



EXPLORE NEWMARKET

*HIKING, BIKING,
ROLLING, & WALKING*



Town of Newmarket Active Transportation Implementation Plan

Final Report | July 2018

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On behalf of the study team and those who contributed to this Implementation Plan, it is our hope that the Active Transportation Implementation Plan provides the Town and its partners with the tools and guidance to build and improve on the current active transportation infrastructure.



Executive Summary

Study Background



In 2017, the Town of Newmarket initiated the Active Transportation Implementation Plan (ATIP) with the assistance of the WSP consultant team. The ATIP is a follow-up study to the 2014 Active Transportation Study (ATS), and builds on the network from the Official Plan Amendment 11 (OPA11), Schedule D. Since the ATS was completed, the cycling context in Ontario and Newmarket has changed, including the publication of new Provincial facility design guidelines and manuals, changes in implementation costs and new funding opportunities.



The ATIP seeks to support the development of a complete and efficient active transportation (AT) network for the Town of Newmarket incorporating previously accepted plans and policies. The network compliments Newmarket's established trail system and newly implemented East-West Bikeway, which are currently well-used and enjoyed by residents and visitors of the Town. The study aims to identify active transportation connectivity opportunities along with existing infrastructure in Newmarket to support walking and cycling as an attractive and viable mode of transportation for both recreational and commuter purposes.



Study Overview



The study was completed in four main phases. It is important to note that the study was also supported through the consultation and input from residents and other relevant stakeholders. The first phase of the project started with a detailed trail inventory and condition assessment of Newmarket's existing trail assets. The exercise identified that Newmarket has a high-quality trail system and provided the town with a comprehensive trail asset database.



The second step was to develop and refine Newmarket's active transportation network from the previously proposed network in Schedule D of OPA11. The network development process involved the modification of previously proposed routes and new additions to increase the connectivity of the network. Facility selection was completed for the network using the methods from the *Ontario Traffic Manual (OTM) Book 18: Cycling Facilities*.



The third step was to develop detailed design guidance for the Town that could be used as a reference for future conceptual design and implementation. The network facilities from the previous step were applied to the local context to create reference designs. Additionally, best practices for network amenities (e.g. bike parking) and a conceptual wayfinding plan have been provided to guide Newmarket in the development of a holistic active transportation network.

Finally, an implementation plan was developed with the inclusion of network costing estimates and a phasing plan. The implementation plan includes best practices for maintenance and monitoring, and will serve as a guide for the Town to effectively track implementation and operations of existing and new active transportation infrastructure.

Proposed Network

The proposed active transportation network consists of 103.8 km of new facilities; 72.2 km are new on-road facilities (e.g. bike lanes) while 31.6 km are new trail facilities. As noted in the consultation process, users are generally happy with the trail network. From both the proposed network contained in Schedule D of OPA11 and the feedback from consultation participants, there was a desire to increase the amount of dedicated on-road facilities. The ATIP proposes to add 54.1 km of dedicated buffered bike lanes or conventional bike lanes to the network. The previously completed Active Transportation Study predated the current design guidance of OTM Book 18 and the Ontario Bikeway Design Manual. The facility selection was updated to reflect the guidance of these documents. Shared facilities (e.g. signed routes) were only applied on routes with lower volumes and vehicle operating speeds.



The trail network builds on the core Tom Taylor Trail which acts as a key spine in the network. New in-boulevard and off-road trails provide additional options for those who prefer fully separated facilities/paths to encourage more recreational and utilitarian trips.



Implementation Plan

The cost to implement/construct the proposed network over the next 10 years, including potential bridges, is estimated to be \$11 million (in 2018 dollars). Design, landscaping, and additional costs are in addition to this estimate. A large portion of projects are planned to be implemented in the short-term phase to capitalize on current development plans and capital projects. The Provincial government is currently very supportive of active transportation, and is providing funding for these projects. This has provided Newmarket with the opportunity to apply and successfully obtain funds from both the Ontario Municipal Cycling Infrastructure (OMCIP) and Ontario Municipal Commuter Cycling (OMCC) Programs.



Funding can be obtained through several sources including grants, capital projects and development charges. As the Town implements new facilities, projects that have been designated for long-term and future phase implementation should be re-evaluated and re-costed. As the urban and transportation contexts change, route choices and alignments should be revisited to reflect the future environment and public desires along with up-to-date costing estimates.



Next Steps

The Town of Newmarket has a high-quality and well-used existing active transportation system. The ATIP aims to build upon these successful foundations by creating more route options and increased connectivity to attract users for both utilitarian and recreational purposes. Facility design and planning should be consistent with provincial standards. The public should also be consulted and informed about new developments in the AT network. As the network expands, the Town should consider implementing more network amenities and enhancing maintenance and monitoring programs to further develop an AT supportive environment.



1 Study Purpose and Approach

1.1 About the Implementation Plan



The Town of Newmarket Active Transportation Implementation Plan (ATIP) builds upon previously accepted plans and policies and identifies infrastructure requirements for the development of an integrated active transportation network in Newmarket. The Town currently has an extensive and well-used trail system, and has recently implemented the East-West Bikeway.



The study builds upon the existing network to provide additional connectivity and support the development of a comprehensive, efficient, and accessible active transportation network. The ATIP is a comprehensive multi-year strategy to develop a connected network of routes that can be feasibly implemented. It will make walking and cycling a convenient and enjoyable option for Newmarket residents and visitors.



1.2 Plan Objectives

The overall goal of the ATIP is to support the development of a complete and efficient active transportation network for the Town of Newmarket. The key objectives include:



1



Obtain feedback from the public to identify challenges and opportunities.

2



Identify a proposed network of connected routes that builds upon the approved network from the Town of Newmarket Official Plan Amendment 11 (OPA11).

3



Identify facility types that accommodate a wide range of users of varying skill levels, abilities and age, and develop a network hierarchy to identify priority corridors within the network.

4



Provide design guidance to Newmarket on the implementation of on-road and trail active transportation facilities.

5



Recommend a wayfinding system that is consistent within the Town and the Region to ensure users are able to effectively choose their preferred routes and navigate to key destinations.

6



Identify a realistic implementation strategy that can be achieved in short, medium, long-term and future phases.

7



Develop preliminary 10-year cost estimates of the proposed active transportation network.



Benefits of Active Transportation



Safety

More cyclists and pedestrians means an improved sense of safety. Cities and towns with high levels of walking and cycling typically see a lower rate of collisions.

Health

An active lifestyle can reduce risk of heart disease, cancer, obesity as well as improve mental health.



Environment

Walking and cycling are carbon neutral and do not generate greenhouse gas emissions.

Economic

Cycling tourists help with economic growth on a local and regional scale. According to Ontario's Cycling Tourism Plan, cycling visitors generally spend more on average in comparison to other visitors.



Group Bicycle Ride on the Tom Taylor Trail

1.3 Study Approach

The Active Transportation Implementation Plan (ATIP) was developed in four phases between the spring of 2017 and the end of 2017. Figure 1 provides an overview of the study process and the tasks undertaken for each phase. During the initial phase of the project, consultation was completed to understand the needs of active transportation users in the Town of Newmarket. The input collected from stakeholders was used throughout course of the study.

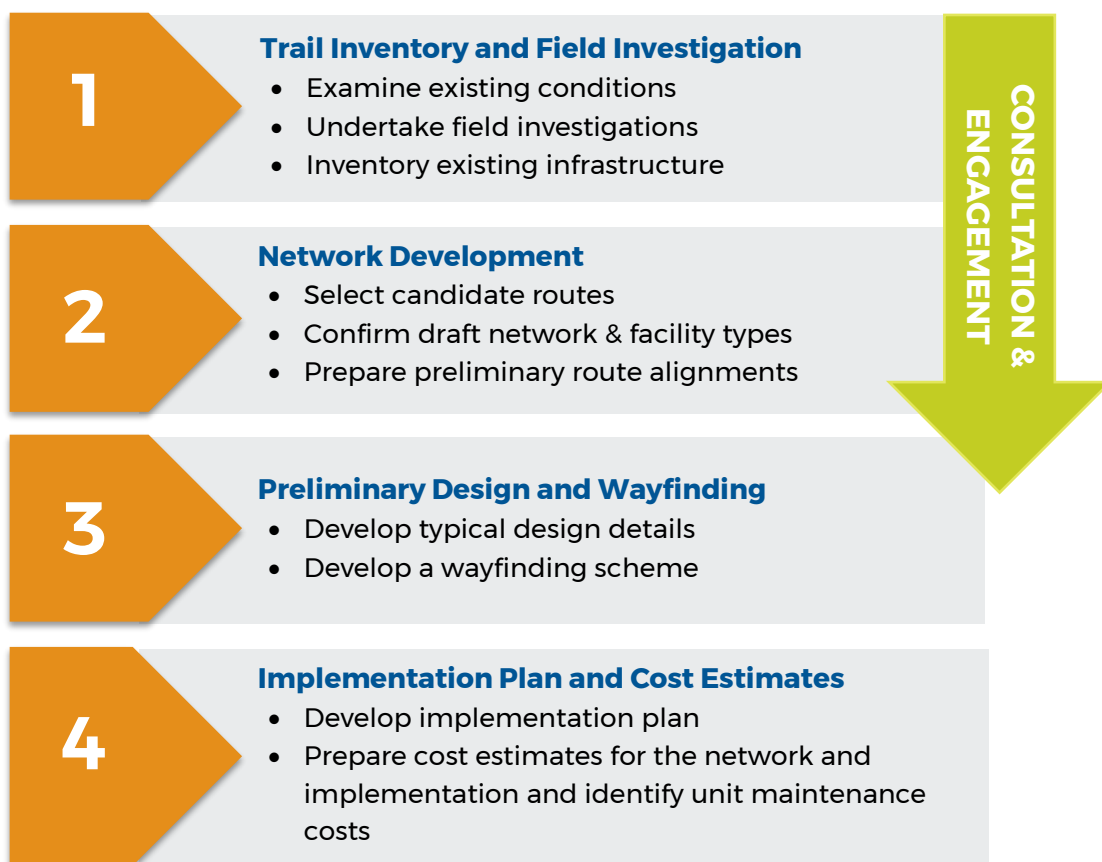


Figure 1: Key Phases of the Newmarket ATIP



Group Bicycle Ride Meetup at Newmarket Riverwalk Commons

Trail Inventory and Field Investigation

A desktop review of mapping data, including existing and proposed active transportation routes from local and regional plans were used to identify the existing trail network. The study team conducted a field investigation to confirm the current condition of the trail system in Newmarket and to create an up-to-date file of the trail alignment and amenities. The purpose of the field investigation was to assess the condition of the trail system and to identify segments of trail that may need repair. A database of trail features with GPS coordinates will help Town staff better understand the state of their trail assets.



Network Development

The proposed network in the ATIP is based on the network in Schedule D from OPA11 and incorporated information from the Trail Inventory. The selection of additional routes involved applying route selection criteria such as “route connectivity and accessibility” to determine if a route would be suitable for the network. Field investigation was completed to verify the choice and feasibility of the proposed routes. A network hierarchy was developed to ensure that there are seamless east-west and north-south spines throughout the Town. The ATIP’s on-road facility selection incorporated current provincial design guidance that was not available when the previously proposed network from Schedule D was created. The facility selection process included considerations from earlier steps of the network development. The study team refined the draft network alignment to minimize potential conflicts. Implementation challenges and opportunities were highlighted in the Preliminary Proposed On-road/Trail Design Sheets.



Preliminary Design & Wayfinding

Facility design guidance was provided to assist in the implementation process. Commentary and typical cross-sections were developed as a guide for the Town. The design guidance draws from best practices in current guidelines (e.g. Ontario Traffic Manual Book 18) and applies them to the local Town environment. The wayfinding plan builds on the York Region Wayfinding Strategy as part of their *Design Standards for York Region Pedestrian and Cycling Facilities* to ensure a common wayfinding experience in Newmarket and York Region.



Implementation Plan & Cost Estimates

Cost estimates for the network were developed based on current unit construction costs and adjusted for the Newmarket context in consultation with Town staff. The costs are provided for the recommended long-term (10-year time horizon) network. Typical unit maintenance costs have been provided to the Town to develop a maintenance budget for new facilities. The phasing plan divided the implementation scheme into short-term, medium-term, long-term and future phases. The development of the phasing plan includes consideration for the network cost, potential funding, partnership opportunities and network connectivity. The implementation plan acts as a guide for the Town to identify where and when to implement new routes and to better operate, maintain and monitor the expanding network.



1.4 Public Consultation Summary

To inform the development of the Implementation Plan, the study team provided opportunities for members of the public, Town Councillors, Town staff and stakeholders to provide input towards the ATIP through a Public Information Centre (PIC) and online questionnaire. A Public Information Centre was held in June 2017 and an online questionnaire ran from June to September 2017. Approximately 25 people attended the PIC and 100 people responded to the online questionnaire.

During the PIC, attendees had the opportunity to engage with Town staff and members of the study team. Attendees were also asked to provide their feedback and comments directly onto activity boards and comment sheets provided at the PIC. The following is a summary of key themes and comments received through the PIC and the online survey. A more detailed summary of the PIC is provided in **Appendix A**.



Safety needs to be a top priority during the ATIP development. Facilities should be designed and maintained to minimize risks for users.



There needs to be promotion and education around active transportation. Education should focus on behaviour and etiquette.



Amenities such as bicycle parking and repair stations throughout the Town may encourage more active transportation users.



Although there is an established trail network, more on-road routes could be implemented to provide better connectivity.



More direct routes along major roads should be considered while keeping user safety and comfort in mind.

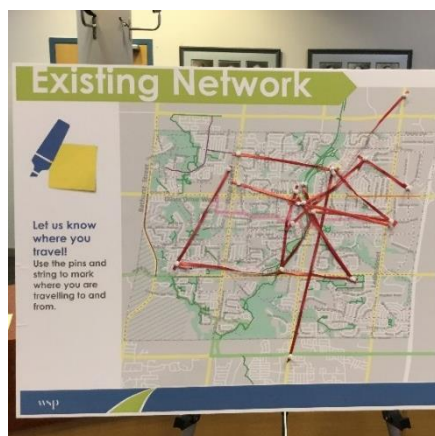


Figure 2: PIC Interactive Activity Board and Public Participation

2 Policy Context and Review

Policies provide the basis for future growth, development and community change. Where possible, the Active Transportation Implementation Plan (ATIP) should be supported by policies and plans from other levels of government. Active transportation and recreation have been integrated into a number of policies and plans at the provincial and regional levels of government, which have a direct impact on decision making in the Town of Newmarket. In order to understand how to influence future policy changes, it is important to understand the existing policies.

The following is a summary of active transportation and recreation supportive policies at the federal, provincial, regional, and municipal level. Several policies have prompted funding opportunities that Newmarket may want to explore during the implementation process.

2.1 Federal Policies

Transport Canada

Strategies for Sustainable Transportation Planning: a review of practices and options (2005) identifies guidelines for consideration when incorporating sustainable transportation into municipal policies. The report includes federal level principles that support the promotion of active transportation as a viable and sustainable mode of transportation. Potential strategies identified in the Transport Canada guidelines include those that support:

Land Use Planning Integration

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

Modal Sustainability

- Increase walking, cycling, other active transportation, transit, ridesharing and teleworking; and
- Recognize synergies and tensions among different modes (e.g. potential for multimodal cycling-transit trips, potential for modal shift from transit to ridesharing);

Strategies for Sustainable Transportation Planning can act as a resource for the Town of Newmarket when seeking to develop more sustainable transportation plans.

Federation of Canadian Municipalities (FCM)

The Federation of Canadian Municipalities fosters the development of sustainable communities that enjoy a high quality of life by promoting strong, effective, and accountable municipal government. The FCM *Communities in Motion: Bringing Active Transportation to Life Initiative* is a key resource for all Canadian municipalities.



It sets out goals for promoting active transportation and eliminating barriers to more difficult travel modes. The strategy outlines active transportation considerations for community design including travel times and distance, lighting on trails, wayfinding, cycling amenities, and support for recreational, utilitarian, and tourism trip types. Local municipalities are encouraged to use the recommendations and design considerations outlined in this policy to help guide the development of individual routes, systems, and linkages. The FCM and the *Communities in Motion* initiative can be a resource for the Town of Newmarket to compliment this ATIP.



2.2 Provincial Supportive Policies

Provincial Policy Statement (2014)

The 2014 update to the Provincial Policy Statement (PPS) set the foundation for regulating land use planning and development within the Province of Ontario while supporting provincial goals and objectives. The PPS provides guidelines for sustainable development and the protection of resources of provincial interest and promotes transportation choices that facilitate pedestrian and cycling mobility and other modes of travel. Policies pertaining to alternative modes of transportation can be found throughout the PPS. This document can help the Town of Newmarket make developers more accountable for active transportation development.



Places to Grow (2017)

The *Places to Grow Act*, the Growth Plan for the Greater Golden Horseshoe (GGH), sets out a vision for the Greater Golden Horseshoe to become a great place to live by 2041, supported by a strong economy, a clean and healthy environment, and social equity. The plan provides policy objectives to guide the planning and development of an integrated and efficient transportation system to support a vibrant economy and high quality of life in the Greater Golden Horseshoe. The sections *Where and How to Grow* and *Infrastructure to Support Growth* provide numerous policies that support active transportation. Key themes of these policies include: minimizing surface parking and placing a higher emphasis on active transportation and transit in employment areas; ensuring new developments are supportive of active transportation by providing safe and comfortable cycling and pedestrian facilities; and selecting sites for essential amenities that are accessible by transit and active transportation. Further active transportation policies can be found in the sections *Protecting What is Valuable* and *Simcoe Sub-Area*, which feature policies related to active transportation's role in mitigating greenhouse gas emissions and urban design standards that support utilitarian walking and cycling. The *Places to Grow Act* builds on the PPS and can act as a resource to support complete communities and active transportation in Newmarket.



2.3 Provincial Active Transportation Policies and Action Plans

Accessibility for Ontarians with Disabilities Act (2005)



The Accessibility for Ontarians with Disabilities Act (AODA) was passed in 2005. The policy calls on the business community, public, not-for-profit sector, and people with disabilities to develop, implement, and enforce mandatory standards. The policy makes Ontario the first jurisdiction in Canada to establish and apply accessibility standards to both private and public sectors. These guidelines provide directives on how businesses in Ontario can identify, remove, and prevent barriers to accessibility.



Additionally, the *Ontario Guide to Integrated Accessibility Standards Regulation* provides further guidance in the sections, The Built Environment and Standards for Public Spaces. These sections offer details on requirements for recreational trails and beach access routes, and exterior paths of travel, etc. The AODA Act can provide the Town of Newmarket with specific requirements during the planning and design phases of future active transportation infrastructure.



Ontario Trails Strategy (2005)

The *Ontario Trails Strategy* was developed by the Ministry of Tourism, Culture and Sport and formally launched on October 2005. The Strategy is a long-term plan that establishes strategic directions for planning, managing, promoting, and using trails in Ontario.



The Ministry, and its partners throughout Ontario, aims to establish “a world-class system of diversified trails, planned and used in an environmentally responsible manner that enhances the health and prosperity of all Ontarians.” The strategy focuses on single and shared-use trail networks within urban, rural, and wilderness areas which are meant for recreational, active living, utilitarian, and tourism purposes. The strategy sets out five strategic directions including focusing on collaboration between stakeholders, trail sustainability, education, and improved health, economy, and trail experience. *The Ontario Trails Strategy* can help inform the planning, managing, and promotion of trails within the Town of Newmarket.



Ontario Cycling Strategy #CycleON (2013)



In November 2013, the MTO published the Ontario Cycling Strategy, #CycleON. The strategy acknowledges the importance of developing cycling infrastructure to help reduce greenhouse gas emissions, ease gridlock, enhance the economy, increase tourism, and increase quality of life for Ontario residents. The strategy was developed based on increasing demand for direction from the Province on the development of cycling facilities. The Province’s vision is to ultimately “develop a safe cycling network that connects the Province, for collision rates and injuries to continue to drop, and for everyone from the occasional user to the daily commuter

to feel safe when they get on a bicycle in Ontario.” The strategy outlines recommended cycling infrastructure, legislation changes and enhancements including proposed changes to The Highway Traffic Act. The final version of #CycleON includes a clear set of actions. These actions are a strong basis for strategic municipal plans as they address both soft and hard infrastructure as well as the importance of short-term actions and priorities to demonstrate early success.



Ontario Cycling Action Plan #CycleON Action Plan 1.0 (2014)

Following the release of #CycleON, Ontario released its first action plan to implement the strategic directions set from the main strategy document. The plan outlines initiatives to improve cycling infrastructure by launching a three-year Cycling Infrastructure Program. The action plan places greater emphasis on promoting cycling awareness and increased street safety through consultation and engagement programs for all users of the road. The Town of Newmarket can use this Action Plan as a resource for provincial level active transportation supportive policies. Action Plan 2.0 was released in 2018 with updated goals and initiatives that builds on the original action plan.



Ontario Municipal Cycling Infrastructure Program (2015)

The Ontario Municipal Cycling Infrastructure Program (OMCIP) was linked to the #CycleON Action Plan to release funding for Local Cycling Infrastructure. The program allotted \$10 million to help municipalities build new and improved existing cycling infrastructure. The program was launched on July 3, 2015 with almost 150 municipalities submitting expressions of interest for funding. In total, 37 projects across various municipalities in Ontario were selected for funding. The Town of Newmarket was one of successful applicants for the OMCIP, resulting in funding for the newly constructed East-West Bikeway.



Ontario Climate Change Strategy #ONClimate (2015)

In November 2015, Ontario’s Ministry of Environment and Climate Change released a Climate Change Discussion Paper to educate Ontarians on key issues related to Climate Change in the provincial context. The Strategy is a response to the Climate Change Discussion Paper (February 2015) which presented a long-term vision and a set of goals to mitigate climate change. The updated strategy sets out changes which are required in order to reduce greenhouse gas emissions by 37% before 2030. Most of Ontario’s greenhouse gas emissions come from the transportation industry and buildings sectors. As such, a key consideration of the strategy is further investment in sustainable transportation. To reduce the greenhouse gas emissions produced by transportation, the province will continue to improve and provide residents with increased access to active mode choices.



Ontario Climate Change Action Plan 2016 – 2020

In June 2016, Ontario released a new Climate Change Action Plan prompted by Ontario’s participation in the United Nations Framework Convention on Climate Change COP21 Paris

conference. The action plan confirms the Province's intent on investing funds from cap and trade into green projects to help advance Ontario towards a low-carbon economy and a more sustainable Province. The action plan acknowledges that transport is a large contributor towards emissions in Ontario. It aims to promote low-carbon and zero-emission transportation. One method of low-carbon and zero-emission transportation is to improve the commuter cycling network by developing a better cycling network in Ontario, and revising road and highway standards to support safe and convenient cycling infrastructure.

As part of this Action Plan, \$150 to \$225 million is intended to help implement commuter cycling across Ontario. On May 2017, the Province announced significant funding through the *Ontario Municipal Commuter Cycling Program* (discussed below). On July 2018, the new Provincial government announced the cancellation of the cap and trade program.

Ontario Municipal Commuter Cycling Program (2017)

The Ontario Municipal Commuter Cycling Program is a result of the transportation priorities in the *Ontario Climate Change Action Plan*. The funding from the Action Plan is from cap and trade proceeds. The purpose of the program was to directly fund and support municipalities to develop commuter cycling infrastructure. In spring of 2017, the Government of Ontario announced \$42.5 million of available funding for the first wave of funding. Due to the overwhelming interest by municipalities to enhance commuter cycling, \$93 million was allocated to 120 municipalities across Ontario. In 2017, the Town of Newmarket was successful in obtaining funding from the first year of the program. As a result of the new Provincial government in 2018, the cap and trade program, and the OMCC program was cancelled. Pre-existing OMCC funding received prior to March 31, 2018 can still be used for commuter cycling projects identified in the OMCC application.

Tour by Bike, Ontario's Cycling Tourism Plan (2017)

Tour by Bike provides many policies and goals for the Province to increase cycling tourism and seeks to position Ontario as a premier destination for cycling tourism. To enhance on and off-road cycling tourism, the plan includes four target areas, including:

- **Products and Experience Development:** Prioritization to enhance products and experiences to support cycling tourism, such as heritage and trail tour programs.
- **Strategic Marketing:** Recognition of needed improvements in the coordination and effectiveness of marketing efforts for cycling tourism in Ontario.
- **Advancing the Tourism Sector:** The support for trail organizations and communities to enhance the cycling ecosystem, improve the interconnectivity of trail networks, and assist public education efforts regarding cycling tourism.
- **Making Evidence Based Decisions:** The prioritization of using data and research tools to monitor cycling tourism and its economic impact and industry goals.



The *Tour by Bike* plan can function as a resource for provincial level policies that support a wide range of cycling initiatives, beyond facility implementation.

