secondary planning process for these areas is ongoing.

Please refer to Figure 6-3 for Implementation Priorities throughout the entire Town.

The data used to assemble this map was taken from GIS information provided to the Study Team by the Town of East Gwillimbury and the Region of York.



JUNE 2012

LEGEND

- Other (Town)
 - Potential AT Connections
- Key AT Crossing
- Existing Road
- Proposed Road
- Major Local Centre
- Minor Local Centre
- Libraries
- Schools
- Community Centres
- Shopping Malls and Plazas
- Parks
- GO Station
- Railway
- Transmission Line
- Lakes and Watercourses
- East Gwillimbury Boundary

Candidate ATTMP Network Implementation Priorities (Town)

- Existing Cycling or Trail Facility
- Short Term (0 - 5 years)
- Mid Term (6 - 10 years)
- Long Term (11 - 25+ years)

Approved PCMP Network Implementation Priorities (Region)

- Existing Facility
- Short Term
- Mid Term
- Long Term

ultimate decision may be not to proceed. Given competing priorities, some sections will be dependent on the timing of new developments, road projects, etc., and it may take much longer for those segments to be implemented. For example, sidewalk improvements on local streets may be subject to neighbourhood consultation, and residents may ask Council not to proceed. In such cases, Council may elect not to proceed with the proposed sidewalk improvement project. Similarly, a number of route segments and related facility types proposed for implementation in Phases 1, 2 and 3 may not prove to be feasible because of other circumstances (e.g. funding constraints, outcome of an Environmental Assessment or detailed design, etc.).



In these situations, an interim solution may be possible and should be investigated by Town staff. Deviations like these from the proposed implementation strategy are to be expected, and should be reflected in revisions made to the ATTMP as part of regular updates to the Plan.

The Town's proposed off-road system component of the designated active transportation network identified in this Active Transportation and Trails Master Plan will consist primarily of multi-use trails and hiking style trails and footpaths. The on-road component of the ATTMP focuses on signed routes, paved shoulder and bike lanes connecting neighbourhoods and feeding users into the larger York Region PCMP network. The Master Plan includes a series of proposed actions suggesting that the Town, working with York Region and local developers, adopt active transportation friendly urban design and streetscaping practices, and encourage built forms and subdivision designs that support walking for both utilitarian and recreational purposes. This is discussed in more detail in sub-section 6.3.1.

6.2.2 Priority Projects for Implementation

A number of projects have been identified as priorities for consideration. These include those listed in the Short Term (0-5 years); plus select projects identified in the Mid-term (6-10 years). This list includes:

- Completion of Nokiidaa Trail along the Holland River towards Queensville Sideroad;
- Completion of off-road multi-use trail links connecting residential subdivisions in Mount Albert, Sharon and Queensville;
- Multi-use Trail Connections north and south of Mount Albert, developing a continuous north-south trail connection along the eastern area of the Town and into adjoining local municipalities;
- Development of the Mount Albert Rail Trail Line; and
- The completion of the active transportation components of Secondary Plans for the Holland Landing, Sharon West and Queensville areas.

Recommendation(s):

- 6.9 The AT and Trails Coordinator and Town staff should consult with the Regional Municipality of York to ensure that the proposed active transportation and trail network is consistent with the pedestrian and cycling facilities outlined in the York Region Pedestrian and Cycling Master Plan.

- 6.10 The ATTMP should be reviewed and given consideration when addressing local municipal or Regional roads and other capital infrastructure projects identified and scheduled within the Town of East Gwillimbury;
- 6.11 That the Town should recognize that adjustments to the proposed network plan in the ATTMP will occur from time to time and that this is consistent with a goal of ensuring the Master Plan is flexible and can respond to changes and new opportunities.

6.3 Community Design Strategies that Support AT

The design of a community can determine how and when people engage in active transportation and recreation alternatives. There is a great amount of research that links the layout and design of communities to an increase in health, social interaction, safety and economic development for the community as well as its residents. One of the key documents which identifies this is the “Shaping Active, Healthy Communities” report completed by the Heart and Stroke Foundation. This document provides governments at all levels with a “built environment toolkit” which can be used to guide a change in the design and development of communities to promote AT and AT related benefits.

More specifically, there are a number of design strategies which are identified which prove to facilitate the development of communities which are supportive of physical activity and active modes of transportation. These strategies are provided in some detail below.

6.3.1 Land Use Planning

The land use planning of a community deals with the layout and arrangement of housing, businesses and amenities within a community. More specifically land use planning can support active living when housing, businesses and amenities are arranged in a way that promotes vibrant communities. These communities are easily accessible by walking, cycling and other active transportation methods. This can be achieved through a number of initiatives including but not limited to the following:

- Mixing housing with other land uses decreases the distance between people’s residences and their destinations of choice, thus making it more likely for them to walk or cycle to their destination;
- Encouraging higher-density urban areas by developing higher-density areas, such as “urban villages”. Situate amenities and destinations within walking distance from the residences. In addition, more people are able to support the local economy as they are located in one centralized area; and
- Conveniently locating schools and other amenities enable children to safely and securely walk or bicycle to their schools as well as key destinations. This will also provide a higher level of comfort for parents.

6.3.2 Active Living Infrastructure

Land use planning can support active living when housing, businesses and amenities are arranged in a way that promotes vibrant communities.

The development and integration of active living infrastructure in communities such as parks, sidewalks, street lighting and bike racks all support physical activity by making active transportation and recreation appealing and accessible to residents and visitors. Infrastructure such as this can be achieved by exploring and implementing the following initiatives:

- Making streetscapes appealing to pedestrians and cyclists through effective design such as good lighting, well-maintained sidewalks, bike paths, signage, crosswalks and improved aesthetics can draw people to these

areas and make them more likely to travel to the destination by bike or foot. More appealing streets also attract people creating an “eyes on the street” result. In many cases this can prevent crime and makes these environments safer for children and adults;

- Designing streets that are healthy and safe for pedestrians and cyclists such as narrower streets, cycling lanes, sidewalks, landscaping, parallel parking and traffic calming measures are key to increasing cyclist and pedestrian activity throughout urban and rural communities; and
- Providing recreational facilities, parks, trails and safe places to play outside can result in a higher physical activity level for children and youth as well as all user groups. These can include community centres, walking trails, public greenways and events such a temporary street closures.



6.3.3 Transportation Planning

The use of transportation planning can promote walking, cycling and other active modes of travel by identifying them as the highest priority when designing a community’s transportation network. This “pedestrians and cyclists first” approach can include the design of streets, pedestrian and cycling routes as well as public transit systems. These can be achieved through the following initiatives:

- Increasing pedestrian and cycling connectivity means that walking and cycling routes are continuous and in many cases connect with key destinations. Features which emphasize this concept include continuous sidewalks, shorter blocks, grid-like street layouts, pedestrian connectors and accessible links to public transit;
- Creating safe routes to school includes safe crossings and / or crossing guards, safe bicycle parking, traffic-calming measures around schools and “walking school buses” which go to and from the school along a designated route. These types of initiatives can increase the safety of walking and biking routes to school and help children get the physical activity they need; and
- Improving public transit through encouragement includes locating stops close to places of residence, providing frequent services and ensuring ease of connection to key destinations throughout the community. In many cases users of public transit achieve their daily requirement of 30 minutes of physical activity by walking to and from the transit stops.

As an alternative means of promoting and educating people on alternative transportation options through transportation planning, the Town should explore the adoption and implementation of a “Pedestrian Charter”. A pedestrian charter is used to facilitate and promote the need for walkable communities throughout the Town and is an important measure of the quality of the public realm, healthy and vitality. Pedestrian Charters are becoming increasingly more popular throughout North America with the first one being established in Toronto followed by those developed in Waterloo, Kitchener, Sudbury, Burlington and Montreal. An example of a pedestrian charter can be found in Appendix B of the report.

Recommendation(s):

- 6.12 Work to encourage AT (pedestrian & cycling) friendly streetscaping, urban design and AT and trail oriented land development in collaboration through planning and design studies and development reviews.
- 6.13 Explore land use planning initiatives and policy development such as mixed land use, higher density urban areas and pedestrian and cyclist friendly streetscapes to promote / facilitate an increased quality of life and liveability throughout the Town of East Gwillimbury.
- 6.14 Continue to increase pedestrian and cycling connectivity to key destinations and develop continuous links to public transit and trails as well as shorter blocks.
- 6.15 Work with the Safe Routes to School Program to develop a Safe Routes to school program for East Gwillimbury.
- 6.16 The Town should adopt a Pedestrian Charter to help facilitate and promote the development of a walkable and pedestrian friendly environment.
- 6.17 The Town should promote the development of residential communities with mixed land uses including development in close proximity to schools and transit to decrease time spend travelling and increase the likelihood of walking and cycling to key destinations throughout the community.
- 6.18 The Town should consider elements of active transportation and trail planning when addressing land use planning and design considerations throughout the Town. These could include the design of street, additional pedestrian and cycling routes, trail development and transit planning.
- 6.19 The Town should review the proposed AT and Trail Design Guidelines recommended in the AT and Trails Master Plan and then update the Town's Parks and Recreation Design Manual to establish a set of Town-approved AT and Trail guidelines.

7.0 INVESTING IN AT AND TRAILS

The success of East Gwillimbury's Active Transportation and Trails Master Plan (ATTMP) is reliant on the commitment of funding and staff resources by Council to support implementation of this plan. The Town should continue to explore additional sources of revenue from its partners including Metrolinx, York Region and the Provincial and Federal Governments.



The ATTMP consists of an integrated body of components, and requires a strategic implementation and investment approach. Focusing efforts on individual elements of the ATTMP in isolation of the others will not result in the level of success that the ATTMP has been designed to achieve. For example, funding a new bicycle lane or paved/stone dust trail in the short-term, but not funding the long-term development and delivery of a promotional strategy to boost trail activity, is not an efficient or recommended strategy.

The public and stakeholder input received during the development of the ATTMP indicate an increased interest in reducing the use of single occupant automobiles throughout the Town via active transportation and a demand for improved pedestrian and cycling facilities. Town Council's leadership in adopting this Master Plan in principle will directly connect and improve the liveability of communities in East Gwillimbury.

7.1 How Much Will It Cost to Implement?

The ATTMP is both an infrastructure and operations plan. Therefore, it requires infrastructure, program development and operations funding to ensure its success. For example, some of the cycling routes outlined in the ATTMP, especially on-road paved shoulder bikeways and some bike lanes, require little improvement beyond a change in pavement markings and signage. These types of improvements should be included in the Town's capital budget and forecasts.

On top of on-going investment into the implementation of the ATTMP, operating costs include delivering safety, educational outreach and promotional programs, and performing network and infrastructure maintenance to ensure that facilities are in a year round state of good repair. This also includes staff resources, as well as management and administration.

The ATTMP consists of an integrated body of components, and requires a strategic implementation and investment approach that requires a firm financial commitment.

Table 7-1 identifies the 25+ Year Implementation Strategy Cost Estimate Summary.

It is estimated that the total investment to implement the ATTMP (infrastructure and outreach) is about \$23,984,213 over the next 25+ years. This cost consists of approximately \$22,734,213 for the proposed network, and \$1,250,000 for outreach. Out of the total investment of the 25+ year longer-term strategy, \$11,260,543 or 47% is estimated to be The Town of East Gwillimbury's share. The remaining \$12,723,670 or 53% would be the responsibility of York Region as

the proposed facilities fall on roads under their jurisdiction and are part of the approved Pedestrian and Cycling Master Plan. This Regional funding component is included in York Region’s approved Pedestrian and Cycling Master Plan. A more detailed Implementation Cost Estimate Summary highlighting facility type and jurisdiction by implementation phase is included in **Table C-1** found in Appendix C.

Table 7-1: 25+ Year Implementation Strategy Cost Estimate Summary

Jurisdiction	Cost						Total	(%)	Total Distance (Km)
	Short Term (0 - 5 yrs)		Mid Term (6 - 10yrs)		Long Term (10-25+ yrs)				
	Capital	Outreach	Capital	Outreach	Capital	Outreach			
East Gwillimbury	\$1,923,118	\$250,000	\$4,769,843	\$250,000	\$3,317,582	\$750,000	\$11,260,543	47%	209.36
York Region	\$4,589,200	\$0	\$3,295,600	\$0	\$4,838,870	\$0	\$12,723,670	53%	133.53
Total	\$6,762,318		\$8,315,443		\$8,906,452		\$23,984,213		
(%)	28%		35%		37%				

The network cost of \$23,984,213 is a conservative estimate and is based on stand-alone unit prices (the units prices assumed are summarized in **Table C-2** in Appendix C). However, it is assumed that on-road components of the network will typically be included as part of the same tender for a road resurfacing, reconstruction or widening project. Therefore, through economies of scale, the construction cost charged to the Town by a contractor should be less.

For on-road facilities shown in the tables, the distance shown represents the length of the road with bicycle facilities on both sides of the road. The distances for multi-use trails in Town and Regional road rights-of-way have been assigned to the Town because multi-use trails, like sidewalks, are the responsibility of local municipalities in York Region.

7.2 Risk Management and Liability

Exposure to potential lawsuits, and concerns from private landowners who grant easements or who are located adjacent to off-road pedestrian and cycling facilities are sometimes perceived as liability concerns.

Bike lanes, paved shoulder bikeways and signed only routes generally fall into the same liability pattern as roadways and sidewalks, meaning that the Town or Region is liable only if the facility is improperly designed, constructed, or maintained.

Even though multi-use trails are separated from the roadway, they still may be interpreted to legally fall under the definition of a “highway”, since bicycles are legally defined as vehicles. This is an important point because if the courts make this interpretation, it means that cycling facilities are covered under many of the same basic immunities as other highways. It also illustrates the importance of adhering to provincial, national or other established design and construction guidelines, as this will provide the greatest legal protection. Aside from proper design and operation of pedestrian and cycling facilities, the Town of East Gwillimbury should address potential hazards associated with these facilities including accidents, theft, vandalism, and other problems. This becomes much more acute when these facilities are located along waterways and residential backyard fences.

The following methods of reducing risk are proposed for the Town and its partners to help minimize the liability associated with providing designated trail and active transportation facilities:

- Improve the physical environment, increase public awareness of the rights and obligations of cyclists and pedestrians and improve access to educational programs in order to demonstrate that efforts are being taken to reduce the likelihood of accidents occurring and lawsuits being initiated by injured parties;
- Select, design and designate facilities in compliance with the highest prevailing standards. Regulatory signs, as identified by the MTO Manual of Uniform Traffic Control Devices, should be used to indicate the applicability of legal requirements that might not otherwise be apparent;
- Design concept(s) should comply with all applicable laws and regulations (e.g. Ontario Highway Traffic Act and current Town and Regional by-laws);
- Maintenance operations should conform to acceptable standards. If a hazard cannot be removed, it must be isolated with barriers or notified by clear warning signage;
- Monitor on a regular basis the physical conditions and operations of roadways and pathway facilities. All reports of hazardous conditions received from cyclists, pedestrians, police or others should be promptly and thoroughly investigated;
- Keep written records of monitoring and maintenance activities;
- Avoid describing or promoting routes or pathways as “safe” or “safer” than alternatives. It is preferable for facility users to assess their capabilities themselves and govern their choices accordingly, which is the prevailing situation; and
- Maintain proper insurance coverage as a safeguard against having to draw payment for damages from the public treasury.



Recommendation(s):

- 7.1 Review the Town’s existing level of service standards regarding maintenance and consider adopting the Minimum Maintenance Standards for Municipal Highways (MMSMH);
- 7.2 That the Town review and update their annual maintenance budgets to accommodate the addition of AT and Trail infrastructure over time as the network is implemented;
- 7.3 Consider that additional snow storage space be designed into the road cross section for roads with existing or planned on-road cycling facilities in the next review of the Town’s road rights-of-way and design guidelines/standards; and
- 7.4 Develop and implement a program to update the Town’s existing pedestrian and cycling infrastructure to current guidelines (as noted in the Planning, Design and Operation Guidelines) and adequately maintain those facilities.

7.3 Where Will the Money Come From?

It is expected that the majority of ATTMP capital costs related to proposed on-road facilities will be identified and included as component costs within planned roadway widenings, reconstructions, resurfacings, new developments, and other East Gwillimbury and York Region projects.

Funding of the ATTMP is expected to come from Development Charges (DC), the general tax base and a portion of federal gas tax funds. An update to East Gwillimbury's Development Charges bylaw should consider referencing those AT and Trail projects eligible for DC funding as they relate to improving Town road rights-of-way to better accommodate alternative transportation modes, including walking, cycling and public transit use. To assist in reducing local taxpayer costs, the Town of East Gwillimbury should also pursue outside funding opportunities. Over the last few years, funding sources made available for cycling, pedestrian and trail related projects are at or near an all-time high due to the enormous popularity of on and off-road cycling facilities and trails today. It is expected that this trend will continue. Outside funding opportunities may include:

- York Region Municipal Partnership Program
- Federal Gas Tax;
- Metrolinx (as per the Regional Transportation Plan and funding recommendation of \$20 million per year for municipal active transportation infrastructure in the GTHA);
- Transport Canada's MOST (Moving on Sustainable Transportation) and ecoMobility (TDM) grant programs;
- Federation of Canadian Municipalities Green Municipal Fund;
- Future Federal / Provincial infrastructure stimulus funding programs;
- Ontario Ministry of Environment Community Go Green Fund (CGGF);
- Ontario Ministry of Transportation Demand Management Municipal Grant program;
- The Communities in Action Fund available through the Ontario Ministry of Health Promotion for programming and promotional initiatives related to health/active living/active transportation;
- The Canada-Ontario Infrastructure Program;
- Ontario Trillium Foundation that was recently expanded in response to the money collected throughout the Province by casinos;
- Human Resources Development Canada program that enables personnel positions to be made available to various groups and organizations. For example, the Ontario Trails Council has been able to hire two people under this program;
- Corporate Environmental Funds such as Shell and Mountain Equipment Co-op that tend to fund small, labour-intensive projects where materials or logistical support is required;
- Corporate donations, which may consist of money or services in-kind, and have been contributed by a number of large and small corporations over the years;
- Potential future funding that might emerge from the Province in rolling out the Ontario Trails Strategy;
- Service Clubs such as the Lions, Rotary and Optimists, which have assisted with a number of high visibility projects at the community level; and

- Private citizen donations/bequeaths.

7.4 Why Should the Town Make the Investment?

There are a numerous benefits that emphasize why the Town of East Gwillimbury's commitment to implement the ATTMP is so important. Section 1.2 of this report details the various benefits of walking and cycling in terms of recreation, health and fitness benefits; transportation benefits; environmental benefits; and economic benefits. The Town's investment in the ATTMP can be expected to yield benefits in all of these areas.



In addition to these important benefits, the costs of the ATTMP can be justified as part of the cost of providing a more sustainable, balanced and efficient transportation system in the Town of East Gwillimbury. Finally, as the consultations conducted as part of this study appear to suggest, residents want the Town to invest in making East Gwillimbury more pedestrian and cycle friendly.

Recommendation(s):

- 7.5 The Town should strive to provide annual funding to implement the ATTMP;
- 7.6 The Town should seek out cost sharing opportunities and other sources of revenue from partners throughout the Town and from the Region as well as the Provincial and Federal Governments;
- 7.7 The Active Transportation and Trail Coordinator should work with all Town staff to implement the recommended actions identified in the ATTMP as per the suggested schedule contingent on the available capital funding and Town Council authorization; and
- 7.8 The Town should review their Development Charges (DC) Bylaw and if it doesn't already exist, provide a line item that permits the use of DC funds for providing and improving active transportation and trail facilities.

8.0 ACTIVE TRANSPORTATION AND TRAILS SUPPORTIVE POLICIES AND RECOMMENDATIONS



The following are a list of suggested AT and trails supportive policy concepts / ideas and recommendations, some or all of which may be included in the next update Transportation Master Plan and Official Plan for the Town of East Gwillimbury. The proposed recommendations are organized by chapter and policy theme area. In addition, a proposed timeline and page number for reference throughout chapters one through seven and nine

8.1 Chapter 4 “The Proposed AT and Trails Network” Policies and Recommendations

Chapter 4 provides details on the proposed ATTMP network as well as proposed facility types and network features specific to the AT network for the Town of East Gwillimbury. In order for the Town to develop the network a number of recommendations have been developed to support the proposed routing and ensure the successful implementation and maintenance of the proposed ATTMP.

Network

The Town should recognize that all Town and Regional roads except 400-series highways (or roads designated by Regional or local municipal bylaw to exclude pedestrians and / or cyclists) are accessible for pedestrians and cyclists. In addition, the Town should consider the adoption of a vehicular approach to cycling to recognize the bicycle as a vehicle which operates on public roadways or within road rights-of-way with the same rights and responsibilities as motor vehicles.

The route development and selection principles identified in this plan should be considered when future network changes are contemplated, new opportunities identified and when individual routes are entering into the detailed planning and design stage of implementation.

When developing a more pedestrian and cycling friendly environment the Town should protect for and develop the active transportation network which includes sidewalks, off-road multi-use trails, and on-road cycling facilities consistent with the ATTMP as a Schedule in the Town’s Official Plan. It is important to recognize, however, that the ATTMP will evolve over time and improve and expand upon this network by adjusting routes/facility types as necessary, adding missing links through opportunities offered by unopened road allowances, hydro rights-of-way, abandoned rail trails, open greenspace development and future roadway improvements. Amendments to the network plan are not required for route or facility type revisions, provided that continuity and functionality of the network is

maintained in the same general location and/or is consistent with the route section principles included in the ATTMP.

Recommendation(s):

- 4.1 The AT and Trails network as identified in the East Gwillimbury Active Transportation and Trails plan should be adopted in principle by the Town as a blue print for the development of a comprehensive AT and Trails network throughout the Town of East Gwillimbury (short-term) (page 4-6).
- 4.2 The route development and selection principles identified in this plan should be considered when future network changes are contemplated, new opportunities identified and when individual routes are entering into the detailed planning and design stage of implementation (short term) (page 4-20).
- 4.3 That the Town of East Gwillimbury recognize that the Active Transportation and Trails network will change over time through the addition of missing links and opportunities offered by unopened road allowances, hydro rights-of-way, existing or abandoned rail corridors, open green space and future roadway improvements (short term) (page 4-20).
- 4.4 Update the Town's sidewalk inventory to include sidewalks proposed in the new development areas, and once completed, identify missing sidewalk links so they can be prioritized for future development/implementation (short term) (page 4-20).
- 4.5 The Town should ensure the safe movement of pedestrians throughout the municipality by providing safe pedestrian facilities such as:
 - Sidewalks of sufficient widths;
 - Stairs and ramps of sufficient width; and
 - Protective barriers between streets and sidewalks (medium term) (page 4-20)
- 4.6 Consider the application of the Institute of Transportation Engineers (ITE) recommended practices for the application of site design guidelines that "Promote sustainable transportation through site design" (short term) (page 4-20).
- 4.7 The Town should consider upgrading gravel-surfaced roads that are identified in the network to hard surface when the opportunity for reconstruction arises and asphalt is warranted (medium term) (page 4-24).
- 4.8 The Town should integrate the network and policies identified in the East Gwillimbury Active Transportation and Trails Master Plan with current Transportation Demand Management (TDM) strategies and explore future TDM opportunities with the help of Smart Commute and the Regional Municipality of York (short to medium term) (page 4-24).
- 4.9 The Town should work with developers to give priority to pedestrian and cyclist circulation patterns on site plans for future development to create sufficient bicycle and pedestrian connections to adjacent developments (short and medium term) (page 4-25).
- 4.10 The Town should consider the research of local desire lines in rural areas as possible lower cost tertiary level trails. In the future, the Town could choose to upgrade these to secondary or primary routes as the network evolves (short term) (page 4-25).

4.11 The Town should promote inter-municipal connectivity through the consideration of surrounding municipal active transportation and trails initiatives when implementing the proposed Active Transportation and Trails Network in East Gwillimbury (short term) (page 4-25).



8.2 Chapter 5 “Education and Outreach” Policies and Recommendations

Chapter 5 provides details on potential education and outreach initiatives with regards to active transportation and trail development. More specifically, proposed initiatives geared towards the education of different groups of individuals as well as strategic marketing opportunities, leadership roles and promotional materials are explored in further detail providing the Town of East Gwillimbury with options for future development and promotion of active transportation and trails. It is important to note that these types of promotional materials, as is the case with the proposed facilities, are not developed based on a one size fits all approach. Programming, education, marketing and outreach must be considered and developed based on different target groups. The types of materials are explored in further detail in this chapter; however, it is also important to provide policies and recommendations to guide the development of these programs and materials in the future.

Education and Outreach

Support education and pedestrian and cycling skills training initiatives that create an awareness of safe walking and cycling practices as well as trail use for all road, sidewalk and pathway users.

Recommendation(s):

- 5.1 The Town staff in collaboration with the Town’s new Active Transportation and Trails Advisory Committee should work to educate children on the use of trails and sustainable modes of transportation (e.g. walking and cycling facilities) where possible, and reduce their auto dependency (through their parents)(short to medium term) (page 5-4).
- 5.2 The Town should consider the implementation of cycling and pedestrian/trail education programs and partner with York Region, York Region Public Health Service, not-for-profit organizations, school boards and agencies to educate residents on walking and cycling. (short to medium term) (page 5-4).

The Town should promote inter-municipal connectivity through the consideration of surrounding municipal active transportation and trails initiatives when implementing the proposed Active Transportation and Trails Network in East Gwillimbury.

Mobility and Access

It is possible to improve and enhance access to active transportation and trail facilities and destinations by supporting a broad range of initiatives that improve route network infrastructure, encouragement and promotion of active transportation, and education and enforcement programs for a safer, more knowledgeable pedestrian and cyclist activities and trail use.

Recommendation(s):

- 5.3 Develop and distribute newsletters and/or education/promotional materials to promote and educate the public on AT and trail use opportunities, recommendations for routes and destinations and updates on available routes. These initiatives are proposed to be undertaken as a combined effort between the Town and a promotion group such as the York Region Public Health and Safety Services (medium term) (page 5-4).

Benefits of AT and Trails Use

It is important to recognize and promote the many benefits associated with the development of an active transportation and trails network and the implementation of related facilities. Active Transportation provides benefits that include increased community health due to increased exercise, economic returns from retail sales and tourism, positive environmental impacts from a reduction in air pollution, energy consumption and mobility space requirements, and increased social interactions.

Recommendation:

- 5.4 Utilize educational programming and materials to promote and inform people of the benefits of AT and trail use on community health, environment, economy and sustainability throughout the Town (short to medium term) (page 5-4).

Encouragement and Promotion

Encouraging and promoting active transportation (walking and cycling) and trail use as a preferred mode of transportation for both utilitarian and recreational purposes is equally important as the creation of a connected network. This can be accomplished through activities such as infrastructure and accessibility improvements, educational programs, enforcement campaigns and promotional initiatives.

Recommendation(s):

- 5.5 The Town should apply the principles of Community-Based Social Marketing (CBSM) in its marketing and promotional efforts related to the East Gwillimbury Active Transportation and Trails Master Plan (medium term) (page 5-7).
- 5.6 The Town should explore efforts and further partnerships with Smart Commute Central York to promote active transportation activities and alternative transportation choices in the Town of East Gwillimbury (short term) (page 5-7).
- 5.7 The Town should further promote active transportation activities through the production of their Parks & Trails (pedestrian) map and work to revise it to include cycling facilities. Town staff should work with local cycling and hiking groups and consider updating the map once every two years to ensure new routes and connections are illustrated as identified in the East Gwillimbury Active Transportation and Trails Master Plan (short term to ongoing) (page 5-8).
- 5.8 The Town should work with Active and Safe Routes to School (ASRTS), the York Region District School Board, York Region Catholic District School, and local schools to implement ASRTS initiatives and programming to encourage children in East Gwillimbury to walk and bike to and from school more often (medium term) (page 5-8).

5.9 The Town 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 (where available for longer distance trips) (medium term) (page 5-8).



Bicycle Parking & End of Trip Facilities

Encourage the continued expansion of bicycle trip end facilities (parking, lockers, and showers, etc.) at all cycling destinations, whenever possible or practical through the following measures:

- Development of a comprehensive bicycle parking program that establishes public and private sector responsibilities and opportunities;
- Requiring the land use planning approval process and zoning by-laws to set standards for bicycle parking that is adequate to meet demands, and produce secure, illuminated, highly visible, sheltered and convenient bicycle parking where feasible;
- Providing leadership by example through focusing bicycle trip end facilities on Region owned properties and inter-regional transit hubs;
- Practice Transportation Demand Management by identifying methods to help developers reduce costs and land requirements by avoiding or reducing the need for large surface land area parking lots;
- Ensuring that the location and design of bicycle parking minimizes any impediments with other systems such as pedestrians and emergency vehicles; and
- Developing effective strategies to prevent bicycle theft.

Recommendation(s):

5.10 The Town and its respective partners should make the development of end-of-trip facilities a priority during the planning and implementation of active transportation and trails facilities (medium term) (page 5-8); and

5.11 The Town should explore partnerships with local public and private organization and integrate end-of-trip facilities into active transportation and trail promotional strategies and initiatives (medium term) (page 5-8).

The Town 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 (where available for longer distance trips).

Enforcement

Working with York Region Police to increase the effective enforcement of proper user behaviour for both on-road and multi-use pathways will ensure that users are aware of, and comply with regulations of the Highway Traffic Act and Town By-laws. It is also recognized and encouraged that the bicycle be used as a law enforcement tool for trained police officers who reflect role models and exhibit proper cycling behaviour in the community.

Recommendation(s):

- 5.12 The Town should continue to work with York Regional Police to be an active member in the development and delivery of cycling and walking-related safety programs (short term) (page 5-10).
- 5.13 Enforcement activities from the York Regional Police should be supplemented by the Town's by-law enforcement officers for issues relating to sidewalk obstruction, misuse of bicycle and pedestrian facilities and the misuse of trails (short term) (page 5-10).

Safety and Security

Encouraging safe and secure active transportation (walking and cycling) practices, trail use and behaviour through education, skills training and the application of active transportation facility guidelines and best practices will be of benefit to all users.

Recommendation(s):

- 5.14 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:
- Exemptions from turn prohibitions for cyclists;
 - Bicycle detection at intersections; and
 - Enforcing speed limits on roadways where observed speeds exceed acceptable levels (medium to long term) (page 5-10).

Partnerships

It is suggested that the Town and Trails Committee explore future opportunities with regarding to funding and promotional partnerships with local private and public organizations and agencies. These partnerships will be effective in the future development, funding and implementation of proposed recommendations and programming throughout the Town of East Gwillimbury as set out in the Active Transportation and Trails Master Plan.

Recommendation:

- 5.15 The Town should continue to develop partnerships with outside agencies, volunteer groups, individuals as well as regional representatives to promote and educate residents on active transportation and trail use throughout the Town (short and medium term) (page 5-11).
- 5.16 The Town should approach York Region to develop, in partnership with local municipalities, an Active Transportation website for residents, possibly modelled after the Region of Peel's Walk and Roll website (www.walkandrollpeel.ca) (medium term) (page 5-11).

8.3 Chapter 6 "Implementing the Plan" Policies and Recommendations

Chapter 6 of the Active Transportation and Trails Master Plan provides the Town with a proposed implementation schedule for the active transportation and trails network development as well as management tools and roles and responsibilities proposed for consideration once the plan is adopted. It is important for a

plan of this scale to develop and assign a process and set of recommendations for implementation and development as a means of guiding active transportation and trails for East Gwillimbury in the future.

Town Wide AT and Trails Network

It is necessary to adopt the Town's Active Transportation and Trails Master Plan that includes goals and objectives for creating a pedestrian, cycling and trail friendly community through an integrated AT and trail network plan and implementation strategy and process. The Town should consider a complete formal update of the ATTMP at least every five years, with the next update to be scheduled no later than 2017.



Recommendation(s):

- 6.1 The Town should adopt in principle the 25+ year active transportation and trails network implementation strategy identified in the ATTMP and include it as a schedule in the Town's Official Plan (when next updated) (short term) (page 6-2).
- 6.2 The Town's Parks and Leisure Services Branch should coordinate active transportation and trail network implementation with the Town's Community Programs and Infrastructure Department's capital programs and traffic engineering timeline as well as the 10 year capital works program for the Regional Municipality of York (short and medium term) (page 6-2).
- 6.3 The Town should rescope the role of the existing Trails Advisory Committee and establish the Active Transportation and Trails Advisory Committee. It is proposed that this AT and Trails Committee include town staff members, such as Planning and Development as well as representatives from York Region Planning, York Region Health, Lake Simcoe Region Conservation Authority, interested residents and other stakeholders as determined by the Town. (short term) (page 6-5).

Leadership Role

The Town should adopt a "leadership by example" role that showcases to other Town staff members, local agencies and organizations as well as employers the implementation of infrastructure and innovative programs that support, encourage, educate and enforce safe cycling.

Recommendation(s):

- 6.4 The Town should initially allocate the responsibility of "Active Transportation and Trail Coordinator" to an existing staff position. This staff member should be responsible for the "championing" of AT and Trail related issues, initiatives and programming throughout the Town. It may be necessary in the future to consider adding an additional staff position to assist in this staff role (short and medium term) (page 6-5).

- 6.5 The “Active Transportation and Trail Coordinator” should be responsible for the implementation and follow-up of the ATTMP at the Town level and provide updates on the progress of the study when necessary to Council on an annual basis (short term) (page 6-5).

A Five-Step Implementation Process

The five-step implementation process is a tool for guiding the implementation of the active transportation and trail network facilities in the Town of East Gwillimbury. It ensures that roads designated in the ATTMP for future pedestrian, cycling and trail routes are given due regard when planning, designing and budgeting larger capital / infrastructure projects.

Recommendation(s):

- 6.6 The AT and Trail Coordinator and AT and Trails Advisory Committee should review the proposed five-step process tool as a means of guiding the implementation of active transportation and trail network facilities in the Town of East Gwillimbury and adapt it as necessary (short term) (page 6-9).
- 6.7 Buffered bike lanes are recommended where feasible, and provide a separation between motor vehicles and cyclists that is believed to create a more secure and comfortable environment for cyclists. Physically separated bike lanes (i.e. cycle tracks) may also be an option, especially for new roads or when roads are to be widened (short to long term) (page 6-9).
- 6.8 Review and select an acquisition/land securement strategy for proposed active transportation and trail routes on privately owned lands based on the information provided and techniques described in the master plan (short to long term) (page 6-16).

Construction

It is suggested that any construction or reconstruction under the Town’s review or authority include provisions to provide for active transportation facilities to meet the needs and ensure the safety of pedestrians and cyclists.

Recommendation:

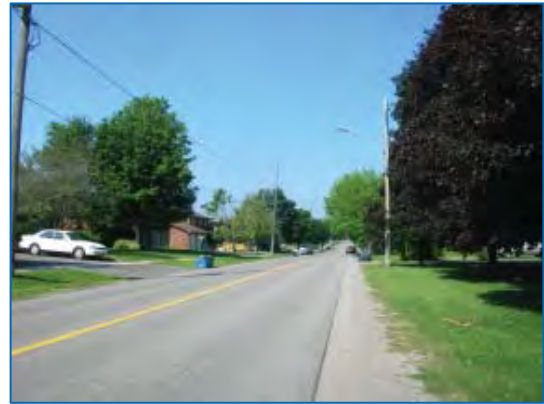
- 6.9 The AT and Trails Coordinator and Town staff should consult with the Regional Municipality of York to ensure that the proposed active transportation and trail network is contiguous with the pedestrian and cycling facilities outlined in the York Region Pedestrian and Cycling Master Plan (short term) (page 6-17).
- 6.10 The ATTMP should be reviewed and given consideration when addressing local municipal or Regional roads and other capital infrastructure projects when identified and scheduled within the Town of East Gwillimbury (short term) (page 6-18).
- 6.11 That the Town should recognize that adjustments to the proposed network plan in the ATTMP will occur from time to time and that this is consistent with a goal of ensuring the Master Plan is flexible and can respond to changes and new opportunities (short to medium term) (page 6-18).

Land Use Planning & Development

Incorporating considerations for active transportation and trail development in the land use planning, development and approval process will help to ensure that land use patterns and transportation systems support and/or give priority to active transportation and trail facilities such as multi-use trails, bicycle lanes, paved shoulders and trip end facilities (e.g. secure bike parking, showers, and lockers).

Recommendation:

- 6.12 Work to encourage AT (pedestrian & cycling) friendly streetscaping, urban design and AT and trail oriented land development in collaboration through planning and design studies and development reviews (short term) (page 6-20).



Quality of Life/Liveability

Incorporating bicycle and walking facilities in a compatible, complimentary and non-conflicting manner will help to ensuring public safety and the integrity of the transportation system. For example, the Town should consider means of minimizing interference with pedestrians by prohibiting cycling on sidewalks by adults.

Recommendation:

- 6.13 Explore land use planning initiatives and policy development such as mixed land use, higher density urban areas and pedestrian and cyclist friendly streetscapes to promote / facilitate an increase quality of life and liveability throughout the Town of East Gwillimbury (medium term) (page 6-20).

Sustainable Transportation

Recognizing and supporting walking and cycling as an important mode of transportation will to help facilitate the development of a more sustainable transportation system that uses resources in a manner that is efficient and considerate of the sustainability of the Town.

Recommendation(s):

- 6.14 Continue to increase pedestrian and cycling connectivity to key destinations and develop continuous links to public transit and trails as well as shorter blocks (medium term) (page 6-20).
- 6.15 Work with the Safe Routes to School Program to develop a Safe Routes to school program for East Gwillimbury (medium to long term) (page 6-20).
- 6.16 Town Staff should adopt a Pedestrian Charter to help facilitate and promote the development of a walkable and pedestrian friendly environment (medium to long term) (page 6-20).

Recognize and support walking and cycling as an important mode of transportation to help facilitate the development of a more sustainable transportation system that uses resources in a manner that is efficient and considerate of the sustainability of the Town.

Transportation Efficiency

Recognizing active transportation and trail use as an important consideration when coordinating transportation and land use planning will help to reduce space needed for facilities such as parking, and being supportive of more intensive land use practices.

Recommendation:

- 6.17 The Town should promote the development of residential communities with mixed land uses including development in close proximity to schools and transit to decrease time spend travelling and increase the likelihood of walking and cycling to key destinations throughout the community (medium term) (page 6-20).

Integration

It is important to recognize that active transportation and trail development is an important component of a multimodal transportation network by incorporating considerations for pedestrians and cyclists within an integrated land use and transportation planning and decision making process.

Recommendation:

- 6.18 The Town should consider elements of active transportation and trail planning when addressing land use planning and design considerations throughout the Town. These could include the design of street, additional pedestrian and cycling routes, trail development and transit planning (short to medium term) (page 6-20).
- 6.19 The Town should review the proposed AT and Trail Design Guidelines recommended in the AT and Trails Master Plan and then update the Town's Parks and Recreation Design Manual to establish a set of Town-approved AT and Trail guideline (short to medium term) (page 6-20).

8.4 Chapter 7 "Implementing the Plan" Policies and Recommendations

Chapter 7 provides the Town with details on the proposed funding strategy for the ATTMP. In addition to the costing and implementation provided it is important to look to the future for additional funding opportunities and maintenance budgeting. The policies and recommendations provided for this chapter are meant to help guide and maintain the future of trails within the Town.

Operations and Maintenance

It is suggested that transportation operational measures undertaken as part of system management work are identified and implemented to support safe and convenient cycling. These measures may include, but may not be limited to:

- Exemptions from turn prohibitions;
- Contra-flow cycling lanes on one way streets;
- Vehicle/bicycle detection equipment at intersections;
- Management of loading zones to minimize disruption of cyclists; and
- Spring sweeping of debris from on-road cycling lanes.

The Town should endeavour to ensure the safe and comfortable year round operation of the pedestrian system and cycling network through the adoption, implementation and monitoring of pedestrian and cycling maintenance practices and standards for both on and off-road routes.



Recommendation(s):

- 7.1 Review the Town's existing level of service standards regarding maintenance and consider adopting the Minimum Maintenance Standards for Municipal Highways (MMSMH) (medium term) (page 7-3).
- 7.2 That the Town review and update their annual maintenance budgets to accommodate the addition of AT and Trail infrastructure over time as the network is implemented (short term) (page 7-3).
- 7.3 Consider that additional snow storage space be designed into the road cross section for roads with existing or planned on-road cycling facilities in the next review of the Town's road rights-of-way and design guidelines/standards (medium term) (page 7-3).
- 7.4 Develop and implement a program to update the Town's existing pedestrian and cycling infrastructure to current guidelines (as noted in the Planning, Design and Operation Guidelines) and adequately maintain those facilities (medium term) (page 7-3).

Funding

The Town of East Gwillimbury ATTMP is an integrated body of components, and requires a strategic approach for implementation. Central to this is the need for committed funding and staff resources on an annual basis.

Recommendation(s):

- 7.5 The Town should strive to provide annual funding to implement the ATTMP (short term) (page 7-5).
- 7.6 The Town should seek out cost sharing opportunities and other sources of revenue from partners throughout the Town and from the Region as well as the Provincial and Federal Governments (short term) (page 7-5).
- 7.7 The Active Transportation and Trail Coordinator should work with all Town staff to implement the recommended actions identified in the ATTMP as per the suggested schedule contingent on the available capital funding and Town Council authorization (short term) (page 7-5).
- 7.8 The Town should review their Development Charges (DC) Bylaw and if it doesn't already exist, provide a line item that permits the use of DC funds for providing and improving active transportation and trail facilities (short term) (page 7-5).

8.5 Chapter 9 “Measuring Success and Next Steps” Policies and Recommendations

Chapter 9 provides details on tools for measuring success and next steps for the implementation and maintenance of the Active Transportation and Trails Master Plan.

Performance Measures

The success of the ATTMP should be evaluated on an annual basis by applying and assessing a series of performance measures as well as assessing the ease with which it is being integrated with other municipal and operational initiatives.

Recommendation(s):

- 9.1 Review and confirm performance measures and targets with input from Town Staff and the AT and Trails Advisory Committee (short term) (page 9-3).
- 9.2 Consider the ATTMP performance measures when evaluating the implementation of the ATTMP and updating the Master Plan every five years (short to medium term) (page 9-3).
- 9.3 It is recommended that Town staff report to Council on an annual basis to review components of the Plan implemented in the previous year, projects currently underway, and to present network and program initiatives and associated budgets proposed for the upcoming year, as input to Council’s annual budget review (short to medium term) (page 9-4).
- 9.4 The Town should consider the application of performance measures to evaluate and monitor the implementation of the ATTMP (short and medium term) (page 9-4).

9.0 MEASURING SUCCESS AND NEXT STEPS

9.1 Monitoring and Performance Indicators

Implementation of the ATTMP is expected to begin in 2012. It is proposed that the Town implement the plan on an annual basis in accordance with the proposed phasing and available capital funding, and as authorized by Town Council.



Collecting data to evaluate the different and changing aspects of pedestrian and cyclist behaviour will assist in evaluating the effectiveness and overall contribution of various activities to achieve the stated vision and goals of this Plan.

This data collection should begin in 2012 and build upon the various ATTMP initiatives, and may include several questions in a future public attitudes survey to gather residents input or overall Town services, if one is planned. The data will establish a benchmark with which to compare later data as the ATTMP is implemented.

The data collection could be used to:

- Confirm the overall direction and implementation of the ATTMP;
- Confirm statistics on the number and type of pedestrians and cyclists;
- Verify the route selection process; and
- Identify the supply and demand for bicycle parking.

Over time, the evaluation system should identify changes in route preference to assist in determining where to implement changes to “hard and soft” pedestrian and cycling infrastructure. The results of this assessment may be used to determine the success of implementing various types of pedestrian and cycling facilities. However, caution must be used in relying on an immediate response to a given improvement. An extended timeframe should be established to ensure that pedestrian and cycling awareness initiatives are in place to assist in changing travel patterns and habits. Assessing the impact and costs of the implementation program might be based on information such as:

A component of measuring the implementation of the Plan and its success in meeting objectives is to establish performance measures and targets.

- Origin/destination counts;
- Screen line counts on a finer scale that are appropriate to pedestrian and cycling travel patterns;
- Intersection counts to coincide with routes on which improvements are proposed, and also on parallel routes; and
- User counts on major trail systems.

This information could be collected every two years and during the non-winter months.

Data collected through evaluation/monitoring programs along with information collected through on-going public consultation exercises, such as user surveys and public attitude surveys conducted perhaps every five years, would inform and assist in preparing the list of annual priorities and measuring the performance of the Plan.

A component of measuring the implementation of the Plan and its success in meeting objectives is to establish performance measures and targets.

Table 9-1 identifies a proposed set of suggested outreach and infrastructure performances measures, and targets by Phase. It is proposed that an assessment of these performance measures be included as part of the recommended five-year update to the Master Plan.

Table 9-1: Proposed Performance Measures

PERFORMANCE MEASURE		EXISTING BENCHMARKS	SUGGESTED TARGET		
			PHASE 1	PHASE 2	PHASE 3
Outreach	Number of schools participating in pedestrian or bicycle safety education programs or events	TBD	25%	50%	100%
	Percentage of children that walk or bike or take transit to school in East Gwillimbury	TBD	30%	50%	90%
	Percentage of reported pedestrian and bicycle collisions per 1000 population in East Gwillimbury	TBD – Regional Police	Reduction	Reduction	Reduction
	Percent of all Town residents who commute to work primarily by walking or cycling	2.7% (2006 Census)	3%	7%	10-15%

PERFORMANCE MEASURE		EXISTING BENCHMARKS	SUGGESTED TARGET		
			PHASE 1	PHASE 2	PHASE 3
Infrastructure	Kilometres of new bike lanes and paved shoulder bikeways implemented as per the ATTMP	3 km	37 km	42 km	48 km
	Kilometres of new signed-only bike routes implemented as per the ATTMP	2 km	31 km	33 km	16 km
	Number of bikes per year using bike racks on YRT buses in East Gwillimbury	TBD	TBD	TBD	TBD
	Kilometres of new off-road multi-use trails implemented as per the ATTMP	23 km	9 km	37 km	7 km
	Kilometres of linear sidewalks on Town and Regional roads	442 km	TBD	TBD	TBD
	Kilometres of completed missing sidewalk links on Town and Regional roads as per the ATTMP	N/A	N/A	N/A	N/A
	Number of new bicycle parking spots implemented	N/A	TBD	TBD	TBD

Recommendations:

- 9.1 Review and confirm performance measures and targets with input from Town staff and the AT and Trails Advisory Committee.
- 9.2 Consider the ATTMP performance measures when evaluating the implementation of the ATTMP and updating the Master Plan every five years.

9.2 Where Do We Go From Here?

There are a number of recommended steps that the Town of East Gwillimbury should take in 2012 to advance the ATTMP:

- Assuming Council's adoption of the Final Report in principle, issue a media release and public notice announcing the completion of the ATTMP.
- Copies of the ATTMP should be provided to all Town and Regional facilities including the York Region Police and York Region Transit as well as the East Gwillimbury Trails Advisory Committee.
- Accompanying the copy of the ATTMP to York should be a request that the Region give consideration to the proposed route and facility types proposed for Regional roads in the Town in all future environmental assessment studies and road design projects.
- A digital copy of the ATTMP should be issued to Metrolinx accompanied with a request by the Town to meet to discuss the funding component presented in the Regional Transportation Plan, and moreover to discuss how the Town can partner with Metrolinx to implement the Town's component of a broader regional active transportation network.
- A digital copy of the ATTMP should be issued to adjacent local municipalities, the Ontario Ministry of Transportation (Policy Branch and Design Branch), school boards, GO Transit, and the Lake Simcoe Region Conservation Authority and Ministry of Natural Resources for information and as input to their long range planning initiatives.
- Starting in 2013, the Town should consider and, if feasible, begin to implement the Town's share of the network recommendations as part of all future road projects in the Town.
- The Town should proceed with a strategy to expand the off-road trail system, consistent with the Town's Active Transportation and Trails Master Plan (ATTMP).
- The Town should rescope the role of the existing Trails Advisory Committee and establish the Active Transportation and Trails Advisory Committee. It is proposed that this AT and Trails Committee include town staff members, such as Planning and Development as well as representatives from York Region Planning, York Region Health, Lake Simcoe Region Conservation Authority, interested residents and other stakeholders as determined by the Town.
- The Town should initially assign the responsibility of "Active Transportation and Trail Coordinator" to an existing staff position. This staff member should be responsible for the "championing" of AT and Trail related issues, initiatives and programming throughout the Town. It may be necessary in the future to consider adding an additional staff position to assist in this staff role.

Recommendation(s):

- 9.3 It is recommended that Town staff report to Council on an annual basis to review components of the Plan implemented in the previous year, projects currently underway, and to present network and program initiatives and associated budgets proposed for the upcoming year, as input to Council's annual budget review.
- 9.4 The Town should consider the application of performance to evaluate and monitor the implementation of the ATTMP Master Plan.