2.4 Regional Active Transportation Policies



The Big Move

The Metrolinx Regional Transportation Plan, *The Big Move*, provides policies and strategies to achieve a transportation system in the Greater Toronto and Hamilton Area (GTHA) that is effective, integrated, and multi-modal. *The Big Move* has many active transportation supportive policies. A key goal of the plan is to make walking and cycling more attractive and realistic choices for all, including children and seniors. Additionally, Strategy #2 in the plan is to enhance and expand active transportation; this section includes many active transportation supportive policies such as:



- 2.1 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;
- 2.3 Research, standardize and promote best practices to integrate walking and cycling in road design, such as scramble intersections, bike boxes, and signal prioritization;
- 2.8 Undertake Active Transportation Master Plans and incorporate them into municipal Transportation Master Plans; and
- 2.10 Enabling Official Plan policies to support active transportation shall be adopted. Where appropriate, the bonusing provisions under the Planning Act should be used to require that any application for major commercial, employment or multiple residential development, particularly in a mobility hub, provides appropriate facilities for cyclists and pedestrians such as secure bike storage, showers and change rooms.



The Big Move's emphasis on active transportation to help address regional transportation concerns, such as congestion, GHG emissions, and public health, provides strong policy support for active transportation initiatives in Newmarket.



2041 Regional Transportation Plan

In 2018, Metrolinx released the update to the Regional Transportation Plan (RTP) that outlines outcomes and strategies to achieve desired transportation goals. Compared with the previous RTP, *The Big Move*, there is an emphasis on the unknown conditions of the future and multi-modal transportation.



Strategy 4: Integrate Land Use and Transportation, highlights that a Regional Cycling Network is essential to improve the transportation system. Metrolinx set a goal to double the regional cycling network from 990 km in 2016 to 2,000 km by 2041. The policy recognizes that land use will need to be supportive of multiple modes of transportation, including transit and active transportation. First and last mile active transportation will be improved through increasing walking and cycling accessibility through transit and active transportation supportive land development. Additionally, the regional cycling network aims to provide more separated infrastructure for heavily travelled corridors and routes that are used for commuter purposes.

The RTP builds upon the original active transportation goals set out in *The Big Move*. Active transportation development is considered critical to develop transportation options and mobility hubs in the Greater Toronto and Hamilton Area, and the update provides strong regional policy support for active transportation in the Town of Newmarket.

York Region Official Plan

The 2010 Official Plan (OP) provides goals and policies to direct growth and development in York Region. Section 7, *Serving Our Population*, contain strong policy support for active transportation. In the subsections, Active Transportation and Streets, numerous policies can be found for cycling and pedestrian initiatives. Key themes of these policies include the priority to implement the Regional Cycling Network, partner with municipalities to help facilitate pedestrian and cycling programs, provide end of trip facilities for active transportation, integrate active transportation with transit. Further active transportation supportive policies can be found in the OP's *An Urbanizing Region* section, which looks at forecasted growth in the region and the increasing need for urban development. This section emphasizes the need for more cycling and pedestrian friendly compact communities, more walkable transit access, and increased mobility choices for residents of the York Region.

Additionally, of the three focal points of the OP, *Healthy Communities*, contains supportive policies for active transportation. Healthy and active lifestyles, safe infrastructure, and accessibility are some of the key themes in the Region's *Healthy Communities* policies. The York Region OP provides numerous active transportation supportive policies and objectives for the Region; the OP can be a resource for the Town of Newmarket when planning and approving development related to active transportation.



York Region Pedestrian and Cycling Master Plan Study (2008)

In 2008, York Region completed their Pedestrian and Cycling Master Plan (PCMP) study, which sought to better understand the elements that affect active transportation in the Region, provide improved conditions for pedestrians and cyclists, and integrate sidewalks and cycling facilities development in regional roads. The PCMP offers recommendations for increasing demand for pedestrian and cycling infrastructure, improving facilities and facility selection criteria, network development, and implementation strategies. In the recommended actions of the PCMP, many supporting policies can be found, such as priorities to develop the Plan's suggested pedestrian and cyclist networks, encourage pedestrian and cycling friendly streetscaping and development, provide bicycle detection at intersections, enforce stricter speed limits, and complete missing sidewalks on regional roads.



The York Region PCMP proposed cycling network includes many regional roads in Newmarket. Yonge St. and Davis Dr. for example, are among the many regional roads selected for future active transportation improvements. These regional roadway improvements should be taken into consideration when developing the proposed Newmarket active transportation network.

The Regional Municipality of York Transportation Master Plan (2016)

The York Region Transportation Master Plan covers transportation policy for the nine municipalities in York Region and contains support for active transportation. One of the plan's three objectives is to integrate active transportation in urban areas, and states that active transportation is vital to ensuring a sustainable transportation system for the future. This chapter contains many supportive policies for walking and cycling, including policies:



- P25: Collaborate with local municipalities as they develop and implement their own plans to improve active transportation;
- P27: The Region will assume responsibility for planning, design, construction, operation and ownership of boulevard elements within Regional rights-of-way, including sidewalks, cycling facilities, illumination and streetscape design;
- P32: Include paved shoulders for cyclists as part of all new construction and rehabilitation projects and consider them for inclusion in resurfacing projects on Regional roads in rural areas; and
- P35: Designate Regionally-significant cycling routes and require consistent design standards and connectivity between them.



A background *Pedestrian and Cycling Plan Development Report* was prepared to support the policy develop in the TMP. The intent of the report was to inform active transportation strategies in the TMP and to update the 2008 Pedestrian and Cycling Master Plan. The network development and phasing of projects in York Region is focused on maximizing the value of investments that complete infill links and improve connectivity, rather than developing links in conjunction with the Roads Capital Plan. The report evaluates current conditions, assesses

the need to connect regional corridors and trails, and proposes a network with high level facility type recommendations for the 10-year plan and the 2041 master network. Future cycling infrastructure projects in the Town of Newmarket should align with the priorities of this TMP and complement its proposed network.

2.5 Town of Newmarket Policies

Town of Newmarket Official Plan

The 2006 Town of Newmarket Official Plan (OP) includes many policies and goals to manage and direct future development in the Town. The OP has seven core goals, including several related to active transportation, such as:

- Goal 1: Maintain and Promote a Healthy Community - which prioritizes supporting alternatives transportation choices through trail and recreational opportunity development;
- Goal 3: Encourage Growth in Support of a Sustainable Community – which seeks to increase opportunities for communities to be more self-reliant and more supportive of walking and cycling; and
- Goal 4: Develop Sustainable Transportation Improvements – which aims to decrease the Town’s reliance on automobiles and make strong progress towards the provision of walking and cycling trails and transit facilities.

Chapter 15 of the OP specifically covers transportation and in 2014, the section was updated with the Active Transportation Network amendment. This amendment adds 16 active transportation specific policies to the OP, covering themes such as the provision of cycling and pedestrian facilities, additional easements on road right-of-ways to accommodate new active transportation infrastructure, minimum widths for specific facilities, improvements to accessibility, and the priority to develop an Active Transportation Plan. The amendment also includes a map of proposed primary and secondary active transportation networks for Newmarket.

Other sections of the OP contain active transportation supportive policies, such as section 12.2 Urban Design Principles, which has six key design principles - two of which directly relate to active transportation. The Connectivity design principle highlights the need for transportation systems to ease travel for cyclists and pedestrians, while the Pedestrian Amenities principle emphasizes pedestrian safety and creating inviting spaces for social interaction in the built environment. Section 8, Parks and Open Spaces, also provides support for pedestrian and cycling initiatives with several policies regarding the inclusion of walkways and cycling facilities in open spaces and using trail and cycling infrastructure to connect communities to essential amenities. Additionally, the 2014 OP amendment, Urban Centres, provides guidelines for intensification in identified urban grown centres. Again, maximizing pedestrian and cycling connectivity is covered in this section, within policy 4.2.5.



Active Transportation Network Summary Report

The Town of Newmarket, 2014 *Active Transportation Network Summary Report* details active transportation priorities for the Town, suggested network updates, and design considerations. This report serves as the basis for the Official Plan Amendment 11 and refines and updates On-Street Bike Lane and Off-Street Trails Plans in Schedules D and E, respectively, of the Town's OP. The study reviews existing conditions relevant to active transportation and summarizes previously proposed cycling and walking facilities from existing Plans and Studies. A review of origin-destination data for the Town of Newmarket is also included, which highlights key trip generating areas and current, all-purpose mode-share distributions. Additionally, the overlapping themes and role of the separate Urban Centres study are also discussed in the report: higher density development, more walkable block structures, and other active transportation supportive elements outlined in the Urban Centres vision will play a key role in the broader context of the Town's active transportation network.

The Town's active transportation study included public consultation aspects; major themes from the Town's residents include specific streets identified as heavily used and in need of active transportation improvements, the priority for improved connectivity/safety for young cyclists, and improved pedestrian signalization and pavement markings at intersections. Sections 3 and 4 of the *Active Transportation Network Summary Report* includes a proposed network with phasing and costing considerations, which are supported with greater detail in the Report's appendices with proposed street sections for various street types and trails, cost estimates for specific active transportation facilities, and phasing considerations/recommendations.



Tom Taylor Trail by Fairy Lake



3 AT Network Development

The development of the Active Transportation Network followed a six step process to identify and confirm the needs of the Town, develop the draft network and hierarchy, and propose facility types. The process built upon existing infrastructure and the network proposed in Schedule D in OPA11. The network development integrates current design guidance, which has evolved significantly since the development of Schedule D, to build a connected network that encourages both recreational and utilitarian active transportation trips.

1	Existing conditions review
2	Trail network inventory and condition assessment
3	Candidate network selection
4	Field investigation and verification
5	Network selection and hierarchy
6	Facility selection for on-road facilities

Figure 3: Overview of the Newmarket ATIP Network Development Process

3.1 Existing Conditions Review

Community Profile

The Town of Newmarket is growing and changing. It is important to understand the local context and establish an understanding of the social, demographic and transportation characteristics to develop informed recommendations and a network that corresponds to the Town’s needs. Through a combination of public input and a scan of socio-demographic and transportation data, the study team was able to develop an understanding of the current conditions and factors that influence the community’s transportation needs and desires.

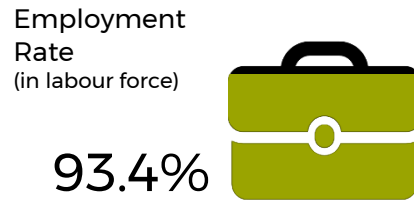
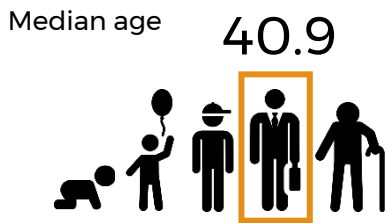
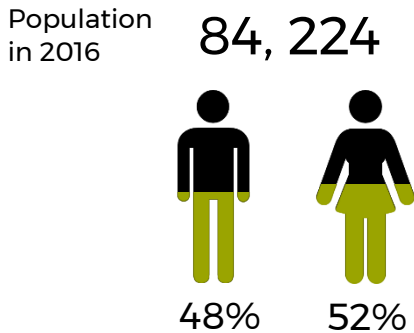
The 2016 Census recorded residents’ primary mode of transportation to work. **Map 1** shows sustainable transportation mode share (combination of transit, cycling and walking) overlaid with the existing active transportation network and YRT transit stops. The map was used to identify areas where there is high sustainable transportation usage, and to identify peripheral areas that could benefit from additional infrastructure. New facilities may encourage residents to consider active transportation as a viable mode for both commuter and recreational purposes.



A Snapshot of Newmarket

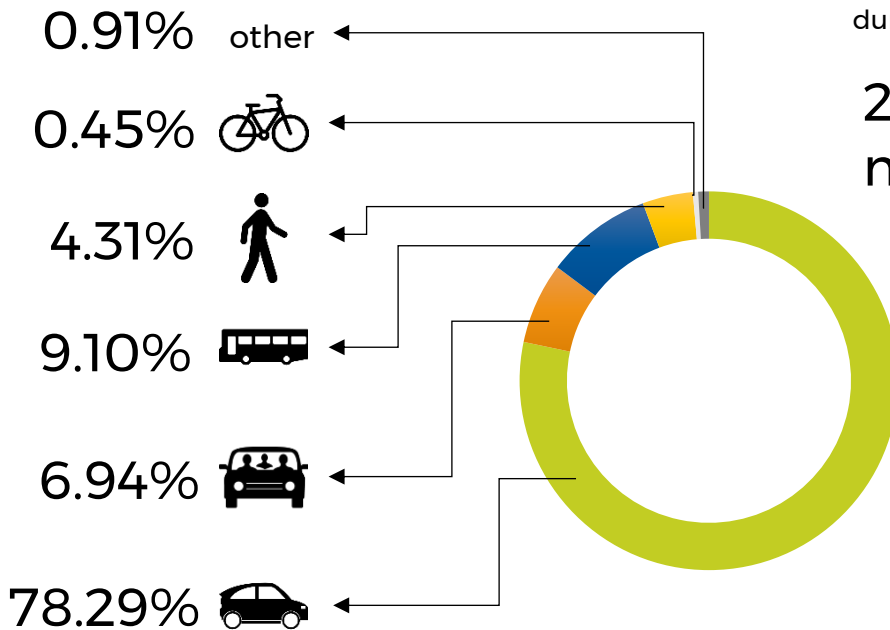
The People

Source: Census Data 2016



The Travel Patterns

Main mode of commuting to work



Median commuting duration



Source: 2011 National Household Survey Journey to Work



Source: 2016 Census Journey to Work

Source: 2011 Transportation Tomorrow Survey



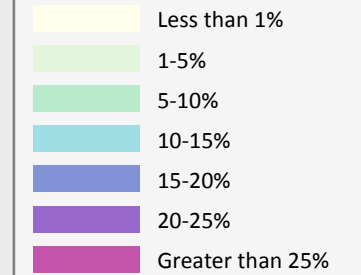


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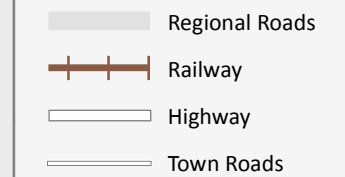
MAP 1: SUSTAINABLE TRANSPORTATION MODE SHARE AND EXISTING CONDITIONS

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

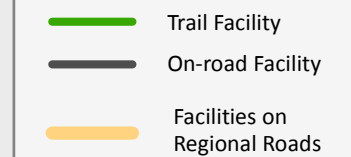
Sustainable Transportation Mode Share



Other Items

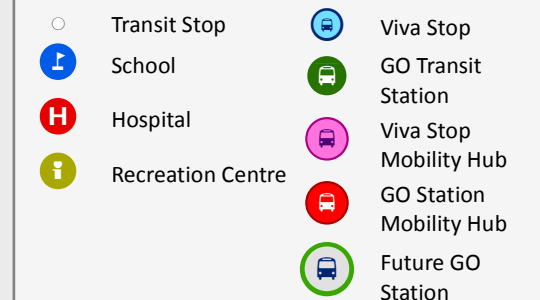


Active Transportation Network

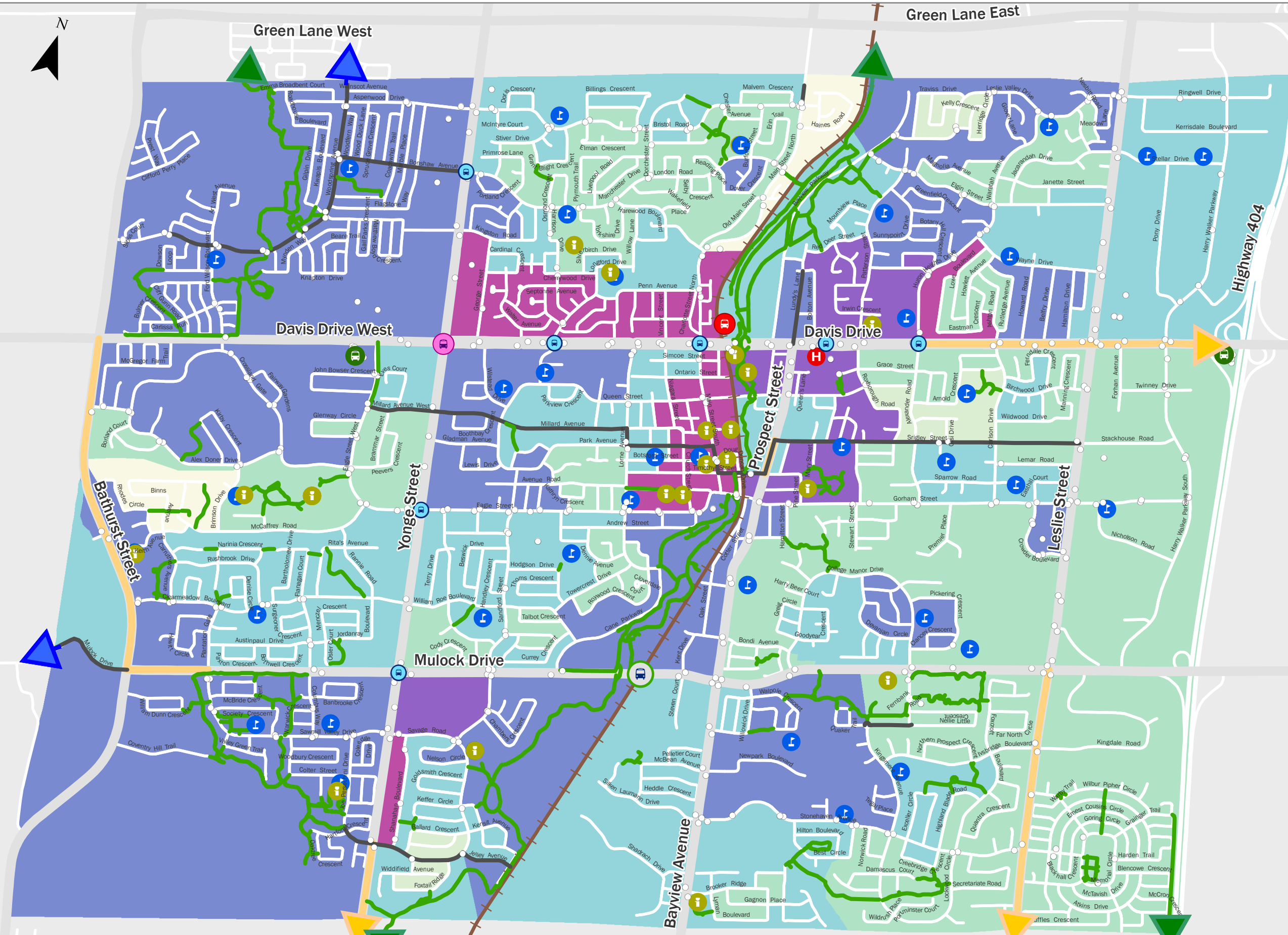
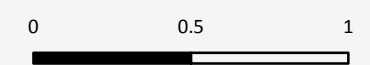


NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

Key Destinations



Data Sources: Town of Newmarket, York Region, and Statistics Canada
Map Created By: WSP in July 2018.



This map shows the Sustainable Transportation mode share in Newmarket. The existing active transportation network and transit stops have been displayed for reference. **Sustainable transportation is defined as the combination of cycling, walking and transit modes.** The Active Transportation mode share has been calculated from Statistics Canada 2016 Census Data or Journey to Work by combining cycling, walking and transit data. Census respondents were asked to indicate their main mode of commuting.

3.2 Trail Network Inventory and Condition Assessment

The study team undertook fieldwork to determine the condition of Newmarket's trail system. Fieldwork involved data collection to identify linear trail features and relevant characteristics of the trail (e.g. surface type and path width) and point features to identify trail amenities, conditions and facilities (e.g. bridges, signage and sightline issues). The data was collected and combined into a comprehensive Geographic Information System (GIS) database that will assist the Town in prioritizing trail monitoring and maintenance activities, and planning for new trail connections.

The field data collection process began with a preliminary compilation of all available trail data into a GIS database. An application was installed on a cellular and GPS enabled tablet device that could accurately upload features, attributes and georeferenced pictures. The Town can use the database of trail features that was produced as an asset management tool to better understand the condition of their trails and identify where they need to monitor or apply maintenance activities. Figure 4 and Figure 5 shows the hardware and software used to record trail features and conditions.

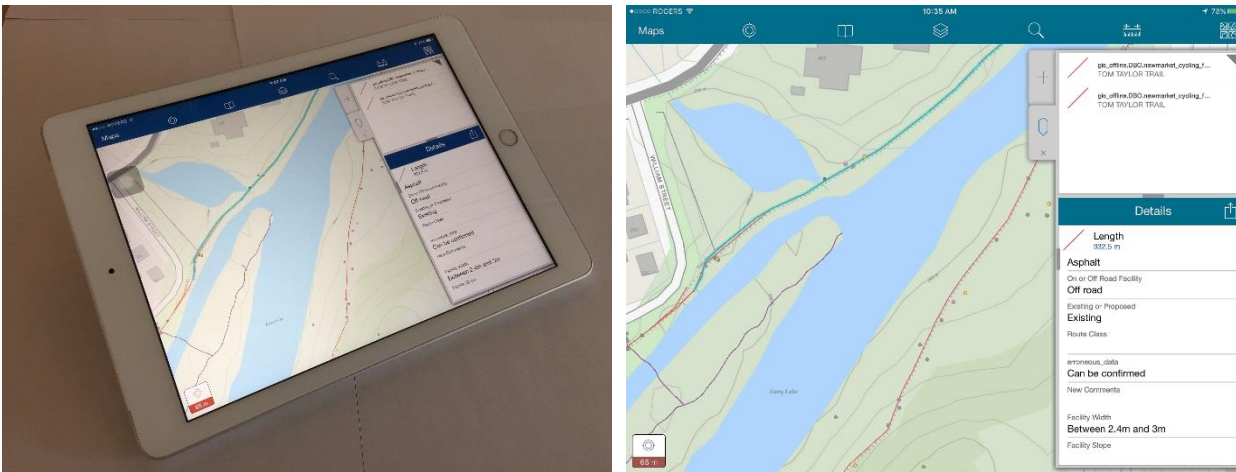


Figure 4: Tablet Device and Software Used for Field Inventory

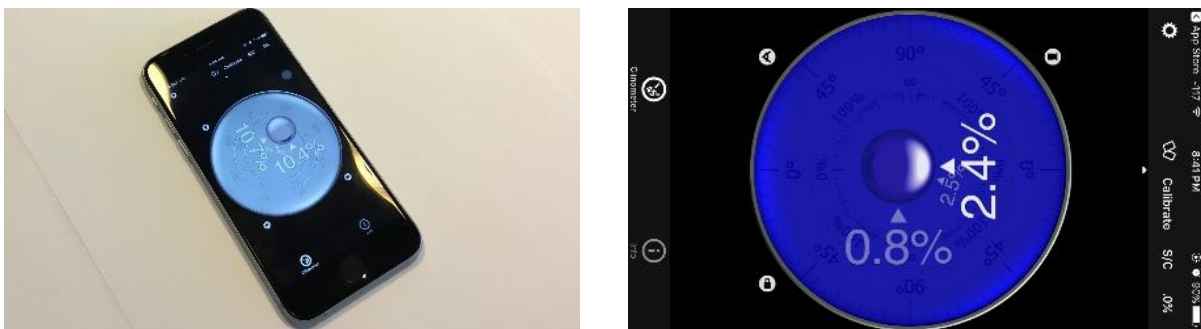


Figure 5: iPhone and Application for Slope Measurement

The field data collection team noted locations for:

- Linear Trail Features (e.g. width, surface type);
- Surface Conditions (e.g. asphalt condition, drainage, slopes);
- Trail Signage (e.g. informational, cautionary, directional signage);
- Road and rail crossings;
- Structures (e.g. bridges, underpasses, railings, culverts);
- Amenities (e.g. trash bins, benches, bike parking); and
- Obstructions (e.g. barriers, gates)



Overall, the findings from the trail inventory and condition assessment phase concluded that Newmarket has a well-used and well-maintained trail system. The trail system has many supporting amenities that residents and visitors can benefit from, such as trail lighting and dog bag dispensers. The detailed findings and recommendations from the trail inventory and condition assessment can be found in the **Appendix Trail Inventory Report**. The Trail inventory data provides important information for identifying potential improvements and new connections linking trails with on-street facilities. Figure 6 and Figure 7 show the study team conducting the field inventory and examples of features that were recorded.