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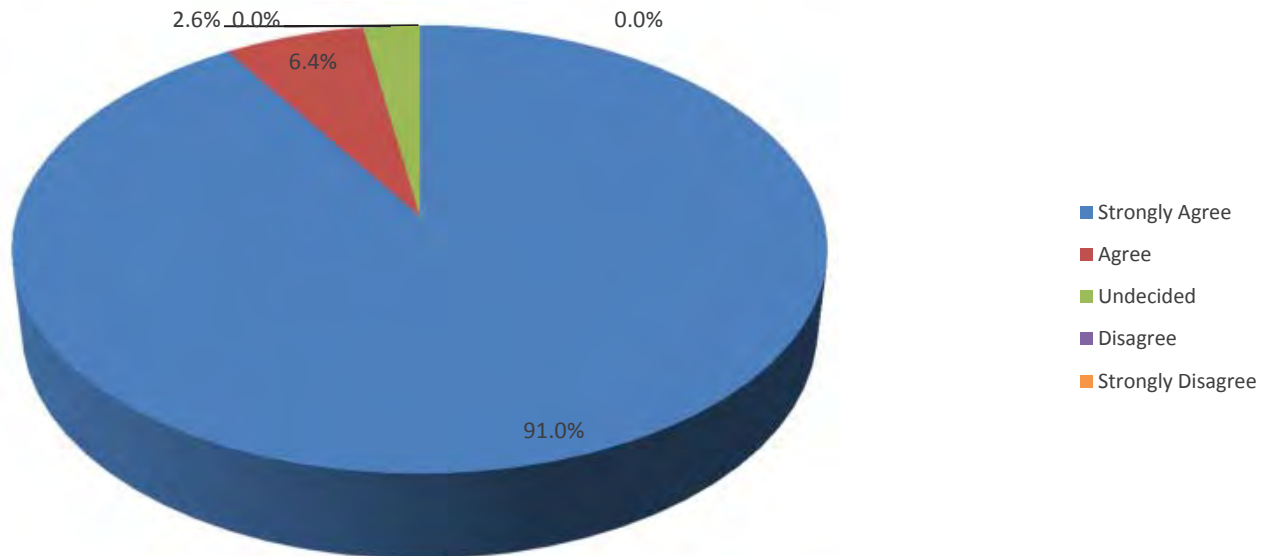
Appendix A

FINAL QUESTIONNAIRE RESULTS

East Gwillimbury AT and Trails Study Questionnaire

Do you agree that the Town of East Gwillimbury should invest in improvements that provide opportunities for trail and active transportation use? (select one response)

Answer Options	Response Percent	Response Count
Strongly Agree	91.0%	71
Agree	6.4%	5
Undecided	2.6%	2
Disagree	0.0%	0
Strongly Disagree	0.0%	0
<i>answered question</i>		78
<i>skipped question</i>		5

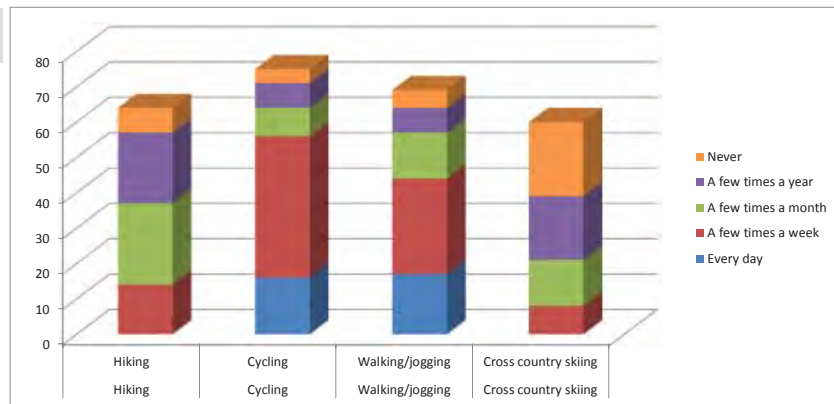


East Gwillimbury AT and Trails Study Questionnaire

How often do you use the following for commuting, recreation, fitness, tourism, travel or other purposes? (Select one of the following for each mode)

Answer Options	Every day	A few times a week	A few times a month	A few times a year	Never	Response Count
Hiking	0	14	23	20	7	64
Cycling	16	40	8	7	4	75
Walking/jogging	17	27	13	7	5	69
Cross country skiing	0	8	13	18	21	60
Other (please specify)						11
<i>answered question</i>						77
<i>skipped question</i>						6

Number	Response Date	Other (please specify)
1	Mar 16, 2010 2:15 PM	snow shoeing
2	Mar 23, 2010 6:06 PM	Snowshoeing - a few times a year
3	Mar 25, 2010 6:30 PM	skateboarding, rollerblading & snowskating(snowboarding)
4	Mar 25, 2010 9:02 PM	Horseback riding
5	Mar 26, 2010 6:10 PM	dog walking
6	Mar 28, 2010 10:56 PM	Bird Watching
7	Apr 18, 2010 7:05 PM	snowshoeing
8	May 7, 2010 3:13 PM	need more trails !!!
9	May 7, 2010 9:51 PM	Swimming
10	Nov 26, 2010 5:25 PM	Interested in facilities for horseback riding as well
11	Mar 25, 2011 3:09 AM	snowshoeing a few times per year

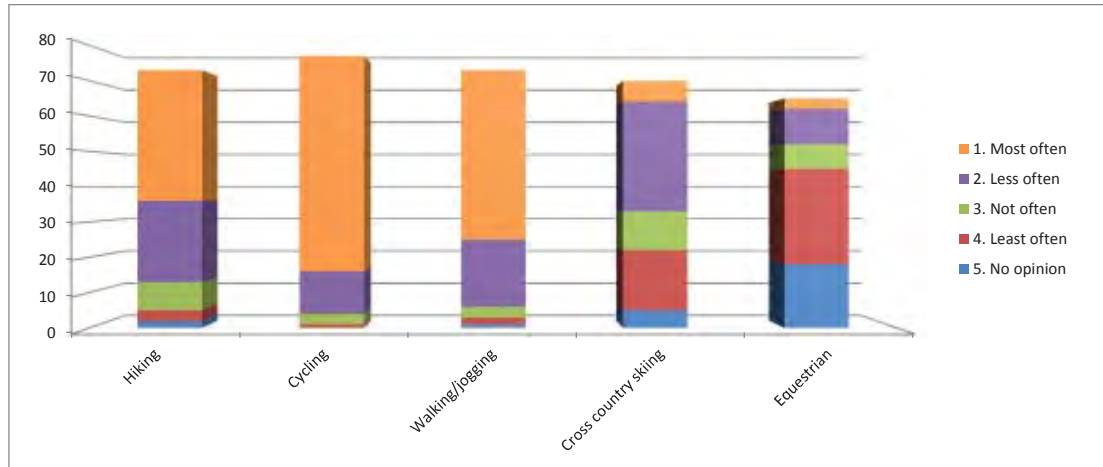


East Gwillimbury AT and Trails Study Questionnaire

Please select in order the types of uses you think should be considered in the development of an Active Transportation and Trail Master Plan for the Town of East Gwillimbury:

Answer Options	1. Most often	2. Less often	3. Not often	4. Least often	5. No opinion	Response Count
Hiking	37	23	8	3	2	73
Cycling	61	12	3	1	0	77
Walking/jogging	48	19	3	2	1	73
Cross country skiing	6	31	11	17	5	70
Equestrian	3	10	7	27	18	65
Other (please specify)						5
<i>answered question</i>						77
<i>skipped question</i>						6

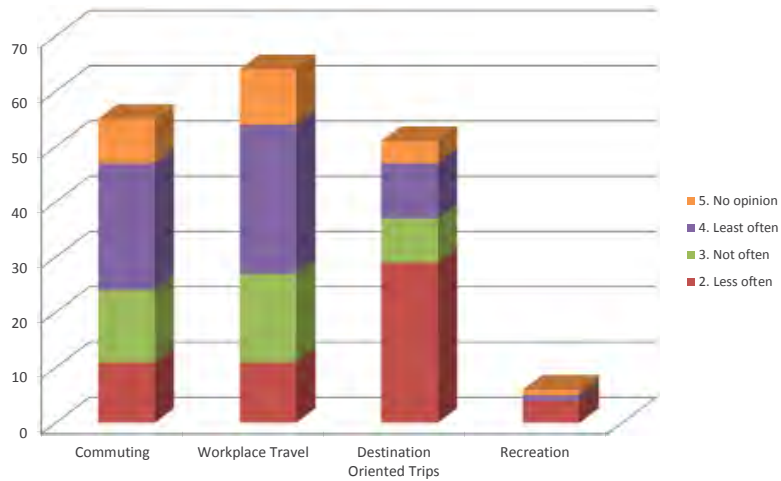
Number	Other (please specify)
1	Snowshoeing - less often
2	skateboarding
3	Accessibility to all
4	roller-blading
5	snowshoeing



East Gwillimbury AT and Trails Study Questionnaire

Please select which reasons motivate you to use the active transportation and trail system in the Town of East Gwillimbury:						
Answer Options	1. Most often	2. Less often	3. Not often	4. Least often	5. No opinion	Response Count
Active Commuting, which involves journeys to and from work	13	11	13	23	8	68
Active Workplace Travel, which includes trips during work hours such as delivery of materials or attending meetings	3	11	16	27	10	67
Active Destination Oriented Trips, which includes trips to and from school, shops, visiting friends and running errands	16	29	8	10	4	67
Active Recreation, which involves the use of an active transportation mode for fitness or recreational pursuits, such as hiking or cycling	70	4	0	1	1	76
Other (please specify)						2
<i>answered question</i>						77
<i>skipped question</i>						6

Number	Other (please specify)
1	taking these trip on trails as opposed to roads is much safer (especially for children)
2	snowshoeing - just kidding :-)

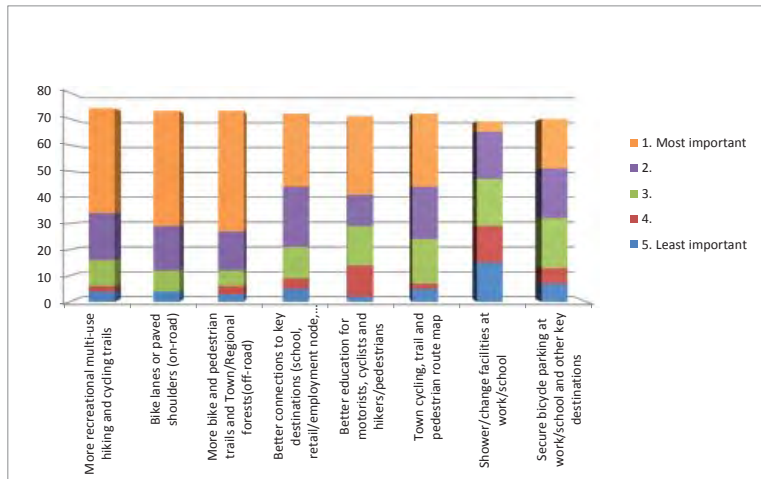


East Gwillimbury AT and Trails Study Questionnaire

Please rank from most important (1) to least important (5) the improvements that might encourage you to walk or bike more often? (Rank all that apply)

Answer Options	1. Most important	2.	3.	4.	5. Least important	Response Count
More recreational multi-use hiking and cycling trails	40	18	10	2	4	74
Bike lanes or paved shoulders (on-road)	44	17	8	0	4	73
More bike and pedestrian trails and Town/Regional forests(off-road)	46	15	6	3	3	73
Better connections to key destinations (school, retail/employment node, community centre, bus stop, etc.)	28	23	12	4	5	72
Better education for motorists, cyclists and hikers/pedestrians	30	12	15	12	2	71
Town cycling, trail and pedestrian route map	28	20	17	2	5	72
Shower/change facilities at work/school	4	18	18	14	15	69
Secure bicycle parking at work/school and other key destinations	19	19	19	6	7	70
Other (please specify)						4
	<i>answered question</i>					75
	<i>skipped question</i>					8

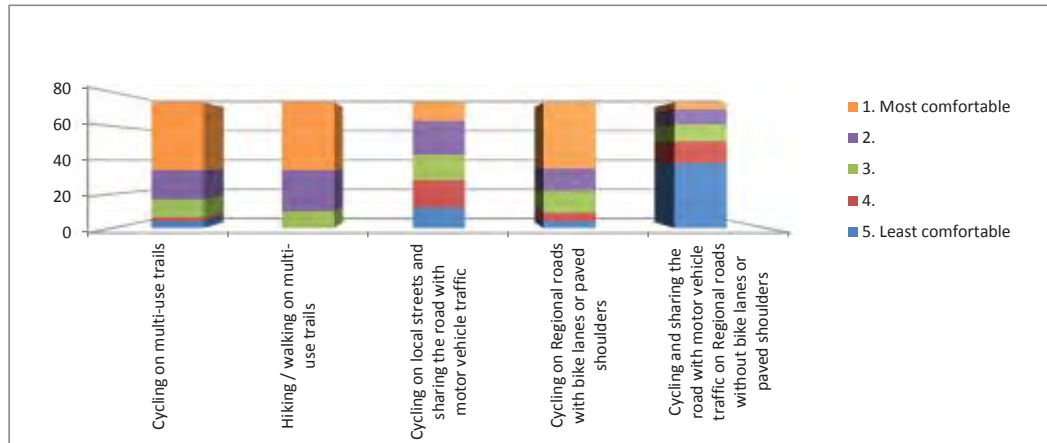
Number	Response Date	Other (please specify)
1	Mar 23, 2010 6:41 PM	meandering natural trails inside forests and wetlands
2	May 7, 2010 3:16 PM	need a nice clean connection to Nemarkets paved trail at green lane. Also would be nice to extend the trails north from Sharon to Queensville and beyond !!
3	May 7, 2010 7:48 PM	A large part of education needs to focus, and actively seek, to educate motorists to share the road. Any type of use of roads during commuting hours are extra dangerous due to intolerance by motorists. At least have share the road signs.
4	May 8, 2010 7:26 PM	Paved shoulders are important, bike lanes are absolutely not important.



East Gwillimbury AT and Trails Study Questionnaire

For each of the following statements, please indicate your personal comfort level.

Answer Options	1. Most comfortable	2.	3.	4.	5. Least comfortable	Response Count
Cycling on multi-use trails	40	17	11	2	4	74
Hiking / walking on multi-use trails	40	24	10	0	0	74
Cycling on local streets and sharing the road with motor vehicle traffic	11	20	15	16	12	74
Cycling on Regional roads with bike lanes or paved shoulders	39	13	13	5	4	74
Cycling and sharing the road with motor vehicle traffic on Regional roads without bike lanes or paved shoulders	4	9	10	13	38	74
<i>answered question</i>						75
<i>skipped question</i>						8

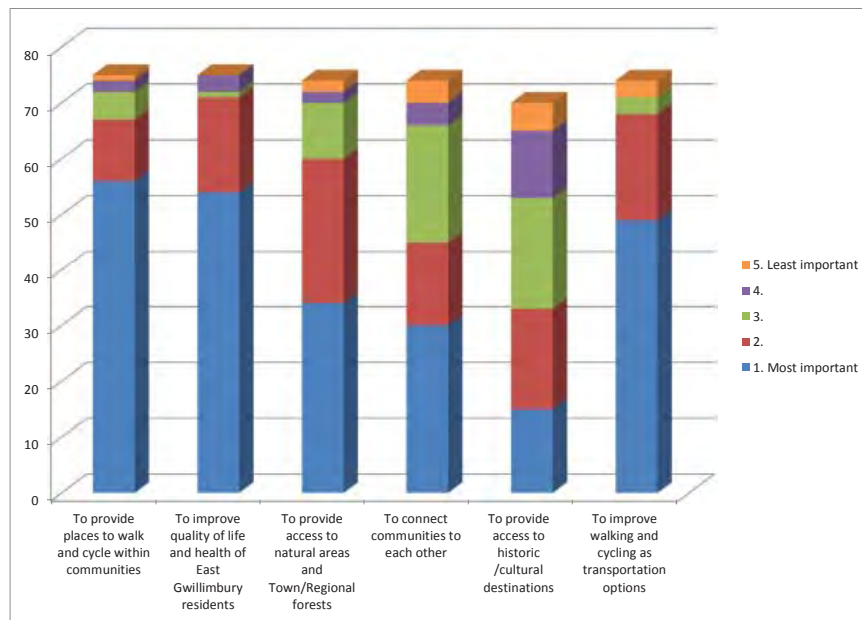


East Gwillimbury AT and Trails Study Questionnaire

Please rank from most important (1) to least important (5) the reasons why you think an active transportation and trail system for the Town of East Gwillimbury should be developed: (Rank all answers)

Answer Options	1. Most important	2.	3.	4.	5. Least important	Response Count
To provide places to walk and cycle within communities	56	11	5	2	1	75
To improve quality of life and health of East Gwillimbury residents	54	17	1	3	0	75
To provide access to natural areas and Town/Regional forests	34	26	10	2	2	74
To connect communities to each other	30	15	21	4	4	74
To provide access to historic /cultural destinations	15	18	20	12	5	70
To improve walking and cycling as transportation options	49	19	3	0	3	74
Other (please specify)						8
<i>answered question</i>						75
<i>skipped question</i>						8

Number	Other (please specify)
1	To provide visitors opportunities to use the trail system
2	keep dangerous, polluting vehicles away from people places
3	Handicap accessibility and encouragement to use of facilities should be promoted. Areas where additional healthy activities could be presented should be available on trails for all-round health
4	To reduce our CO2 emissions and wean ourselves off of fossil fuel addiction
5	We must all "think globally and act locally" these days. This would be a great way to reduce our carbon footprint.
6	green movement...get away from oil dependency
7	Fitness and recreation
8	To reduce traffic and fossil fuel consumption



East Gwillimbury AT and Trails Study Questionnaire

In your opinion, what are the top three locations or corridors (please indicate both the start and end points) in the Town of East Gwillimbury where you think new or better connected trails or bikeways should be considered? (Enter up to three responses in order of importance - maximum 100 characters)

Answer Options	Response Percent	Response Count
1	100.0%	54
2	87.0%	47
3	55.6%	30
answered question		54
skipped question		29

Number	1	2	3
1	Civic Centre to EG Go Station	Sharon to Holland Landing	Holland Landing to Harvest Hills
2	Continue trail along East Holland River to the Lake from Walking Bridge to Lake		
3	Complete the trail along both sides of the river from Second Conc to Yonge St	Complete the Noliidaa trail to Georgina from Queensville side rd	East west connection from Sharon area to Mt Albert
4	Green Lane and Leslie to Green lane and Yonge Street to allow access to Go Station and Movie complex	Leslie and Mt Albert to Holland Landing to allow safely riding between communities for children	Along North South road proposed for new development to tie GO station to Queensville area
5	Queensville to Sharon	Sharon to Go Terminal	
6	Connection of the Sutton-Zephur Trail south through Mt. Albert to York Regional Forest south of Davis Dr.	Completion of the Nokiddaa Trail north to Cooks Bay	Establish an east/west link from Sharon/Queensville to Mt. Albert
7	Connection of the Sutton - Zephur Trail south to Davis Drive	Completion of the Nokiddaa Trail	Complete the Radial Line connection to Queensville and further north
8	connection across river at the end of Oriole	more trails near the river in Holland landing and north into riverdrive park	
9	Nokida Trail to Lake Simcoe and Georgina beaches	Sharon to Maple Hill and Ravenshoe villages	Join all Regional Forests and natural areas
10	Connection of the Sutton - Zephur Trail south to Davis Drive	Completion of the Nokiddaa Trail	Complete the Radial Line connection to Queensville and further north

11	Holland Landing to Newmarket via 2nd Concession	Holland Landing to Sharon via Mount Albert Road	Holland Landing to Newmarket via Yonge Street
12	GO station to Mount Albert	Mount Albert to Stouffville/Uxbridge	
13	Holland Landing To Sharon to Mt Albert to Keswick/Sutton	Holland Landing/Sharon/Queensville to Lake Simcoe	
14	leslie street corridor	mt. albert road	holland river trail system
15	Holland Landing to Mt Albert West to East	Davis Dr Mt Albert to Brown Hill South to North	Green Lane to Sharon to Queensville to Ravenshoe Rd
16	Mount Albert Sideroad to Greenlane	Leslie to Greenlane	Greenlane to Yonge
17	Mt Albert Road between HL and Mt Albert	Yonge St - Holland Landing Rd to Green Lane	2nd Concession - Queensville Side Rd to Green Lane (and Leslie St too!!)
18	Mount Albert Rd. corridor (Holland Landing, Sharon and Mt. Albert)	corridor to Yonge St., (around the corner to Newmarket Inn)	
19	Holland Landing to Queensville	Holland Landing to Sharon	
20	across the Holland River at Doane Road	Mt. Albert Sideroad between Holland Landing and Sharon	
21	grist mill subdivision along river to Yonge street	trail to connect grist mill park to trails in ravine along river to Roger's resevoir	bike trails along both sides of river from reservoir to bridge and beyond
22	between Hollland Landing Public School and the Library	from the library to Anchor Park	From Good Shepherd to ANYWHERE!
23	Harvest Hills to Upper Canada Mall	Harvest hills northbound (eventually that are will be developed)	
24	most regional or local roads are too narrow to support comfortable cycling or walking		
25	mt albert - holland landing	mt albert - newmarket	mt albert - sharon
26	2nd concession to Green lane.	Holland river blvd. to Yonge st., north side	Yonge/Mount Albert to Queensville sideroad.

27	Sharon to Green Lane trail	Sharon to Queensville	Queensville to Holland Landing
28	sharon civic centre to Green lane junction	a paved multi use route along side the 404 extension !!!	Sharon civic centre north along hydro lines
29	Kennedy McCowan	Queensville	Ravenshoe area
30	East West Route - East from Newmarket	North South Routh - North along Leslie or Woodbine - Newmarket to Keswick	
31	Mount Albert to Newmarket via Sharon		
32	McCowan Road to the GO Train Station in Newmarket	Queensville sideroad from Hwy 48 across to Holland Landing	Main Street North from Newmarket to Queensville Sideroad
33	North/South route		
34	all regional roads should have smooth surfaces and wide shoulders		
35	Warden Ave - Entire EG length - the only road that is not overly busy that is continious n/s through EG	Lenghten the Nokiidaa trail to a destination like Cooks Bay	Maintain the Ravenshoe / McCowan forest track for Mountain biking - it is one of the best in the area
36	keele	woodbine	
37	Leslie Street in Sharon- needs a bike lane	Queensville urban corridor needs bike lanes	
38	Big shoulders on Queensville and Warden across the region.	Unpaved trail connecting Mt.Albert/Holland Landing.	
39	Mt Albert to East Gwillimbury GO Stn	Woodbine from Baseline Rd to Newmarket	
40	to and from subdivisions to schools	to and from subdivisions to key shopping...biking should be an option to run errands within a certain radius for all	
41	pave Doane Road and add cycling lines	add cycling lanes to warden, mccowan for all of EG	cycling lane on queensville side road
42	links to Newmarket and north communities	Warden Avenue	Kennedy Road

43	Top of Newmarket to Holland Landing	Connection from Sharon to Riverdrive Park	Mt. Albert to Sharon
44	Warden ave Davis to baseline	Kennedy ave, Herald to Baseline	McCowan ave, davis to baseline
45	Green Lane should have sidewalks/bike lanes in order to get to Go Station/Newmarket	Woodbine Avenue should have sidewalks/bike lanes to make it safer for pedestrians	Leslie Street should have sidewalks/bike lanes from Green Lane north to Ravenshoe
46	2nd concession south to Green Lane		
47	some west - east corridors too	a link all the way to lake simcoe	
48	Warden Ave, top to bottom (for road cyclists)	Kennedy Rd, top to bottom (for road cyclists)	Leslie St, top to bottom (for road cyclists)
49	Green Lane to 2nd Concession Trail - Needs to be widened and paved	2nd Concession to Holland Landing Trail - Needs to be paved	
50	holland landing to newmarket and sharon	sharon to newmarket and mt albert	mt albert to sharon and then holland landing
51	better access to Anchor park	northern part of Yonge street after side-walk ends in holland landing	trails coming into the library
52	east - west corridors in the Newmarket area, anywhere is fine as long as easy access	I live in Mount Albert and would love to see an expanded trail system in that area.	
53	paved and marked bike lanes to link Mount Albert, Sharon and Newmarket. If they are there people will use them.	paved and marked bike lanes around the perimeter of E.G. Will provide a "tour" route for recreation and tourism	extend the old railway line north of Holborn Rd south to go through Mt Albert then east to connect to Rogers Reservoir
54	old yonge to new yonge		

East Gwillimbury AT and Trails Study Questionnaire

What do you think are the top three biggest challenges, constraints or barriers to improving conditions for hiking/walking and cycling in the Town of East Gwillimbury? (Enter up to three responses in order of importance - maximum 100 characters)

Answer Options	Response Percent	Response Count
1	100.0%	48
2	79.2%	38
3	70.8%	34
<i>answered question</i>		48
<i>skipped question</i>		35

Number	1	2	3
1	Council Culture - not a major priority for them	Funding and roll out of programs	Public buy in and input
2	Budget allocation	Land or water hazards	
3	We need someone to organize people to make it happen		
4	Money	tendency to make the trails to elaborate and thus get less trails for the same money	Need for land aquisition for east west connections
5	Resistance by landowners/developers	Lack of firm plan and standards/bylaws	Lack of learning from experiences in Toronto (trying to add after the fact) and other jurisdictions such as Quebec
6	Respecting Private Property Owner's Rights and Privacy	Respecting Historic/Current Land Use Patterns	Educating Public that they are stewards of land not abusers of land

7	Need for investment (cash)	Land ownership - thus a land acquisition strategy is required to make it attractive to private landowners	Human resource support from the Town
8	Money	Land ownership - access to private property	More Town staff needed to build and maintain trails
9	Keep the large (dangerous) polluting vehicles away from ATT users	ATT should have priority access to all public places and usurpe the dominance of big motor vehicles	Hundreds of millions wasted on roads better spent on ATT infrastructure
10	Money	Land ownership - access to private property	More Town staff needed to build and maintain trails
11	paved bike lanes - on road	paved off-road trails	more off road unpaved trails
12	provision of off road routes (for safety reasons on road is not an option)	keeping cyclists from terrorizing other means of transport (e.g. equine)	keeping motorized vehicles off trails meant for walking (e.g. ATV/snowmobile/dirt bikes)
13	Milage - we need more distance	awareness - tell people what is there already	linkage - to go to a destination or loop
14	lack of political will	doing what is right for the people when the people might be against it. most love their cars even when riding a bike or walking would be better for them and the	time...it is a late start
15	Money and commitment by Town	Openland privately owned	Environment Protection
16	Pedestrian / Cyclist safety	Distance between communities, destinations	Residents mindset, habits, health and time constraints
17	Lack of bike lanes on roads makes more of a barrier to cycling between communities		
18	Geography - the river	cost	

19	space	money	educating the drivers
20	Members of the community - do not respect the trails and do not clean up their litter	For biking on roads, the public should be better educated about the Highway traffic act and potential offences	The city council - they should know that if the police enforce provincial acts, people on these trails will comply and revenue can be generated from the fines
21	Expense is likely the biggest factor for most of it		
22	politicians	developers	not maintaining greenbelt/farmland
23	Funding		
24	environment	large area to connect	expense
25	mud and hills on the trail btwn civic centre and green lane	safety while on trails (lights at night)	obtaining land permission, funding for trail building
26	lack of paved shoulders	Growing volume of heavy traffic without safe cycling options	Development crowding out off road trails
27	money		
28	narrow roads sharing between cyclists and cars/trucks	Development and resulting large truck traffic	clean paved shoulders suitable for cycling
29	redneck attitudes from drivers	lack of understanding from planners (e.g. multi-use trails can be hazardous and often not useful for commuters)	cost
30	sharing the road with fast moving vehicles.....narrow roads are almost safer to cycle on as cars have to stop to pass us. as example, warden vs woodbine....no way would i cycle on woodbine even on the bike lane.		

31	Educating motorists to share the road and have more tolerance for other users - especially during mornign and evening rush hour.		
32	Costs	maintenance	public attitudes against active transportation
33	Money.	Red tape/lethargy.	
34	Lack of paved shoulders	Lack of paved shoulders	Lack of paved shoulders
35	Share the road education. Drivers dont know the rules around cyclists being on the road.	Safety - for cycling. Drivers think cyclists are an inconveniece	Lack of planning.....mandate trails and sidewalks and bike lanes into new subdivisions
36	money		
37	paved road shoulders	bike lanes	pot holes
38	Motorist and law enforcement education		
39	Financing this at the expense of the tax payer	Construction schedules	Land to be acquired for use
40	unsafe and narrow roadways on Warden and Kennedy and McCowan	Lower speed limits on these three streets and restrict bicycle traffic on highway 48 and Woodbine ave.	numerous cyclists from GTA, as well as E Gwillumbury use warden, Kennedy and McCowan as corridors to travel to I. Simcoe. Even a one way cycle path, north on
41	Residents are lazy	Budget issues	
42	being suitable for everyone		

43	Rules of the road both bike riders and drivers - courtesy, space - see www.sharetheroad.com	Paved shoulders are inconsistent, sometimes there, sometimes not.	EG using new rough road surface? Bumpy with high rolling friction for bikes.
44	Environmental impact	Money	Lack of political will
45	finding the most appropriate location	approval	type of pathway ie paved or gravel
46	traffic on streets - people drive too fast in Holland Landing	a better map of the location of trails	cars on the roads not allowing bikers on designated bike lanes
47	perceived danger of cycling on heavy traffic roads	difficulty of linking pathways together to form a continuous trail system	education - challenge is getting vehicles to drive slower/give slower transportation a wide berth
48	the will of the politicians to get it done. Take a look at what New York State has for cycling...paved routes everywhere. I would rather ride here but it is a destination now.	this should be easy to do. every time a road gets repaved or widened add a paved bike lane...SIMPLE!! All talk and no action about "green initiatives" shy should this take 25 years!!	Lack of a vision of what this could be. Linking the towns of York Region with a bike route would attract Tourism as well as be good for E.G. residents health and welfare. This is prime cycling country, lets embrace it!!