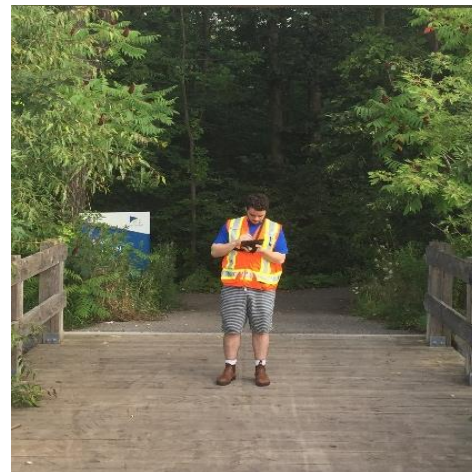


Figure 6: Study Team Conducting Field Inventory and Condition Assessment



Figure 7: Example Trail Features and Conditions Noted in the Field Inventory

3.3 Candidate Network Selection Process

Step 1: Compile and Review Existing Conditions and Future Plans

Information was gathered from a variety of sources including the Town of Newmarket staff, the Open Data portal, and from York Region. The network was based on the proposed active transportation network in Schedule D of OPA11. Building upon and refining the previous network will help the Town maintain continuity in the funding, planning, engineering and operations of new and existing active transportation facilities. The network refinement process began by assembling a GIS database that included data from the following sources:

- **York Region Cycling Routes:** Though not under the Town’s jurisdiction, these existing and proposed routes serve as important active transportation spines in Newmarket. Connections to Regional routes allow for opportunities to enable long distance and inter-municipal trips. Information regarding Regional facilities was taken from the 2016 York Region Transportation Master Plan.
- **Local Cycling and Trail Facilities:** The proposed network from Schedule D of OPA11 was used as the base network for route alignment and facility type. Currently, the Town of Newmarket has both conventional and buffered bike lanes, advisory lanes, shared routes, in-boulevard trails and off-road multi-use trails.
 - **East-West Bikeway:** The East-West Bikeway is a new route established by the Town to function as a major on-road, east-west cycling corridor.
 - **Trail Network Inventory:** The trail inventory from this study is the most up to date file regarding the existing trail network.
 - **Greenbelt Route:** The Greenbelt Cycling Route is a mix of on-road and trail facilities in Ontario’s protected Greenbelt. This route connects cyclists to natural features, local attractions and amenities. The Greenbelt Cycling Route runs through the southwest corner of Newmarket.



- **Key Origins and Destinations:** A number of key origins and destinations throughout the Town were identified as potential trip generators and attractors. This includes locations of interest such as recreation or community centers, schools, and places of major employment.
- **Current Commuter Cycling Demand:** 2016 Census provides data on commuters' main mode share in Newmarket including walking, cycling and transit statistics. Mapping of sustainable transportation mode share in Newmarket revealed some areas of higher use of active modes, which could be supported with additional infrastructure. There are some peripheral areas where new routes could be implemented to encourage more utilitarian and commuter travel (e.g. Bristol Rd. or London Rd.)
- **Public Transit:** Currently GO Transit and YRT/Viva operate transit routes in Newmarket including a bus-rapidway on Davis Dr. and a future bus-rapidway on Yonge St. There is a GO Station at Davis Dr. / Main St. on the Richmond Hill GO Line. Additionally, there is a GO Bus Station at Davis Dr. / Eagle St. W and a GO/YRT station and commuter carpool lot at Davis Dr. / Highway 404. Major transit hubs and transit routes are key destinations and form an opportunity to encourage multi-modal transit trips.
- **First and Last Mile Connections to Transit:** All transit trips start with an active transportation component. Typically, this is a walking trip, though increasingly more users are also cycling to transit stops. As a result, it is important that transit stops, terminals and stations are connected through continuous sidewalks, pathways and bicycle facilities to encourage more people to combine active modes and transit for the same trip. Figure 8 provides an overview of the general distance ranges that support the interaction of active transportation and transit.

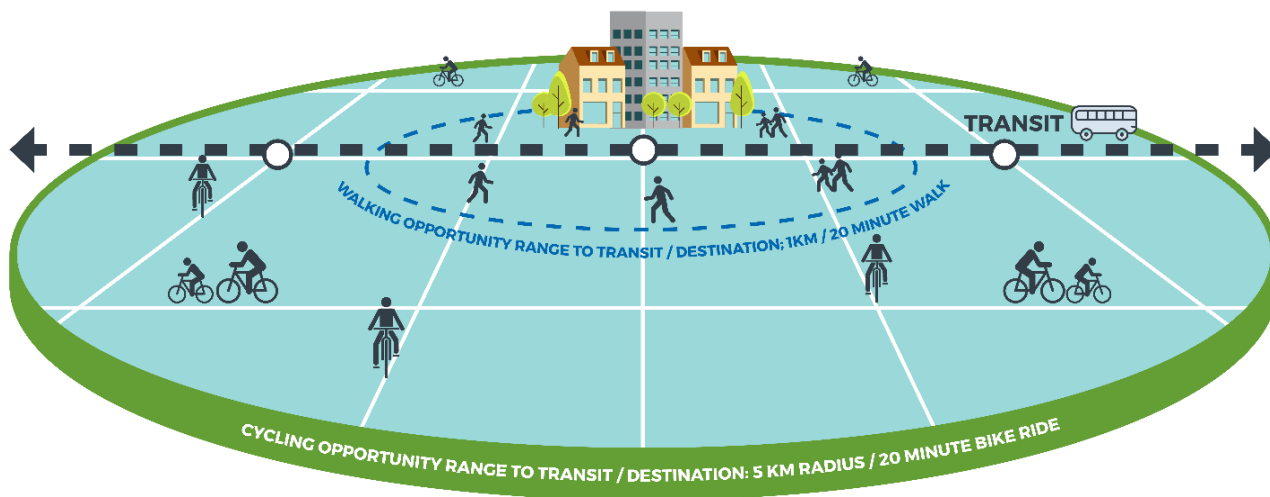


Figure 8: First and Last Mile Connectivity to Transit

Step 2: Prepare Route Selection Criteria

A set of criteria to review the selection of routes was developed to ensure that the goals and objectives of the ATIP were being met. These criteria were used to select candidate routes, and acted as a guide for field investigation and for further refinement of the network.



Accessibility and Potential Use

- Does the candidate route connect significant origins, destinations or nodes such as residential neighbourhoods, employment areas, transit hubs, commercial, recreational or institutional destinations?
- Is the connectivity compromised by barriers that may deter some cyclists such as narrow bridges and steep slopes?



Connectivity and Directness

- How directly does the candidate route connect origins, destinations and nodes?
- Does the route complete missing linkages in the system?
- Does the candidate route constitute a corridor that would enable users to travel a significant distance through the Town?



Safety and Comfort

- What is the potential for conflict between cyclists and other user groups on both on and off-road facilities?
- Can the candidate route feasibly be implemented and appeal to a broad range of potential users?

Cost

- Would the construction of an appropriate route require a disproportionate amount of the annual budget available for active transportation infrastructure, relative to the potential use of the facility?
- What is the level of effort required to implement the preferred facility?



Consideration of Future Use

- Is there significant potential to increase the volume of cyclists using the candidate route in the future?
- Is it clear who the intended users of the proposed facility type are?
- Are there sufficient routes/proposed facility types for users of all ages and abilities?

Planning and Policy

- Is the route identified as part of Schedule D or another planning document?
- Is the route identified as part of future development areas?



Step 3: Identify and Confirm Candidate AT Routes

Candidate routes are the potential active transportation links and connections that could form part of the active transportation network. The route selection criteria were applied to the compiled network of Schedule D and some additional routes. A visual review of the network was completed on Google Earth and orthophoto maps to ensure that the route alignment was feasible (e.g. a trail running through sensitive conservation lands could be considered for modification or removal), and to identify what routes or attractions the proposed routes would connect.

Minor alignment changes and additions were made to the draft network to improve local connectivity while remaining consistent with the goals and priorities set in Schedule D of OPA11. The draft network was shared with Town staff to leverage their knowledge of the Town and to identify current active transportation preferences and priorities for the Town. Links were added, removed and/or modified based on the criteria.



Off-road multi-use pathways in the Northwest Quadrant Forest



Off-road multi-use pathways, bridge and gate at the Environmental Park

Step 4: Complete Field Investigations

After the preliminary draft network was confirmed, field investigations were completed to identify the current condition and context of the proposed routes. The observations confirmed the feasibility of candidate routes and provided information that was used during the network development and facility selection process. Below are a selection of photos taken during the field investigation.



Proposed Trail Crossing at Janette St.



Proposed Trail at North of Clematis Rd.



*Existing Two-lane Road on Harry Walker Pkwy.
Proposed to be a Buffered Bike Lane route*



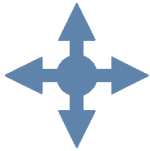
New Bike Lanes on Lundy's Ln.

3.4 Network Hierarchy

The network hierarchy is used to designate routes within Newmarket as primary, secondary or tertiary. The goal of the network hierarchy is to identify the key corridors that connect to other routes or pass major destinations or points of interest in Newmarket. The hierarchy can be used as a guide to determine funding priorities for new projects or maintenance requirements. The network hierarchy focused on ensuring that each major community in Newmarket has continuous east-west and north-south spines that reach major regional corridors and destinations. **Map 2** shows the network hierarchy for both on-road and trail routes. The routes were organized as follows:



LOCAL PRIMARY ROUTES



These routes act as key local spines in Newmarket's neighbourhoods and support the regional active transportation network. They tend to connect major employment areas, transit stations and schools to residential areas. Primary routes have good connectivity to other major regional routes. The Tom Taylor Trail and the East-West Bikeway are examples of primary spine routes.

LOCAL SECONDARY ROUTES



Secondary routes are supporting links in Newmarket's active transportation network. These routes form alternative routes to the primary spines and are often not as direct or as long as primary routes. Secondary routes connect and channel users towards local primary routes. An example of a secondary route is the proposed Eagle St. buffered bike lanes that complement the East-West Bikeway.

LOCAL TERTIARY ROUTES



Tertiary routes are facilities that do not perform a network function within Newmarket's active transportation system, such as the trail at Jim Bond Park. These routes exclusively perform local and recreational purposes and have limited connectivity to the primary and secondary network. While these routes are not essential for the network, they are important for local residents who use the trails within parks or as a shortcut for their commute.

MAP 2: DRAFT NETWORK HIERARCHY

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Network Hierarchy on Newmarket Local Routes

- | | | |
|-----------------|-----------------|-----------|
| Existing | Proposed | |
| | | Primary |
| | | Secondary |
| | | Tertiary |

Regional Primary Routes

- | | |
|-----------------|-----------------|
| Existing | Proposed |
| | |

NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

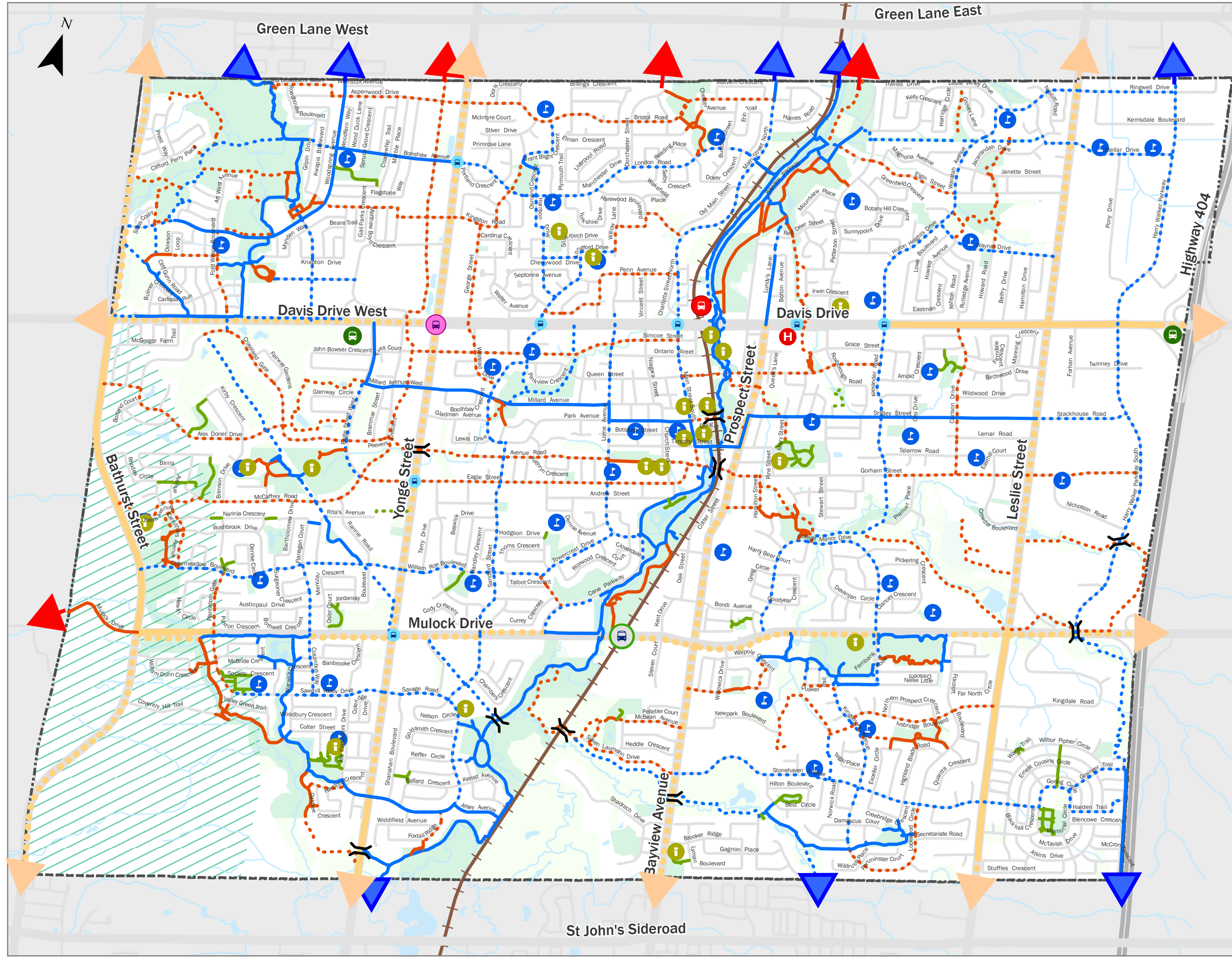
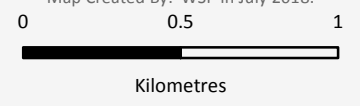
Other Items

- Town of Newmarket Boundary
- Regional Roads
- Railway
- Highway
- Town Roads
- Watercourse
- Green Space
- Oak Ridges Moraine

Key Destinations

- School
- Hospital
- Recreation
- Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)
- Viva Stop
- GO Transit Station
- Viva Stop Mobility Hub
- GO Station Mobility Hub
- Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.





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3.5 Recommended On-Road Network

The ATIP recommends an on-road network that creates high levels of connectivity and is feasible for the Town of Newmarket to implement. The proposed on-road network builds on the proposed network from Schedule D of OPA11. New routes were added to the previously proposed network from Schedule D as a result of the candidate route evaluation process. These routes were selected due to the proximity to trip generators and are feasible to implement without major road reconstruction. The on-road network is further detailed in and **Map 3A**.

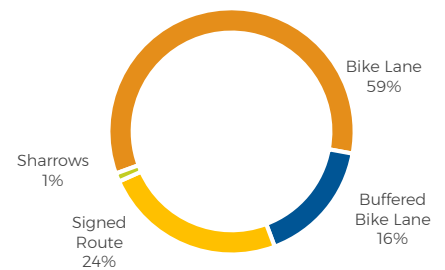


Proposed On-road Network Summary

Facility Type	Length (km)
Bike Lane	42.2
Buffered Bike Lane	11.9
Signed Route	17.4
Signed Route with Sharrows	0.8
Total	72.2

Table 1: On-road Network Summary

Proposed On-road Facility Type Breakdown



Existing and Proposed On-road Facility Summary

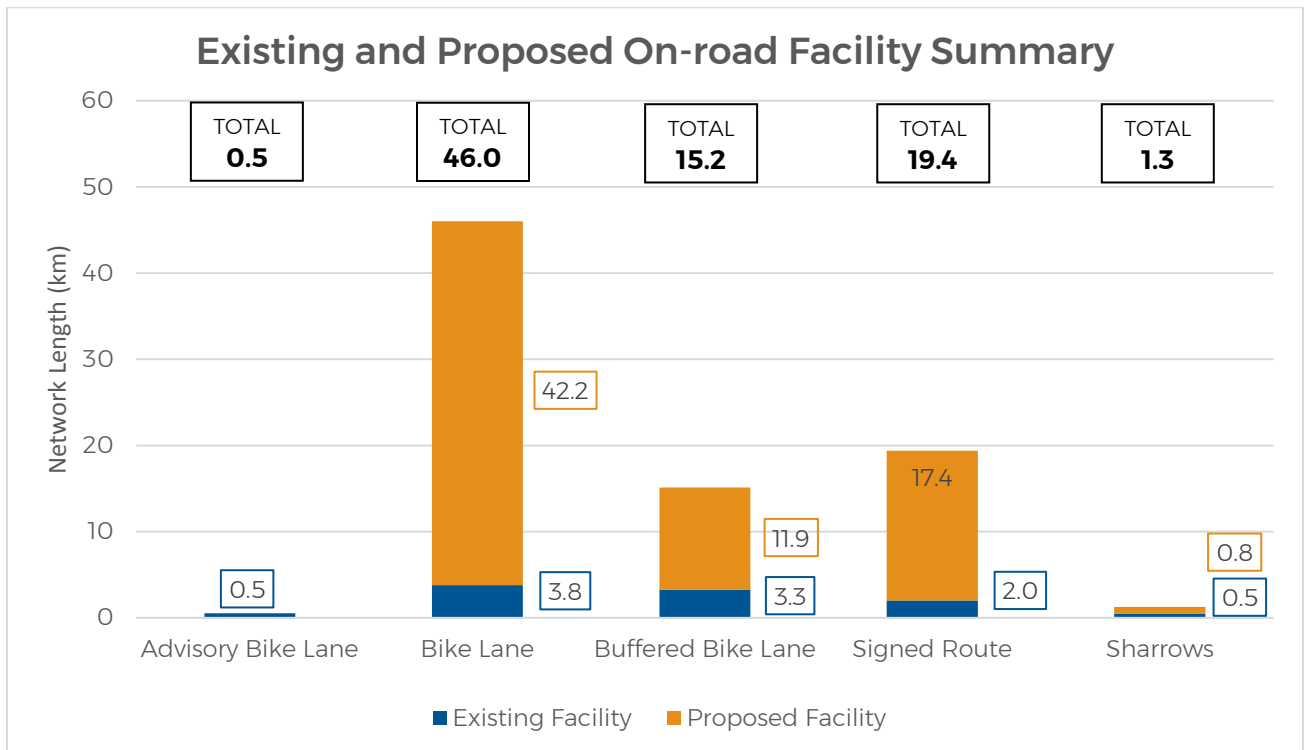


Figure 9: Existing and Proposed On-road Facility Summary

MAP 3A: PROPOSED ON-ROAD NETWORK FACILITY TYPE

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Facility Types on Local Town Roads

- | Existing | Proposed | |
|----------|----------|--------------------|
| | | Buffered Bike Lane |
| | | Bike Lane |
| | | Signed Route |

Proposed or Existing Facility on Regional Roads

- | Existing | Proposed | |
|----------|----------|--|
| | | |

NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

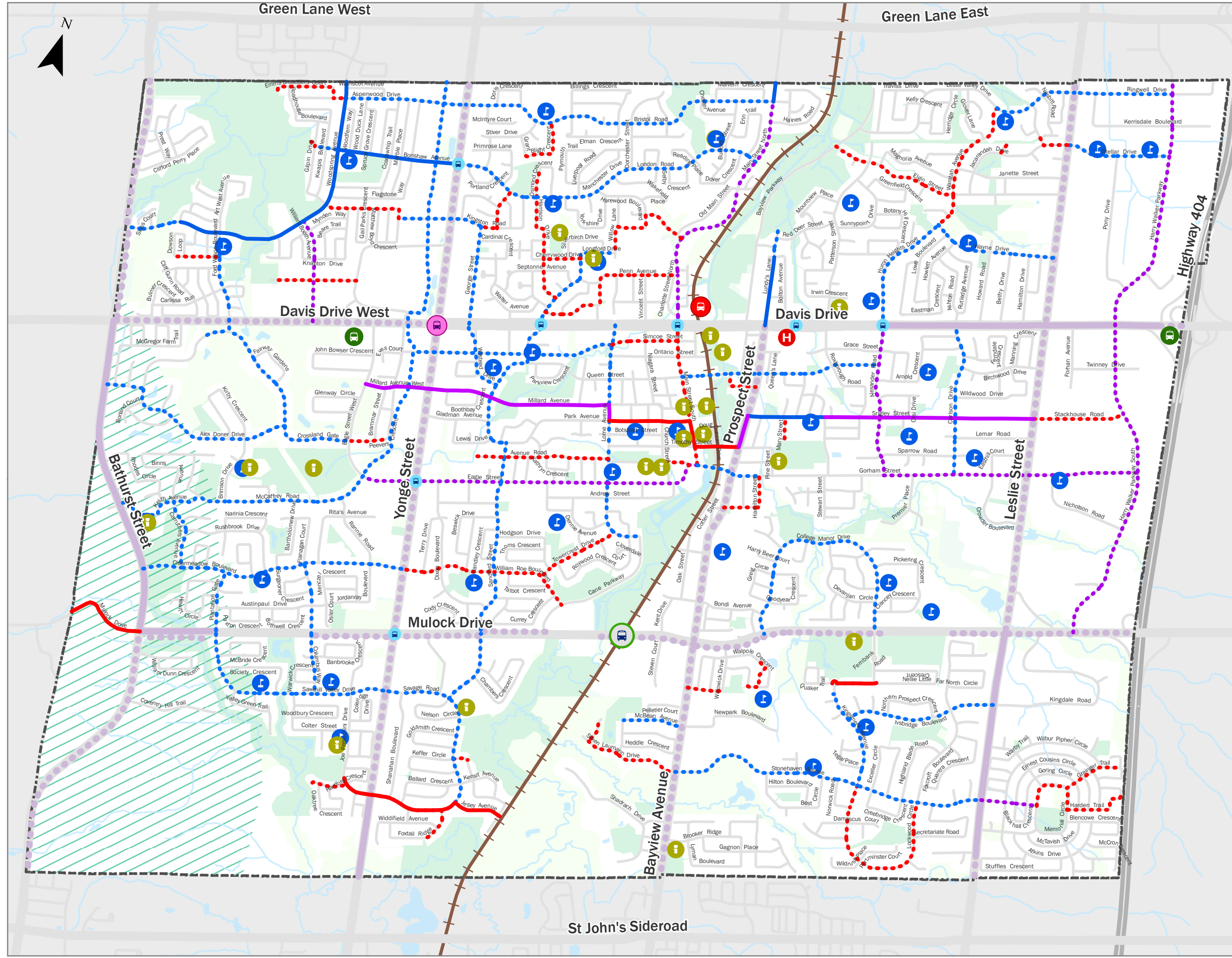
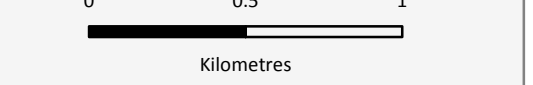
Other Items

- Town of Newmarket Boundary
- Regional Roads
- Railway
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- Town Roads
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- Green Space
- Oak Ridges Moraine

Key Destinations

- School
- Hospital
- Recreation Centre
- Viva Stop
- GO Transit Station
- Viva Stop Mobility Hub
- GO Station Mobility Hub
- Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.



Facility Type Selection

The on-road facility selection in Schedule D from OPA11 pre-dates current design guidance from OTM Book 18 and the MTO Bikeway Design Manual. The goal of the facility type selection process was to review and update the network to reflect current bikeway design practices. The on-road facility selection took into consideration traffic data, stakeholder input, physical and built environment, and feasibility of implementation. The selection of facility types for on-road routes was driven by the following key inputs:



- **Route Selection Criteria:** As the study team completed the desktop and field investigations, each of the criteria were considered and applied. It was expected that each of the proposed routes meets the majority of the criteria.
- **Traffic Volumes and Speed:** Average Annual Daily Traffic (AADT) volumes were provided by the Town and observations regarding road usage were made during field investigations. Speed limits were also recorded and verified on Google Earth. This information was used as an input into the Facility Selection Nomograph.
- **Parking:** Consideration was given for the current parking conditions, especially for routes where bike lanes would affect parking availability. A desktop review of parking regulations and a field review for parking restriction signs were used to inform where parking removal could be problematic. The study team attempted to minimize the on-street parking impact while providing the key facilities for cyclists.
- **Geometric Constraints:** During field investigations, spot measurements were taken to determine the road width. Where the current road is too narrow for the recommended facility, the team reviewed the right-of-way width to verify that there is sufficient room to implement the facility during a road reconstruction project. In general, implementation of a facility that required road reconstruction and curb-widening was avoided unless the route justified a higher order dedicated facility.
- **Public and Stakeholder Input:** During the public consultation and online questionnaire, people were asked about what facilities they would prefer to see implemented in Newmarket. The study team took this input into account when choosing facility types.
- **Staff Input:** The study team and Town staff iteratively reviewed and revised the network to determine the optimal network for Newmarket.