East Gwillimbury AT and Trails Study Questionnaire

Please indicate the first three letters of your home postal code in the Town of East Gwillimbury:

Answer Options	Response Count
	70
<i>answered question</i>	70
<i>skipped question</i>	13

Number	Response Text
1	I0g
2	L3Y
3	L9N
4	L0G
5	L3Y
6	L0G
7	L9N
8	L0G
9	L0G
10	L9N
11	L0G
12	L0G
13	L9N
14	L0G
15	L3Y
16	L9N
17	L0G
18	L9N

19	L9N
20	L9N
21	L9N
22	1I4
23	I9n
24	I9n
25	I9n
26	L9N
27	L3Y
28	L0G
29	L9N
30	L0G
31	L3Y
32	I3y
33	L0G
34	L4E
35	L3X
36	L4G
37	L0G
38	L0G
39	1L0
40	L0G
41	L0H
42	L4G
43	I3y
44	L4P
45	L3X
46	L0G
47	I0g
48	L3Z
49	L9N
50	I4e
51	L0E
52	M6P
53	L3X
54	L4A
55	L0G

56	L0G
57	L9N
58	L3Y
59	l3y
60	L9N
61	L9N
62	st4
63	L0G
64	L0G
65	l0g
66	L0G
67	T8S
68	L9N
69	N7T
70	L0G

Please enter any other comments you have regarding the Town of East Gwillimbury's Active Transportation and Trail Study.

Answer Options	Response Count
	34
<i>answered question</i>	34
<i>skipped question</i>	49

Number	Response Date	Response Text
1	Mar 13, 2010 11:29 AM	Let's make it a priority. Other good things will naturally flow from a great trail system ¹
2	Mar 17, 2010 1:18 PM	We should take advantage of the experiences of other communities and make off road trails a requirement for any new development and as part of any road upgrades. People need to feel safe if they're going to use or allow their children to use trails/paths. Bylaws should be in place to require secure places to lock bikes at key venues.
3	Mar 22, 2010 11:16 PM	The Town has come a long way over the past few years. However, a bigger effort is needed in the future to secure land ahead of development. We need an AMBITIOUS strategy (Master Plan) and then the willingness of Council to adopt and invest in it. Linkages between communities and across the Town is critical.

4	Mar 23, 2010 2:01 PM	Im looking forward to walking on some new trails soon!
5	Mar 23, 2010 7:22 PM	This opportunity is appreciated; thank you. We need a design view that places greatest priority on ATT use and access, with large vehicle traffic properly relegated to secondary priority. We must keep large, dangerous, polluting vehicles well away from ATT users. Budget priority should be shared with "wild, natural hiking trails". Since costs for natural trails are less than 1% the cost per Km of "urban" style trails, more than 100 times as much trail length can be delivered, and much faster than with
6	Mar 23, 2010 11:53 PM	Would love to see more options in the future for my family to enjoy!
7	Mar 25, 2010 9:13 PM	Pleased that you are soliciting input. However some of the questions were very oddly worded and I am not sure I answered the way it was hoped - e.g. did you want me to rank in order of importance relative to other options or just rank in order of importance to me, it was not always clear. Perhaps some testing of the next questionnaire before it was released would be useful. and the penultimate question duplicates the last one.....
8	Mar 26, 2010 6:21 PM	Please keep expanding the linked greenspace to allow a more natural experience within the coming urbanization og this area.
9	Apr 6, 2010 11:24 PM	Glad to see this getting started. You have an opportunity to do something great that will last a very long time. Simcoe County is putting in wide shoulders(cycling lanes?) on all roads that are to be repaved in the future...push for the same. They help the road last longer and provide active transport.

10	Apr 12, 2010 8:46 PM	<p>Very pleased to see this happening. I would like to see everyone (including myself) walking, hiking and biking more, instead of jumping in the car!</p>
11	Apr 21, 2010 5:59 PM	<p>Thanks for doing the study</p>
12	Apr 24, 2010 6:05 PM	<p>If it is in place and functional - people will use it. Have police enforcement along the trails. This way, they are safe for all to use, and kept in decent condition.</p>
13	Apr 26, 2010 6:32 PM	<p>Maybe any new road work construction should contain a "trail or lane" component to it. This might help offset some of the new costs. I think if the local and regional roads were a little more walking/jogging/cycling "friendly" more people would use them.</p>
14	May 4, 2010 11:49 PM	<p>Education for walking and riding participants for right of way rules, to avoid accidents.</p>
15	May 7, 2010 3:24 PM	<p>In Florida, they have paved multi use trails running parallel to highways (but a safe distance away and fenced) . Awesome use of space the municipality already owns !!!</p> <p>Also townships like King City have invested in singletrack trail building for mountain biking. These are are visited and used like any other park (with a playground), arena</p>

16	May 7, 2010 4:19 PM	Good to see this being done, I moved to Mount Albert from Richmond Hill for the cycling and hope it remains viable to keep riding on the regions roads (was not the case in Richmond hill due to growth). I don't want to move again !
17	May 7, 2010 5:37 PM	I would definitely use my bike to ride to the train station if there were a safe route. Taking Green Lane is treacherous and Main St. North has become far too busy. I ride a road bike for recreation and my average ride is 50-100km, hence a 5km trail around town is not going to be any good for me. I always used to commute on my bike when I lived in the city, and I would do so now if there were safer roads. Keeping speed limits lower on the secondary roads is helpful, as are paved shoulders.
18	May 7, 2010 7:05 PM	Excited you are looking at this!
19	May 7, 2010 8:19 PM	I am not a resident of East Gwillimbury but do utilize the region for recreation as well as passing through parts of the town to commute to work when I do so by bike. Hoipefull this does not discount my input.
20	May 7, 2010 9:55 PM	It's a great idea
21	May 7, 2010 10:34 PM	Great idea and initiative!

22	May 8, 2010 2:21 AM	A useful initiative that should focus on cycling as a form of transportation
23	May 8, 2010 12:18 PM	very positive
24	May 8, 2010 7:27 PM	Thank you for doing this study!
25	May 8, 2010 9:22 PM	Glad to see that the town is actively looking into this
26	May 11, 2010 8:02 PM	To avoid unwanted car/bike collision, use and enforce policies that will encourage cars to use specific roads (48, woodbine, warden) and cyclists to use quieter lower speed roads(Kennedy and McCowan)
27	May 11, 2010 10:56 PM	We need to make it safer for pedestrians/bicyclists on the roads. We should not be accomodating cars, but rather should be accomodating pedestrians/bicyclists.

28	May 16, 2010 10:53 PM	I live in Newmarket and am a member of the Newmarket Eagles Cycling Club. Our members do more than 50% of our riding in EG travelling primarily north-south along Leslie, Warden, Kennedy and Ninth Line. These route are also popular with other local clubs and those in the GTA as they carry the lightest level of traffic. Cyclists and drivers conflict, particularly when one party fails to share the road, but parts of these routes do not have shoulders, often on hills so riding on the road is unavoidable. If
29	May 17, 2010 2:04 PM	I would really like to see the trail between Green Lane and the 2nd concession paved as well as the trail from the 2nd concession to Holland landing paved. It would be a great link year round adding to the Newmarket/Aurora trail system and a paved trail would encourage people to stick to the path.
30	Jun 1, 2010 7:12 PM	I really love the bike trails that are currently in Holland Landing and was definitely a big part of why we moved to the area. I encourage more of these. We plan to purchase cross country skis for the winter. One of the most unfortunate things I have noticed though is that people drive way too fast, particularly in residential areas. Often there are children using the access path on Stonehill Blvd. to go to the park and many times I have almost witnessed a child being hit due in most part to the
31	Sep 13, 2010 12:52 AM	I am really impressed with the beautiful facilities we have now. Simply expanding on these and getting a dedicated east - west trail system would be wonderful. I realize money is always an issue, but the general population's health and well being is too important to ignore. I don't know whether land acquisition is a problem, but building up an inter-connected walking / cycling system is a worthy investment.
32	Nov 26, 2010 5:29 PM	Glad to see these things are being looked at. I have looked at the proposed trails and there is one very close to my home, near Kennedy Rd / Holborn Rd - I would love to see it become reality, especially if it accommodates Equestrian activity.
33	Dec 8, 2010 3:10 AM	if cycling lanes are to be added to paved roads, then cycyists should be made to pay for them (read costs that include the construction of them) and take the tax burden off of the residents who do not use them

34	Jan 1, 2011 4:24 PM	<p>A bike "tour" route linking the towns of not only E.G. but all of York Region would address, health, safety, "green" and recreation desires. I know a ton of people in Toronto that would come up for the day to ride around our area, putting tourism money into local businesses. More importantly it will be a tremendous opportunity to provide an infrastructure that allows E.G. residents the opportunity for better health, fitness and lifestyle. Pave the shoulders and mark the routes. This is not difficult</p>
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016-010-39

Appendix B

PEDESTRIAN CHARTER

Pedestrian Charter for the Town of East Gwillimbury

Walking is the oldest and most universal form of travel, as well as an important form of exercise and recreation. Every daily trip taken by an individual involves walking whether it is alone or in combination with other modes of transportation such as taking public transit, cycling, carpooling or a taxi. Therefore, having access to high-quality pedestrian facilities is very important. When properly designed and implemented, pedestrian facilities can provide residents with a safe, convenient and comfortable means of getting to and from their destinations.

To ensure walking is a safe, connected, comfortable and convenient mode of travel, East Gwillimbury respects the following principles:

Accessibility

Walking is a free and direct means of accessing local goods, services and community amenities and public transit for people of all ages and abilities.

Equity

Walking is the only mode of travel that is universally affordable and allows all residents including children, youth and the elderly to travel independently and safely in a well-planned environment.

Health and Well-being

Walking promotes healthy living by enhancing physical and mental health and the overall personal well-being of community members.

Environmental Sustainability

Walking relies on human power and has negligible environmental impact. Urban or rural environments which support walking decrease auto-dependency and environmental impacts associated with driving.

Personal and Community Safety

An environment where people feel safe and comfortable walking increases community safety for all.

Community Cohesion and Vitality

Walking encourages social interaction through face-to-face encounters and facilitates local economic vitality.

In order to create an urban and rural environment that supports walking, our Town will:

- Support all residents and visitors in their right to have safe, convenient, direct and comfortable walking conditions;
- Provide environments that encourage people to walk for utilitarian, recreation and exercise;
- Support and encourage the planning, design and development of compact, human-scale and mixed-use urban environments in both public and private spaces that meet the needs of pedestrians;
- Develop and maintain infrastructure that provides pedestrians with safe and convenient passages along street corridors and more importantly at intersections;
- Ensure that residents' access to basic community amenities and services does not depend on car ownership;

- Provide outreach programs that educate local residents about the social, economic, environmental and health benefits of pedestrian as a form of travel, exercise and recreation;
- Set policies that reduce conflict between all users of the public right-of-way including pedestrians, cyclists and drivers;
- Promote laws and regulations that support and respect the unique needs of pedestrians;
- Advocate for improving provincial and federal regulatory and funding frameworks that affect our ability to make East Gwillimbury more pedestrian friendly;
- Work with individual citizens, community groups and agencies, businesses and other levels of government to achieve these goals.

An environment that encourages and facilitates walking as a transportation choice, supports overall community vitality. It provides accessibility and connectivity for all residents regardless of age or ability; it decreases car dependency leading to active living and cleaner air; it supports green tourism and economic growth; and it increases safety and encourages social interaction among residents. All of these things lead to vibrant, liveable urban and rural communities.

Please note that the Pedestrian Charter for the Town of East Gwillimbury was developed based on charters from other Regions and Municipalities throughout Ontario such as the Regional Municipality of Waterloo, the City of Toronto, and the Town of Halton Hills. This document is a preliminary draft and is meant to be a base from which the Trails Advisory Committee can build an Active Transportation or cycling charter.



016-010-39

Appendix C

UNIT COST SUMMARY

Component	Facility ^{1,2}	Jurisdiction ³	Estimated Unit Cost / Km	Short Term (0 - 5 yrs)			Mid Term (6 - 10 yrs)			Long Term (10-25+ yrs)			Ultimate (0 - 25+ yrs)		
				Distance (Km)	(%)	Estimated Cost	Distance (Km)	(%)	Estimated Cost	Distance (Km)	(%)	Estimated Cost	Distance (Km)	(%)	Total Estimated Cost ⁴
AT Network	Signed Bike Route	East Gwillimbury	\$2,000	27.72	88.2%	\$55,438	0.46	1.4%	\$917	14.60	87.3%	\$29,192	42.77	52.5%	\$85,547
		East Gwillimbury - HLTMP	\$2,000	0.00	0.0%	\$0	8.77	26.3%	\$17,542	0.00	0.0%	\$0	8.77	10.8%	\$17,542
		East Gwillimbury - Sharon	\$2,000	0.00	0.0%	\$0	3.69	11.1%	\$7,386	0.00	0.0%	\$0	3.69	4.5%	\$7,386
		East Gwillimbury - Queensville	\$2,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		York Region	\$2,000	3.70	11.8%	\$7,400	20.45	61.3%	\$40,900	2.13	12.7%	\$4,260	26.28	32.2%	\$52,560
		Total		31.42		\$62,838	33.37		\$41,817	16.73		\$33,452	81.52		\$138,107
	Multi-Use Trail ⁵	East Gwillimbury (inc. Future Road Links)	\$120,000	9.17	100.0%	\$1,099,800	24.11	65.0%	\$2,893,320	7.23	100.0%	\$867,120	40.50	75.8%	\$4,860,240
		East Gwillimbury - HLTMP	\$120,000	0.00	0.0%	\$0	5.35	14.4%	\$641,927	0.00	0.0%	\$0	5.35	10.0%	\$641,927
		East Gwillimbury - Sharon	\$120,000	0.00	0.0%	\$0	3.41	9.2%	\$409,761	0.00	0.0%	\$0	3.41	6.4%	\$409,761
		East Gwillimbury - Queensville	\$120,000	0.00	0.0%	\$0	4.20	11.3%	\$503,760	0.00	0.0%	\$0	4.20	7.9%	\$503,760
		York Region	\$120,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		Total		9.17		\$1,099,800	37.07		\$2,893,320	7.23		\$867,120	53.46		\$4,860,240
	Desire Line	East Gwillimbury	\$40,000	12.38	100.0%	\$495,080	19.08	100.0%	\$763,240	49.23	100.0%	\$1,969,280	80.69	100.0%	\$3,227,600
		East Gwillimbury - HLTMP	\$40,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		East Gwillimbury - Sharon	\$40,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		East Gwillimbury - Queensville	\$40,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		York Region	\$40,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		Total		12.38		\$495,080	19.08		\$763,240	49.23		\$1,969,280	80.69		\$3,227,600
	Bike Lane	East Gwillimbury (inc. Future Road Links)	\$200,000	1.36	15.8%	\$272,800	5.56	32.8%	\$1,112,367	0.00	-	\$0	6.93	27.1%	\$1,385,167
		East Gwillimbury - HLTMP	\$200,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	-	\$0	0.00	0.0%	\$0
		East Gwillimbury - Sharon	\$200,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	-	\$0	0.00	0.0%	\$0
		East Gwillimbury - Queensville	\$200,000	0.00	0.0%	\$0	8.94	52.7%	\$1,787,600	0.00	-	\$0	8.94	35.0%	\$1,787,600
		York Region	\$200,000	7.25	84.2%	\$1,449,000	2.46	14.5%	\$492,600	0.00	-	\$0	9.71	38.0%	\$1,941,600
		Total		8.61		\$1,721,800	16.96		\$1,604,967	0.00		\$0	25.57		\$3,326,767
	Paved Shoulder	East Gwillimbury	\$110,000	0.00	0.0%	\$0	0.00	0.0%	\$0	4.11	8.5%	\$451,990	4.11	4.0%	\$451,990
		East Gwillimbury - HLTMP	\$110,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
		East Gwillimbury - Sharon	\$110,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0
East Gwillimbury - Queensville		\$110,000	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	0.00	0.0%	\$0	
York Region		\$110,000	28.48	100.0%	\$3,132,800	25.11	100.0%	\$2,762,100	43.95	91.5%	\$4,834,610	97.54	96.0%	\$10,729,510	
Total			28.48		\$3,132,800	25.11		\$2,762,100	48.06		\$5,286,600	101.65		\$11,181,500	
Operations and Support Costs	Outreach	East Gwillimbury			\$250,000			\$250,000			\$750,000			\$1,250,000	
TOTAL			90.05	26.3%	\$6,762,318	131.60	38.4%	\$8,315,443	121.24	35.4%	\$8,906,452	342.89	100.0%	\$23,984,213	

Notes:

- 1 - For on-road routes the length indicated assumes facilities on both sides of the road. For example 1.0 km of roadway will have a Bike Lane on both sides of the roadway.
- 2 - Future roads, where known, were taken into consideration when developing the network.
- 3 - Active Transportation routing and facility types for Holland Landing, Sharon West and Queensville Secondary Plans are subject to change as part of the Secondary Planning process.
- 4 - Costing for AT facilities found within Holland Landing, Sharon West and Queensville Secondary Plans have not been included with network totals, as they are subject to change as part of the Secondary Planning process.
- 5 - A blended rate was developed for multi-use trail costing to better represent Town costing standards.

**Table C-1:
IMPLEMENTATION COST SUMMARY
BY FACILITY TYPE AND JURISDICTION
ALL PHASES**

			Unit Cost Schedule
ITEM	UNIT	UNIT PRICE 2010 DOLLARS	COMMENTS/ASSUMPTIONS
ON ROAD ROUTES			
<i>Note: unit prices for LKM are for both sides of a road unless otherwise noted.</i>			
1. Add 1.5m asphalt shoulder (both sides) over existing gravel shoulders	LKM	120,000	assumes cycling project pays for additional granular base and asphalt and edge line
2. Widen existing asphalt shoulders (when road is resurfaced or reconstructed)	LKM	12,000	assumes cycling project pays for change in granular base and asphalt beyond standard asphalt shouldering e.g. increase from 1.2m to 1.5 or 1.8m
2. Wide curb lane in conjunction with construction of a new road	LKM	60,000	assumes 0.5m widening on both sides of the road (3.5m to 4.0m)
3. Wide curb lane in conjunction with a road reconstruction project	LKM	240,000	see note 4 below
4. Wide curb lane as a separate project	LKM	360,000	includes curb replacement, catch basin adjustments, lead extensions and driveway ramps
5. Add Bike lane marking (1.5 to 1.8m both sides) (unit price given for paint and not thermoplastic)	LKM	12,000	includes signs (\$2k/km both sides), stencils (\$300 each x 10/km 5/side) and markings (\$1.30 LM/paint x 2 sides) or \$5.40 LM x 2 for thermoplastic
6. Construct Bike lane in conjunction with construction of a new or road widening project	LKM	180,000	assumes 1.5m bike lanes on both sides of the roadway (1.5m x 2 sides = 3.0m). Includes asphalt, signs, pavement markings sub-base only
7. Retro-fit (widen road) to add bike lane in conjunction with road reconstruction/resurfacing project	LKM	510,000	see note 5 below
8. Retro-fit (widen road) and construct 1.5m Bike lane with road resurfacing project	LKM	660,000	includes the cost to adjust catch basins, lead extensions, new curbs/driveway ramps, asphalt and sub-base, pavement markings and signs.
9. On-road signed-only route (rural area)	LKM	200	price for two sides, assumes signs every 2km in rural areas
10. On-road signed-only route through residential (urban) area (no repainting required)	LKM	2,000	average 5 signs / km / direction of travel (signs = \$165.00 each including labour and materials)
11. Add / update edge line (paint) to both sides of road	LKM	3,120	\$1.30 LM/paint x 2 sides
12. Replace catch basin covers with bicycle friendly model	each	350	
13. Construct median refuge	each	24,000	average price for basic refuge
14. Construct pedestrian activated traffic signal (IPS)	each	72,000	varies depending on number of signal heads required
15. Construct concrete sidewalk	LKM	90,000	one side of street only
16. Construct pre-fabricated pedestrian overpass of major arterial	each	1,200,000	requirements vary widely and dependent on width of crossing and structure design and material, use price as general guideline only
TRANSITION AREAS (ON-ROAD TO OFF-ROAD)			
1. Trail / Road transition	each	3,000	typically includes 3 bollards, warning signs, curb cuts and minimal restoration (3.0m trail)
2. Trail / Road transition at existing signalized intersection	each	3,600	(at intersection with pedestrian crosswalk) typically includes 6 bollards, warning signs and minimal restoration
3. At grade mid-block crossing	each	6,000	typically includes pavement markings, 6 bollards, warning signs, curb cuts and minimal restoration (median refuge island extra)
4. At grade railway crossing	each	120,000	flashing lights, motion sensing switch (C.N. estimate)
5. At grade railway crossing with gate	each	300,000	flashing lights, motion sensing switch and automatic gate (C.N. estimate)
6. Below grade railway crossing	each	600,000	3.0m wide, unlit culvert style approx 10 m long for single elevated railway track
7. Multi use subway under 4 lane road	each	1,440,000	guideline price for basic 3.3 m wide, lit
OFF ROAD ROUTES			
1. Rough grading	LKM	12,000	includes leveling and packing after leveling (3.0m wide)
2. Construct new stone dust limestone trail	LKM	100,000	normal site conditions (3.0m wide)
3. Construct new asphalt trail in park/open space setting	LKM	180,000	normal site conditions (3.0m wide)
3. Construct new asphalt trail in road boulevard	LKM	300,000	normal site conditions (3.0m wide)
5. Upgrading gravel trail to tar and chip	LKM	25,000	includes 1 coat primer and 2 coats surface (areas requiring "trail hardening" - 3.0m wide)
6. Upgrading gravel trail to asphalt	LKM	70,000	price includes minor upgrades to the base (3.0m wide)
6. Construct single track trail	LKM	10,000	includes clearing and grubbing with minor regrading to eliminate high and low points (1.5m wide)
OTHER ITEMS			
A. Signage			
1. Regulatory and caution Signage (off-road trail) on new post	each	200	trailside sign, 300mm x 300mm c/w metal post
2. Bike lane or bike route sign (on-road) on new post	each	200	per M.T.O. specs
3. Regulatory sign	each	200	same as 1 above
4. Interpretive sign	each	1,000	guideline price only for budgeting purposes. Price varies according to design and materials
5. Signboards for interpretive sign	each	2,000	guideline price only for budgeting purposes. Price varies according to design and materials
6. Trailhead kiosk	each	5,000	guideline price only for budgeting purposes. Price varies according to design and materials
7. Signboards for trailhead kiosk sign	each	2,500	guideline price only for budgeting purposes. Price varies according to design and materials
9. Trail directional sign	each	180	bollard / post / w 100mm x100mm marker
10. Trail marker sign	each	90	bollard / post / w 100mm x100mm marker
B. Barriers and Access			
1. Lockable gate (2 per road crossing)	each	3,000	price indicated for one side of road (2 required per road crossing)
2. Berming/boulders at road crossing	each	600	price indicated for one side of road (2 required per road crossing)
3. Granular parking lot at staging area (15 car capacity-gravel)	each	15,000	
4. Metal offset gates (P' gate style)	each	1,440	provide 4 (\$4,800.00) per crossing to create maze-type barrier
5. Page wire fencing	LKM	14,400	
6. Chain link fencing	LKM	60,000	range from \$35,000 to \$65,000 per LKM depending on height, gauge and site location
C. Accessories			
1. Self weathering steel truss pedestrian bridge	LM	3,400	3.5m wide
2. Self weathering steel truss pedestrian bridge	LM	2,000	1.8m wide
3. New boardwalk (pedestrian light-duty)	LM	540	new construction - includes floating foundation and decking 1.5m wide
4. New boardwalk (pedestrian light-duty)	LM	720	new construction - includes footings and decking 2.5m wide
5. New boardwalk (pedestrian light-duty)	LM	1,440	new construction - includes footings and decking 3.0m wide
6. New concrete box culvert (walkthrough)	LM	12,000	crossing below major roadway
7. Metal stairs with hand railing and gutter to roll bicycle	vertical M	3,600	1.8m wide, galvanized steel stairs
8. Bicycle rack	each	180	post and ring style stand
9. Bicycle rack	each	900	holds 6 bicycles, price varies depending on manufacturer
10. Bicycle locker	each	3,000	price varies depending on manufacturer
11. Benches	each	800	can be as low as \$250.00 for a "low tech" bench
12. Garbage container	each	400	as high as \$2,000.00 for below grade, high capacity units
13. Construct washroom building	each	8,000	wood structure with concrete holding unit

- NOTES:**
- Unit Prices Reflect 2010 Dollars, and do not include the cost of property acquisition, utility relocations, or major roadside drainage works
 - LKM = Linear kilometres
 - LM = Linear metres
 - Road portion of project includes the cost to reconstruct curbs. Cycling portion of project includes the cost to adjust catch basins, lead extensions, and driveway ramps. No sidewalk replacement is included.
 - Road portion of project includes the cost to reconstruct sidewalks (where required) and curbs. Cycling portion of project includes the cost to adjust catch basins, lead extensions, and driveway ramps.

Appendix C-2

UNIT COST SCHEDULE
JUNE 2012



ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.10	Conventional 1.5m-1.8m Bicycle Lanes through Lane Conversion from 4 lanes to 3 lanes	linear KM	\$53,000		Price for both sides. Includes grinding of existing pavement, markings, signs, painted markings. Assumes road is not be surfacing. The price assumes: - \$11,000 for painted lane line (\$5.5 per metre multiply 2 for both sides of the road) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used. - \$6 to \$8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway. Remove soda-blasting cost component if the road is being resurfaced. The cost for resurfacing to be part of resurfacing project.
1.11	Conventional 1.5m-1.8m Bicycle Lanes in Conjunction with a New Road, or Road Reconstruction / Widening Project	linear KM	\$390,000		Price for 1.5m bike lanes on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m2 = 120 x 1.5m BL x 1000 x 2) - \$16,000 for signs, stencils and edge line The roadway project funds all other improvements.
1.12	Conventional 1.5m-1.8m Bicycle Lanes that require a road widening /reconstruction	linear KM	\$700,000		Price for both sides of the road, includes the cost for excavation, adjust catch basins, lead extensions, new curbs/driveway ramps, asphalt and sub-base, painted markings and signs. All costs associated with widening or reconstructing the road for the purposes of adding bike facilities is born by the bike project i.e. no economies of scale of adding a bike facility in conjunction with a planned roadway project.
1.13	Buffered Bicycle Lane with Hatched Pavement Markings - No Road Construction / Widening or Road Diet required	linear KM	\$49,000		Price for 1.5m bike lanes with 1m hatched buffer. The price assumes: - \$30,000 for painted lines (\$6 x 5000 metres of line paint) - \$1,000 for hatching paint (1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used
1.14	Buffered Bicycle Lane with Hatched Pavement Markings - No Road Construction / Widening or Road Diet required Includes pre-cast curbs and flexible bollards in the buffer	linear km	\$165,000		Price for 1.5m bike lanes with 1m hatched buffer (includes pre-cast curbs and flexible bollards in the buffer). The price assumes: - \$30,000 for painted lines (\$6 x 5000 metres of line paint) - \$1,000 for hatching paint (1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used - \$95,000 for pre-cast concrete curbs on both sides - Assume 70% of roadway to include physical delineation (700 metres per 1 linear km): 700 metres / 1.83m curb length = 382.5 pre-cast concrete curbs - 382.5 x \$250 = \$95,000 - Assume \$125 each 1.83m long curb x 2 = \$250 per linear metre of roadway (both sides) - \$21,000 for flexible bollards - Assume 700m spacing as per pre-cast curb placement above x 2 (both sides of the road). - 700m x 2 (both sides of the road) = \$1,400 - \$1,400 x \$150 (price per bollard) = \$21,000

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.15	Buffered Bicycle Lane with Hatched Pavement Markings with Road Diet	linear KM	\$65,000		Price for 1.5m bike lanes with 1m hatched buffer. The price assumes: - \$30,000 for painted lines (\$6 x 5000 metres of line paint) - \$1,000 for hatching paint (\$1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used. - \$6 to \$8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway.
1.16	Buffered Bicycle Lane with Hatched Pavement Markings - Assumes a Road Diet from a 4 Lane Cross-Section to a 2 Lane Cross-section with a two-way centre turn lane. Includes pre-cast curbs and flexible bollards in the buffer	linear km	\$194,620		Price for 1.5m bike lanes with 1m hatched buffer (includes pre-cast curbs and flexible bollards in the buffer). The price assumes: - \$48,000 for painted lines (\$6 x 8000 metres of line paint) - \$1,000 for hatching paint (1000 metres) - \$10,400 for painted bike symbols (assumes \$400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - \$2,500 for bike lane signs (assumes \$350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - \$3,900 for 'No Parking' signs (assumes \$150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used - \$95,000 for pre-cast concrete curbs on both sides - Assume 70% of roadway to include physical delineation (700 metres per 1 linear km): 700 metres / 1.83m curb length = 382.5 pre-cast concrete curbs - 382.5 x \$250 = \$95,000 - Assume \$125 each 1.83m long curb x 2 = \$250 per linear metre of roadway (both sides) - \$21,000 for flexible bollards - Assume 700m spacing as per pre-cast curb placement above x 2 (both sides of the road). - 700m x 2 (both sides of the road) = \$1,400 - \$1,400 x \$150 (price per bollard) = \$21,000 - \$6 to \$8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway. Assume 1,660 metres of lane line removal for a 4 lane road: - 1000m of yellow line (centre line) per km (assume continuous line, no break at intersections) - 1 continuous dashed white line that separates 2 vehicles lanes (x2 for both sides of the road) - dashed white line: 3-3 skip pavement marking (3m long with 3m spacing) = 330m length x 2 for both sides of road = 660m
1.17	Buffered Bicycle Lane with Hatched Pavement Markings - Assumes New Road or Road Reconstruction/Widening already Planned	linear KM	\$393,000		Price for 1.5m bike lanes + 0.5m hatched buffers on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line The roadway project funds all other improvements.
1.18	Buffered Bicycle Lane with Hatched Pavement Markings - Retrofit / No new road reconstruction or widening is planned	linear KM	\$533,000		Price for 1.5m bike lanes + 0.5m hatched buffers on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line - \$140,000 for removal and replacement of curb (140 / linear metre) The roadway project funds all other improvements.

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.19	Buffered Bicycle Lane with Flex Bollards - Assumes Road Reconstruction/Widening Already Planned	linear KM	\$423,000		Price for 1.5m bike lanes + 0.5m hatched buffers + flexible bollards on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line - \$30,000 for flexible bollards (\$150 per bollard, spaced every 10m) The roadway project funds all other improvements.
1.20	Buffered Bicycle Lane with Pre-Cast Barrier - Assumes New road or Road Reconstruction/Widening Already Planned	linear KM	\$483,000		Price for 1.5m bike lanes + 0.5m hatched buffers + flexible bollards+ pre-cast and anchored curb delineators. The price assumes: - \$14,000 for catch basins and leads (\$350 per lead x 40 catch basins per linear km) - \$360,000 for asphalt and sub-base (\$55/m ² = 120 x 1.5m BL x 1000 x 2) - \$19,000 for signs, stencils and edge line - \$30,000 for flexible bollards (\$150 per bollard, spaced every 10m) - \$50,000 - \$60,000 pre-cast curb delineators (\$250 / pre-case unit 2m length + \$7.5 / pins and anchoring. Assumes 2m long x 2 = 200-250 per km depending on intersections and driveways) The roadway project funds all other improvements.
1.21	Supply and install surface mounted flexible post delineators	each	\$100 to \$150		Price depends on product, volume and supplier.
1.22	Standard precast concrete curb 178 mm high, 216 mm wide and 1.83 metre long	each	\$250		Approximately \$95,000 - \$100,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 1.83 metres = 382.5 pre-cast concrete curbs - 382.5 x \$250 = \$95,000 Assume \$125 each 1.83m long curb x 2 = \$250 per linear metre of roadway (both sides).
1.23	Standard precast concrete curb 457 mm high, 457 mm wide and 3.05 metre long	each	\$1,380		Approximately \$315,000 - \$320,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 3.05 metres = 229.5 pre-cast concrete curbs - 229.5 x \$1,380 = \$317,000
1.24	Standard precast concrete bullnose 457 mm high, 457 mm wide and 1.22 metre long	each	\$970		Approximately \$550,000 - \$560,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 1.22 metres = 573.8 pre-cast concrete curbs - 573.8 x \$970 = \$556,557
Cycle Tracks					
1.25	Uni-directional Cycle Tracks: Raised and Curb Separated - In conjunction with existing road reconstruction / resurfacing project	linear KM	\$500,000 - \$750,000	\$500,000	Both sides. Assumes cycle track will be implemented as part of road construction. Could include minor utility / lighting pole relocations. Other components such as bike signals, bike boxes etc. are project specific and will impact unit price.
1.26	Uni-directional Cycle Tracks: Raised and Curb Separated - Retrofit Existing Roadway	linear KM	\$750,000 - \$1,500,000		Both sides. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are project specific and will impact unit price
1.27	Two Way Cycle Track - Retrofit Existing Roadway	linear KM	\$750,000 - \$1,000,000		One side. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are project specific and will impact unit price

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Active Transportation Paths and Multi-Use Trails					
1.28	Two Way Active Transportation Multi-use path within road right-of-way	linear KM	\$275,000 - \$375,000	\$375,000	3.0m wide hard surface pathway (asphalt) within road right of way (no utility relocations). Price depends of scale / complexity of project and if existing sidewalk is being removed (i.e. crushing of existing sidewalk and compacting for trail base).
1.29	Concrete Splash Strip placed within road right-of-way between Active Transportation Multi-Use Path and Roadway	m ²	\$150		Colour Stamped Concrete
1.30	Hard Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in an Urban Setting (New)	linear KM	\$315,000 - \$630,000	\$375,000	3.0m wide hard surface pathway (asphalt) within park setting (normal conditions) 90mm asphalt depth. Price depends of scale / complexity of project.
1.31	Hard Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Urban Setting (Upgrade existing granular surface)	linear KM	\$250,000 - \$400,000		Includes some new base work (50% approx.), half of the material excavated is removed from site. Price depends of scale / complexity of project.
1.32	Granular Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Urban Setting	linear KM	\$195,000 - \$249,000		3.0m wide, compacted stone dust surface normal site conditions. Price depends of scale / complexity of project.
1.33	Granular Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Rural Setting (New)	linear KM	\$195,000 - \$249,000		3.0m wide, compacted stone dust surface in complex site conditions (includes cost of clearing and grubbing). Price depends of scale / complexity of project.
1.34	Upgrade existing granular surface trail to meet 3.0m wide compacted granular trail standard	linear KM	\$188,000 - \$215,000		Includes some new base work (50% approx.) and an average of 20 regulatory signs per kilometre. Price depends of scale and existing trail conditions e.g. width, slope, location of trail, etc.
1.35	Off-Road Multi-Use Trail Outside of Road Right-of-Way on Abandoned Rail Bed	linear KM	\$80,000 - \$125,000		3.0m wide, compacted stone dust surface, includes signage along trail and gates at road crossings. Assumes ballast is still in place. Price depends of scale / complexity of project.
1.36	Granular Surfaced Multi-use Trail in a Woodland Setting	linear KM	\$175,000		2.4m wide, compacted stone dust surface. Price depends of scale / complexity of project.
1.37	Major rough grading (for multi-use pathway)	m ²	\$8.00		Varies depending on a number of factors including site access, disposal location etc.
2.0 PEDESTRIAN FACILITIES					
2.1	Sidewalk	linear KM	\$300,000	\$300,000	Price for 1.5m concrete sidewalk. Include site prep., select utility relocation, minor drainage modifications / traffic control.
3.0 STRUCTURES AND CROSSINGS					
3.1	Culvert Water Crossing	each	\$5,000 - \$8,000		4 to 8m long
3.2	Wood Bridge (Short)	each	\$8,000 - \$15,000		Boardwalk style construction, straight beam span, up to 6m long
3.3	Wood Bridge (Medium)	each	\$15,000 - \$20,000		10 - 20m
3.4	Prefabricated Metal Bridge (Short)	each	\$20,000 - \$50,000		Weathering Steel, Single span, box truss style, 10 to 20m long
3.5	Prefabricated Metal Bridge (Medium)	each	\$75,000 - \$150,000		Weathering Steel, Single span, pony truss style, 20 to 30m long
3.6	Prefabricated Metal Bridge (Long)	each	\$200,000 - \$350,000		Weathering Steel, Single span, box truss style, 30 to 50m long
3.7	Custom Bridge (Small)	each	\$500,000 - \$1,000,000		Metal or Wood Structure, single span 10 to 50m long
3.8	Custom Bridge (Medium)	each	\$2,000,000 - \$5,000,000		Metal or Wood Structure, single span 50 to 100m long
3.9	Custom Bridge (Large)	each	\$5,000,000 - \$10,000,000		Metal or Wood Structure, single span 100 to 200m long
3.10	Mid-block Pedestrian Signal	each	\$150,000 - \$180,000		Traffic control signal systems that are dedicated primarily to providing traffic gaps for pedestrian right-of-way installed as pedestrian signals at mid-block pedestrian crossings.
3.11	Pedestrian Crossover 1	each	\$25,000 - \$35,000		Similar to Level 1 Type A PXO based on OTM Book 15. Assume two push buttons (\$10,000), flashing unit (\$5,000) and civil engineering elements including tactile plates, concrete ramp, signage, stencils and crossing lines.
3.12	Pedestrian Crossover 2	each	\$30,000 - \$40,000		Similar to Level 2 Type B PXO based on OTM Book 15. Assume rapid flashing beacons (\$20,000), tactile plates (\$3,500), concrete ramp (\$3,000), signage (\$2,800), shark teeth (\$1,200) and pavement crossing.
3.13	Pedestrian Crossover 3	each	\$30,000 - \$40,000		Level 2 Type C PXO based on OTM Book 15. Assume back to back signs, solid white lines, shark teeth and rapid reflecting beacon.
3.14	Pedestrian Crossover 4	each	\$10,000 - \$15,000		Level 2 Type D PXO based on OTM Book 15. Assume back to back signs, tactile plates, solid white lines and shark teeth.
3.15	Line Paint/Sign		\$4,000 - \$6,000		Assume 8 signs, shark teeth and solid white line markings.
3.16	Driveway Crossing		\$2,500 - \$3,500		Assume adjustment of existing curb cuts to accommodate 3.0m multi-use pathway, commercial driveway (\$2,500 - 3,500 without green thermoplastic) and driveway with green thermoplastic (\$4,000-5,000).
3.17	Median Refuge	each	\$10,000 - \$20,000		Average price for basic refuge with curbs, no pedestrian signals
3.18	Move Existing School Crossing	each	\$10,000 - \$25,000		Average price for removing existing school crossing and repainting in a new location
3.19	At grade railway crossing with gate	each	\$60,000 - \$100,000		Assume surface treatment, standard gate and signage
3.20	At grade railway crossing with automatic gate	each	\$100,000 - \$300,000		Assume surface treatment, flashing lights, with or without motion sensing switch and automatic gate.
3.21	Below grade railway crossing	each	\$500,000 - \$1,500,000		Assume 4m wide, unit culvert style approx. 10m long for single elevated railway track
3.22	Intersection Signalization	each	\$160,000 - \$200,000		Assume full signalization of intersection with potential to add cycling facility and improvements.
3.23	Intersection Pedestrian / Bike Signal	each	\$72,000 - \$88,000		Assume average price for intersection pedestrian signal. Assume partial rebuild of intersection for bike signals i.e. realignment of ducts and poles.
3.24	Multi use subway under 4 lane road	each	\$1,000,000 - \$1,200,000		Guideline price only for basic 3.3 m wide, lit.
3.25	Retaining Wall - Engineered	m ²	\$1,200		Face metre squared
3.26	Retaining Wall - Natural	m ²	\$1,200		Face metre squared
3.27	Drainage Ditches	linear KM	\$4,500 - \$5,500		
3.28	Drainage Culverts	linear KM	\$2,000 - \$3,000		

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
4.0 BARRIERS AND ACCESS CONTROL FOR MULTI-USE TRAILS OUTSIDE OF THE ROAD RIGHT-OF-WAY					
4.1	Lockable gate (2 per road crossing)	each	\$4,000		Heavy duty gates (e.g. equestrian supported step over gate). Price for one side of road - 2 required per road crossing. Typically only required in rural settings or city boundary areas
4.2	Metal offset gates	each	\$2,000		"P"-style park gate
4.3	Removable Bollard	each	\$500 - \$750		Basic style (e.g. 75mm diameter galvanized), with footing. Increase budget for decorative style bollards
4.4	Berming/boulders at road crossing	each	\$1,200		Price for one side of road (2 required per road crossing)
4.5	Granular parking lot at staging area (15 car capacity-gravel)	each	\$45,000		Basic granular surfaced parking area (i.e. 300mm granular B sub-base with 150mm granular A surface), with precast bumper curbs. Includes minor landscaping and site furnishings, such as garbage receptacles and bike racks.
4.6	Paige wire fencing	linear M	\$60		1.5m height with peeled wood posts
4.7	Chain link fencing	linear M	\$90 - \$110		Galvanized, 1.5m height
5.0 SIGNAGE					
5.1	Regulatory and caution Signage (off-road pathway) on new metal post	each	\$200-300		300mm x 300mm metal signboard c/w metal "u" channel post
5.2	Signboards for interpretive sign	each	\$2,400		Does not include graphic design. Based on a 600mm x 900mm typical size and embedded polymer material, up to 40% less for aluminum or aluminum composite panel
5.3	Staging area kiosk	each	\$2,000 - \$10,000		Wide range provided. Price depends on design and materials selected. Does not include design and supply of signboards
5.4	Signboards for staging area kiosk sign	each	\$1,500 - \$2,000		Typical production cost, does not include graphic design (based on a 900mm x 1500mm typical size and embedded polymer material). Up to 40% less for aluminum or aluminum composite panel
5.5	Pathway directional sign	each	\$350 - \$500		Bollard / post (100mm x100mm marker), with graphics on all 4 sides
5.6	Pathway marker sign	each	\$250		Bollard / post (100mm x100mm marker), graphics on one side only
5.7	Pathway marker sign	linear KM	\$1,000		Price for both sides of the path, assumes one sign on average, per direction of travel every 0.5 km
5.8	Bike sign	each	\$300		Price for one side of road.
5.9	Major Trailhead	each	\$10,000 - \$20,000		Assume large signage/map feature, control barrier, seating, bike parking, supply of materials, and installation.
5.10	Minor Trailhead	each	\$6,000 - \$12,000		Assume small to medium signage, control barrier, bike parking, supply of materials, and installation.
5.11	Rustic Trailhead	each	\$5,000		Assume a wayfinding/regulatory sign board, extended gravel shoulder or other informal parking allowance for 1-2 cars, supply of materials, and installation.
6.0 BICYCLE PARKING INFRASTRUCTURE					
6.1	Bicycle rack (Post and Ring style)	each	\$150 - \$250		Holds 2 bicycles, price varies depending on manufacturer (includes installation).
6.2	Bicycle rack (U style)	each	\$600		Holds 2 bicycles, price varies depending on manufacturer (includes installation).
6.3	Bicycle rack	each	\$1,800		Holds 6 bicycles, price varies depending on manufacturer (includes installation).
6.4	Bicycle Locker	each	\$3,000		Price varies depending on style and size. Does not include concrete mounting pad.
6.5	Bike Loop	each	\$2,500		Price for installation including labour and equipment. Price also includes materials e.g. two channel detector for traffic cabinet, bike loop (wire and sealant), cable to traffic cabinet, handhole and conduit.
6.6	Bicycle Corral (one parking space with bollards)	each	\$1,500 - \$2,900		Price may vary from \$1,500 (galvanized finish with the mad shield corrosion warranty) to \$2,900 (stainless finish with the mad shield corrosion warranty) for one parking space.
7.0 LIGHTING AND UTILITIES					
7.1	Pathway Lighting	per 25 m	\$5,000		Includes cabling, connection to power supply, transformers and fixtures.
7.2	Relocation of Light / Support Pole	each	\$4,000		Adjustment of pole offset (distance between pole and roadway).
7.3	Relocation of Signal Pole / Utility Box	each	\$8,000		Adjustment of pole offset (distance between pole and roadway).
8.0 PAVEMENT MARKINGS					
8.1	Sharrow Symbol	each	\$400		Price for durable paint. Sharrow symbol with green pavement marking
8.2	Bike Symbol	each	\$400		Price depends on volume
8.2	Line Painting	linear M	\$6		Price for durable paint.
8.2	Removal of Line Painting	linear M	\$6		N/A
9.0 OTHER					
9.1	Bike Box	each	\$1,500		Price may vary depending on road cross-section (e.g. two lane roadway, four lane roadway, etc.). Price includes installing a bike box on the approach of an intersection using a bike stencil and durable e.g. green surface treatment (\$250 / each). Price also include estimate to move stop-bar back to provide space for bike box.
9.2	Clearing and Grubbing	m ²	\$15		
9.3	Bench	each	\$1,000 - \$2,000		Price varies depending on style and size. Does not include footing/concrete mounting pad
9.4	Safety Railings / Rubrail	linear M	\$300		1.4m height basic post and rail style
9.5	Small diameter culvert	each (6 m)	\$1,200		Price range applies to 400mm to 600mm diameter PVC or CSP culverts for drainage below trail
9.6	Flexible Bollards	each	\$110		Should be placed at 10m intervals where required. Cost depends on product type used.
9.7	Picnic Tables	each	\$4,000 - \$6,000		Includes wood picnic table with metal frame and concrete pad. This cost includes the supply of materials and installation.
9.8	Waste and Recycling Receptacle	each	\$500 - \$5,000		Assume waste and recycle receptacles are in a range between steel drum and high end non-electronic. Cost assumes 1 per minor and major entry points.
9.9	Cellular Emergency Beacon Station	each	\$5,000 - \$10,000		Assume elements including cellular beacon station, cabling, connection to power supply and fixtures.
9.10	Flush Toilet	each	\$30,000 - \$40,000		Assumes washroom structure with single toilet and sink and excludes water and sewer connection
9.11	Composting Toilet	each	\$35,000 - \$45,000		Assumes washroom structure with single toilet, subsurface chamber and sub-surface cleanout access
9.12	Vault Toilet	each	\$10,000 - \$15,000		Concrete structure with pump out design

Notes:

- Unit Prices are for functional design purposes only, include installation but exclude contingency, design and approvals costs (unless noted) and reflect 2023 dollars, based on projects in southern Ontario.
- Estimates do not include the cost of property acquisitions, signal modifications, utility relocations, major roadside drainage works or costs associated with site-specific projects such as bridges, railway crossings, retaining walls, and stairways, unless otherwise noted.
- Assumes typical environmental conditions and topography.
- Applicable taxes and permit fees are additional.

Table 2 - Active Transportation and Trails Network by Route

ID	GIS Source	Facility	Length (KM)	Unit Price	Route Cost	Contingency Cost (25%)	Design and Approvals Cost (15%)	Total Route with Contingency, Design and Approvals	Phase
251	ATMP	Bike Lane	0.938132049	\$ 29,000.00	\$ 27,205.83	\$ 6,801.46	\$ 4,080.87	\$ 38,088.16	ST
303	ATMP	Bike Lane	0.978244886	\$ 29,000.00	\$ 28,369.10	\$ 7,092.28	\$ 4,255.37	\$ 39,716.74	ST
692	ATMP	Bike Lane	0.406322821	\$ 29,000.00	\$ 11,783.36	\$ 2,945.84	\$ 1,767.50	\$ 16,496.71	ST
702	ATMP	Bike Lane	2.214012884	\$ 29,000.00	\$ 64,206.37	\$ 16,051.59	\$ 9,630.96	\$ 89,888.92	LT
780	ATMP	Bike Lane	2.345899529	\$ 29,000.00	\$ 68,031.09	\$ 17,007.77	\$ 10,204.66	\$ 95,243.52	MT
1	ATMP	Desire Line	0.720688401		\$ -	\$ -	\$ -	\$ -	LT
5	ATMP	Desire Line	1.09199882		\$ -	\$ -	\$ -	\$ -	LT
7	ATMP	Desire Line	1.292207797		\$ -	\$ -	\$ -	\$ -	LT
8	ATMP	Desire Line	0.886197873		\$ -	\$ -	\$ -	\$ -	LT
9	ATMP	Desire Line	0.501325343		\$ -	\$ -	\$ -	\$ -	LT
16	ATMP	Desire Line	0.246902103		\$ -	\$ -	\$ -	\$ -	LT
28	ATMP	Desire Line	5.607423273		\$ -	\$ -	\$ -	\$ -	LT
29	ATMP	Desire Line	1.41823944		\$ -	\$ -	\$ -	\$ -	LT
33	ATMP	Desire Line	12.94154306		\$ -	\$ -	\$ -	\$ -	LT
34	ATMP	Desire Line	10.14491978		\$ -	\$ -	\$ -	\$ -	LT
35	ATMP	Desire Line	3.034223932		\$ -	\$ -	\$ -	\$ -	LT
36	ATMP	Desire Line	0.937564573		\$ -	\$ -	\$ -	\$ -	LT
37	ATMP	Desire Line	2.353268023		\$ -	\$ -	\$ -	\$ -	LT
41	ATMP	Desire Line	1.799388802		\$ -	\$ -	\$ -	\$ -	LT
44	ATMP	Desire Line	3.750695194		\$ -	\$ -	\$ -	\$ -	LT
45	ATMP	Desire Line	1.336288391		\$ -	\$ -	\$ -	\$ -	LT
57	ATMP	Desire Line	1.069322937		\$ -	\$ -	\$ -	\$ -	LT
63	ATMP	Desire Line	0.845368021		\$ -	\$ -	\$ -	\$ -	MT
98	ATMP	Desire Line	0.115955678		\$ -	\$ -	\$ -	\$ -	ST
153	ATMP	Desire Line	0.131056745		\$ -	\$ -	\$ -	\$ -	LT
187	ATMP	Desire Line	0.081990638		\$ -	\$ -	\$ -	\$ -	LT
204	ATMP	Desire Line	0.534357279		\$ -	\$ -	\$ -	\$ -	LT
217	ATMP	Desire Line	0.405187531		\$ -	\$ -	\$ -	\$ -	MT
218	ATMP	Desire Line	0.769050251		\$ -	\$ -	\$ -	\$ -	LT
219	ATMP	Desire Line	4.043004609		\$ -	\$ -	\$ -	\$ -	LT
221	ATMP	Desire Line	0.342283412		\$ -	\$ -	\$ -	\$ -	LT
239	ATMP	Desire Line	1.869814366		\$ -	\$ -	\$ -	\$ -	LT
240	ATMP	Desire Line	2.061445037		\$ -	\$ -	\$ -	\$ -	LT
242	ATMP	Desire Line	5.936135308		\$ -	\$ -	\$ -	\$ -	LT
254	ATMP	Desire Line	0.458896296		\$ -	\$ -	\$ -	\$ -	LT
256	ATMP	Desire Line	7.845714668		\$ -	\$ -	\$ -	\$ -	LT
257	ATMP	Desire Line	3.602957821		\$ -	\$ -	\$ -	\$ -	LT
261	ATMP	Desire Line	1.564310484		\$ -	\$ -	\$ -	\$ -	LT
263	ATMP	Desire Line	0.961403506		\$ -	\$ -	\$ -	\$ -	LT
296	ATMP	Desire Line	0.668411429		\$ -	\$ -	\$ -	\$ -	LT
612	ATMP	Desire Line	7.889987898		\$ -	\$ -	\$ -	\$ -	LT
745	ATMP	Desire Line	0.131396731		\$ -	\$ -	\$ -	\$ -	ST
767	ATMP	Desire Line	6.820771681		\$ -	\$ -	\$ -	\$ -	LT
768	ATMP	Desire Line	1.971142212		\$ -	\$ -	\$ -	\$ -	LT
777	ATMP	Desire Line	0.329726183		\$ -	\$ -	\$ -	\$ -	LT
833	ATMP	Desire Line	0.129028349		\$ -	\$ -	\$ -	\$ -	LT
231	ATMP	Multi-Use Path	1.136687783	\$ 375,000.00	\$ 426,257.92	\$ 106,564.48	\$ 63,938.69	\$ 596,761.09	ST
305	ATMP	Multi-Use Path	0.392660819	\$ 375,000.00	\$ 147,247.81	\$ 36,811.95	\$ 22,087.17	\$ 206,146.93	LT
322	ATMP	Multi-Use Path	0.233036335	\$ 375,000.00	\$ 87,388.63	\$ 21,847.16	\$ 13,108.29	\$ 122,344.08	ST
642	ATMP	Multi-Use Path	0.285486527	\$ 375,000.00	\$ 107,057.45	\$ 26,764.36	\$ 16,058.62	\$ 149,880.43	MT
649	ATMP	Multi-Use Path	0.264560142	\$ 375,000.00	\$ 99,210.05	\$ 24,802.51	\$ 14,881.51	\$ 138,894.07	MT