The study team used the Ontario Traffic Manual (OTM) Book 18, Facility Pre-Selection Nomograph (see Figure 10) to determine an initial level of separation. The above criteria were used to ensure that the facility selection suited the local Newmarket context. Level of separation nomenclature (e.g. shared, dedicated, separated) used in the ATIP is consistent with the York Region Transportation Master Plan. This allows for greater consistency between the Town and the Region for planning purposes. In the Town of Newmarket's local network, shared and dedicated facilities were sufficient for the on-road network.

- **Shared Facilities** are those where cyclists and motorists use the same road space. These facilities are best suited to streets with low traffic volumes and speeds.
- **Dedicated Facilities** provide space on the road exclusively for cyclists defined by pavement markings, and are generally adjacent to motor vehicle lanes. These facilities are best suited for streets with moderate traffic volumes and speeds.

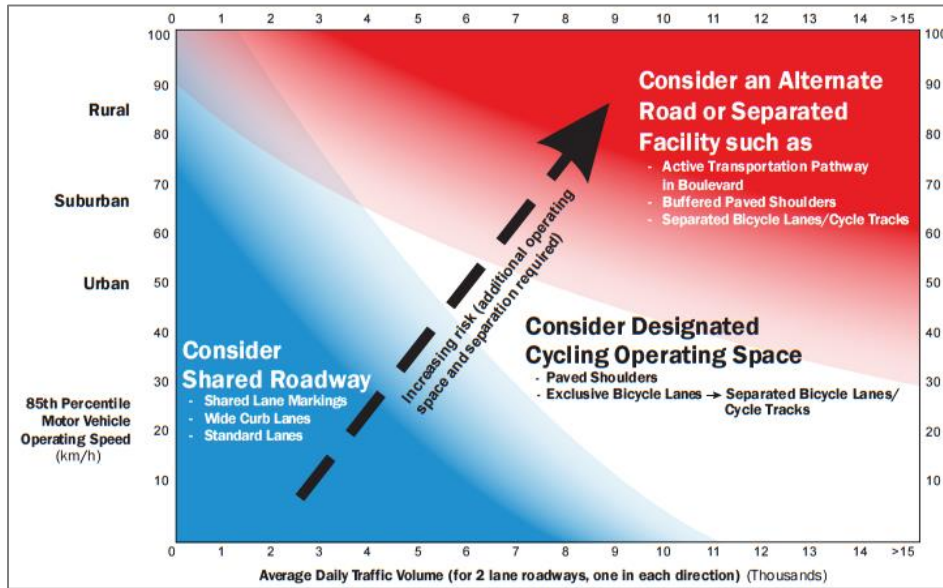


Figure 10: OTM Book 18 Facility Pre-selection Nomograph



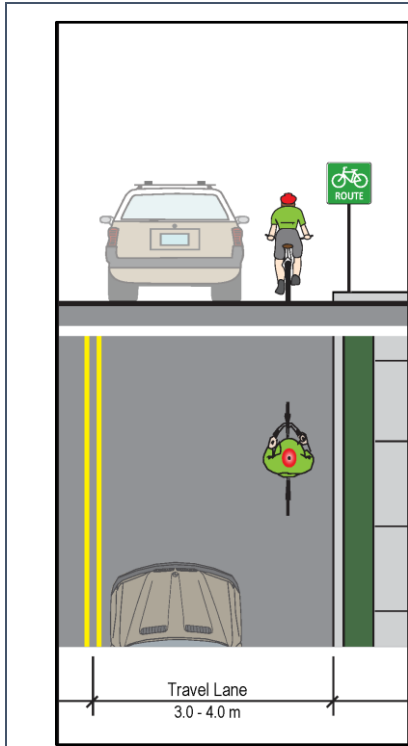
Buffered Bike Lanes of Srigley St. (East-West Bikeway)



Bike Lanes on Woodspring Ave.

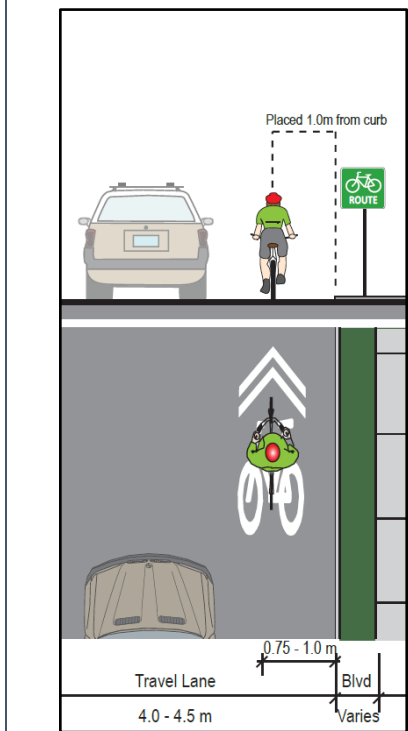


SHARED FACILITIES



Signed Route

- No separation between motorists and cyclists
- Cyclists may travel in the centre of the lane or to the right, depending on lane width
- Shared roadways are typically found on low volume streets with little or no truck traffic



Signed Route with Sharrows

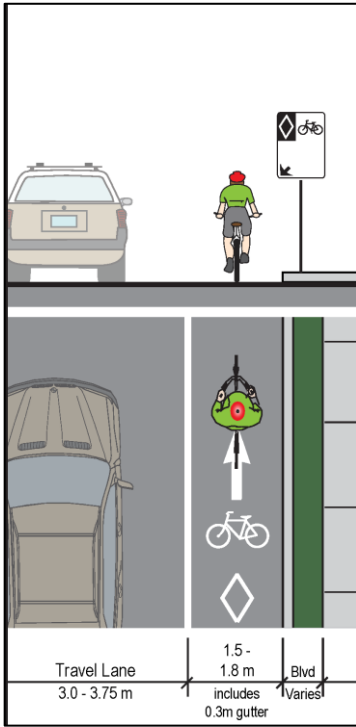
- Sharrow may be positioned in the centre of the lane or to the right, depending on lane width
- Green “Super Sharrow” Markings can be used in addition to the conventional bike stencil and arrow sharrow markings



Super Sharrow Marking on Timothy St.

Table 2: Shared Facility Overview

DEDICATED FACILITIES

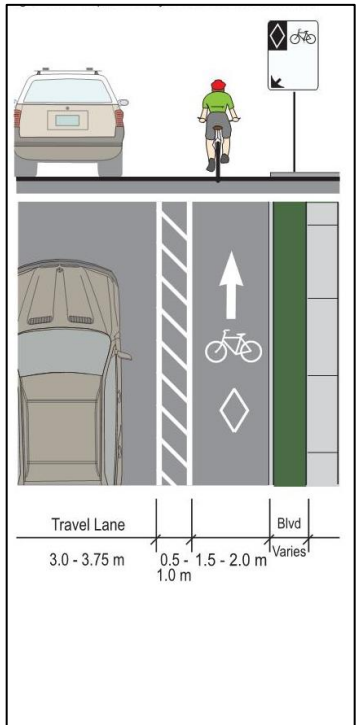


Bike Lane

- A bike lane is a portion of roadway for use by cyclists and is delineated from motor vehicle lanes by pavement markings and signage
- Cyclists have designated space, but it is not physically separated from motor vehicles
- It is most appropriate on urban streets where moderate traffic volumes and speeds warrant designated space for cyclists



Bike Lanes on Woodspring Ave.



Buffered Bike Lane

- A buffered bike lane is a portion of roadway for use by cyclists and is delineated from motor vehicle lanes by pavement markings and signage
- The buffer zone in the bike lane provides cyclists with additional space and separation from vehicles resulting in a larger designated space
- Buffer zone may include physical delineators such as flexible bollards



Buffered Bike Lanes on Srigley Rd. (East-West Bikeway)

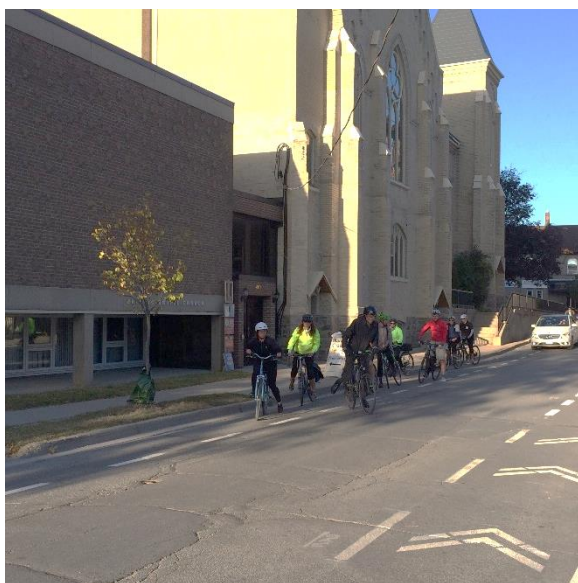
Table 3: Dedicated Facility Overview

Preliminary Proposed On-Road Designs

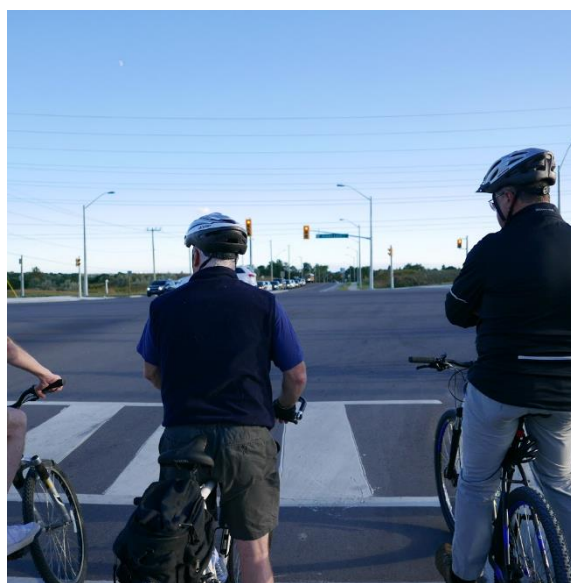
Once the facility recommendations were completed, an additional detailed review of the network was undertaken. This resulted in minor adjustments and refinements to the network to minimize potential conflicts. Observations made during the desktop review and field investigations of the routes were used to identify potential challenges and opportunities in developing the specific routes. The detailed alignment and commentary regarding opportunities and challenges towards the implementation of on-road facilities are explored in further detail in the **Appendix Preliminary Proposed On-road/Trail Design Sheet Report**.

A major consideration for implementation is how facilities will cross intersections. A large portion of intersections are at locations where a local and regional roads meet. Each intersection should be evaluated in conjunction with York Region to ensure that active transportation facilities interface appropriately with Regional facilities and efficiently guide users towards their destinations. Design treatments and operational measures such as pavement markings, signage or modifications to signal timing should be considered.

In the proposed network, there are several routes that are proposed as bike lanes, but could be implemented as a signed route and still be consistent with current provincial cycling design guidance. These routes tend to be on streets with lower vehicle operating speed and lower traffic volumes. These routes were recommended to be bike lanes, as this may encourage more individuals to ride a bike and public consultation should be undertaken prior to implementing these routes. If local residents raise concerns through the consultation or preliminary design process, staff may consider implementing the route as a signed route rather than a bike lane at their discretion.



Cyclists Riding on Advisory Lanes on Park Ave.



Cyclists Riding Towards Newmarket to Main St. N



3.6 Recommended Trail Network

The development of the trail network in Newmarket drew on the Trail Inventory and Condition Assessment of the existing trails. The Trail network was developed by combining the results of the trail inventory, off-road priorities as identified in the Active Transportation Network in Schedule D of OPA11, and the Town’s open trail data. It should be noted that the Town has an extensive existing, high quality trail network. The proposed trail network builds upon the existing network and provides connectivity to proposed and existing on-road routes. The Trail Network is further detailed in and **Map 3B**.



Trail Network Summary

Facility Type	Length (km)
In-boulevard Multi-use Pathway	2.4
Multi-use Pathway	16.2
Multi-use Trail	2.0
Desire Line	11.0
Total	31.6

Table 4: Trail Network Summary

Proposed Trail Facility Type Breakdown

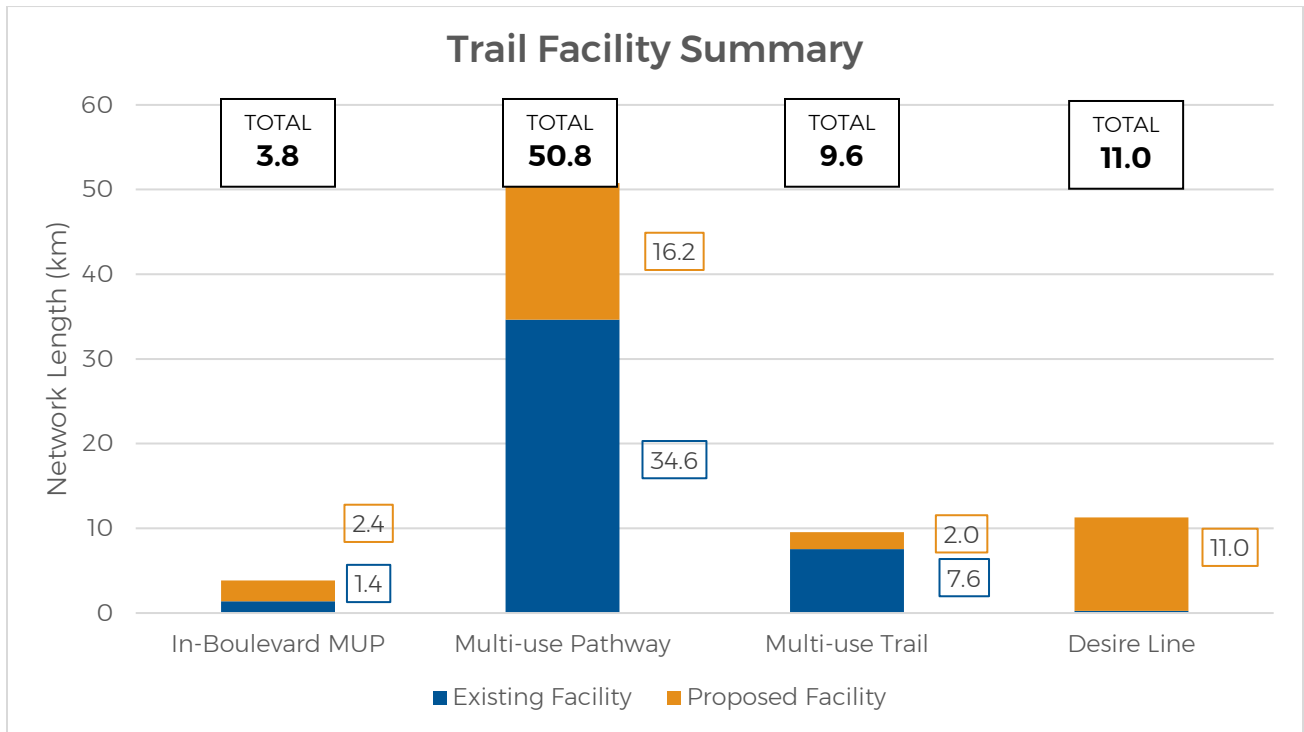
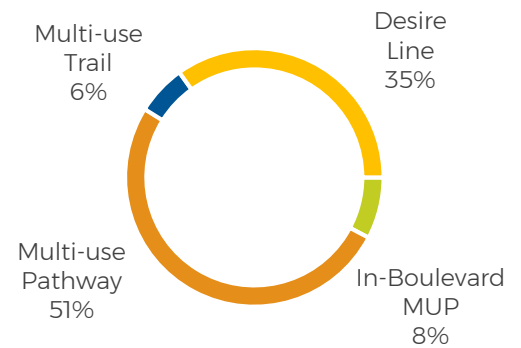


Figure 11: Existing and Proposed On-road Facility Summary

MAP 3B: PROPOSED TRAIL NETWORK

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Facility Types in Local Town Area

- | | | |
|-----------------|-----------------|--------------------------|
| Existing | Proposed | |
| | | Multi-use paths & trails |
| | | Desire Line |

Proposed or Existing Facility on Regional Roads

- | | |
|-----------------|-----------------|
| Existing | Proposed |
| | |

NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

Other Items

- Town of Newmarket Boundary
- Regional Roads
- Railway
- Highway
- Town Roads
- Watercourse
- Green Space
- Oak Ridges Moraine

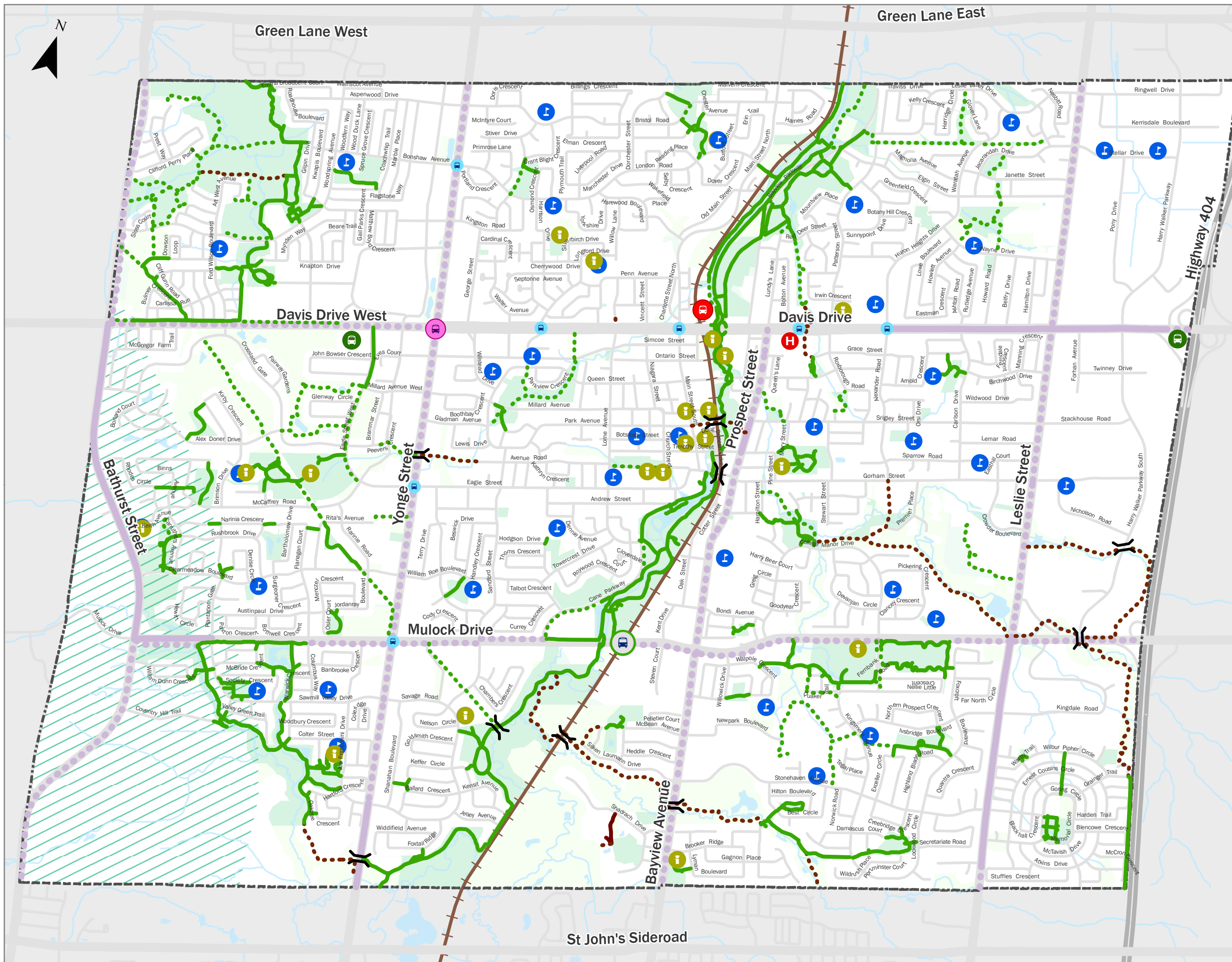
Key Destinations

- | | | | |
|--|---|--|-------------------------|
| | School | | Viva Stop |
| | Hospital | | GO Transit Station |
| | Recreation Centre | | Viva Stop Mobility Hub |
| | Potential Future Pedestrian Bridge/Underpass (OPA Schedule D) | | GO Station Mobility Hub |
| | | | Future GO Station |

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.

0 0.5 1

Kilometres



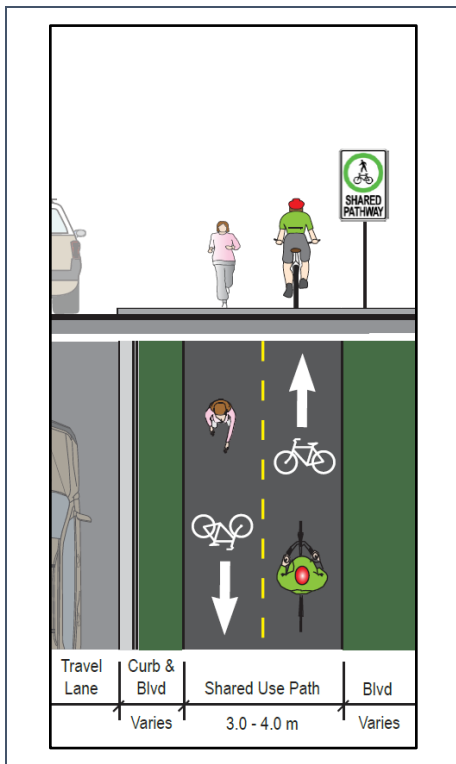
St John's Sideroad

Trail facilities, both within and outside of the road rights-of-way are considered separated facilities per the York Region Transportation Master Plan. In-boulevard facilities were considered where there is sufficient room within the road rights-of-way, and high volume of traffic warrant a separated facility. These facilities may require the replacement of sidewalk to implement the facility. Multi-use Trails support mostly recreational usage and can support granular or natural surfaces. Multi-use Pathways are for both commuter and recreational usage, and are typically paved paths and widths exceeding 3.0 m.

Besides in-boulevard, multi-use paths and trails, the network incorporated desire lines. Desire lines are potential trail facilities along routes that may already be informally used by residents, but cross through private property. These routes may be accepted into the network in the future if the Town forms an agreement with the private property owner and the appropriate facilities and amenities are implemented on the route.



OFF-ROAD SEPARATED FACILITIES



In-boulevard Trail

- An in-boulevard facility is separated from motor vehicle traffic by a boulevard or a verge within the road right-of-way
- An in-boulevard facility can be constructed with a bicycle path distinct from the sidewalk or with a single facility shared by cyclists and pedestrians



In-boulevard Trail by Mulock Dr. and Tom Taylor Trail

OFF-ROAD SEPARATED FACILITIES

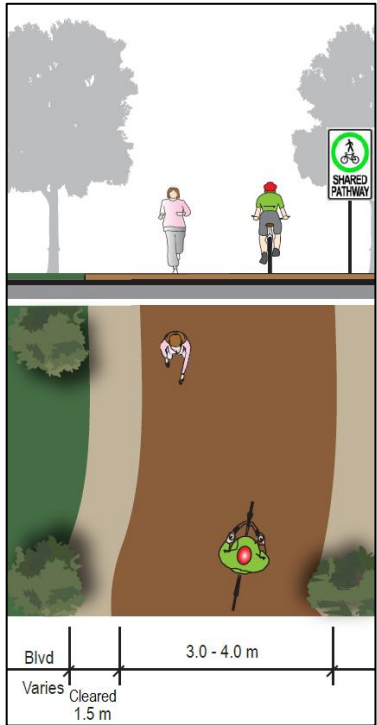

	Off-Road Trail
	<ul style="list-style-type: none"> • Typically accommodates pedestrians and cyclists • Typically positioned outside of any road right-of-way • Multi-use trails tend to use granular/natural surface types and may be narrower than 3.0 m if necessary • Multi-use paths are asphalt/concrete paths with a width exceeding 3.0 m  <p><i>Multi-use pathway in the Tom Taylor Trail</i></p>

Table 5: Separated Trail Facility Overview

Preliminary Proposed Trail Designs

Once the facility recommendations were completed, an additional review of the network was undertaken. This resulted in minor adjustments and refinements to the network to minimize potential conflicts. Observations made during the desktop review and field investigations of the routes were used to identify potential challenges and opportunities in developing the specific routes. The detailed alignment and commentary regarding opportunities and challenges towards the implementation of trail facilities are explored in further detail in the **Appendix Preliminary Proposed On-road/Trail Design Sheet Report**.

Trail design and planning differs from on-road facility planning. Consultation with the Accessibility Advisory Committee is mandatory for all trail facility projects to ensure AODA requirements are met. The Town also has an Environmental Advisory Committee which should be consulted if the proposed facility is adjacent to a natural heritage area, in order to minimize environmental impact during the development and operation of the facility.