656	ATMP	Multi-Use Path	0.099626136	\$	375,000.00	\$	37,359.80	\$	9,339.95	\$	5,603.97	\$	52,303.72	MT
666	ATMP	Multi-Use Path	0.189488817	\$	375,000.00	\$	71,058.31	\$	17,764.58	\$	10,658.75	\$	99,481.63	MT
667	ATMP	Multi-Use Path	0.327429089	\$	375,000.00	\$	122,785.91	\$	30,696.48	\$	18,417.89	\$	171,900.27	MT
678	ATMP	Multi-Use Path	0.56763441	\$	375,000.00	\$	212,862.90	\$	53,215.73	\$	31,929.44	\$	298,008.07	MT
679	ATMP	Multi-Use Path	0.538870184	\$	375,000.00	\$	202,076.32	\$	50,519.08	\$	30,311.45	\$	282,906.85	MT
683	ATMP	Multi-Use Path	0.378719899	\$	375,000.00	\$	142,019.96	\$	35,504.99	\$	21,302.99	\$	198,827.95	MT
684	ATMP	Multi-Use Path	0.239125861	\$	375,000.00	\$	89,672.20	\$	22,418.05	\$	13,450.83	\$	125,541.08	MT
685	ATMP	Multi-Use Path	0.245233617	\$	375,000.00	\$	91,962.61	\$	22,990.65	\$	13,794.39	\$	128,747.65	MT
701	ATMP	Multi-Use Path	0.311226527	\$	375,000.00	\$	116,709.95	\$	29,177.49	\$	17,506.49	\$	163,393.93	ST
730	ATMP	Multi-Use Path	4.284629827	\$	375,000.00	\$	1,606,736.19	\$	401,684.05	\$	241,010.43	\$	2,249,430.66	ST
741	ATMP	Multi-Use Path	0.237636739	\$	375,000.00	\$	89,113.78	\$	22,278.44	\$	13,367.07	\$	124,759.29	MT
757	ATMP	Multi-Use Path	0.052653944	\$	375,000.00	\$	19,745.23	\$	4,936.31	\$	2,961.78	\$	27,643.32	LT
776	ATMP	Multi-Use Path	0.420853425	\$	375,000.00	\$	157,820.03	\$	39,455.01	\$	23,673.01	\$	220,948.05	ST
781	ATMP	Multi-Use Path	8.469343582	\$	375,000.00	\$	3,176,003.84	\$	794,000.96	\$	476,400.58	\$	4,446,405.38	LT
787	ATMP	Multi-Use Path	0.535708906	\$	375,000.00	\$	200,890.84	\$	50,222.71	\$	30,133.63	\$	281,247.18	MT
818	ATMP	Multi-Use Path	0.146044415	\$	375,000.00	\$	54,766.66	\$	13,691.66	\$	8,215.00	\$	76,673.32	ST
835	ATMP	Multi-Use Path	0.173026096	\$	375,000.00	\$	64,884.79	\$	16,221.20	\$	9,732.72	\$	90,838.70	ST
836	ATMP	Multi-Use Path	0.095546055	\$	375,000.00	\$	35,829.77	\$	8,957.44	\$	5,374.47	\$	50,161.68	ST
837	ATMP	Multi-Use Path	1.165645173	\$	375,000.00	\$	437,116.94	\$	109,279.23	\$	65,567.54	\$	611,963.72	ST
853	ATMP	Multi-Use Path	0.634523609	\$	375,000.00	\$	237,946.35	\$	59,486.59	\$	35,691.95	\$	333,124.89	ST
854	ATMP	Multi-Use Path	0.528226961	\$	375,000.00	\$	198,085.11	\$	49,521.28	\$	29,712.77	\$	277,319.15	ST
855	ATMP	Multi-Use Path	0.5381929	\$	375,000.00	\$	201,822.34	\$	50,455.58	\$	30,273.35	\$	282,551.27	ST
856	ATMP	Multi-Use Path	0.250849053	\$	375,000.00	\$	94,068.39	\$	23,517.10	\$	14,110.26	\$	131,695.75	ST
857	ATMP	Multi-Use Path	0.912313875	\$	375,000.00	\$	342,117.70	\$	85,529.43	\$	51,317.66	\$	478,964.78	ST
858	ATMP	Multi-Use Path	0.543236393	\$	375,000.00	\$	203,713.65	\$	50,928.41	\$	30,557.05	\$	285,199.11	ST
11	ATMP	Multi-Use Trail	2.047400594	\$	375,000.00	\$	767,775.22	\$	191,943.81	\$	115,166.28	\$	1,074,885.31	LT
14	ATMP	Multi-Use Trail	1.188126175	\$	375,000.00	\$	445,547.32	\$	111,386.83	\$	66,832.10	\$	623,766.24	ST
15	ATMP	Multi-Use Trail	0.406636131	\$	375,000.00	\$	152,488.55	\$	38,122.14	\$	23,873.28	\$	213,483.97	ST
19	ATMP	Multi-Use Trail	0.624212583	\$	375,000.00	\$	234,079.72	\$	58,519.93	\$	35,111.96	\$	327,711.61	ST
26	ATMP	Multi-Use Trail	1.210088419	\$	375,000.00	\$	453,783.16	\$	113,445.79	\$	68,067.47	\$	635,296.42	MT
31	ATMP	Multi-Use Trail	1.224533105	\$	375,000.00	\$	459,199.91	\$	114,799.98	\$	68,879.99	\$	642,879.88	ST
43	ATMP	Multi-Use Trail	1.077400737	\$	375,000.00	\$	404,025.28	\$	101,006.32	\$	60,603.79	\$	565,635.39	LT
46	ATMP	Multi-Use Trail	0.116950745	\$	375,000.00	\$	43,856.53	\$	10,964.13	\$	6,578.48	\$	61,399.14	ST
62	ATMP	Multi-Use Trail	0.163990884	\$	375,000.00	\$	61,496.58	\$	15,374.15	\$	9,224.49	\$	86,095.21	ST
101	ATMP	Multi-Use Trail	0.077041389	\$	375,000.00	\$	28,890.52	\$	7,222.63	\$	4,333.58	\$	40,446.73	ST
102	ATMP	Multi-Use Trail	0.182995603	\$	375,000.00	\$	68,623.35	\$	17,155.84	\$	10,293.50	\$	96,072.69	ST
121	ATMP	Multi-Use Trail	0.220040722	\$	375,000.00	\$	82,515.27	\$	20,628.82	\$	12,377.29	\$	115,521.38	ST
123	ATMP	Multi-Use Trail	0.087399303	\$	375,000.00	\$	32,774.74	\$	8,193.68	\$	4,916.21	\$	45,884.63	ST
141	ATMP	Multi-Use Trail	0.787710941	\$	375,000.00	\$	295,391.60	\$	73,847.90	\$	44,308.74	\$	413,548.24	LT
146	ATMP	Multi-Use Trail	0.186190756	\$	375,000.00	\$	69,821.53	\$	17,455.38	\$	10,473.23	\$	97,750.15	ST
155	ATMP	Multi-Use Trail	0.935818946	\$	375,000.00	\$	350,932.10	\$	87,733.03	\$	52,639.82	\$	491,304.95	ST
167	ATMP	Multi-Use Trail	0.136962	\$	375,000.00	\$	51,360.75	\$	12,840.19	\$	7,704.11	\$	71,905.05	ST
186	ATMP	Multi-Use Trail	0.060198002	\$	375,000.00	\$	22,574.25	\$	5,643.56	\$	3,386.14	\$	31,603.95	ST
188	ATMP	Multi-Use Trail	0.585884354	\$	375,000.00	\$	219,706.63	\$	54,926.66	\$	32,955.99	\$	307,589.29	ST
199	ATMP	Multi-Use Trail	0.303949743	\$	375,000.00	\$	113,981.15	\$	28,495.29	\$	17,097.17	\$	159,573.61	ST
202	ATMP	Multi-Use Trail	0.374848715	\$	375,000.00	\$	140,568.27	\$	35,142.07	\$	21,085.24	\$	196,795.58	ST
223	ATMP	Multi-Use Trail	0.155103988	\$	375,000.00	\$	58,164.00	\$	14,541.00	\$	8,724.60	\$	81,429.59	LT
260	ATMP	Multi-Use Trail	0.139351508	\$	375,000.00	\$	52,256.82	\$	13,064.20	\$	7,838.52	\$	73,159.54	LT
262	ATMP	Multi-Use Trail	1.503131967	\$	375,000.00	\$	563,674.49	\$	140,918.62	\$	84,551.17	\$	789,144.28	ST
265	ATMP	Multi-Use Trail	0.14200011	\$	375,000.00	\$	53,250.04	\$	13,312.51	\$	7,987.51	\$	74,550.06	ST
299	ATMP	Multi-Use Trail	0.287164141	\$	375,000.00	\$	107,686.55	\$	26,921.64	\$	16,152.98	\$	150,761.17	ST
300	ATMP	Multi-Use Trail	0.522294688	\$	375,000.00	\$	195,860.51	\$	48,965.13	\$	29,379.08	\$	274,204.71	ST
301	ATMP	Multi-Use Trail	0.278157424	\$	375,000.00	\$	104,309.03	\$	26,077.26	\$	15,646.36	\$	146,032.65	ST
302	ATMP	Multi-Use Trail	0.124686297	\$	375,000.00	\$	46,757.36	\$	11,689.34	\$	7,013.60	\$	65,460.31	ST
319	ATMP	Multi-Use Trail	0.493660666	\$	375,000.00	\$	185,124.77	\$	46,281.19	\$	27,768.72	\$	259,174.68	ST
320	ATMP	Multi-Use Trail	0.322869782	\$	375,000.00	\$	121,076.17	\$	30,269.04	\$	18,161.43	\$	169,506.64	LT

597	ATMP	Multi-Use Trail	0.050189426	\$	375,000.00	\$	18,821.03	\$	4,705.26	\$	2,823.16	\$	26,349.45	ST
599	ATMP	Multi-Use Trail	0.04996139	\$	375,000.00	\$	18,735.52	\$	4,683.88	\$	2,810.33	\$	26,229.73	ST
601	ATMP	Multi-Use Trail	0.00066698	\$	375,000.00	\$	250.12	\$	62.53	\$	37.52	\$	350.16	ST
603	ATMP	Multi-Use Trail	0.180144354	\$	375,000.00	\$	67,554.13	\$	16,888.53	\$	10,133.12	\$	94,575.79	ST
653	ATMP	Multi-Use Trail	0.160363027	\$	375,000.00	\$	60,136.14	\$	15,034.03	\$	9,020.42	\$	84,190.59	MT
657	ATMP	Multi-Use Trail	0.396978864	\$	375,000.00	\$	148,867.07	\$	37,216.77	\$	22,330.06	\$	208,413.90	MT
662	ATMP	Multi-Use Trail	0.949878436	\$	375,000.00	\$	356,204.41	\$	89,051.10	\$	53,430.66	\$	498,686.18	MT
663	ATMP	Multi-Use Trail	0.368568567	\$	375,000.00	\$	138,213.21	\$	34,553.30	\$	20,731.98	\$	193,498.50	MT
664	ATMP	Multi-Use Trail	0.258334718	\$	375,000.00	\$	96,875.52	\$	24,218.88	\$	14,531.33	\$	135,625.73	LT
672	ATMP	Multi-Use Trail	0.4867676	\$	375,000.00	\$	182,537.85	\$	45,634.46	\$	27,380.68	\$	255,552.99	MT
673	ATMP	Multi-Use Trail	0.324119203	\$	375,000.00	\$	121,544.70	\$	30,386.18	\$	18,231.71	\$	170,162.58	MT
674	ATMP	Multi-Use Trail	0.841391785	\$	375,000.00	\$	315,521.92	\$	78,880.48	\$	47,328.29	\$	441,730.69	MT
675	ATMP	Multi-Use Trail	0.168001823	\$	375,000.00	\$	63,000.68	\$	15,750.17	\$	9,450.10	\$	88,200.96	MT
676	ATMP	Multi-Use Trail	0.301354569	\$	375,000.00	\$	113,007.96	\$	28,251.99	\$	16,951.19	\$	158,211.15	MT
677	ATMP	Multi-Use Trail	0.423413442	\$	375,000.00	\$	158,780.04	\$	39,695.01	\$	23,817.01	\$	222,292.06	ST
699	ATMP	Multi-Use Trail	0.063550541	\$	375,000.00	\$	23,831.45	\$	5,957.86	\$	3,574.72	\$	33,364.03	ST
700	ATMP	Multi-Use Trail	0.11083772	\$	375,000.00	\$	41,564.15	\$	10,391.04	\$	6,234.62	\$	58,189.80	ST
710	ATMP	Multi-Use Trail	0.093189582	\$	375,000.00	\$	34,946.09	\$	8,736.52	\$	5,241.91	\$	48,924.53	MT
729	ATMP	Multi-Use Trail	0.658981698	\$	375,000.00	\$	247,118.14	\$	61,779.53	\$	37,067.72	\$	345,965.39	ST
731	ATMP	Multi-Use Trail	0.171116316	\$	375,000.00	\$	64,168.62	\$	16,042.15	\$	9,625.29	\$	89,836.07	ST
732	ATMP	Multi-Use Trail	0.284321946	\$	375,000.00	\$	106,620.73	\$	26,655.18	\$	15,993.11	\$	149,269.02	ST
735	ATMP	Multi-Use Trail	0.002332525	\$	375,000.00	\$	874.70	\$	218.67	\$	131.20	\$	1,224.58	ST
737	ATMP	Multi-Use Trail	1.232873742	\$	375,000.00	\$	462,327.65	\$	115,581.91	\$	69,349.15	\$	647,258.71	ST
753	ATMP	Multi-Use Trail	0.210605253	\$	375,000.00	\$	78,976.97	\$	19,744.24	\$	11,846.55	\$	110,567.76	ST
763	ATMP	Multi-Use Trail	4.598985649	\$	375,000.00	\$	1,724,619.62	\$	431,154.90	\$	258,692.94	\$	2,414,467.47	LT
778	ATMP	Multi-Use Trail	1.891144027	\$	375,000.00	\$	709,179.01	\$	177,294.75	\$	106,376.85	\$	992,850.61	MT
779	ATMP	Multi-Use Trail	0.718672822	\$	375,000.00	\$	269,502.31	\$	67,375.58	\$	40,425.35	\$	377,303.23	MT
825	ATMP	Multi-Use Trail	1.40584037	\$	375,000.00	\$	527,190.14	\$	131,797.53	\$	79,078.52	\$	738,066.19	MT
826	ATMP	Multi-Use Trail	0.54682189	\$	375,000.00	\$	205,058.21	\$	51,264.55	\$	30,758.73	\$	287,081.49	ST
839	ATMP	Multi-Use Trail	0.212545007	\$	375,000.00	\$	79,704.38	\$	19,926.09	\$	11,955.66	\$	111,586.13	MT
849	ATMP	Multi-Use Trail	0.49132759	\$	375,000.00	\$	184,247.85	\$	46,061.96	\$	27,637.18	\$	257,946.98	MT
859	ATMP	Multi-Use Trail	0.592540674	\$	375,000.00	\$	222,202.75	\$	55,550.69	\$	33,330.41	\$	311,083.85	ST
321	ATMP	Paved Shoulder	4.092808118	\$	215,000.00	\$	879,953.75	\$	219,988.44	\$	131,993.06	\$	1,231,935.24	LT
724	ATMP	Paved Shoulder	2.073192953	\$	215,000.00	\$	445,736.48	\$	111,434.12	\$	66,860.47	\$	624,031.08	MT
725	ATMP	Paved Shoulder	1.050300634	\$	215,000.00	\$	225,814.64	\$	56,453.66	\$	33,872.20	\$	316,140.49	MT
726	ATMP	Paved Shoulder	2.667837734	\$	215,000.00	\$	573,585.11	\$	143,396.28	\$	86,037.77	\$	803,019.16	MT
748	ATMP	Paved Shoulder	3.288106025	\$	215,000.00	\$	706,942.80	\$	176,735.70	\$	106,041.42	\$	989,719.91	LT
756	ATMP	Paved Shoulder	0.847248727	\$	215,000.00	\$	182,158.48	\$	45,539.62	\$	27,323.77	\$	255,021.87	LT
771	ATMP	Paved Shoulder	2.048095741	\$	215,000.00	\$	440,340.58	\$	110,085.15	\$	66,051.09	\$	616,476.82	LT
782	ATMP	Paved Shoulder	6.176668711	\$	215,000.00	\$	1,327,983.77	\$	331,995.94	\$	199,197.57	\$	1,859,177.28	LT
783	ATMP	Paved Shoulder	2.075836458	\$	215,000.00	\$	446,304.84	\$	111,576.21	\$	66,945.73	\$	624,826.77	LT
786	ATMP	Paved Shoulder	6.046564192	\$	215,000.00	\$	1,300,011.30	\$	325,002.83	\$	195,001.70	\$	1,820,015.82	LT
66	ATMP	Signed Route	1.6439573	\$	1,200.00	\$	1,972.75	\$	493.19	\$	295.91	\$	2,761.85	MT
67	ATMP	Signed Route	1.014220539	\$	1,200.00	\$	1,217.06	\$	304.27	\$	182.56	\$	1,703.89	MT
69	ATMP	Signed Route	1.197407322	\$	1,200.00	\$	1,436.89	\$	359.22	\$	215.53	\$	2,011.64	ST
70	ATMP	Signed Route	1.456063682	\$	1,200.00	\$	1,747.28	\$	436.82	\$	262.09	\$	2,446.19	ST
71	ATMP	Signed Route	0.481824461	\$	1,200.00	\$	578.19	\$	144.55	\$	86.73	\$	809.47	ST
72	ATMP	Signed Route	0.852404329	\$	1,200.00	\$	1,022.89	\$	255.72	\$	153.43	\$	1,432.04	ST
73	ATMP	Signed Route	1.696410873	\$	1,200.00	\$	2,035.69	\$	508.92	\$	305.35	\$	2,849.97	ST
74	ATMP	Signed Route	0.382004465	\$	1,200.00	\$	458.41	\$	114.60	\$	68.76	\$	641.77	ST
78	ATMP	Signed Route	0.774932325	\$	1,200.00	\$	929.92	\$	232.48	\$	139.49	\$	1,301.89	ST
79	ATMP	Signed Route	0.380318108	\$	1,200.00	\$	456.38	\$	114.10	\$	68.46	\$	638.93	ST
81	ATMP	Signed Route	0.743364153	\$	1,200.00	\$	892.04	\$	223.01	\$	133.81	\$	1,248.85	ST
84	ATMP	Signed Route	0.672404257	\$	1,200.00	\$	806.89	\$	201.72	\$	121.03	\$	1,129.64	ST
85	ATMP	Signed Route	1.05204624	\$	1,200.00	\$	1,262.46	\$	315.61	\$	189.37	\$	1,767.44	MT
86	ATMP	Signed Route	2.027034336	\$	1,200.00	\$	2,432.44	\$	608.11	\$	364.87	\$	3,405.42	LT

87	ATMP	Signed Route	2.032212824	\$	1,200.00	\$	2,438.66	\$	609.66	\$	365.80	\$	3,414.12	LT
89	ATMP	Signed Route	0.441326046	\$	1,200.00	\$	529.59	\$	132.40	\$	79.44	\$	741.43	ST
90	ATMP	Signed Route	0.368343646	\$	1,200.00	\$	442.01	\$	110.50	\$	66.30	\$	618.82	ST
93	ATMP	Signed Route	0.245343342	\$	1,200.00	\$	294.41	\$	73.60	\$	44.16	\$	412.18	ST
94	ATMP	Signed Route	0.153003365	\$	1,200.00	\$	183.60	\$	45.90	\$	27.54	\$	257.05	ST
103	ATMP	Signed Route	0.116934019	\$	1,200.00	\$	140.32	\$	35.08	\$	21.05	\$	196.45	ST
105	ATMP	Signed Route	0.481613355	\$	1,200.00	\$	577.94	\$	144.48	\$	86.69	\$	809.11	ST
107	ATMP	Signed Route	0.829572767	\$	1,200.00	\$	995.49	\$	248.87	\$	149.32	\$	1,393.68	ST
125	ATMP	Signed Route	0.691165119	\$	1,200.00	\$	829.40	\$	207.35	\$	124.41	\$	1,161.16	ST
126	ATMP	Signed Route	0.279907552	\$	1,200.00	\$	335.89	\$	83.97	\$	50.38	\$	470.24	ST
131	ATMP	Signed Route	0.207228826	\$	1,200.00	\$	248.67	\$	62.17	\$	37.30	\$	348.14	ST
132	ATMP	Signed Route	0.50806245	\$	1,200.00	\$	609.67	\$	152.42	\$	91.45	\$	853.54	ST
142	ATMP	Signed Route	0.753003302	\$	1,200.00	\$	903.60	\$	225.90	\$	135.54	\$	1,265.05	ST
144	ATMP	Signed Route	0.337842309	\$	1,200.00	\$	405.41	\$	101.35	\$	60.81	\$	567.58	ST
161	ATMP	Signed Route	0.599463233	\$	1,200.00	\$	719.36	\$	179.84	\$	107.90	\$	1,007.10	ST
169	ATMP	Signed Route	0.57453431	\$	1,200.00	\$	689.44	\$	172.36	\$	103.42	\$	965.22	ST
191	ATMP	Signed Route	0.340292551	\$	1,200.00	\$	408.35	\$	102.09	\$	61.25	\$	571.69	ST
205	ATMP	Signed Route	0.432585306	\$	1,200.00	\$	519.10	\$	129.78	\$	77.87	\$	726.74	ST
206	ATMP	Signed Route	0.388147151	\$	1,200.00	\$	465.78	\$	116.44	\$	69.87	\$	652.09	ST
706	ATMP	Signed Route	0.525245423	\$	1,200.00	\$	630.29	\$	157.57	\$	94.54	\$	882.41	ST
707	ATMP	Signed Route	0.232816041	\$	1,200.00	\$	279.38	\$	69.84	\$	41.91	\$	391.13	ST
708	ATMP	Signed Route	0.116587002	\$	1,200.00	\$	139.90	\$	34.98	\$	20.99	\$	195.87	ST
709	ATMP	Signed Route	0.434367448	\$	1,200.00	\$	521.24	\$	130.31	\$	78.19	\$	729.74	ST
720	ATMP	Signed Route	0.334994599	\$	1,200.00	\$	401.99	\$	100.50	\$	60.30	\$	562.79	ST
721	ATMP	Signed Route	0.649636553	\$	1,200.00	\$	779.56	\$	194.89	\$	116.93	\$	1,091.39	ST
746	ATMP	Signed Route	0.103048848	\$	1,200.00	\$	123.66	\$	30.91	\$	18.55	\$	173.12	ST
750	ATMP	Signed Route	0.193321475	\$	1,200.00	\$	231.99	\$	58.00	\$	34.80	\$	324.78	ST
754	ATMP	Signed Route	0.279161553	\$	1,200.00	\$	334.99	\$	83.75	\$	50.25	\$	468.99	LT
755	ATMP	Signed Route	1.120510346	\$	1,200.00	\$	1,344.61	\$	336.15	\$	201.69	\$	1,882.46	ST
761	ATMP	Signed Route	0.317825352	\$	1,200.00	\$	381.39	\$	95.35	\$	57.21	\$	533.95	MT
765	ATMP	Signed Route	0.818948229	\$	1,200.00	\$	982.74	\$	245.68	\$	147.41	\$	1,375.83	ST
773	ATMP	Signed Route	1.637558293	\$	1,200.00	\$	1,965.07	\$	491.27	\$	294.76	\$	2,751.10	LT
789	ATMP	Signed Route	0.903009274	\$	1,200.00	\$	1,083.61	\$	270.90	\$	162.54	\$	1,517.06	ST
832	ATMP	Signed Route	0.420938112	\$	1,200.00	\$	505.13	\$	126.28	\$	75.77	\$	707.18	MT
64	ATMP	Signed Route with Urban Shoulder	3.773413171	\$	215,000.00	\$	811,283.83	\$	202,820.96	\$	121,692.57	\$	1,135,797.36	ST
82	ATMP	Signed Route with Urban Shoulder	0.632333432	\$	215,000.00	\$	135,951.69	\$	33,987.92	\$	20,392.75	\$	190,332.36	ST
88	ATMP	Signed Route with Urban Shoulder	1.0811203	\$	215,000.00	\$	232,440.86	\$	58,110.22	\$	34,866.13	\$	325,417.21	ST
92	ATMP	Signed Route with Urban Shoulder	0.600833744	\$	215,000.00	\$	129,179.25	\$	32,294.81	\$	19,376.89	\$	180,850.96	ST
106	ATMP	Signed Route with Urban Shoulder	0.556136864	\$	215,000.00	\$	119,569.43	\$	29,892.36	\$	17,935.41	\$	167,397.20	ST
108	ATMP	Signed Route with Urban Shoulder	0.53942619	\$	215,000.00	\$	115,976.63	\$	28,994.16	\$	17,396.49	\$	162,367.28	ST
157	ATMP	Signed Route with Urban Shoulder	0.719915209	\$	215,000.00	\$	154,781.77	\$	38,695.44	\$	23,217.27	\$	216,694.48	ST
705	ATMP	Signed Route with Urban Shoulder	0.405362542	\$	215,000.00	\$	87,152.95	\$	21,788.24	\$	13,072.94	\$	122,014.13	ST
747	ATMP	Signed Route with Urban Shoulder	0.294217266	\$	215,000.00	\$	63,256.71	\$	15,814.18	\$	9,488.51	\$	88,559.40	ST
759	ATMP	Signed Route with Urban Shoulder	0.193922951	\$	215,000.00	\$	41,693.43	\$	10,423.36	\$	6,254.02	\$	58,370.81	ST
762	ATMP	Signed Route with Urban Shoulder	0.120996484	\$	215,000.00	\$	26,014.24	\$	6,503.56	\$	3,902.14	\$	36,419.94	ST
843	ATMP	Signed Route with Urban Shoulder	0.471964129	\$	215,000.00	\$	101,472.29	\$	25,368.07	\$	15,220.84	\$	142,061.20	ST
650	ATMP	Walkway	0.117514345	\$	300,000.00	\$	35,254.30	\$	8,813.58	\$	5,288.15	\$	49,356.02	MT
651	ATMP	Walkway	0.065545801	\$	300,000.00	\$	19,663.74	\$	4,915.94	\$	2,949.56	\$	27,529.24	MT
652	ATMP	Walkway	0.037876631	\$	300,000.00	\$	11,362.99	\$	2,840.75	\$	1,704.45	\$	15,908.18	MT
654	ATMP	Walkway	0.035066043	\$	300,000.00	\$	10,519.81	\$	2,629.95	\$	1,577.97	\$	14,727.74	MT
660	ATMP	Walkway	0.031709831	\$	300,000.00	\$	9,512.95	\$	2,378.24	\$	1,426.94	\$	13,318.13	ST
690	ATMP	Walkway	0.06104682	\$	300,000.00	\$	18,314.05	\$	4,578.51	\$	2,747.11	\$	25,639.66	MT
651	Proposed	Walkway	0.065534534	\$	300,000.00	\$	19,660.36	\$	4,915.09	\$	2,949.05	\$	27,524.50	MT
652	Proposed	Walkway	0.037870112	\$	300,000.00	\$	11,361.03	\$	2,840.26	\$	1,704.16	\$	15,905.45	MT
654	Proposed	Walkway	0.035059986	\$	300,000.00	\$	10,518.00	\$	2,629.50	\$	1,577.70	\$	14,725.19	MT
660	Proposed	Walkway	0.031703188	\$	300,000.00	\$	9,510.96	\$	2,377.74	\$	1,426.64	\$	13,315.34	ST

690	Proposed	Walkway	0.061033907	\$	29,000.00	\$	1,769.98	\$	442.50	\$	265.50	\$	2,477.98	MT
41	Proposed	Sidewalk	0.109151804	\$	29,000.00	\$	3,165.40	\$	791.35	\$	474.81	\$	4,431.56	ST
17	Sidewalk	Sidewalk	0.031269763	\$	300,000.00	\$	9,380.93	\$	2,345.23	\$	1,407.14	\$	13,133.30	LT
25	Sidewalk	Sidewalk	0.225453218	\$	300,000.00	\$	67,635.97	\$	16,908.99	\$	10,145.39	\$	94,690.35	LT
27	Sidewalk	Sidewalk	0.032879772	\$	300,000.00	\$	9,863.93	\$	2,465.98	\$	1,479.59	\$	13,809.50	LT
32	Sidewalk	Sidewalk	0.082339486	\$	300,000.00	\$	24,701.85	\$	6,175.46	\$	3,705.28	\$	34,582.58	LT
43	Sidewalk	Sidewalk	0.056468732	\$	300,000.00	\$	16,940.62	\$	4,235.15	\$	2,541.09	\$	23,716.87	LT
51	Sidewalk	Sidewalk	0.043122553	\$	300,000.00	\$	12,936.77	\$	3,234.19	\$	1,940.51	\$	18,111.47	LT
53	Sidewalk	Sidewalk	0.134481129	\$	300,000.00	\$	40,344.34	\$	10,086.08	\$	6,051.65	\$	56,482.07	LT
55	Sidewalk	Sidewalk	0.36580043	\$	300,000.00	\$	109,740.13	\$	27,435.03	\$	16,461.02	\$	153,636.18	LT
57	Sidewalk	Sidewalk	0.077247715	\$	300,000.00	\$	23,174.31	\$	5,793.58	\$	3,476.15	\$	32,444.04	LT
58	Sidewalk	Sidewalk	0.376477883	\$	300,000.00	\$	112,943.36	\$	28,235.84	\$	16,941.50	\$	158,120.71	LT
59	Sidewalk	Sidewalk	0.046142085	\$	300,000.00	\$	13,842.63	\$	3,460.66	\$	2,076.39	\$	19,379.68	LT
60	Sidewalk	Sidewalk	0.163789189	\$	300,000.00	\$	49,136.76	\$	12,284.19	\$	7,370.51	\$	68,791.46	LT
71	Sidewalk	Sidewalk	0.031614455	\$	300,000.00	\$	9,484.34	\$	2,371.08	\$	1,422.65	\$	13,278.07	LT
72	Sidewalk	Sidewalk	0.161878032	\$	300,000.00	\$	48,563.41	\$	12,140.85	\$	7,284.51	\$	67,988.77	LT
73	Sidewalk	Sidewalk	0.15686861	\$	300,000.00	\$	47,060.58	\$	11,765.15	\$	7,059.09	\$	65,884.82	LT
74	Sidewalk	Sidewalk	0.167512518	\$	300,000.00	\$	50,253.76	\$	12,563.44	\$	7,538.06	\$	70,355.26	LT
75	Sidewalk	Sidewalk	0.163481963	\$	300,000.00	\$	49,044.59	\$	12,261.15	\$	7,356.69	\$	68,662.42	LT
91	Sidewalk	Sidewalk	0.129898613	\$	300,000.00	\$	38,969.58	\$	9,742.40	\$	5,845.44	\$	54,557.42	LT
93	Sidewalk	Sidewalk	0.156720979	\$	300,000.00	\$	47,016.29	\$	11,754.07	\$	7,052.44	\$	65,822.81	LT
94	Sidewalk	Sidewalk	0.224170212	\$	300,000.00	\$	67,251.06	\$	16,812.77	\$	10,087.66	\$	94,151.49	LT
97	Sidewalk	Sidewalk	0.031488109	\$	300,000.00	\$	9,446.43	\$	2,361.61	\$	1,416.96	\$	13,225.01	LT
98	Sidewalk	Sidewalk	0.036612212	\$	300,000.00	\$	10,983.66	\$	2,745.92	\$	1,647.55	\$	15,377.13	LT
130	Sidewalk	Sidewalk	0.002475563	\$	300,000.00	\$	742.67	\$	185.67	\$	111.40	\$	1,039.74	LT
604	Sidewalk	Sidewalk	0.065865495	\$	300,000.00	\$	19,759.65	\$	4,939.91	\$	2,963.95	\$	27,663.51	LT
1009	Sidewalk	Sidewalk	0.248249777	\$	300,000.00	\$	74,474.93	\$	18,618.73	\$	11,171.24	\$	104,264.91	LT
1010	Sidewalk	Sidewalk	0.179847225	\$	300,000.00	\$	53,954.17	\$	13,488.54	\$	8,093.13	\$	75,535.83	LT
1012	Sidewalk	Sidewalk	0.216673396	\$	300,000.00	\$	65,002.02	\$	16,250.50	\$	9,750.30	\$	91,002.83	LT
1013	Sidewalk	Sidewalk	0.071224386	\$	300,000.00	\$	21,367.32	\$	5,341.83	\$	3,205.10	\$	29,914.24	LT
1016	Sidewalk	Sidewalk	0.194223397	\$	300,000.00	\$	58,267.02	\$	14,566.75	\$	8,740.05	\$	81,573.83	LT
1017	Sidewalk	Sidewalk	0.101808164	\$	300,000.00	\$	30,542.45	\$	7,635.61	\$	4,581.37	\$	42,759.43	LT
1018	Sidewalk	Sidewalk	0.480631639	\$	300,000.00	\$	144,189.49	\$	36,047.37	\$	21,628.42	\$	201,865.29	LT
1033	Sidewalk	Sidewalk	0.267122489	\$	300,000.00	\$	80,136.75	\$	20,034.19	\$	12,020.51	\$	112,191.45	LT
1037	Sidewalk	Sidewalk	0.270786074	\$	300,000.00	\$	81,235.82	\$	20,308.96	\$	12,185.37	\$	113,730.15	LT
1041	Sidewalk	Sidewalk	0.064247561	\$	300,000.00	\$	19,274.27	\$	4,818.57	\$	2,891.14	\$	26,983.98	LT
1044	Sidewalk	Sidewalk	0.067304014	\$	300,000.00	\$	20,191.20	\$	5,047.80	\$	3,028.68	\$	28,267.69	LT
1046	Sidewalk	Sidewalk	0.033574121	\$	300,000.00	\$	10,072.24	\$	2,518.06	\$	1,510.84	\$	14,101.13	LT
1058	Sidewalk	Sidewalk	0.057699629	\$	300,000.00	\$	17,309.89	\$	4,327.47	\$	2,596.48	\$	24,233.84	LT
1059	Sidewalk	Sidewalk	0.178232355	\$	300,000.00	\$	53,469.71	\$	13,367.43	\$	8,020.46	\$	74,857.59	LT
1061	Sidewalk	Sidewalk	0.299787987	\$	300,000.00	\$	89,936.40	\$	22,484.10	\$	13,490.46	\$	125,910.95	LT
1063	Sidewalk	Sidewalk	0.274166585	\$	300,000.00	\$	82,249.98	\$	20,562.49	\$	12,337.50	\$	115,149.97	LT
1065	Sidewalk	Sidewalk	0.011854045	\$	300,000.00	\$	3,556.21	\$	889.05	\$	533.43	\$	4,978.70	LT
1067	Sidewalk	Sidewalk	0.398991428	\$	300,000.00	\$	119,697.43	\$	29,924.36	\$	17,954.61	\$	167,576.40	LT
1068	Sidewalk	Sidewalk	0.060204336	\$	300,000.00	\$	18,061.30	\$	4,515.33	\$	2,709.20	\$	25,285.82	LT
1069	Sidewalk	Sidewalk	0.221262754	\$	300,000.00	\$	66,378.83	\$	16,594.71	\$	9,956.82	\$	92,930.36	LT
1070	Sidewalk	Sidewalk	0.139204928	\$	300,000.00	\$	41,761.48	\$	10,440.37	\$	6,264.22	\$	58,466.07	LT
1071	Sidewalk	Sidewalk	0.221441551	\$	300,000.00	\$	66,432.47	\$	16,608.12	\$	9,964.87	\$	93,005.45	LT
1078	Sidewalk	Sidewalk	0.087198806	\$	300,000.00	\$	26,159.64	\$	6,539.91	\$	3,923.95	\$	36,623.50	LT
1081	Sidewalk	Sidewalk	0.233674435	\$	300,000.00	\$	70,102.33	\$	17,525.58	\$	10,515.35	\$	98,143.26	LT
1082	Sidewalk	Sidewalk	0.195061561	\$	300,000.00	\$	58,518.47	\$	14,629.62	\$	8,777.77	\$	81,925.86	LT
1083	Sidewalk	Sidewalk	0.352852345	\$	300,000.00	\$	105,855.70	\$	26,463.93	\$	15,878.36	\$	148,197.98	LT
1084	Sidewalk	Sidewalk	0.061074834	\$	300,000.00	\$	18,322.45	\$	4,580.61	\$	2,748.37	\$	25,651.43	LT
1085	Sidewalk	Sidewalk	0.180606489	\$	300,000.00	\$	54,181.95	\$	13,545.49	\$	8,127.29	\$	75,854.73	LT
1087	Sidewalk	Sidewalk	0.287315136	\$	300,000.00	\$	86,194.54	\$	21,548.64	\$	12,929.18	\$	120,672.36	LT
1090	Sidewalk	Sidewalk	0.074748041	\$	300,000.00	\$	22,424.41	\$	5,606.10	\$	3,363.66	\$	31,394.18	LT

1096	Sidewalk	Sidewalk	0.196864903	\$	300,000.00	\$	59,059.47	\$	14,764.87	\$	8,858.92	\$	82,683.26	LT
1097	Sidewalk	Sidewalk	0.196828908	\$	300,000.00	\$	59,048.67	\$	14,762.17	\$	8,857.30	\$	82,668.14	LT
1111	Sidewalk	Sidewalk	0.035244493	\$	300,000.00	\$	10,573.35	\$	2,643.34	\$	1,586.00	\$	14,802.69	LT
1114	Sidewalk	Sidewalk	0.036356973	\$	300,000.00	\$	10,907.09	\$	2,726.77	\$	1,636.06	\$	15,269.93	LT
1116	Sidewalk	Sidewalk	0.06637722	\$	300,000.00	\$	19,913.17	\$	4,978.29	\$	2,986.97	\$	27,878.43	LT
1117	Sidewalk	Sidewalk	0.060337705	\$	300,000.00	\$	18,101.31	\$	4,525.33	\$	2,715.20	\$	25,341.84	LT
1118	Sidewalk	Sidewalk	0.260182769	\$	300,000.00	\$	78,054.83	\$	19,513.71	\$	11,708.22	\$	109,276.76	LT
1120	Sidewalk	Sidewalk	0.280567096	\$	300,000.00	\$	84,170.13	\$	21,042.53	\$	12,625.52	\$	117,838.18	LT
1132	Sidewalk	Sidewalk	0.063022887	\$	300,000.00	\$	18,906.87	\$	4,726.72	\$	2,836.03	\$	26,469.61	LT
1133	Sidewalk	Sidewalk	0.314419154	\$	300,000.00	\$	94,325.75	\$	23,581.44	\$	14,148.86	\$	132,056.04	LT
1134	Sidewalk	Sidewalk	0.316833505	\$	300,000.00	\$	95,050.05	\$	23,762.51	\$	14,257.51	\$	133,070.07	LT
1138	Sidewalk	Sidewalk	0.186304703	\$	300,000.00	\$	55,891.41	\$	13,972.85	\$	8,383.71	\$	78,247.98	LT
1139	Sidewalk	Sidewalk	0.071199635	\$	300,000.00	\$	21,359.89	\$	5,339.97	\$	3,203.98	\$	29,903.85	LT
1140	Sidewalk	Sidewalk	0.065733009	\$	300,000.00	\$	19,719.90	\$	4,929.98	\$	2,957.99	\$	27,607.86	LT
1141	Sidewalk	Sidewalk	0.186624148	\$	300,000.00	\$	55,987.24	\$	13,996.81	\$	8,398.09	\$	78,382.14	LT
1142	Sidewalk	Sidewalk	0.02955806	\$	300,000.00	\$	8,867.42	\$	2,216.85	\$	1,330.11	\$	12,414.39	LT
1144	Sidewalk	Sidewalk	0.184409463	\$	300,000.00	\$	55,322.84	\$	13,830.71	\$	8,298.43	\$	77,451.97	LT
1182	Sidewalk	Sidewalk	0.038501893	\$	300,000.00	\$	11,550.57	\$	2,887.64	\$	1,732.59	\$	16,170.79	LT
1223	Sidewalk	Sidewalk	0.211945788	\$	300,000.00	\$	63,583.74	\$	15,895.93	\$	9,537.56	\$	89,017.23	LT
1224	Sidewalk	Sidewalk	0.080634267	\$	300,000.00	\$	24,190.28	\$	6,047.57	\$	3,628.54	\$	33,866.39	LT
1225	Sidewalk	Sidewalk	0.022959163	\$	300,000.00	\$	6,887.75	\$	1,721.94	\$	1,033.16	\$	9,642.85	LT
1230	Sidewalk	Sidewalk	0.309490547	\$	300,000.00	\$	92,847.16	\$	23,211.79	\$	13,927.07	\$	129,986.03	LT
1234	Sidewalk	Sidewalk	0.002094221	\$	300,000.00	\$	628.27	\$	157.07	\$	94.24	\$	879.57	LT
1239	Sidewalk	Sidewalk	0.07888676	\$	300,000.00	\$	23,666.03	\$	5,916.51	\$	3,549.90	\$	33,132.44	LT
1240	Sidewalk	Sidewalk	0.002370913	\$	300,000.00	\$	711.27	\$	177.82	\$	106.69	\$	995.78	LT
1241	Sidewalk	Sidewalk	0.002714471	\$	300,000.00	\$	814.34	\$	203.59	\$	122.15	\$	1,140.08	LT
1243	Sidewalk	Sidewalk	0.002592146	\$	300,000.00	\$	777.64	\$	194.41	\$	116.65	\$	1,088.70	LT
1261	Sidewalk	Sidewalk	0.061115611	\$	300,000.00	\$	18,334.68	\$	4,583.67	\$	2,750.20	\$	25,668.56	LT
1262	Sidewalk	Sidewalk	0.002572909	\$	300,000.00	\$	771.87	\$	192.97	\$	115.78	\$	1,080.62	LT
1264	Sidewalk	Sidewalk	0.001924687	\$	300,000.00	\$	577.41	\$	144.35	\$	86.61	\$	808.37	LT
1266	Sidewalk	Sidewalk	0.001949041	\$	300,000.00	\$	584.71	\$	146.18	\$	87.71	\$	818.60	LT
1281	Sidewalk	Sidewalk	0.234142315	\$	300,000.00	\$	70,242.69	\$	17,560.67	\$	10,536.40	\$	98,339.77	LT
1282	Sidewalk	Sidewalk	0.241713147	\$	300,000.00	\$	72,513.94	\$	18,128.49	\$	10,877.09	\$	101,519.52	LT
1283	Sidewalk	Sidewalk	0.038950845	\$	300,000.00	\$	11,685.25	\$	2,921.31	\$	1,752.79	\$	16,359.35	LT
1284	Sidewalk	Sidewalk	0.038668773	\$	300,000.00	\$	11,600.63	\$	2,900.16	\$	1,740.09	\$	16,240.88	LT
1285	Sidewalk	Sidewalk	0.197756281	\$	300,000.00	\$	59,326.88	\$	14,831.72	\$	8,899.03	\$	83,057.64	LT
1286	Sidewalk	Sidewalk	0.159900263	\$	300,000.00	\$	47,970.08	\$	11,992.52	\$	7,195.51	\$	67,158.11	LT
1287	Sidewalk	Sidewalk	0.14340785	\$	300,000.00	\$	43,022.35	\$	10,755.59	\$	6,453.35	\$	60,231.30	LT
1289	Sidewalk	Sidewalk	0.226914089	\$	300,000.00	\$	68,074.23	\$	17,018.56	\$	10,211.13	\$	95,303.92	LT
1290	Sidewalk	Sidewalk	0.004203255	\$	300,000.00	\$	1,260.98	\$	315.24	\$	189.15	\$	1,765.37	LT
1292	Sidewalk	Sidewalk	0.05871214	\$	300,000.00	\$	17,613.64	\$	4,403.41	\$	2,642.05	\$	24,659.10	LT
1293	Sidewalk	Sidewalk	0.237695888	\$	300,000.00	\$	71,308.77	\$	17,827.19	\$	10,696.31	\$	99,832.27	LT
1295	Sidewalk	Sidewalk	0.430704887	\$	300,000.00	\$	129,211.47	\$	32,302.87	\$	19,381.72	\$	180,896.05	LT
1311	Sidewalk	Sidewalk	0.469289971	\$	300,000.00	\$	140,786.99	\$	35,196.75	\$	21,118.05	\$	197,101.79	LT
1316	Sidewalk	Sidewalk	0.094682466	\$	300,000.00	\$	28,404.74	\$	7,101.18	\$	4,260.71	\$	39,766.64	ST
1317	Sidewalk	Sidewalk	0.302784518	\$	300,000.00	\$	90,835.36	\$	22,708.84	\$	13,625.30	\$	127,169.50	LT
1318	Sidewalk	Sidewalk	0.11068392	\$	300,000.00	\$	33,205.18	\$	8,301.29	\$	4,980.78	\$	46,487.25	ST
1319	Sidewalk	Sidewalk	0.264074383	\$	300,000.00	\$	79,222.31	\$	19,805.58	\$	11,883.35	\$	110,911.24	ST
1320	Sidewalk	Sidewalk	0.028029478	\$	300,000.00	\$	8,408.84	\$	2,102.21	\$	1,261.33	\$	11,772.38	ST
1321	Sidewalk	Sidewalk	0.074698771	\$	300,000.00	\$	22,409.63	\$	5,602.41	\$	3,361.44	\$	31,373.48	LT
1322	Sidewalk	Sidewalk	0.274702247	\$	300,000.00	\$	82,410.67	\$	20,602.67	\$	12,361.60	\$	115,374.94	LT
1323	Sidewalk	Sidewalk	0.061077507	\$	300,000.00	\$	18,323.25	\$	4,580.81	\$	2,748.49	\$	25,652.55	LT
1324	Sidewalk	Sidewalk	0.155545149	\$	300,000.00	\$	46,663.54	\$	11,665.89	\$	6,999.53	\$	65,328.96	LT
1325	Sidewalk	Sidewalk	0.149539392	\$	300,000.00	\$	44,861.82	\$	11,215.45	\$	6,729.27	\$	62,806.54	LT
1326	Sidewalk	Sidewalk	0.119485081	\$	300,000.00	\$	35,845.52	\$	8,961.38	\$	5,376.83	\$	50,183.73	LT
1327	Sidewalk	Sidewalk	0.123591616	\$	300,000.00	\$	37,077.48	\$	9,269.37	\$	5,561.62	\$	51,908.48	LT