Trail facilities also have a wide variety of external stakeholder groups that could be involved. For example, trails that pass through watercourses typically require consultation with Lake Simcoe Region Conservation Authority and trails that pass through hydro corridors owned by Hydro One (e.g. Hydro Corridor Trail) require the project to follow a Hydro One planning



process. Based on the alignment and route context and environmental features, different processes or design treatments may need to be applied to the facility.

It is important to note that alignment modifications were based on limited field observations and desktop reviews. Each trail route should be further evaluated and survey work should be completed prior to the facility design to confirm a route alignment that minimizes environmental impacts and reduces the implementation costs.

Recommendations:

1

The proposed active transportation network illustrated in **Map 2, Map 3A and 3B** should be adopted by the Town to guide future AT network expansion, facility design and implementation.

2

As the active transportation networks change over time, the route network mapping should be updated to reflect the most up to date conditions. The Town should strive to review and update the mapping on an annual basis, with comprehensive updates planned every five years.

3

Active transportation networks need to be flexible. There may be opportunities for additional or alternative connections based on new developments or partnerships. Should these connections be made, the mapping should be updated to reflect the changes.

4

On routes that have been recommended as a bike lane where a shared facility would be sufficient as per provincial cycling guidance, consultation with the public should be completed. If there are significant challenges that arise from the consultation process, the route could be implemented as a shared facility at the Town staffs' discretion.

5

Prior to implementing trail facilities, further evaluation and survey work should be completed prior to facility design to confirm a route alignment that minimizes environmental effects and reduces implementation cost.



Tom Taylor Trail Marker by the Tom Taylor Trail and Cane Pkwy.



4 AT Facility Design

The design of active transportation facilities should be informed by sound engineering judgement, standards, guidelines and best practices. Using best practices and design guidelines will help to create a comfortable user experience, mitigate users' risk exposure and extend facility lifecycles. In addition to facility design, the integration of amenities such as lighting and bike parking can enhance the user experience and will encourage more Newmarket residents to make use of the network.



Resources and Further Guidance

When identifying the preferred facility types for specific routes in the active transportation system, the following guidelines and standards were considered:

- Ontario Traffic Manual Book 18: Cycling Facilities ([here](#)).
- Ontario Traffic Manual Book 15: Pedestrian Crossing Treatments ([here](#)).
- Ministry of Transportation Ontario (MTO) Bikeways Design Guidelines.
- National Association of City Transportation Officials Urban Bikeways Design Guide and Urban Street Design Guide ([here](#)).
- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities ([here](#)).
- Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads ([here](#)).
- Transportation Association of Canada (TAC) Bikeway Traffic Control Guideline for Canada ([here](#)).
- Accessibility for Ontarians with Disabilities Act – Built Environment Standards ([here](#)).



4.1 On-Road Facility Design Guidance

This section summarizes three common facility types within the Newmarket AT network and outlines design requirements, application scenarios and additional amenity considerations.



Signed Routes (With Application of Sharrows)

Context

Signed routes with sharrows are most suited to urban and suburban streets where traffic volumes and speeds do not justify dedicated facilities.

Minimum Street Width: none

Traffic Volumes: low

Traffic Speeds: low

Design Considerations

When implemented on neighborhood streets, signed routes with sharrows may attract a very broad range of cyclists, including novice cyclists, children and those who may not be comfortable cycling on streets with higher motor vehicle speeds and volumes.

Wayfinding is particularly important for signed routes that make use of multiple streets to provide connectivity, since these routes may not be intuitive for all users.

Sharrows should be positioned near the curb where the travel lane is wider than 4.0 m or in the centre of the lane where the width of the lane is less than 4.0 m.

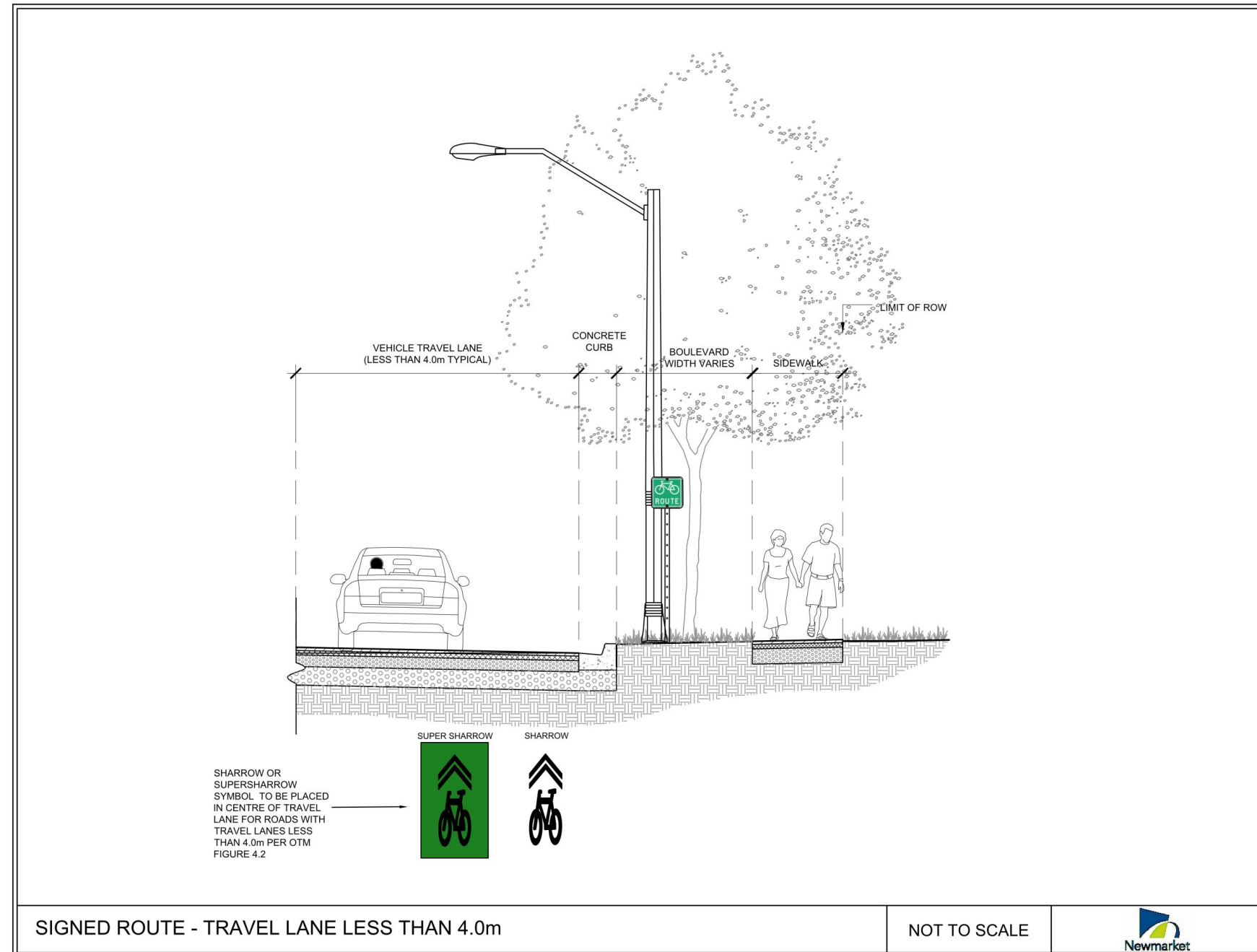
Comfortable crossing opportunities such as signalized intersections, pedestrian signals and pedestrian crossovers should be provided when signed routes cross arterial streets

Signage and Pavement Markings

Bicycle Route Marker (M511 OTM) signs should be provided approximately every 400 m. In narrow locations there may be the need for a “Shared Use Lane Single File” (Wc-24 & Wc-24t OTM) sign.

Key Dimensions

Sharrows dimensions: 1.0 x 2.0 m bike stencil, with 1.0 x 1.0 chevron pair. Sharrows should either be in the centre of the lane or 0.75 - 1.0 m from curb depending on the lane width (see above). They should be repeated every 25 - 50 m.



Buffered Bike Lanes (With/Without On-Street Parking)

Context

Buffered Bike Lanes are most suited to urban and suburban streets where traffic volumes and speeds are moderate, or routes where greater comfort is desired (e.g. where cyclist volumes are high or anticipated user groups include children).

Minimum Street Width: 10.0 m without on-street parking, 12.5 m with one-sided on-street parking.

Traffic Volumes: moderate

Traffic Speeds: moderate

Design Considerations

The buffer zones may include physical delineators such as flexible bollards or planters.

Driveways and other mixing zones should be marked with elephant's feet or green paint, with a bicycle stencil and directional arrow in the facility.

The buffer between the bicycle lane and motor vehicle lane is particularly important where there is on-street parking and in the vicinity of roadway curves.

Signage and Pavement Markings

OTM Rb-84 or Rb-84A and Rb-84t/Rb-85t supplement signs at the start and end of route.

Bicycle stencil and arrow should be placed in the centre of the lane and repeated every 50 m. 0.5m wide hatched painted buffer.

Bicycle Route signs should be provided approximately every 400 m.

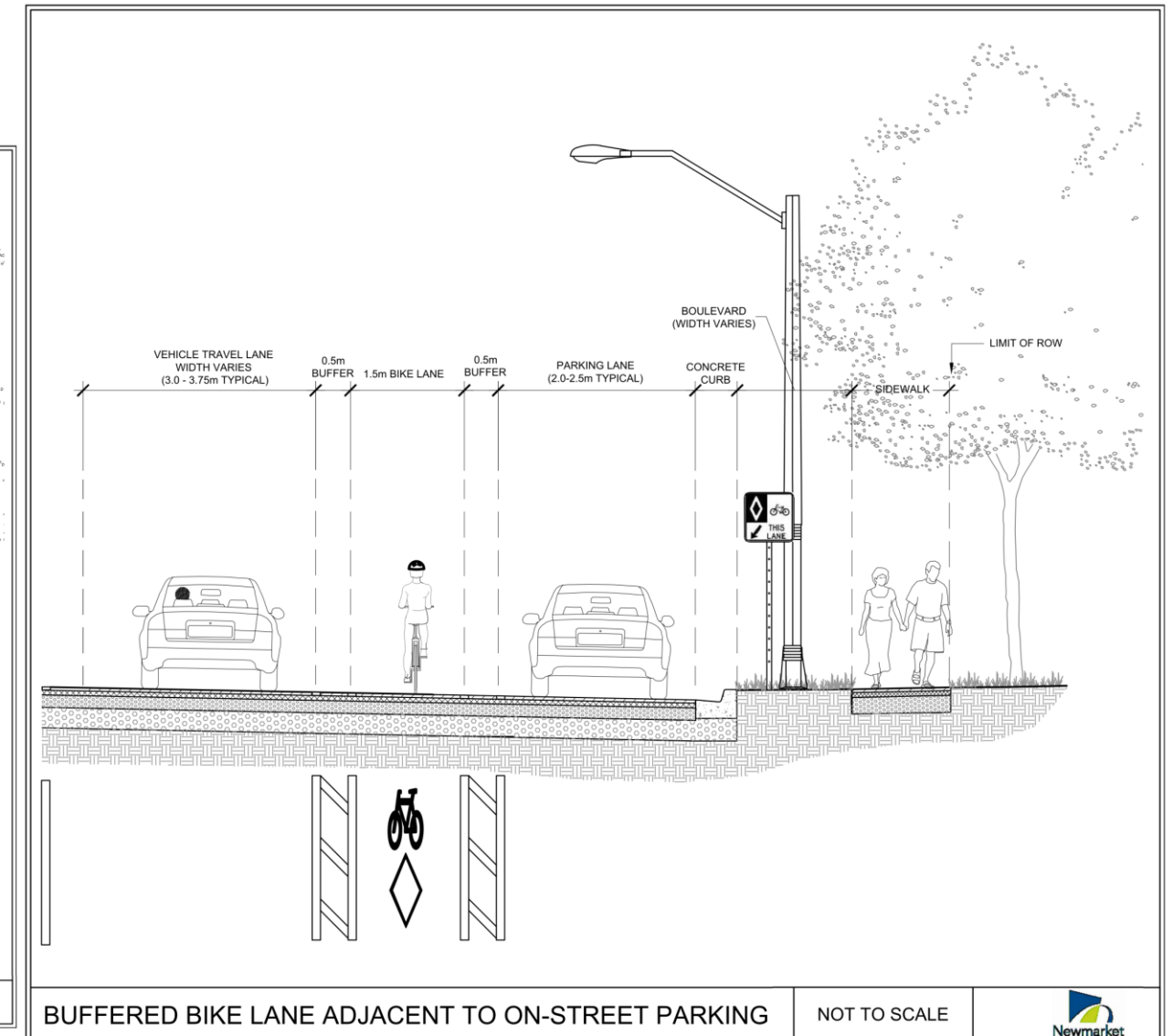
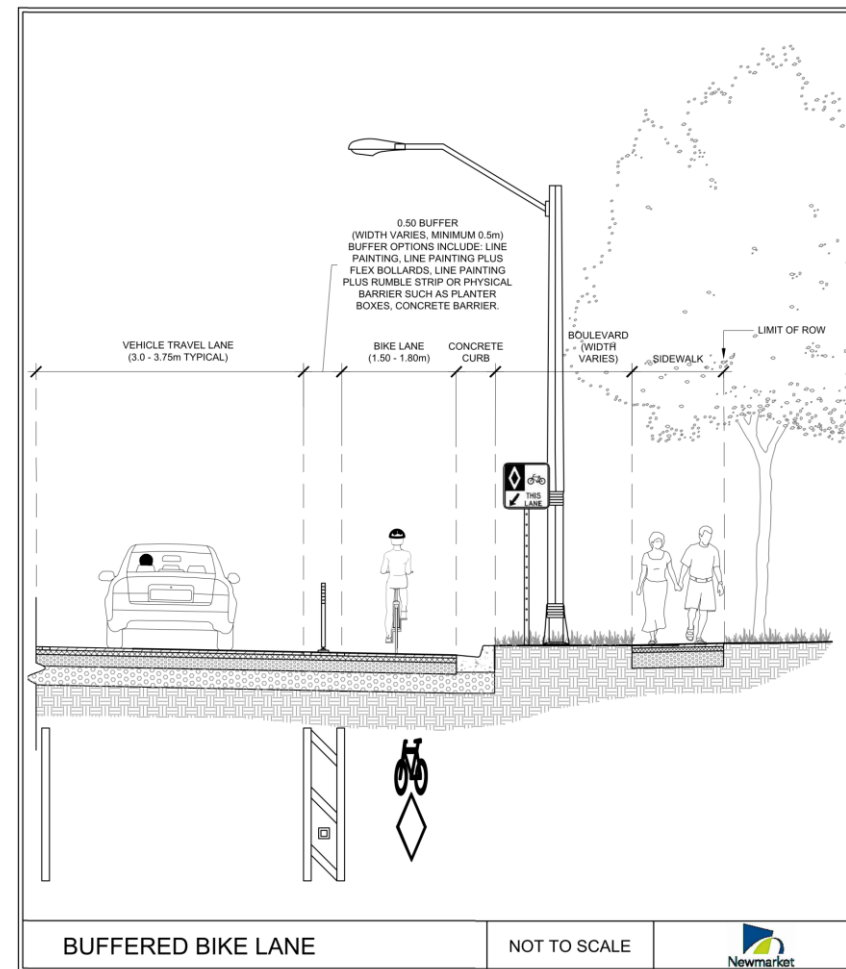
Key Dimensions

Bike Lane Width :

Minimum	1.5 m
Ideal	1.8 m

Buffer Width:

Minimum	0.3 m (no parking); 0.5 m (adjacent to parking)
Ideal	0.5 m (no parking); 1.0 m (adjacent to parking)



Bike Lanes

Context

Bike Lanes are most suited to urban streets where higher traffic volumes and speeds warrant separation of motorists and cyclists. Bike lanes, without buffered or physical separation, are more appropriate for streets without parking or for commuter corridors where children and less confident cyclists are not among the anticipated user groups.

Minimum Street Width: 9.0 m without on-street parking

Traffic Volumes: low to moderate

Traffic Speeds: moderate

Design Considerations

Painted lanes allows a high degree of flexibility for cyclists to make direct left turns, navigate around obstacles or overtake other cyclists.

Driveways and other mixing zones should be marked with elephant's feet or green paint, with a bicycle stencil and directional arrow in the facility.

May require significant enforcement efforts to discourage drivers from parking in the bicycle lane.

Signage and Pavement Markings

OTM Rb-84 or Rb-84A and Rb-84t/Rb-85t supplement signs at the start and end of route.

Bicycle stencil and arrow should be placed in the centre of the lane and repeated every 50 m.

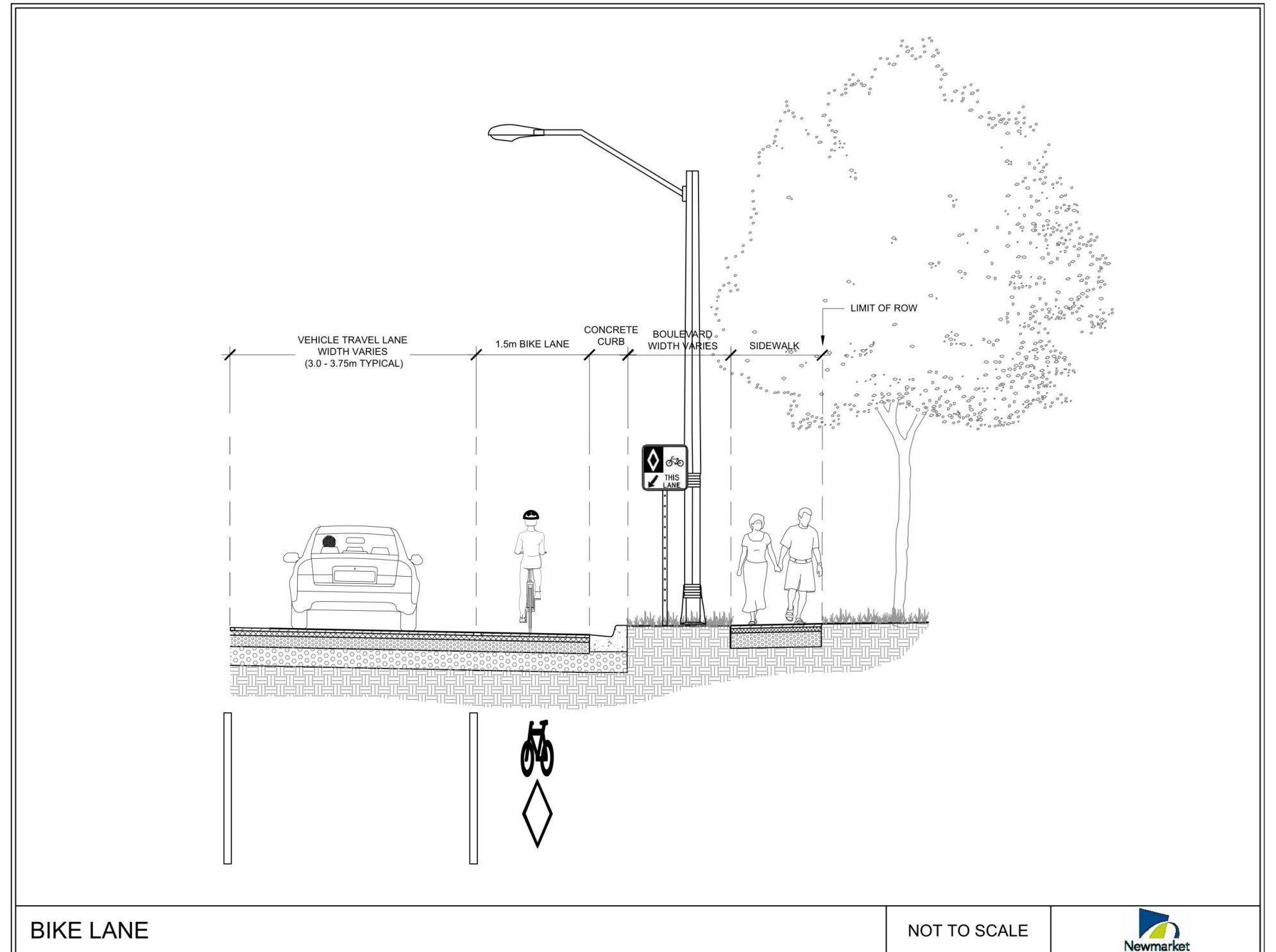
Bicycle Route signs should be provided approximately every 400 m.

Key Dimensions

Bike Lane Width :

Minimum	1.5 m
Ideal	1.8 m

Lane Line Width: 100 mm



Crossing Facilities

At intersections and mid-block crossings the paths of pedestrians, cyclists and motor vehicles overlap which creates the potential for conflict. Various design treatments can mitigate this conflict by reducing motor vehicle speeds, clearly communicating when to yield and stop, providing visual cues that alert users to anticipate and check for other users, creating protected queuing spaces and increasing visibility between users. Treatment options are described in greater detail in section 5.0 of OTM Book 18 and a number of examples of are outlined below.

- **Left turn queue boxes** are designated areas where cyclists wait for a signal to change when making a two-stage left turn. They may be positioned on the roadway or in the boulevard. The bike box is intended to increase a cyclist's visibility for motorists and may also allow cyclists to proceed ahead of motorists on the green traffic signal.
- **Green pavement markings** highlight conflict zones such as bike lanes on the approach to an intersection or around a corner radius.
- **Crossrides** are a crossing treatment typically used for in-boulevard cycling facilities where the bicycle crossing is directly adjacent to the pedestrian crossing. It allows cyclists to proceed through the intersection without having to dismount and separates pedestrians and cyclists to decrease potential conflict.
- **Bike lane crossing markings** typically include chevrons and skip lines and help alert motorists crossing the bike lane to check for cyclists.



A Left Turn Queue Box on Hwy 7.



Bike Lane Crossing Markings (Chevrons and Skip Lines) in Newmarket on Millard Ave.



4.2 Trail Facility Design Guidance

This section summarizes two common trail facility types within the Newmarket AT network and outlines design requirements, application scenarios and additional amenity considerations.



Trail Markers on the Tom Taylor Trail.



Bridge and Signage along the Greenbelt Route.

In-Boulevard Multi-Use Path

Context

In-Boulevard Multi-Use Paths requires a sufficient right-of-way width to accommodate either a uni- or bi-directional facilities. The facility's location within the boulevard provides physical separation and a more comfortable environment for cyclists of all ages and abilities. Consideration must be given to mitigating conflicts at intersections. In-boulevard multi-use paths are suitable for a wide range of streets including high volume, high speed streets.

Minimum Street Width: N/A – 2.4 m of available ROW required

Traffic Volumes: low to high

Traffic Speeds: low to high

Design Considerations

When shared with cyclists and pedestrians, in-boulevard multi-use paths should provide space for cyclists to safely overtake pedestrians. Uni-directional facilities are typically not shared and a separate sidewalk is typically provided.

Driveway crossings should be marked with elephant's feet in some cases green paint, with a bicycle stencil and directional arrow in the crossing.