1333	Sidewalk	Sidewalk	0.210181135	\$	300,000.00	\$	63,054.34	\$	15,763.59	\$	9,458.15	\$	88,276.08	LT
1334	Sidewalk	Sidewalk	0.00313757	\$	300,000.00	\$	941.27	\$	235.32	\$	141.19	\$	1,317.78	LT
1335	Sidewalk	Sidewalk	0.000854537	\$	300,000.00	\$	256.36	\$	64.09	\$	38.45	\$	358.91	LT
1336	Sidewalk	Sidewalk	0.035082623	\$	300,000.00	\$	10,524.79	\$	2,631.20	\$	1,578.72	\$	14,734.70	LT
1337	Sidewalk	Sidewalk	0.012805711	\$	300,000.00	\$	3,841.71	\$	960.43	\$	576.26	\$	5,378.40	LT
1338	Sidewalk	Sidewalk	0.012806718	\$	300,000.00	\$	3,842.02	\$	960.50	\$	576.30	\$	5,378.82	LT
1339	Sidewalk	Sidewalk	0.004622177	\$	300,000.00	\$	1,386.65	\$	346.66	\$	208.00	\$	1,941.31	LT
1340	Sidewalk	Sidewalk	0.058499312	\$	300,000.00	\$	17,549.79	\$	4,387.45	\$	2,632.47	\$	24,569.71	LT
1341	Sidewalk	Sidewalk	0.072731969	\$	300,000.00	\$	21,819.59	\$	5,454.90	\$	3,272.94	\$	30,547.43	LT
1342	Sidewalk	Sidewalk	0.152403831	\$	300,000.00	\$	45,721.15	\$	11,430.29	\$	6,858.17	\$	64,009.61	LT
1350	Sidewalk	Sidewalk	0.353337027	\$	300,000.00	\$	106,001.11	\$	26,500.28	\$	15,900.17	\$	148,401.55	LT
1351	Sidewalk	Sidewalk	0.242197392	\$	300,000.00	\$	72,659.22	\$	18,164.80	\$	10,898.88	\$	101,722.90	LT
1352	Sidewalk	Sidewalk	0.387993159	\$	300,000.00	\$	116,397.95	\$	29,099.49	\$	17,459.69	\$	162,957.13	LT
1355	Sidewalk	Sidewalk	0.181279486	\$	300,000.00	\$	54,383.85	\$	13,595.96	\$	8,157.58	\$	76,137.38	LT
1356	Sidewalk	Sidewalk	0.049882518	\$	300,000.00	\$	14,964.76	\$	3,741.19	\$	2,244.71	\$	20,950.66	LT
1357	Sidewalk	Sidewalk	0.01143926	\$	300,000.00	\$	3,431.78	\$	857.94	\$	514.77	\$	4,804.49	LT
1358	Sidewalk	Sidewalk	0.044331734	\$	300,000.00	\$	13,299.52	\$	3,324.88	\$	1,994.93	\$	18,619.33	LT
1359	Sidewalk	Sidewalk	0.017632095	\$	300,000.00	\$	5,289.63	\$	1,322.41	\$	793.44	\$	7,405.48	LT
1360	Sidewalk	Sidewalk	0.007824878	\$	300,000.00	\$	2,347.46	\$	586.87	\$	352.12	\$	3,286.45	LT
1361	Sidewalk	Sidewalk	0.050350422	\$	300,000.00	\$	15,105.13	\$	3,776.28	\$	2,265.77	\$	21,147.18	LT
1362	Sidewalk	Sidewalk	0.051515342	\$	300,000.00	\$	15,454.60	\$	3,863.65	\$	2,318.19	\$	21,636.44	LT
1366	Sidewalk	Sidewalk	0.01632593	\$	300,000.00	\$	4,897.78	\$	1,224.44	\$	734.67	\$	6,856.89	LT
1367	Sidewalk	Sidewalk	0.110154012	\$	300,000.00	\$	33,046.20	\$	8,261.55	\$	4,956.93	\$	46,264.68	LT
1368	Sidewalk	Sidewalk	0.009349252	\$	300,000.00	\$	2,804.78	\$	701.19	\$	420.72	\$	3,926.69	LT
1369	Sidewalk	Sidewalk	0.018926773	\$	300,000.00	\$	5,678.03	\$	1,419.51	\$	851.70	\$	7,949.24	LT
1370	Sidewalk	Sidewalk	0.167338856	\$	300,000.00	\$	50,201.66	\$	12,550.41	\$	7,530.25	\$	70,282.32	LT
1371	Sidewalk	Sidewalk	0.227639186	\$	300,000.00	\$	68,291.76	\$	17,072.94	\$	10,243.76	\$	95,608.46	LT
1372	Sidewalk	Sidewalk	0.002681934	\$	300,000.00	\$	804.58	\$	201.15	\$	120.69	\$	1,126.41	LT
1374	Sidewalk	Sidewalk	0.207045641	\$	300,000.00	\$	62,113.69	\$	15,528.42	\$	9,317.05	\$	86,959.17	LT
1375	Sidewalk	Sidewalk	0.033449184	\$	300,000.00	\$	10,034.76	\$	2,508.69	\$	1,505.21	\$	14,048.66	LT
1377	Sidewalk	Sidewalk	0.490969484	\$	300,000.00	\$	147,290.85	\$	36,822.71	\$	22,093.63	\$	206,207.18	LT
1378	Sidewalk	Sidewalk	0.043755783	\$	300,000.00	\$	13,126.73	\$	3,281.68	\$	1,969.01	\$	18,377.43	LT
1379	Sidewalk	Sidewalk	0.072116314	\$	300,000.00	\$	21,634.89	\$	5,408.72	\$	3,245.23	\$	30,288.85	LT
1383	Sidewalk	Sidewalk	0.602920171	\$	300,000.00	\$	180,876.05	\$	45,219.01	\$	27,131.41	\$	253,226.47	LT
1385	Sidewalk	Sidewalk	0.003542126	\$	300,000.00	\$	1,062.64	\$	265.66	\$	159.40	\$	1,487.69	LT
1387	Sidewalk	Sidewalk	0.040438804	\$	300,000.00	\$	12,131.64	\$	3,032.91	\$	1,819.75	\$	16,984.30	LT
1389	Sidewalk	Sidewalk	0.126141135	\$	300,000.00	\$	37,842.34	\$	9,460.59	\$	5,676.35	\$	52,979.28	LT
1390	Sidewalk	Sidewalk	0.119903909	\$	300,000.00	\$	35,971.17	\$	8,992.79	\$	5,395.68	\$	50,359.64	LT
1391	Sidewalk	Sidewalk	0.073267356	\$	300,000.00	\$	21,980.21	\$	5,495.05	\$	3,297.03	\$	30,772.29	LT
1392	Sidewalk	Sidewalk	0.26699852	\$	300,000.00	\$	80,099.56	\$	20,024.89	\$	12,014.93	\$	112,139.38	LT
1403	Sidewalk	Sidewalk	0.065478568	\$	300,000.00	\$	19,643.57	\$	4,910.89	\$	2,946.54	\$	27,501.00	LT
2176	Sidewalk	Sidewalk	0.069026886	\$	300,000.00	\$	20,708.07	\$	5,177.02	\$	3,106.21	\$	28,991.29	LT
2177	Sidewalk	Sidewalk	0.108064833	\$	300,000.00	\$	32,419.45	\$	8,104.86	\$	4,862.92	\$	45,387.23	LT
2178	Sidewalk	Sidewalk	0.25600907	\$	300,000.00	\$	76,802.72	\$	19,200.68	\$	11,520.41	\$	107,523.81	LT
2186	Sidewalk	Sidewalk	0.27473196	\$	300,000.00	\$	82,419.59	\$	20,604.90	\$	12,362.94	\$	115,387.42	LT
2189	Sidewalk	Sidewalk	0.118963326	\$	300,000.00	\$	35,689.00	\$	8,922.25	\$	5,353.35	\$	49,964.60	LT
2192	Sidewalk	Sidewalk	0.098722884	\$	300,000.00	\$	29,616.87	\$	7,404.22	\$	4,442.53	\$	41,463.61	LT
2193	Sidewalk	Sidewalk	0.018809964	\$	300,000.00	\$	5,642.99	\$	1,410.75	\$	846.45	\$	7,900.18	LT
2457	Sidewalk	Sidewalk	0.102574963	\$	300,000.00	\$	30,772.49	\$	7,693.12	\$	4,615.87	\$	43,081.48	LT
2458	Sidewalk	Sidewalk	0.050685236	\$	300,000.00	\$	15,205.57	\$	3,801.39	\$	2,280.84	\$	21,287.80	LT
2476	Sidewalk	Sidewalk	0.078201631	\$	300,000.00	\$	23,460.49	\$	5,865.12	\$	3,519.07	\$	32,844.69	LT
2489	Sidewalk	Sidewalk	0.14966025	\$	300,000.00	\$	44,898.08	\$	11,224.52	\$	6,734.71	\$	62,857.31	LT
2492	Sidewalk	Sidewalk	0.116356504	\$	300,000.00	\$	34,906.95	\$	8,726.74	\$	5,236.04	\$	48,869.73	LT
2493	Sidewalk	Sidewalk	0.115248836	\$	300,000.00	\$	34,574.65	\$	8,643.66	\$	5,186.20	\$	48,404.51	LT
2494	Sidewalk	Sidewalk	0.040230521	\$	300,000.00	\$	12,069.16	\$	3,017.29	\$	1,810.37	\$	16,896.82	LT
2504	Sidewalk	Sidewalk	0.131313489	\$	300,000.00	\$	39,394.05	\$	9,848.51	\$	5,909.11	\$	55,151.67	LT

2505	Sidewalk	Sidewalk	0.078003201	\$	300,000.00	\$	23,400.96	\$	5,850.24	\$	3,510.14	\$	32,761.34	LT
2506	Sidewalk	Sidewalk	0.027790534	\$	300,000.00	\$	8,337.16	\$	2,084.29	\$	1,250.57	\$	11,672.02	LT
2507	Sidewalk	Sidewalk	0.042888887	\$	300,000.00	\$	12,866.67	\$	3,216.67	\$	1,930.00	\$	18,013.33	LT
2508	Sidewalk	Sidewalk	0.06983191	\$	300,000.00	\$	20,949.57	\$	5,237.39	\$	3,142.44	\$	29,329.40	LT
2514	Sidewalk	Sidewalk	0.125101506	\$	300,000.00	\$	37,530.45	\$	9,382.61	\$	5,629.57	\$	52,542.63	LT
2521	Sidewalk	Sidewalk	0.074085993	\$	300,000.00	\$	22,225.80	\$	5,556.45	\$	3,333.87	\$	31,116.12	LT
2522	Sidewalk	Sidewalk	0.126731382	\$	300,000.00	\$	38,019.41	\$	9,504.85	\$	5,702.91	\$	53,227.18	LT
2542	Sidewalk	Sidewalk	0.031413142	\$	300,000.00	\$	9,423.94	\$	2,355.99	\$	1,413.59	\$	13,193.52	LT
2543	Sidewalk	Sidewalk	0.039120723	\$	300,000.00	\$	11,736.22	\$	2,934.05	\$	1,760.43	\$	16,430.70	LT
2544	Sidewalk	Sidewalk	0.074407918	\$	300,000.00	\$	22,322.38	\$	5,580.59	\$	3,348.36	\$	31,251.33	LT
2547	Sidewalk	Sidewalk	0.170445019	\$	300,000.00	\$	51,133.51	\$	12,783.38	\$	7,670.03	\$	71,586.91	LT
2548	Sidewalk	Sidewalk	0.214998391	\$	300,000.00	\$	64,499.52	\$	16,124.88	\$	9,674.93	\$	90,299.32	LT
2549	Sidewalk	Sidewalk	0.144306163	\$	300,000.00	\$	44,291.85	\$	10,822.96	\$	6,493.78	\$	60,608.59	LT
2559	Sidewalk	Sidewalk	0.042333324	\$	300,000.00	\$	12,700.00	\$	3,175.00	\$	1,905.00	\$	17,780.00	LT
2560	Sidewalk	Sidewalk	0.036378972	\$	300,000.00	\$	10,913.69	\$	2,728.42	\$	1,637.05	\$	15,279.17	LT
2579	Sidewalk	Sidewalk	0.051101454	\$	300,000.00	\$	15,330.44	\$	3,832.61	\$	2,299.57	\$	21,462.61	LT
2583	Sidewalk	Sidewalk	0.074433361	\$	300,000.00	\$	22,330.01	\$	5,582.50	\$	3,349.50	\$	31,262.01	LT
2584	Sidewalk	Sidewalk	0.068264949	\$	300,000.00	\$	20,479.48	\$	5,119.87	\$	3,071.92	\$	28,671.28	LT
2586	Sidewalk	Sidewalk	0.065132569	\$	300,000.00	\$	19,539.77	\$	4,884.94	\$	2,930.97	\$	27,355.68	LT
2587	Sidewalk	Sidewalk	0.071100193	\$	300,000.00	\$	21,330.06	\$	5,332.51	\$	3,199.51	\$	29,862.08	LT
2589	Sidewalk	Sidewalk	0.131772428	\$	300,000.00	\$	39,531.73	\$	9,882.93	\$	5,929.76	\$	55,344.42	LT
2590	Sidewalk	Sidewalk	0.067397351	\$	300,000.00	\$	20,219.21	\$	5,054.80	\$	3,032.88	\$	28,306.89	LT
2591	Sidewalk	Sidewalk	0.077909117	\$	300,000.00	\$	23,372.74	\$	5,843.18	\$	3,505.91	\$	32,721.83	LT
2593	Sidewalk	Sidewalk	0.06341794	\$	300,000.00	\$	19,025.38	\$	4,756.35	\$	2,853.81	\$	26,635.53	ST
2594	Sidewalk	Sidewalk	0.071108122	\$	300,000.00	\$	21,332.44	\$	5,333.11	\$	3,199.87	\$	29,865.41	LT
2595	Sidewalk	Sidewalk	0.089734131	\$	300,000.00	\$	26,920.24	\$	6,730.06	\$	4,038.04	\$	37,688.34	ST
2596	Sidewalk	Sidewalk	0.178332262	\$	300,000.00	\$	53,499.68	\$	13,374.92	\$	8,024.95	\$	74,899.55	LT
2597	Sidewalk	Sidewalk	0.160443214	\$	300,000.00	\$	48,132.96	\$	12,033.24	\$	7,219.94	\$	67,386.15	LT
2598	Sidewalk	Sidewalk	0.13377898	\$	300,000.00	\$	40,133.69	\$	10,033.42	\$	6,020.05	\$	56,187.17	ST
2600	Sidewalk	Sidewalk	0.069193046	\$	300,000.00	\$	20,757.91	\$	5,189.48	\$	3,113.69	\$	29,061.08	ST
2601	Sidewalk	Sidewalk	0.066074491	\$	300,000.00	\$	19,822.35	\$	4,955.59	\$	2,973.35	\$	27,751.29	ST
2960	Sidewalk	Sidewalk	0.051309286	\$	300,000.00	\$	15,392.79	\$	3,848.20	\$	2,308.92	\$	21,549.90	LT
4566	Sidewalk	Sidewalk	0.032245248	\$	300,000.00	\$	9,673.57	\$	2,418.39	\$	1,451.04	\$	13,543.00	LT
5770	Sidewalk	Sidewalk	0.144246211	\$	300,000.00	\$	43,273.86	\$	10,818.47	\$	6,491.08	\$	60,583.41	LT
9772	Sidewalk	Sidewalk	0.027719085	\$	300,000.00	\$	8,315.73	\$	2,078.93	\$	1,247.36	\$	11,642.02	LT
9773	Sidewalk	Sidewalk	0.031989934	\$	300,000.00	\$	9,596.98	\$	2,399.25	\$	1,439.55	\$	13,435.77	LT
0	Sidewalk	Sidewalk	0.176448501	\$	300,000.00	\$	52,934.55	\$	13,233.64	\$	7,940.18	\$	74,108.37	ST
0	Sidewalk	Sidewalk	0.168161987	\$	300,000.00	\$	50,448.60	\$	12,612.15	\$	7,567.29	\$	70,628.03	ST
0	Sidewalk	Sidewalk	0.52543782	\$	300,000.00	\$	157,631.35	\$	39,407.84	\$	23,644.70	\$	220,683.88	ST
0	Sidewalk	Sidewalk	0.130692434	\$	300,000.00	\$	39,207.73	\$	9,801.93	\$	5,881.16	\$	54,890.82	ST
0	Sidewalk	Sidewalk	0.196937813	\$	300,000.00	\$	59,081.34	\$	14,770.34	\$	8,862.20	\$	82,713.88	ST
0	Sidewalk	Sidewalk	0.329770746	\$	300,000.00	\$	98,931.22	\$	24,732.81	\$	14,839.68	\$	138,503.71	ST
0	Sidewalk	Sidewalk	0.438835311	\$	300,000.00	\$	131,650.59	\$	32,912.65	\$	19,747.59	\$	184,310.83	MT
0	Sidewalk	Sidewalk	0.406	\$	300,000.00	\$	121,800.00	\$	30,450.00	\$	18,270.00	\$	170,520.00	LT
0	Sidewalk	Sidewalk	0.406	\$	300,000.00	\$	121,800.00	\$	30,450.00	\$	18,270.00	\$	170,520.00	LT
0	Sidewalk	Sidewalk	0.8337	\$	300,000.00	\$	250,110.00	\$	62,527.50	\$	37,516.50	\$	350,154.00	LT
0	Sidewalk	Sidewalk	0.8337	\$	300,000.00	\$	250,110.00	\$	62,527.50	\$	37,516.50	\$	350,154.00	LT
16	Sidewalk	Walkway	0.034885942	\$	300,000.00	\$	10,465.78	\$	2,616.45	\$	1,569.87	\$	14,652.10	LT
22	Sidewalk	Walkway	0.150995901	\$	300,000.00	\$	45,298.77	\$	11,324.69	\$	6,794.82	\$	63,418.28	LT
1006	Sidewalk	Walkway	0.10647171	\$	300,000.00	\$	31,941.51	\$	7,985.38	\$	4,791.23	\$	44,718.12	LT
1079	Sidewalk	Walkway	0.079117473	\$	300,000.00	\$	23,735.24	\$	5,933.81	\$	3,560.29	\$	33,229.34	LT
1143	Sidewalk	Walkway	0.064121073	\$	300,000.00	\$	19,236.32	\$	4,809.08	\$	2,885.45	\$	26,930.85	LT
1376	Sidewalk	Walkway	0.253261626	\$	300,000.00	\$	75,978.49	\$	18,994.62	\$	11,396.77	\$	106,369.88	LT
1386	Sidewalk	Walkway	0.069959366	\$	300,000.00	\$	20,987.81	\$	5,246.95	\$	3,148.17	\$	29,382.93	ST
2588	Sidewalk	Walkway	0.131772428	\$	300,000.00	\$	39,531.73	\$	9,882.93	\$	5,929.76	\$	55,344.42	LT
4	TMP	Bike Lane	0.533317589	\$	29,000.00	\$	15,466.21	\$	3,866.55	\$	2,319.93	\$	21,652.69	LT

5	TMP	Bike Lane	1.090163189	\$	29,000.00	\$	31,614.73	\$	7,903.68	\$	4,742.21	\$	44,260.63	LT
6	TMP	Bike Lane	0.367014191	\$	29,000.00	\$	10,643.41	\$	2,660.85	\$	1,596.51	\$	14,900.78	LT
13	TMP	Bike Lane	0.889086767	\$	29,000.00	\$	25,783.52	\$	6,445.88	\$	3,867.53	\$	36,096.92	LT
14	TMP	Bike Lane	0.426359873	\$	29,000.00	\$	12,364.44	\$	3,091.11	\$	1,854.67	\$	17,310.21	LT
15	TMP	Bike Lane	0.397546822	\$	29,000.00	\$	11,528.86	\$	2,882.21	\$	1,729.33	\$	16,140.40	LT
16	TMP	Bike Lane	0.864559042	\$	29,000.00	\$	25,072.21	\$	6,268.05	\$	3,760.83	\$	35,101.10	LT
17	TMP	Bike Lane	3.437862196	\$	29,000.00	\$	99,698.00	\$	24,924.50	\$	14,954.70	\$	139,577.21	LT
18	TMP	Bike Lane	0.834333269	\$	29,000.00	\$	24,195.66	\$	6,048.92	\$	3,629.35	\$	33,873.93	LT
19	TMP	Bike Lane	1.595071184	\$	29,000.00	\$	46,257.06	\$	11,564.27	\$	6,938.56	\$	64,759.89	LT
20	TMP	Bike Lane	1.403807365	\$	29,000.00	\$	40,710.41	\$	10,177.60	\$	6,106.56	\$	56,994.58	MT
21	TMP	Bike Lane	0.393807089	\$	29,000.00	\$	11,420.41	\$	2,855.10	\$	1,713.06	\$	15,988.57	MT
22	TMP	Bike Lane	0.853237515	\$	29,000.00	\$	24,743.89	\$	6,185.97	\$	3,711.58	\$	34,641.44	LT
23	TMP	Bike Lane	0.3022287591	\$	29,000.00	\$	8,766.34	\$	2,191.59	\$	1,314.95	\$	12,272.88	LT
24	TMP	Bike Lane	1.258780253	\$	29,000.00	\$	36,504.63	\$	9,126.16	\$	5,475.69	\$	51,106.48	MT
25	TMP	Bike Lane	0.256155572	\$	29,000.00	\$	7,428.51	\$	1,857.13	\$	1,114.28	\$	10,399.92	MT
30	TMP	Bike Lane	2.34266441	\$	29,000.00	\$	67,937.27	\$	16,984.32	\$	10,190.59	\$	95,112.18	MT
32	TMP	Bike Lane	2.058329475	\$	29,000.00	\$	59,691.55	\$	14,922.89	\$	8,953.73	\$	83,568.18	MT
38	TMP	Bike Lane	0.425869673	\$	29,000.00	\$	12,350.22	\$	3,087.56	\$	1,852.53	\$	17,290.31	LT
40	TMP	Bike Lane	0.795806184	\$	29,000.00	\$	23,078.38	\$	5,769.59	\$	3,461.76	\$	32,309.73	ST
41	TMP	Bike Lane	1.186823685	\$	29,000.00	\$	34,417.89	\$	8,604.47	\$	5,162.68	\$	48,185.04	MT
42	TMP	Bike Lane	0.777005874	\$	29,000.00	\$	22,533.17	\$	5,633.29	\$	3,379.98	\$	31,546.44	ST
44	TMP	Bike Lane	0.341939902	\$	29,000.00	\$	9,916.26	\$	2,479.06	\$	1,487.44	\$	13,882.76	LT
45	TMP	Bike Lane	1.46170957	\$	29,000.00	\$	42,389.58	\$	10,597.39	\$	6,358.44	\$	59,345.41	MT
46	TMP	Bike Lane	0.359769787	\$	29,000.00	\$	10,433.32	\$	2,608.33	\$	1,565.00	\$	14,606.65	ST
48	TMP	Bike Lane	1.728250062	\$	29,000.00	\$	50,119.25	\$	12,529.81	\$	7,517.89	\$	70,166.95	LT
219	TMP	Bike Lane	0.391854376	\$	29,000.00	\$	11,363.78	\$	2,840.94	\$	1,704.57	\$	15,909.29	MT
220	TMP	Bike Lane	1.261389758	\$	29,000.00	\$	36,580.30	\$	9,145.08	\$	5,487.05	\$	51,212.42	LT
254	TMP	Bike Lane	0.22662	\$	29,000.00	\$	6,571.98	\$	1,643.00	\$	985.80	\$	9,200.77	LT
0	TMP	Multi-Use Path	1.880961626	\$	375,000.00	\$	705,360.61	\$	176,340.15	\$	105,804.09	\$	987,504.85	LT
1	TMP	Multi-Use Path	0.540905726	\$	375,000.00	\$	202,839.65	\$	50,709.91	\$	30,425.95	\$	283,975.51	LT
2	TMP	Multi-Use Path	1.179219734	\$	375,000.00	\$	442,207.40	\$	110,551.85	\$	66,331.11	\$	619,090.36	LT
3	TMP	Multi-Use Path	0.388275619	\$	375,000.00	\$	145,603.36	\$	36,400.84	\$	21,840.50	\$	203,844.70	LT
7	TMP	Multi-Use Path	0.678509743	\$	375,000.00	\$	254,441.15	\$	63,610.29	\$	38,166.17	\$	356,217.62	LT
8	TMP	Multi-Use Path	0.48010382	\$	375,000.00	\$	180,038.93	\$	45,009.73	\$	27,005.84	\$	252,054.51	LT
9	TMP	Multi-Use Path	2.152474835	\$	375,000.00	\$	807,178.06	\$	201,794.52	\$	121,076.71	\$	1,130,049.29	LT
10	TMP	Multi-Use Path	1.070161481	\$	375,000.00	\$	401,310.56	\$	100,327.64	\$	60,196.58	\$	561,834.78	LT
11	TMP	Multi-Use Path	1.121474395	\$	375,000.00	\$	420,552.90	\$	105,138.22	\$	63,082.93	\$	588,774.06	MT
12	TMP	Multi-Use Path	0.306528331	\$	375,000.00	\$	114,948.12	\$	28,737.03	\$	17,242.22	\$	160,927.37	LT
27	TMP	Multi-Use Path	0.179559059	\$	375,000.00	\$	67,334.65	\$	16,833.66	\$	10,100.20	\$	94,268.51	LT
28	TMP	Multi-Use Path	2.260210777	\$	375,000.00	\$	847,579.04	\$	211,894.76	\$	127,136.86	\$	1,186,610.66	LT
29	TMP	Multi-Use Path	2.817582851	\$	375,000.00	\$	1,056,593.57	\$	264,148.39	\$	158,489.04	\$	1,479,231.00	LT
31	TMP	Multi-Use Path	2.048045297	\$	375,000.00	\$	768,016.99	\$	192,004.25	\$	115,202.55	\$	1,075,223.78	LT
33	TMP	Multi-Use Path	1.422947317	\$	375,000.00	\$	533,605.24	\$	133,401.31	\$	80,040.79	\$	747,047.34	LT
256	TMP	Multi-Use Path	0.836	\$	375,000.00	\$	313,500.00	\$	78,375.00	\$	47,025.00	\$	438,900.00	LT
34	TMP	Multi-Use Path	5.842061	\$	375,000.00	\$	2,190,772.88	\$	547,693.22	\$	328,615.93	\$	3,067,082.03	ST
35	TMP	Multi-Use Path	0.791145676	\$	375,000.00	\$	296,679.63	\$	74,169.91	\$	44,501.94	\$	415,351.48	MT
37	TMP	Multi-Use Path	0.784602806	\$	375,000.00	\$	294,226.05	\$	73,556.51	\$	44,133.91	\$	411,916.47	LT
39	TMP	Multi-Use Path	1.199506026	\$	375,000.00	\$	449,814.76	\$	112,453.69	\$	67,472.21	\$	629,740.66	MT
56	TMP	Multi-Use Path	2.034847986	\$	375,000.00	\$	763,067.99	\$	190,767.00	\$	114,460.20	\$	1,068,295.19	LT
58	TMP	Multi-Use Path	0.441900989	\$	375,000.00	\$	165,712.87	\$	41,428.22	\$	24,856.93	\$	231,998.02	LT
59	TMP	Multi-Use Path	2.277017421	\$	375,000.00	\$	853,881.53	\$	213,470.38	\$	128,082.23	\$	1,195,434.15	LT
60	TMP	Multi-Use Path	0.886064761	\$	375,000.00	\$	332,274.29	\$	83,068.57	\$	49,841.14	\$	465,184.00	LT
251	TMP	Multi-Use Path	1.261805384	\$	375,000.00	\$	473,177.02	\$	118,294.25	\$	70,976.55	\$	662,447.83	LT
210	TMP	Paved Shoulder	2.071011542	\$	375,000.00	\$	776,629.33	\$	194,157.33	\$	116,494.40	\$	1,087,281.06	MT
43	TMP	Signed Route	0.753466134	\$	1,200.00	\$	904.16	\$	226.04	\$	135.62	\$	1,265.82	LT

Table 3 - Summary of Recommended Active Transportation and Trails Network by Facility Type

Facility Type	Existing Length	Proposed Length	Total Length
Multi-Use Trail	63.3	34.2	97.5
Multi-Use Path	8.6	59.1	67.7
Protected Bike Lane	0.0	0.0	0.0
Cycle Track	4.1	0.0	4.1
Bike Lane	6.1	35.1	41.2
Paved Shoulder	36.2	32.4	68.6
Signed Route	2.9	33.0	35.9
Signed Route with Urban Shoulder	0.0	9.4	9.4
Sidewalk	150.0	30.1	180.1
Walkway	11.6	1.5	13.1
Footpath	8.2	0.0	8.2
Desire Line	0.0	98.6	98.6
Regional Proposed	0.0	126.1	126.1
Total	291.0	459.5	750.5

Table 4 - Summary of Recommended Active Transportation and Trails Network and Cost by Facility Type and Phase

Facility Type	Short-Term 0 to 5 years		Medium-Term 6 to 10 years		Long-Term 11 to 20+ years		Total	
	ST Length	ST Cost	MT Length	MT Cost	LT Length	LT Cost	Total Length	Total Cost
Multi-Use Trail	14.8	\$7,772,750	10.0	\$5,260,622	9.4	\$4,928,258	34.2	\$17,961,629
Multi-Use Path	17.1	\$8,961,779	7.2	\$3,763,038	34.8	\$18,292,252	59.1	\$31,017,068
Cycle Track	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
Bike Lane	4.3	\$172,764	13.1	\$531,853	17.8	\$722,230	35.1	\$1,426,848
Paved Shoulder	0.0	\$0	7.9	\$2,830,472	24.6	\$7,397,174	32.4	\$10,227,646
Signed Route	21.9	\$36,798	4.4	\$7,474	6.6	\$11,161	33.0	\$55,434
Signed Route with Urban Shoulder	9.4	\$2,826,282	0.0	\$0	0.0	\$0	9.4	\$2,826,282
Sidewalk	2.6	\$1,032,221	0.4	\$184,311	27.1	\$11,373,148	30.1	\$12,589,680
Walkway	0.1	\$56,016	0.5	\$193,794	0.8	\$344,663	1.5	\$594,473
Desire Line	0.2	\$0	1.3	\$0	97.0	\$0	98.5	\$0
Total	70.4	\$20,858,611	44.8	\$12,771,563	218.2	\$43,068,885	333.3	\$76,699,060

APPENDIX

C 2012 Active Transportation and Trails Master Plan