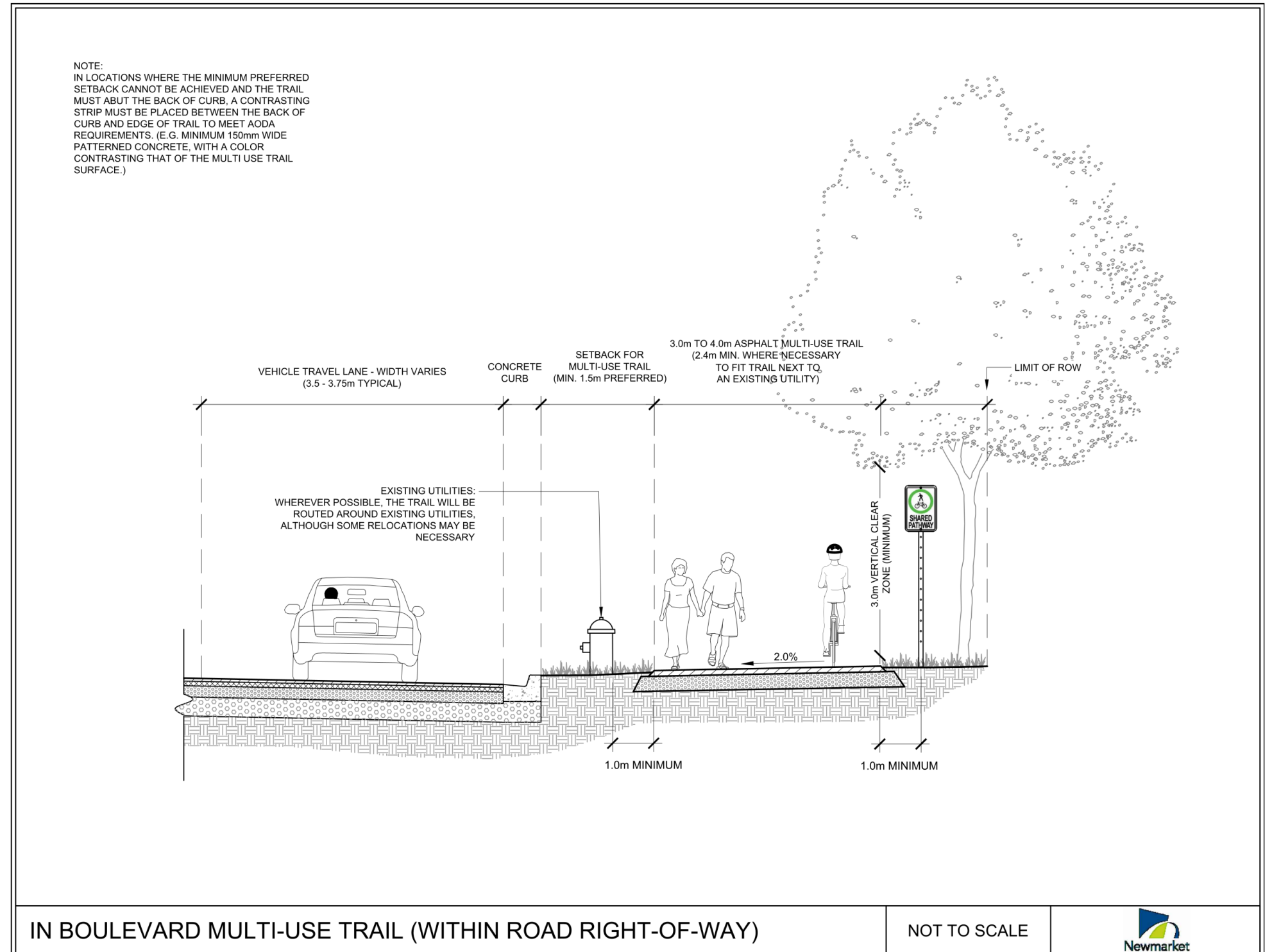
Careful consideration is required at driveways and intersections. Unobstructed sightlines should be provided between the path and all intersection approaches. Signage, pavement markings, and, where appropriate signal phasing, should be used to mitigate conflicts.

Signage and Pavement Markings

Shared facilities should be marked with a Shared Pathway (Rb-71 OTM) sign after every intersection and/or at approximately 200 m intervals. A skip centre line marking should also be used.

Key Dimensions

Bi-Directional Path Width	Bicycle Only or Shared
Minimum	2.4 m
Ideal	4.0 m
Uni-Directional Path Width	Bicycle Only
Minimum	1.8 m
Ideal	2.0 m



Multi-Use Trail/Path

Context

Multi-Use Trails/Paths are suitable for parks, hydro- and rail-corridors and other areas where connectivity and/or recreational trails are desired outside of a road right-of-way. These facilities can attract a wide range of cyclists, including children, recreational riders, and cyclists uncomfortable with riding in traffic.

Minimum Width: N/A

Traffic Volumes: N/A

Traffic Speeds: N/A

Design Considerations

Multi-use trails/paths should provide space for cyclists to safely overtake pedestrians.

Wayfinding is particularly important for Multi-use Trails/Paths; destination information signage should be provided to inform users of direction and distances to key destinations and help users feel comfortable entering the trail system.

Careful consideration is required when Multi-use Trails/Paths cross intersections or terminate at streets with or without cycling facilities. Transitions from cycling/pedestrian-only facilities to streets must be highly predictable, easily navigable, and use clear pavement markings and signage to communicate stopping and yielding behaviour.

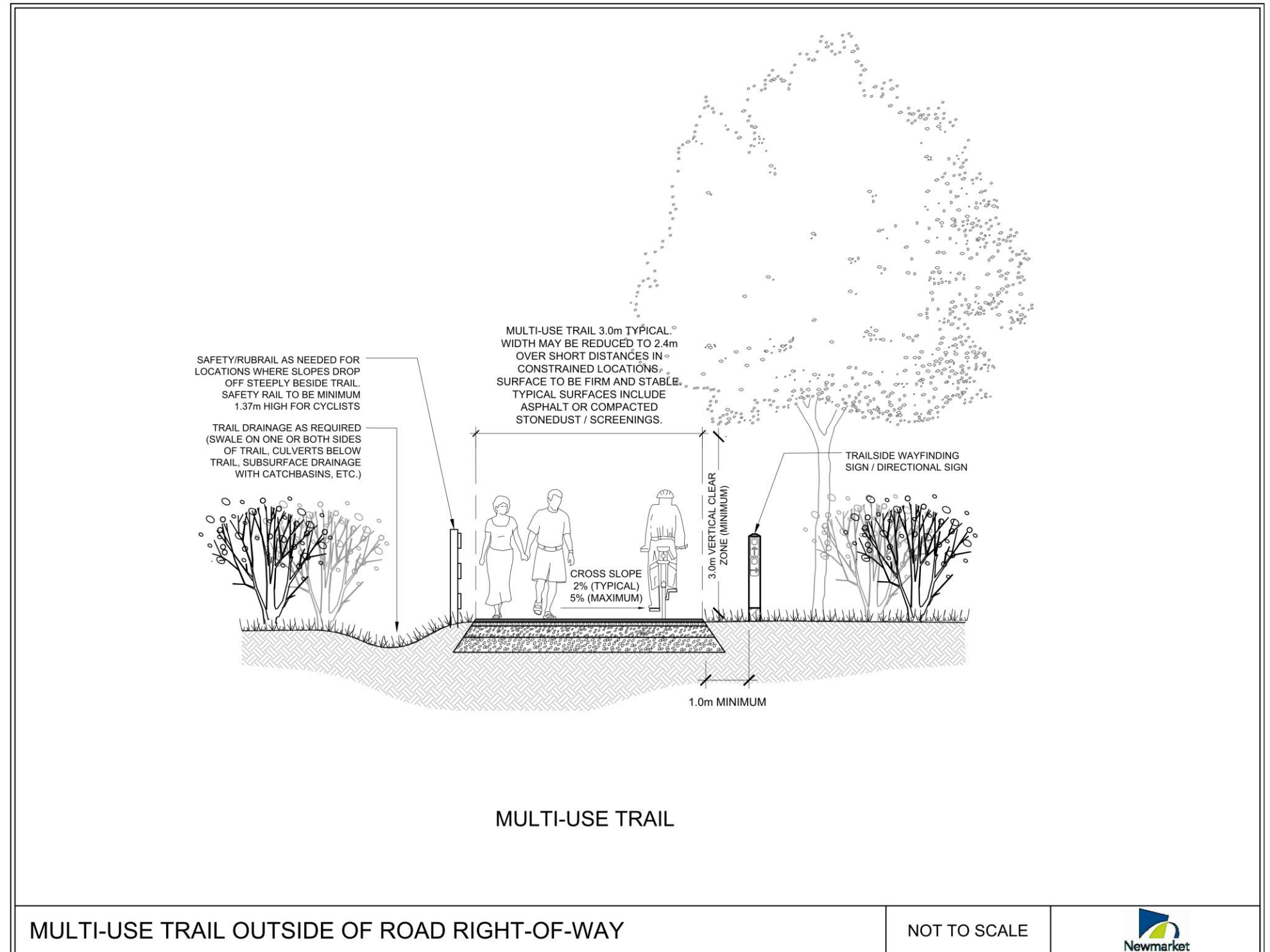
Signage and Pavement Markings

Wayfinding and etiquette signage should be provided as needed.

Key Dimensions

Path Width

Minimum	3.0 m
Ideal	4.0 m



Structures

Bridges are required for crossings of creeks and rivers. The Town's standard pedestrian bridge is a Line-X-Coated steel bridge. As noted in the trail inventory, the Town currently uses these bridges to cross significant watercourses. Some key design considerations include:

- Bridge railings should be designed to a minimum height of 1.37 m; this height is important where cyclists are using the bridge as it provides the necessary protection due to a cyclist's higher centre of gravity on their bicycle relative to a pedestrian.
- The structure should be wide enough to accommodate maintenance vehicles, with the vehicle type being determined early in the design process.
- The elevation of the structure shall meet Lake Simcoe Region Conservation Authority requirements regarding flood levels to mitigate the potential for damage due to flooding and to prevent floating debris from being trapped.

Rail Crossings

Where a trail crosses an active railway line, the crossing design upgrade must follow Transport Canada Grade Crossing Standards ([here](#)). Requirements are specific to the location, based on factors such as railway volume and speed; location relative to other crossings in the vicinity; proximity of the crossing to the existing road crossing of the railway (e.g. applies to on-road crossing and trails within road rights-of-way); and whether or not the crossing is subject to whistle cessation.

Accessibility

The goal of the Accessibility for Ontarians with Disabilities Act, (AODA, 2005) is to make Ontario accessible for people with disabilities by 2025. Ontario Regulation 413/12 (O.Reg 413/12) made under the Accessibility for Ontarians with Disabilities Act, 2005 includes guidelines and standards that apply to new construction and extensive renovation of exterior pedestrian facilities. The regulation does not apply to on-road cycling facilities. O. Reg. 413/12 also states that local accessibility standards shall take precedence over the provincial legislation where local standards are in place, and where they exceed requirements of the provincial legislation. Accessibility requirements should be embedded in the design and planning process of trails including the following considerations:

- Width and surface characteristics;
- Slope;
- Trail entrances and crossings of roadways;
- Elevated trails (e.g. boardwalks) and bridges;
- Signage; and
- The duty to consult with local accessibility groups during the planning and design of trails.



4.3 Bike Parking and Network Amenities

End-of-Trip Facilities and Rest Areas

Rest areas and end-of-trip facilities are key network amenities that contribute to a positive user experience. Rest areas are locations along a route that provide users with a comfortable location to stop during a walking or cycling trip. These locations can include lighting, seating, car parking, bicycle parking, loading/unloading areas, garbage receptacles, wayfinding information, washrooms, drinking fountains, shade trees and shelter structures.

End-of-trip facilities are located at key public or private destinations such as community centres or places of employment. Depending on the location, end-of-trip facilities could include showers, change rooms, bike rooms, lockers, and/or bicycle repair stations.

Section 7.0 of OTM Book 18 provides design considerations and details about the different types of rest areas and end-of-trip facilities based on various land uses and building types. Rest areas and end-of-trip facilities should be provided at strategic locations such as gathering points, attractions and destinations as well as other locations where users are expected to stop.

Bike Parking Facilities

The provision of secure and convenient bicycle parking opportunities is essential to enabling more people to cycle for both recreational and utilitarian purposes. Bicycle parking should typically be provided at schools, places of employment, commercial areas, tourist destinations, mobility hubs and near medium and high density residential developments. The Town should work with property owners and stakeholders to ensure that bicycle parking opportunities are provided either within the public right-of-way or in a visible and accessible location within a development.

Bike parking is currently provided at several locations across Newmarket, as indicated in the Trail Inventory and Condition Assessment. Short term bike parking facilities, where parking duration is often under 2 hours, is currently provided at key locations such as Main St. and transit stops. Long term bike parking facilities, where parking duration often ranges from several hours to several days, is currently provided at GO Stations, including the GO Bus Terminal at Davis Dr. and Eagle St. W and the Commuter Carpool Lot at Davis Dr. and Highway 404.

Short Term Parking Characteristics:

- Typical use of under 2 hours per user;
- Should be close to the entrance of a destination; and
- Passive surveillance can be provided by pedestrians.



Long Term Parking Characteristics:

- Users of long term parking value higher security and weather protection;
- Designed to meet needs of employees, students and commuters;
- Bikes are parked for several hours or longer;
- Location of bike parking depends on the context of the area; and
- There can be additional security provisions such as a managed lock program.

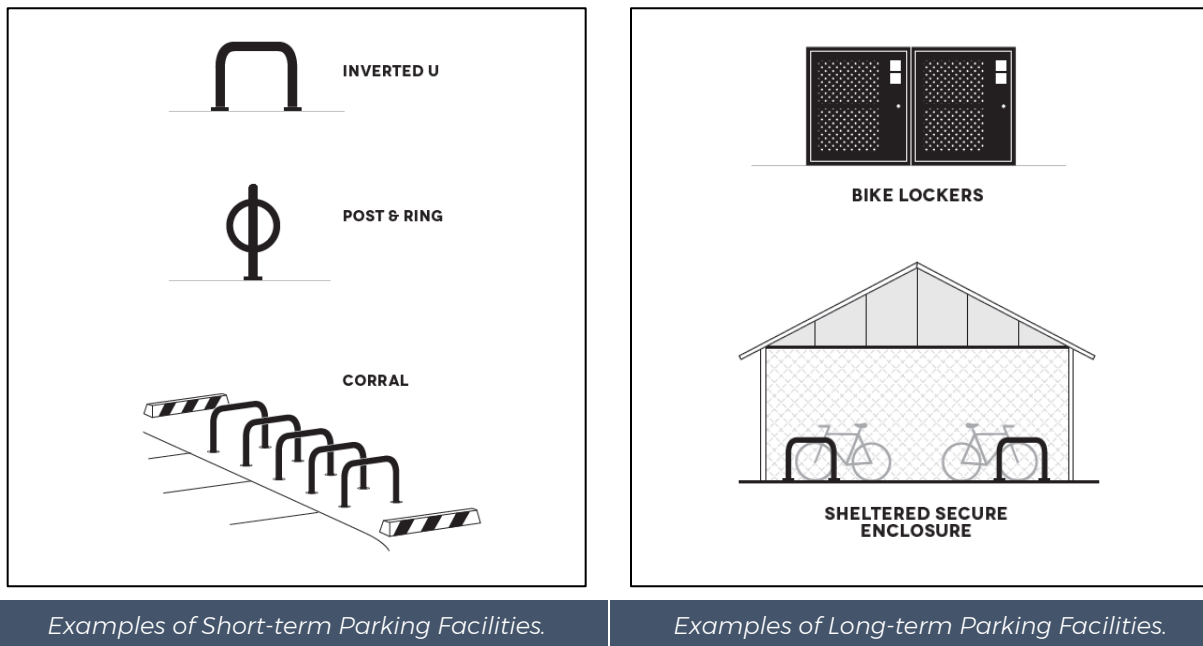


Figure 12: Bike Parking Illustrations from APBP: Essentials of Bike Parking

More detailed guidance on the design of bike parking can be found in the Association of Pedestrian and Bicycle Professionals (APBP) 2010 *Bicycle Parking Guidelines*. This comprehensive guide addresses the selection and placement of short-term, long-term, sheltered and temporary bike parking.

Currently, Newmarket Bylaw 2010-40 requires that bike parking should be provided as per Table 6. While these are the minimum requirements, consideration should be given to providing more bicycle parking at destinations with high volumes of cyclists.





Land Use	Required Bicycle Parking
Retail, Commercial, Office, Industrial	2 spaces plus 1 space for every 1000m ² of gross floor area
Manufacturing/Industrial	2 spaces plus 1 space for every 1000m ² of gross floor area
School	1 space per 10 students plus 1 space per 35 employees
Post-Secondary School	1 space per 20 students
Apartment Building	1 internal or external space for every 5 units plus 1 external space for every 20 units

Table 6: Town of Newmarket Bike Parking Requirements



In comparison with other Ontario municipalities, the Town of Newmarket’s bicycle parking bylaws are very similar to communities such as Ajax, Pickering, Brampton and London. For commercial, industrial and school areas, Newmarket’s zoning bylaws are slightly more generous than common bicycle parking rates in Ontario.



For residential developments however, Newmarket’s current bylaws require developers to provide less bicycle parking than comparably sized municipalities in Ontario. Newmarket requires 0.2 to 0.25 bicycle parking spaces per unit depending on the size of the development. Other municipalities typically require 0.5 to 1.0 bicycle parking spaces per unit in intensification areas. A lack of secure bicycle storage options is a common barrier to bicycle ownership, especially in apartment buildings where bringing a bicycle into a unit is difficult or not permitted by building management. It is recommended that the Town explore the benefit and feasibility of amending this bylaw to provide more bicycle parking in new multi-unit residential developments.



Many other municipalities also have additional bicycle parking zoning requirements that address sheltering, minimum dimensions and security. Higher quality bicycle parking facilities can help make bike ownership and usage more attractive, and the Town should consider providing these details in their zoning requirements.



Bike Repair Stations

The provision of network amenities, including public bicycle repair stations was a key theme that emerged from the ATIP Public Information Centre and online questionnaire. Bike repair stations help give cyclists confidence that they can reliably complete their trips even if they experience a tire puncture or other mechanical issues.



Public bicycle repair stands should be provided near areas with well-used bicycle parking facilities, major trip generators and along significant cycling routes such as the East-West Bikeway and the Tom Taylor Trail. Locations of repair stands should be identified on cycling maps and through wayfinding signage. The repair stands could include:

- A bicycle pump with fittings for common bicycle tire valve types;
- A seat rest/stand to elevate and stabilize the bicycle; and
- A selection common bicycle tools attached to theft-resistant cables; and
- Instructional signage covering basic use of the stand.



Field Investigation of On-road Routes



Share the Road Sign at Lundy's Ln.

4.4 Wayfinding and Signage Plan Concept

Goals and Objectives

Wayfinding implementation is an opportunity for the Town to encourage more residents to cycle and welcome tourists and recreational riders who aren't familiar with the Newmarket active transportation network. The wayfinding and signage concept outlined below describes how signage, pavement markings and other wayfinding features can improve the usability of the active transportation network.

As part of the 2016 York Region Transportation Master Plan (TMP), the Region developed a Wayfinding Strategy. It is recommended that the Town's wayfinding system to be consistent with the Region's in order to promote seamless navigation and provide an intuitive user experience across York Region.

The wayfinding plan below was guided by the general principles of wayfinding signing from the *Design Standards for York Region Pedestrian and Cycling Facilities*.

1. **Conspicuity:** Does the sign attract attention to ensure the user is able to see the information and take the appropriate action?
2. **Simplicity:** Ensure that signs do not become overcrowded with information.
3. **Predictability:** Information should be communicated in a consistent manner. The hierarchy of information on signs should be consistent.
4. **Progressive Disclosure:** The information should be reiterated until a destination is reached. On-going affirmations help users confirm they are moving in the correct direction.



Trail Inventory and Field Investigation on Magna Trail



Existing Wayfinding and Context

Currently, the Town of Newmarket uses a variety of signage formats and pavement markings to help cyclists and pedestrians navigate the Town's on- and off-road active transportation facilities. While on- and off-road facilities have different wayfinding needs, their look, branding, and provided information should be similar. The wayfinding experience in the Town of Newmarket should encourage seamless connection between on- and off-road routes.

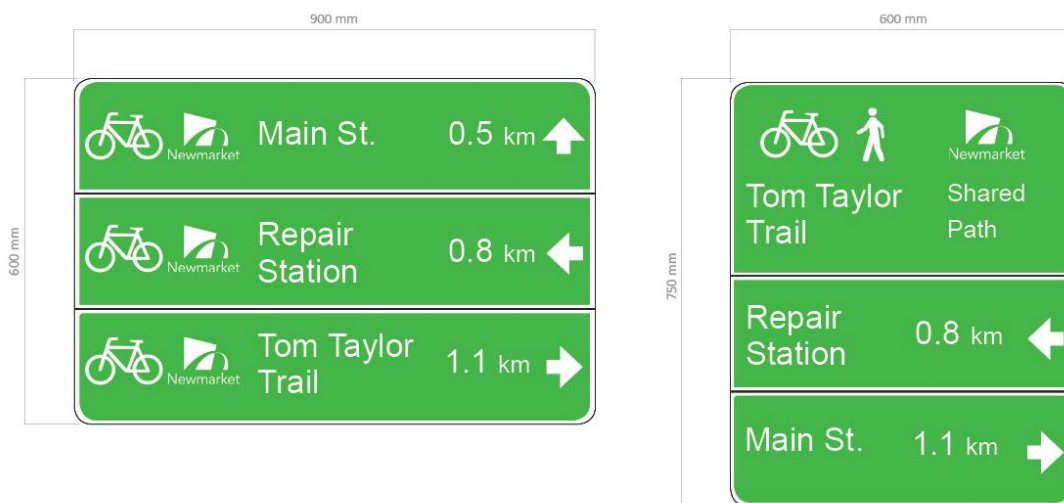


Figure 13: Existing AT Signage and Markings in the Town of Newmarket

Sign Types and Features

Wayfinding signs and other navigational support for cyclists can be categorized into three main types. Using the York Region Cycling and Pedestrian Wayfinding Strategy’s terminology, these sign types are Route Identification, Directional, and Destination Information signs.

Destination Information (Advanced Decision) signs provide cyclists with distances and directions to key destinations. These signs should include distance in kilometres and directional arrows to help cyclists plan their route and inform them of the surrounding area. Destination Information signs should be provided 40-50 m before key decision points and display only a limited amount of information. These signs are meant to be a quick reference for moving cyclists. Signs should feature no more than six destinations, and be ordered from the closest to the farthest destination.



On-Road Destination Information Sign

Off-Road Destination Information Sign with Route with Route Identification Header

Route Identification (Confirmation) signs help to assure cyclists that they are on their intended route. They should be provided 20-30 m after an intersection, a change in facility type, or other major decision points along a route. Additionally, Route Identification signs should be provided at 400 to 800 m intervals. These signs may be produced in large batches with generic designs to save costs or may be combined with Destination Information signs to include distances to key destinations.





On-Road Route Sign

Off-Road Route Identification Sign



Directional (Turning) signs help to guide cyclists when routes require a cyclist to make a turn. They should be provided 5-10 m before an intersection or trail head and/or on the opposite side of an intersection. These signs should feature a bicycle icon and an arrow to direct cyclists to nearby cycling facilities or to significant network connections. Directional signs may be combined with Route Identification signage.



On-Road Directional Turning Sign

Directional Turning Sign with Route Identification Sign

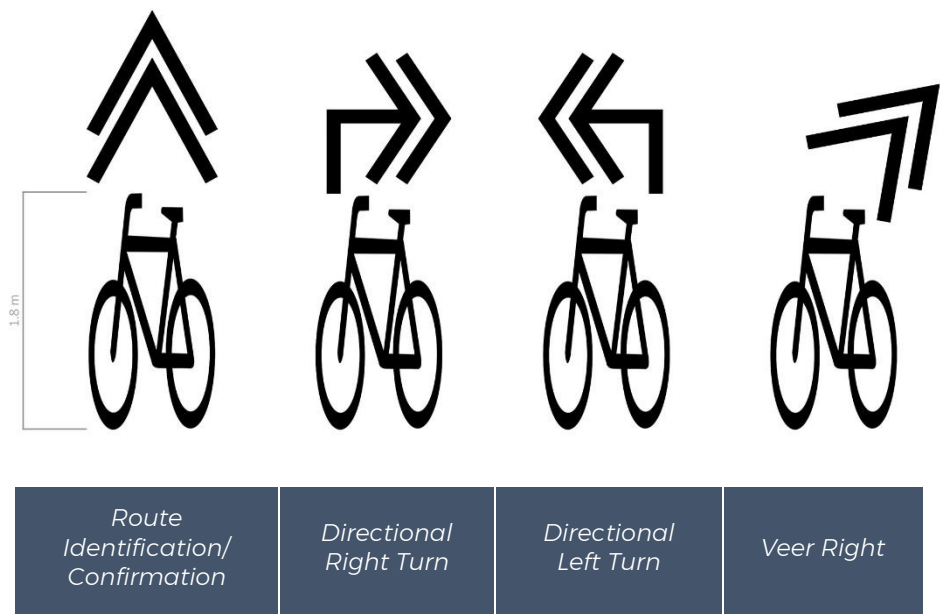


Additional Wayfinding Support

Wayfinding signage can be complimented with several other supporting features and resources for navigating on- and off-road cycling facilities. Pavement markings, trail head maps, and digital/mobile information all play a part in how cyclists plan and navigate their trips.



Pavement Markings and Sharrows can support Directional and Route Identification wayfinding signs. These markings should include a 1.0 m by 2.0 m bicycle stencil and 0.1 m thick by 0.6 m tall chevrons. The chevrons may be straight to assist Route Identification wayfinding or angled at 45 or 90 degrees to support Directional wayfinding. Sharrows with turn directions should be provided to guide users from secondary to primary routes or to guide users to stay on a primary route.



Trail Head Maps are an important resource for pedestrians and cyclists to understand a trail system’s connectivity to key destinations and to identify locations that may have accessibility challenges. Trail heads provide the appropriate information to give residents and visitors confidence to explore the trail system. These maps should highlight connections to key destinations, approximate travel times, and points of interest along the trail. Signage should have high tonal contrast and design and positioning that meets AODA requirements. A recreational trail must have a trail head at major access points that provide the following information:

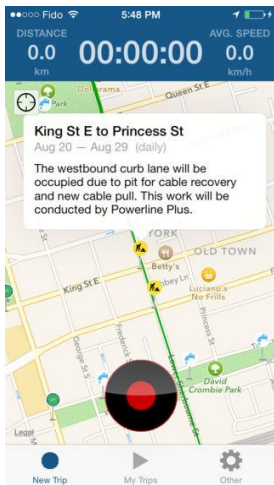
- Length and surface type of trail;
- Average and minimum width of trail;
- Average and maximum running slope and cross slope; and
- The location of amenities.



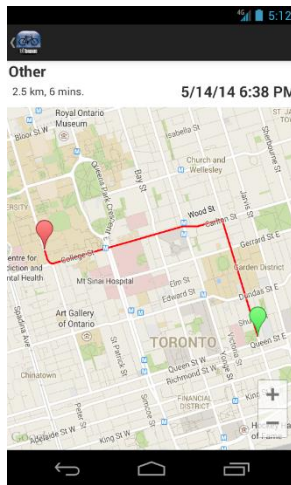
Figure 14: Example of a AODA Compliant Trailhead Sign in Aurora, ON

Digital and Mobile Support is increasingly becoming an important resource for active transportation trip planning. Many cyclists rely on apps such as Google Maps to recommend bike-friendly routes to their destinations. Other successful examples of digital wayfinding include the City of Toronto’s smart phone application and Citymapper that use GPS to guide users throughout their trip.

Web and app based interactive map tools depend on up-to-date and readily available route information to suggest desirable routes for users. The Town should continue to update their GIS data and maps with the most current active transportation network on a regular basis. Publishing the route information and relevant amenities on the Town’s open data portal may provide residents and active transportation supporters an opportunity to visualize and analyze the data in new and innovative ways.



City of Toronto Bike App



Town of Newmarket Trail Map

Types of Destinations and Destination Hierarchy

Destinations that are relevant to pedestrians and cyclists and are not typically featured in general roadway signage include public washrooms, bike shops, repair stations, and trail heads. Establishing a Destination Hierarchy can inform which destinations should be included on Destination Information signage in Newmarket. York Region separates destinations into Primary, Secondary, and Tertiary Destinations, with suggestions regarding when destinations should be featured on wayfinding signage. The Primary, Secondary, and Tertiary terminology has been adopted from the Region. The distance thresholds for the Destination Hierarchy have been modified to suit the geographic size of the Town.

- **Primary Destinations** are major attractions that can be accessed on long, continuous routes. These may include neighboring towns and cycling tourism attractions. Primary destinations should be included on Destination Information signage up to 6 km away from the destination.
- **Secondary Destinations** are major trip generators such as recreational facilities, transit hubs, and large parks. These destinations should be included on Destination Information signage up to 3 km away from the destination.
- **Tertiary Destinations** are local attractions, such as schools, entertainment attractions, and neighbourhood parks. These destinations should be included on Destination Information signage up to 1 km away from the destination.

Figure 15 visualizes the primary, secondary, and tertiary destination distance zones on a map of Newmarket. The zones sizes were chosen such that there would be continuous wayfinding from any point in Newmarket.

Once a destination is included on a sign, it must be consistent and repeat on Destination Information signage leading towards the destination. As signage featuring primary or secondary destinations come close to the identified destination, the signage may separate the destination into more specific attractions. For example, a cyclist in the south-west corner of Newmarket heading to the north-east corner can rely on:

- Primary destination wayfinding resources to guide them to Tom Taylor Trail (< 6 km);
- Secondary wayfinding to get to Main Street (< 3 km); and
- Tertiary wayfinding to locate Newmarket GO station (<1 km)



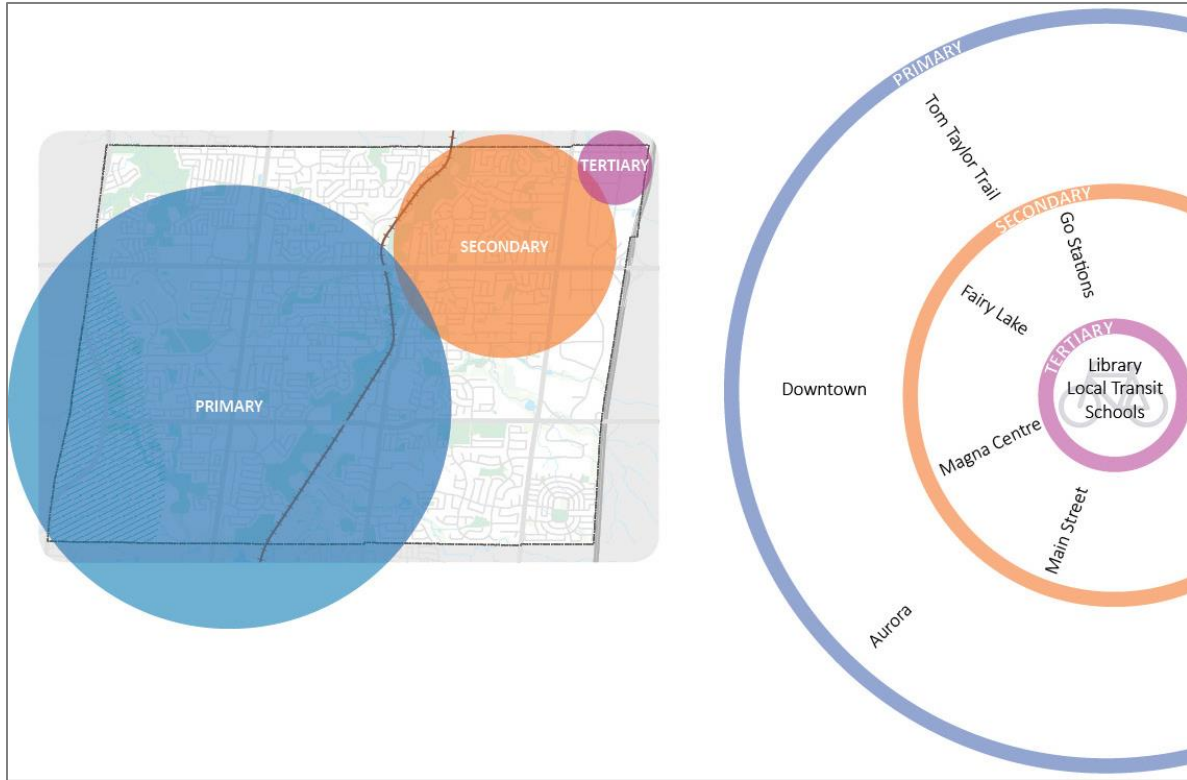


Figure 15: Example Wayfinding Hierarchy in Newmarket

Next Steps

Establishing a wayfinding system is one of the next steps to enhance the active transportation experience. Consideration should be given to apply the principles and strategies outlined in this section, and from the *Design Standards for York Region Pedestrian and Cycling Facilities*. In particular, wayfinding along the East-West Bikeway and the Tom Taylor Trail would provide a meaningful enhancement for current users of Newmarket’s active transportation system.

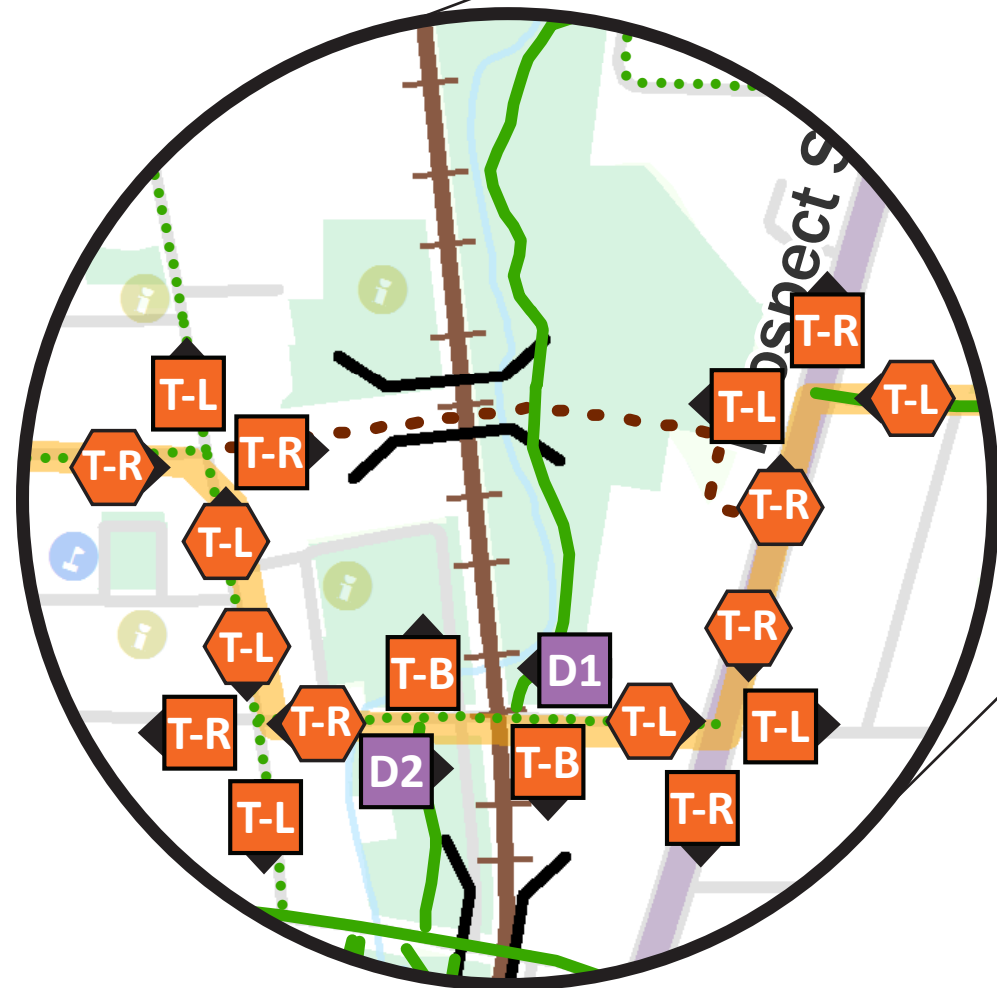
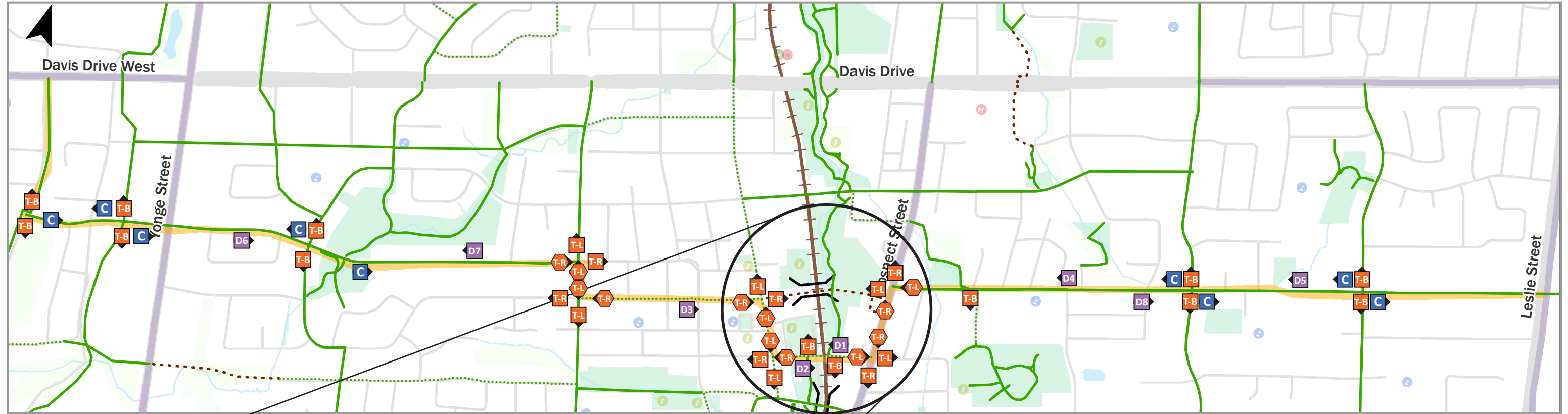
Newmarket has the opportunity to develop a comprehensive and cohesive wayfinding system to guide users in a simple and effective manner. **Map 4** illustrates a conceptual wayfinding scheme for the East-West Bikeway that has been developed as an example of the signage, markings and locations that could be deployed to improve wayfinding in Newmarket.





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Map 4 Conceptual Wayfinding Guide For East-West Bikeway



C - ROUTE IDENTIFICATION SIGNS (Confirmation)

C

T - DIRECTIONAL SIGNS (Turning)

T-L

T-R

T-B

T-L

T-R

D - DESTINATION INFORMATION SIGN (Advanced Decision)

D1		Tom Taylor Trail	←→	D2		Tom Taylor Trail	←		
		Main Street	0.2 km	↑		Prince Charles School	0.9 km	↑	
		GO Station	1.0 km	→		GO Station	1.0 km	←	
D3		Main Street	0.2 km	↑	D4		Main Street	1.0 km	↑
		Tom Taylor Trail	0.3 km	↑			Tom Taylor Trail	0.9 km	↑
		GO Station	1.1 km	←			GO Station	1.1 km	→
D5		Main Street	1.7 km	↑	D6		Main Street	1.8 km	↑
		Tom Taylor Trail	1.6 km	↑			Tom Taylor Trail	1.9 km	↑
D7		Yonge Street	0.9 km	↑	D8		Leslie Street	1.2 km	↑

<h4>Key Destinations</h4> <ul style="list-style-type: none"> School Hospital Recreation Centre / Arena / Pool GO Station 	<h4>Facility Type</h4> <ul style="list-style-type: none"> Potential Future Pedestrian Bridge/Underpass (OPA Schedule D) Mobility Hub Future GO Station Designated Shared Desire Line Regional Facility 	<h4>Basemap Features</h4> <ul style="list-style-type: none"> East West Bikeway (2017) Regional Roads Railway Highway Town Roads Watercourse Green Space 	<p>Data Sources: Town of Newmarket and York Region Map Created By: WSP in Dec 2017.</p> <p>0 0.25 0.5 Kilometres</p>
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Recommendations:



6

The Town should adopt the design guidelines for active transportation facilities as identified in sections 4.1 and 4.2, as well as primary provincial guidelines such as, but not limited to OTM Book 18, OTM Book 15 and the MTO Bikeways Design Manual.

7

The Town should look for opportunities to implement amenities and route enhancements that would encourage walking and cycling and improve the sense of comfort for users.

8

The Town should consider adopting the wayfinding signage scheme and principles from the Design Standards for York Region Pedestrian and Cycling Facilities. Wayfinding and trail head signs should be implemented on the existing active transportation system and new routes as they are added to the network.

9

The Town should evaluate their trail system to identify areas that do not meet the current AODA standards for trail facilities. This accessibility information, including length and slope, should be provided at trailheads and major access points to allow users to navigate the system based on their accessibility needs.

10

The Town should consider following the APBP Bicycle Parking Guidelines when implementing bike parking in public spaces. Consideration should be given to enhance bike parking provisions beyond the bylaw requirements if there is sufficient cycling demand at key destinations.



GO Train Crossing Timothy St.



YRT Stop at Newmarket Riverwalk Commons

5 Implementation Plan

5.1 Who Does What?

Roles and Responsibilities

With numerous recommendations, it is important to define who will lead, support or contribute to their implementation. Implementation should be a collaborative effort. Without partnerships, ongoing communication and coordination between staff in different departments, implementation of the active transportation facilities may be unnecessarily difficult.

Understanding the various partners who will be involved in the implementation of the ATIP is essential to develop a plan to engage and communicate with the relevant stakeholders for each individual project or initiative. A single point of contact from each relevant department in the Town should be established to manage stakeholders and coordinate active transportation developments. Table 7 identifies some of the potential partners and how they could contribute to the implementation of the ATIP.

Partner	Roles and Responsibilities
Town Councillors	Town Council approves budget for projects related to the ATIP and plays a role during facility selection, consultation and project development.
Accessibility Advisory Committee	Ensures that AODA requirements are met for trail projects.
Newmarket Environmental Advisory Committee	Works with Town staff on projects near or adjacent to natural heritage areas to minimize environmental impact during the development and operation of an active transportation facility.
Town Departments	The Development and Infrastructure Services Commission is responsible for the Planning, Engineering Services and Public Works Services Departments. These groups will need to coordinate when planning, building and operating new and existing active transportation facilities.
The Regional Municipality of York	Coordination with the Region is essential to ensure local and regional connections are effective and are phased in an appropriate manner.
Lake Simcoe Regional Conservation Authority	Lake Simcoe Regional Conservation Authority (LSRCA) is responsible for the management of the Lake Simcoe watershed. When a facility crosses or abuts a watercourse, LSRCA should be





	involved to ensure the natural area and watercourse condition are maintained.
External Agencies	Other agencies and partners that could be involved in the planning and implementation process include private land owners and developers, Metrolinx, and Hydro equipment operators (e.g. Hydro One).
Ministry of Transportation	The implementation of proposed active transportation infrastructure that may impact provincial highways and require approval by the Ministry of Transportation (MTO). The MTO administers grants that can be used for active transportation projects. For example, MTO administers the Ontario Municipal Cycling Infrastructure Program, which the Town used to help fund the East-West Bikeway. As part of the grant requirements, municipalities need to monitor usage and report data to demonstrate positive impact and return on investment.
School Boards	Provides input on opportunities to improve accessibility to schools with the implementation of new on-road and trail facilities near school properties.
Local Advocacy Groups	Local advocacy groups are represented by Town residents of varying ages and abilities. These groups have first-hand knowledge of routes in Newmarket and may identify additional opportunities to improve the active transportation network.

Table 7: Overview of Potential Partners and Roles

The partners listed in Table 7 are not intended to be exhaustive. There are some that will likely play a more prominent role in the design and implementation of routes/facilities while others will influence the development and planning process. The list of proposed partners is intended to be reviewed and updated by Town staff as opportunities arise. Maintaining existing partnerships should be a priority and future opportunities to partner with other agencies and organizations should be continually identified.

Recommendations:

- 11 Town staff should periodically review the potential opportunities for additional partners to support the Town in the implementation and execution of the ATIP.
- 12 Town staff from various departments should continue to work together to coordinate the implementation of the ATIP. A single point of contact from each relevant department should be identified to manage the ATIP and track the progress of implementation.

5.2 Network Phasing

How Was the Phasing Plan Developed

The phasing plan was developed to steadily rollout the proposed network in a reasonable manner while connecting key destinations and routes over the implementation time horizon. The timing of route implementation is driven by development plans, potential funding, partnership opportunities, and economies of scale with other projects (e.g. capital projects). The phasing strategy is not meant to be prescriptive. Phasing should be flexible and adapt to on-going changes in Newmarket. The recommended phasing plan distributed the cost and level of effort of implementation over a 10+ year time horizon and is organized into four phases:

- Short Term (0-3 years)
- Medium Term (3-5 years)
- Long Term (5-10 years)
- Future Phases (beyond 10 years)

For each stage of the phasing plan, there are specific goals and objectives. The goals and objectives incorporate the factors above, while building upon the active transportation context during the specific time period.

1. The focus of the **Short Term phase** is to create “short-term wins” for the Town of Newmarket. In particular, this phase includes projects that can be easily and quickly mobilized to develop the on-road network while connecting to the East-West Bikeway and the existing trail system. Projects that occur in conjunction with current and approved capital plans are examples of quick wins that develop the network.
2. The focus of the **Medium Term phase** is to identify missing links in the Town, prioritizing projects that create additional connectivity.
3. The focus of the **Long Term phase** is to implement large projects that require significant work and further build connectivity in the network.
4. The focus of the **Future Phases** is to implement projects that complete links in the network that are not feasible to implement in earlier phases. Projects that are designated for future phases involve extensive work to implement the majority of the facility. These projects currently do not have funding and may require additional engineering and design evaluations to implement the project. Some future phase routes are additions on top of the core network from Schedule D.



The phasing strategy for the proposed routes followed the phasing plan objectives while considering the following factors:

- **Approved Capital Plans:** The phasing in the ATIP aligns with roadway improvements contained in the Town’s capital budget. Coordination with large scale capital projects can be an efficient and effective way to implement active transportation infrastructure as it may realize lower cost of implementation.
- **Official Plans and Development Plans:** On-road and trail active transportation facilities that abut or overlap with proposed developments or are part of the Official Plan have been identified. The phasing is consistent with the proposed/approved timeline of the projects and developments.
- **Route Selection Criteria:** Key route selection criteria were considered and informed decision making on phasing projects. For example, the criteria “Connectivity and Directness” and “Cost” were used to determine the appropriate phase to optimize connectivity with other planned projects and to seek cost efficiencies.
- **Consultation and Engagement:** Attendees at the Public Information Centre and respondents of the survey provided comments which were taken into consideration and where appropriate, incorporated into the phasing plan.

It is recommended that the Town should adopt the proposed phasing plan as a guide for the next decade. The proposed routes should be reviewed on an annual basis to ensure the projects and priorities identified are feasible based on the available budgets and/or coordination with other capital projects and land developments. The phasing plan is not meant to dictate when a project is intended to commence. The exact timing is intended to be determined by Town staff and Council as they proceed with the implementation of the plan based on available budgets approved by Council.



Group Bike Ride Along the Tom Taylor Trail



On-road Network Phasing Plan

Map 5A illustrates the proposed phasing for the network. A summary is provided below in Table 8. Figure 16 shows that bike lanes form the majority of the proposed network with the greatest proportion of on-road implementation.

Facility	PHASE (Length in km)				Total
	Short	Medium	Long	Future	
Bike Lane	8.2	17.3	6.0	10.7	42.2
Buffered Bike Lane	7.1	0.7	0.0	4.0	11.9
Signed Route	2.4	8.8	3.7	2.4	17.4
Signed Route w/ Sharrows	0.0	0.8	0.0	0.0	0.8
Total	17.7	27.6	9.8	17.1	72.2

Table 8: On-road Network Phasing Summary

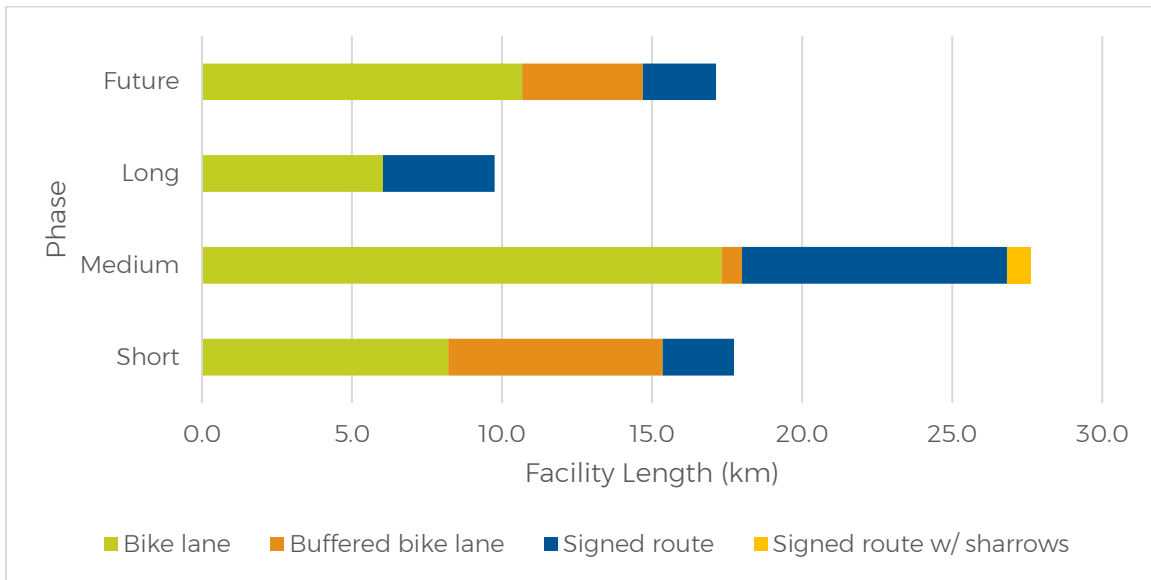


Figure 16: On-road Network Phasing Summary Chart



Off-road Network Phasing Plan

Map 5B illustrates the proposed phasing for the network. A summary is provided below in Table 9. Figure 17 shows that the majority of trail development occurs in the short-term. Within the Short Term phase, the majority of the multi-use pathways development occurs in conjunction with potential funding opportunities and trails that are contained as part of capital plans.



Facility	PHASE (Length in km)				Total
	Short	Medium	Long	Future	
In-boulevard Multi-use Pathways	1.3	1.1	0.0	0.0	2.4
Multi-use Pathways	7.9	0.3	4.5	3.4	16.2
Multi-use Trails	0.0	0.0	0.7	1.3	2.0
Desire Line	0.0	0.0	0.0	11.0	11.0
Total	9.2	1.5	5.2	15.7	31.6

Table 9: Trail Network Phasing Summary

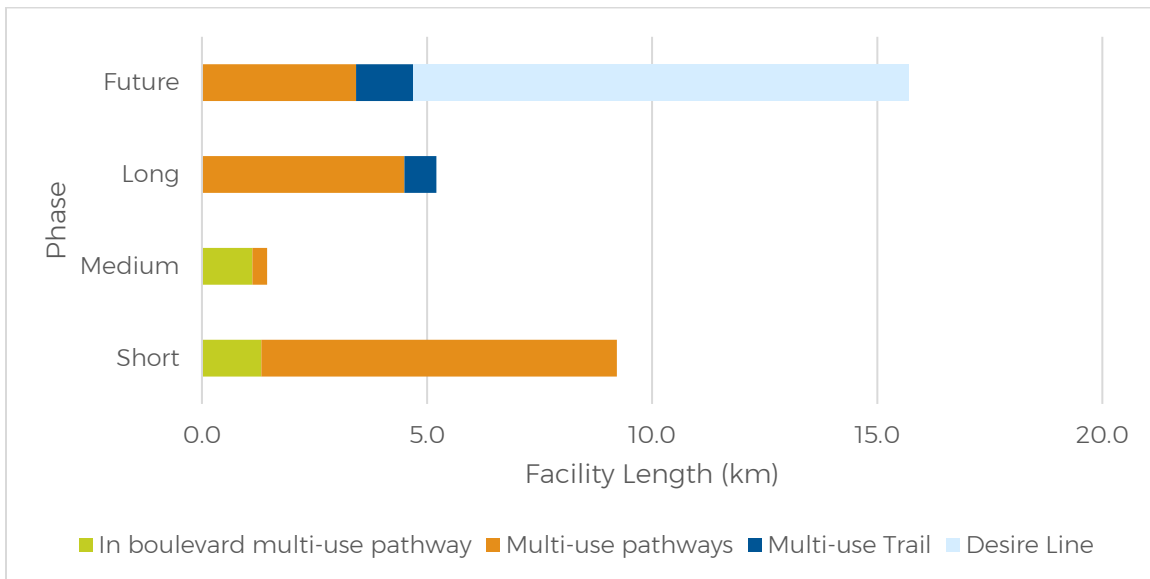


Figure 17: Trail Network Phasing Summary Chart

Recommendations:

13

The Town should adopt the proposed network phasing illustrated on **Map 5A and Map 5B**. These maps should be used by staff as a guide for implementation of the proposed active transportation network.

14

The phasing plan should be reviewed on an annual basis to ensure the projects and priorities identified are feasible based on the available budgets and/or coordination with other capital projects and land developments.

15

The proposed phasing identified in this plan should be communicated to Town partners including but not limited to MTO, York Region and the surrounding municipalities. The Town should work with these partners to coordinate the implementation of the network.

16

The Town should pursue opportunities to implement active transportation facilities in conjunction with new developments. The Town should work with developers to ensure that subdivisions and plans accommodate suitable active transportation connections.



5.3 Network Costing

How was the Network Costed?

The estimated cost to implement the network was calculated from a set of unit prices and assumptions. Unit prices are based on past projects and pricing from both Newmarket and other Ontario municipalities. The unit prices have been adjusted to reflect the typical prices for infrastructure projects in the Town of Newmarket with consultation from Town staff. The cost estimates are for the short to long-term time horizon (10-year horizon). As facilities are implemented in the future, costing for longer term projects should be revisited and updated. It is important to note that some of the proposed routes may be partially or fully funded through capital projects, development charges or partnerships and grants.

Each project has its own unique site conditions, and may require additional resources due to local design issues or project complexities beyond the scope of the high-level estimates. The unit prices:

- Are blended rates and reflect 2018 dollars;
- Are intended to be used for base budgeting purposes as they only include the installation of linear facilities. The costs do not include fixtures, furniture, contingency, consulting, design and approvals costs, etc.;
- 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;
- Assume typical environmental conditions and topography; and
- Do not include applicable taxes and permit fees.

Relative to trail facilities, on-road facilities generally cost less to implement. During the facility selection process, the study team minimized the amount of on-road facilities that require capital intensive road reconstruction. Most on-road facilities involve re-painting and remarking and signing of roads to implement the facility. Trail construction tends to be more complex, and has a higher unit cost.

Due to the unknown length of water-crossings, a 17.5 m long bridge was assumed as a conservative estimate for a typical pedestrian and cycling bridge on a trail. There may be a significant number of water crossings required to complete the trails at the Northwest Quadrant Forests, Haskett Park and the woodlot southeast of Mulock Dr. and Highway 404.

Network Cost Summary

Facility	PHASE COST			Total
	Short	Medium	Long	
On-road	\$507,580	\$558,060	\$382,572	\$1,448,211
Off-road	\$3,260,000	\$535,500	\$1,692,150	\$5,487,650
Network Sub-total	\$3,767,580	\$1,093,560	\$2,074,722	\$6,935,861
Structures	\$1,680,000	\$420,000	\$1,260,000	4,200,000
Total	\$5,447,580	\$1,513,560	\$3,334,722	\$11,135,861

Table 10: Network Cost Summary



Future On-road Network Cost

Facility	PHASE COST			Total
	Short	Medium	Long	
Bike Lane	\$172,000	\$385,550	\$371,412	\$928,961
Buffered Bike Lane	\$328,440	\$138,420		\$466,860
Signed Route	\$7,140	\$26,490	\$11,160	\$44,790
Signed Route with Sharrows		\$7,600		\$7,600
Total	\$507,580	\$558,060	\$382,572	\$1,448,211

Table 11: On-road Network Cost Summary

Future Trail Network Cost

Facility	PHASE COST			Total
	Short	Medium	Long	
In-boulevard Multi-use Pathways	\$495,000	\$420,000		\$915,000
Multi-use Pathways	\$2,765,000	\$115,500	\$1,575,000	\$4,455,500
Multi-use Trails			\$117,150	\$117,150
Desire Line				\$0
Total	\$3,260,000	\$535,500	\$1,692,150	\$5,487,650

Table 12: Trail Network Cost Summary

Recommendations:

17

The cost estimates for on-road and trail facilities should be used as a reference to inform the Town's future budgeting and costing for AT routes and facilities.

18

Costing estimates and unit-prices should be updated on a regular basis to account for inflation and other external factors as needed.

19

As facilities are implemented into the future, projects in the long and future phases should be re-evaluated and re-costed. If future phase projects are within the 10-year budget horizon, they should be added to the phasing plan and costed with up-to-date unit prices.



MAP 5A: PROPOSED ON-ROAD PHASING PLAN

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Phasing Plan

- Existing Facilities
- Short Term (0-3 years)
- Medium Term (3-5 years)
- Long Term (5-10 years)
- Future Phases (10+ years)

NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

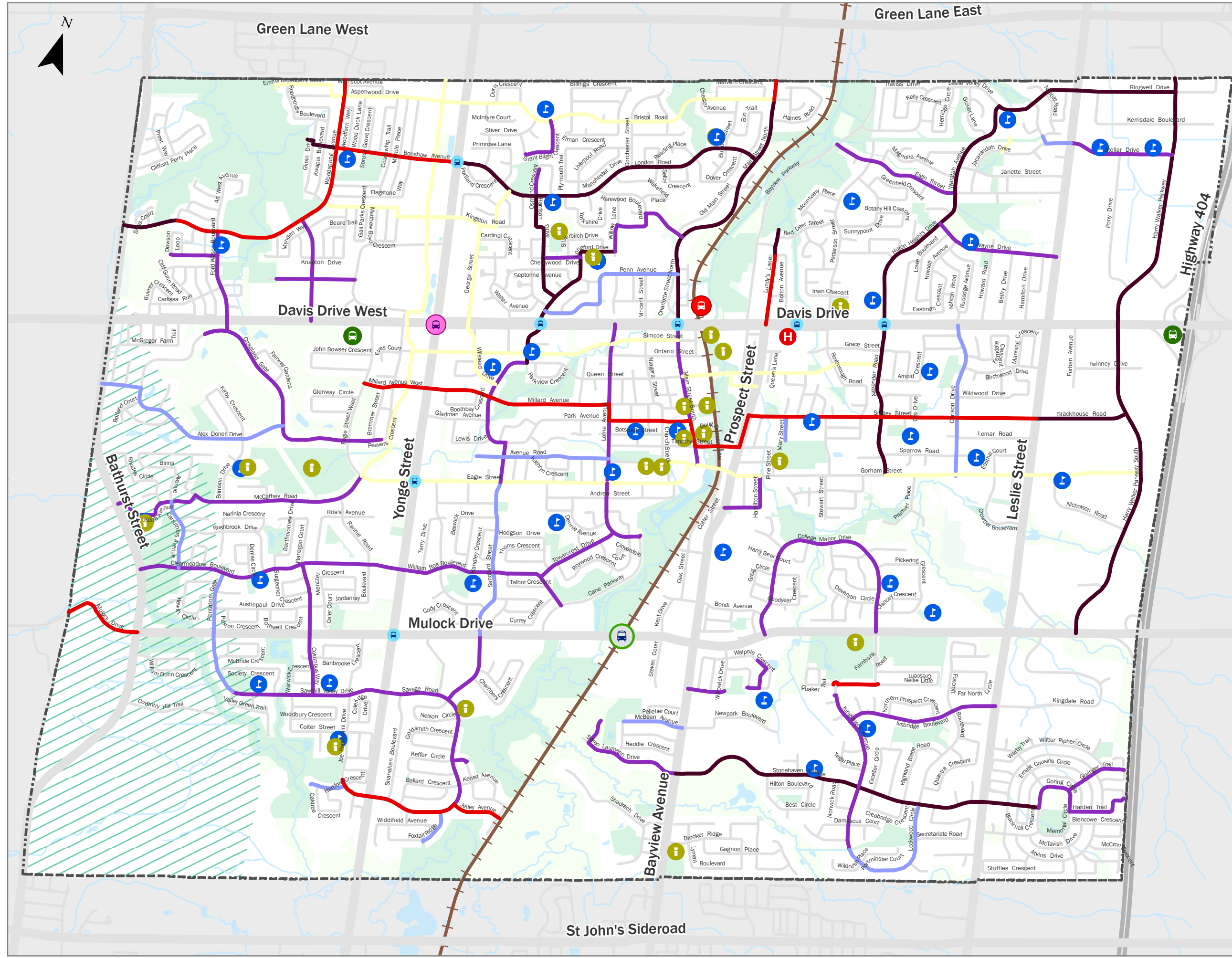
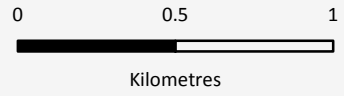
Other Items

- Town of Newmarket Boundary
- Regional Roads
- Railway
- Highway
- Town Roads
- Watercourse
- Green Space
- Oak Ridges Moraine

Key Destinations

- School
- Hospital
- Recreation Centre
- Viva Stop
- GO Transit Station
- Viva Stop Mobility Hub
- GO Station Mobility Hub
- Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.



MAP 5B: PROPOSED TRAIL PHASING PLAN

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

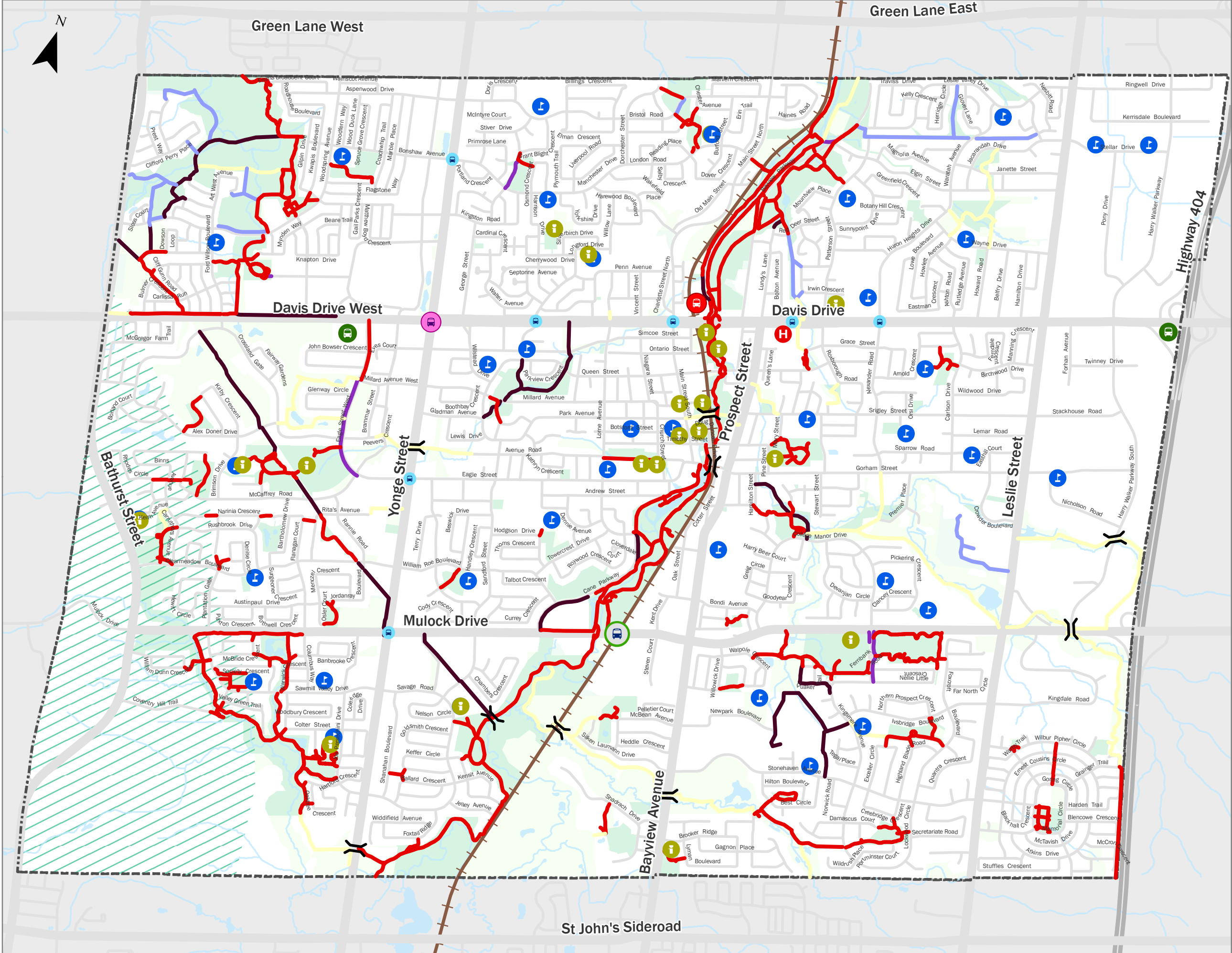
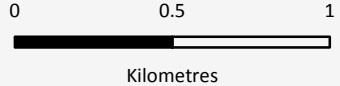
- ### Phasing Plan
- Existing Facilities
 - Short Term (0-3 years)
 - Medium Term (3-5 years)
 - Long Term (5-10 years)
 - Future Phases (10+ years)

NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

- ### Other Items
- Town of Newmarket Boundary
 - Regional Roads
 - Railway
 - Highway
 - Town Roads
 - Watercourse
 - Green Space
 - Oak Ridges Moraine

- ### Key Destinations
- + School
 - H Hospital
 - i Recreation Centre
 - / Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)
 - + Viva Stop
 - + GO Transit Station
 - + Viva Stop Mobility Hub
 - + GO Station Mobility Hub
 - + Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.



5.4 Funding Sources and Opportunities

The Town of Newmarket has a long-standing history of allocating funds for active transportation initiatives and partnering with external agencies. The recently completed East-West Bikeway which was partly funded through the Ontario Municipal Cycling Infrastructure Program, is an example of Newmarket's effective partnerships and commitment to active transportation. The cost to implement the long-term network and associated structures is estimated to be approximately 11 million. For successful implementation, the Town will need seek opportunities to coordinate with other major projects and gain sources of funding to finance the proposed network.



Core Implementation Funding

Annual Capital Plans: Proposed infrastructure may be funded through the Town's capital budget. The Town's capital plan is updated on an annual basis and sets-out a five-year forecast. When the capital plan is being updated, Town staff should continue to investigate any opportunities to coordinate the implementation of active transportation facilities as part of other projects.

Coordination with Regional Projects: Implementation of the active transportation network will require coordination with Regional projects. The Town of Newmarket and York Region should continue to work together to identify opportunities for the implementation of infrastructure located on roads under the Region's jurisdiction. Coordination with the Town of Aurora, Town of East Gwillimbury and Township of King are important when implementing routes that are in close proximity to Town of Newmarket boundaries.

Development Charges: The Town of Newmarket collects development charges for residential and non-residential developments. The charges are used to recover the costs associated with funding infrastructure and services associate with growth. The cost to build an active transportation facility is part of the overall development cost, and is integrated within the development budget. Development Charges were established in By-law 2014-42.

Additional Implementation Support

External Funding Sources: There are a number of funding opportunities available at the provincial and federal level. Where possible, external funding sources should be explored such as the federal/provincial gas tax, Federation of Canadian Municipalities Green Municipal Fund, Ontario Commuter Cycling Infrastructure/Climate Strategy Programs, York Region Pedestrian and Cycling Municipal Partnership Program, as well as corporate environmental initiatives.

Opportunities should be identified where economies of scale can be realized. During the planning of large-scale infrastructure projects, opportunities to coordinate the implementation of pedestrian or cycling routes should be identified. Most recently, the Town was successful in receiving funds from the Ontario Municipal Commuter Cycling (OMCC) program in 2017. The OMCC is a four-year program which is intended to provide direct, dedicated and annual funding to Ontario municipalities to support the implementation of commuter cycling infrastructure in order to encourage people to get out of their cars and cycle for daily commuting or other frequent trips. The OMCC funding can be used to support up to 80% of the costs associated with the implementation of eligible commuter cycling programs. In the successful submission, the Town identified a number of potential projects, including;

- In-boulevard multi-use pathways along Mulock Dr. in partnership with York Region;
- Multi-use path along the Hydro-Corridor;
- New buffered bike lanes on Main St N. and Harry Walker Pkwy.; and
- Completion of bike lanes on Woodspring Ave.

Development Opportunities: When new developments abut or are in the middle of a proposed route, the Town should consider working with the developer to ensure that the active transportation infrastructure is implemented as part of the new development. During the planning process, consideration should be given to ensure that road and neighbourhood development are active transportation supportive.

Recommendations:

20

The Town should continue to identify opportunities to coordinate large-scale capital projects to achieve economies of scale and include the cost of active transportation facilities into the annual budget request.

21

The Town should explore external funding sources and partnerships to help fund the implementation of the active transportation network.



5.5 Operations and Maintenance

Operations and maintenance are vital components of a comprehensive and comfortable active transportation program. These programs help to mitigate users' risk exposure and ensure that the public have consistent access to comfortable facilities, and increase the lifespan of infrastructure. Maintenance practices vary by municipality and by facility type. Common active transportation maintenance practices include:

- Surface repairs (e.g. crack sealing, asphalt patching, resurfacing);
- Sweeping;
- Drainage feature maintenance (e.g. culverts, catch basins);
- Pavement markings and signage replacement;
- Vegetation management; and
- Snow clearance and ice-control.

As the network expands, additional effort will be required to carry out maintenance and operations. Maintenance practices and level of service limits will need to be adapted to address new facilities as they are implemented. Priority should be given to core routes that have high connectivity and comparatively high volumes of bicycle traffic.

This section is intended to be used a reference and resource for operations and maintenance as the on-road and trail network expands. The Town should proceed to update its on-road and trail maintenance practices and assess the impact to the operating budgets, equipment needs and resources.

Maintenance Standards in Ontario

Municipalities currently use the Provincial Minimum Maintenance Standards to inform maintenance practices. The Ministry of Transportation Regulations 239/02 outlines the minimum maintenance requirements. The standards are based on the potential for hazardous road conditions for motorists. Though not currently considered as part of these standards, bicycles are also considered vehicles under the Highway Traffic Act (HTA) and users of the roadway. As cyclists are more vulnerable to poor road conditions (e.g. potholes and cracks), additional consideration for standards that accommodate all users, including cyclists is needed. The Minimum Maintenance Standards (MMS) have been updated in 2018 and include guidance on the topics below:

- Monitoring of weather conditions and snow accumulation including patrolling to check for conditions on the road;
- Addressing winter road conditions including snow accumulation and ice formation on roadways;
- Potholes, shoulder drop-offs, cracks and debris;



- Lighting, signs and traffic control signals;
- Bridge deck spalling (concrete splintering and breaking); and
- Roadway and sidewalk surface discontinuities.



What is Being Done in Newmarket?

The maintenance of active transportation facilities for both on-road and trail facilities is managed through Public Works Services. The Department's current maintenance standards are consistent with the Minimum Maintenance Standards.



Asset Management Plan

In 2014, The Town of Newmarket released an asset management plan with the goal of understanding the Town's capital assets including linear infrastructure (e.g. roads and trails) and vehicles and equipment (e.g. resurfacers and mowers). The asset management plan introduces key performance indicators (KPIs) that demonstrate if an asset is meeting its desired service levels.



The performance indicators help the Town understand which facilities are priorities and which facilities need maintenance and/or rehabilitation. The KPIs are developed through an asset inventory and condition surveys for linear infrastructure. Prioritization and coordination of repairs are completed through a scoring process that determines the structural adequacy, surface condition, maintenance demands and drainage conditions. As a result of the asset inventory process and evaluation, the recommended rehabilitation or maintenance treatment can be applied.



The Asset Management Plan identifies these regular maintenance and significant repair activities as part of the Town's road, bridge and culvert management programs (Asset Management Plan Section 5.2.1):



- 24-hour maintenance response capability;
- Routine maintenance such as street sweeping, pothole patching, utility cut repairs, etc.;
- Snow and ice removal maintenance and winter night patrol;
- Scheduled preventative maintenance programs (e.g. crack sealing program);
- Scheduled inspection program for ~25% per year pavement quality and once every two years for culverts;
- Reactive maintenance for significant portion of asset inventory;





- Maintenance triggered by public inspection through phone calls, emails, letter and over the counter interactions and web interface available for public reports/complaints;
- Maintenance of lighting and signals infrastructure is contracted out. The nature and frequency of re-lamping and pole maintenance are based on best practices and the requirements in the contracts;
- Signage – Major regulatory signs (e.g. stop signs) are tested for reflectivity on yearly basis and maintained based on the evaluation results. Minor regulatory (e.g. no parking) and guide/information signs are managed reactively based on citizen inquiries and staff observation; and
- Line markings on major routes are reapplied semi-annually. The condition of the line markings varies throughout the year based on traffic, type of marking and time since reapplication.

In addition to maintenance activity, the Asset Management Plan outlines these renewal/rehab activities to extend the life of an asset (Asset Management Plan Section 5.2.1):

- Road structures are maintained on a lifecycle basis through the selection of the optimal treatment based on their current condition and projected deteriorate. Road renewal and rehabilitation treatments range from patching and crack sealing, to resurfacing, total reconstruction, and are selected to minimize the lifecycle cost of operating each asset within its target state. Road sections that are at an optimal time for specific rehabilitation treatments are placed on a list for prioritization. Rehabilitation is dependent on budget availability.

On-road Maintenance

Cycling facilities located within the road right-of-way should be maintained at the same standard of the rest of the roadway. As the network grows and develops, the Town should assess the impact to the maintenance budget while maintaining the same level of service as the roadway.

For winter operations, it is suggested that new design and operations standards be established considering snow storage to ensure that bike lanes are brought up to an adequate level of service soon after a snow fall event occurs. As the Minimum Maintenance Standards (MMS) have been updated in 2018, the Town's standards and guidelines relating to winter maintenance of on-road facilities should be reviewed and adjusted to reflect changes in the MMS.

Annual unit costs for maintenance of on-road facilities for non-winter and winter months are provided below in Table 13 and Table 14.

Facility Type	Per km Cost (per year)
Buffered Bike Lane	\$8,050 - \$9,650
Bike Lane	\$6,650 - \$8,050
Signed Route	\$260
Signed Route with Sharrows	\$2,950 - \$6,410
Sidewalk	\$2,550

Table 13: Estimated On-road Network Maintenance Costs during Non-Winter Months

Facility Type	Per km Cost (per year)
Buffered Bike Lane	\$1,000
Bike Lane	\$1,000
Sidewalk	\$6,750 - \$12,500

Table 14: Estimated On-road Network Maintenance Costs during Winter Months

Trail Maintenance

Trail maintenance is managed by Parks and Property in the Town of Newmarket (under Public Works Services). Through the trail inventory component of this study, it was determined that the Town’s trail systems were well maintained and kept at a high level of service. The Town should continue to monitor and evaluate the condition of the trail system and regularly maintain the trails.

Currently the majority of parks and trails in Newmarket are not maintained for winter activities. Both the Town of Newmarket website and trail signage indicates that users should take extra caution and use facilities at their own risk for winter activities. The Tom Taylor Trail and the area by Fairy Lake are the currently the only trails that are winter maintained. Walkways into parks, on school routes between streets are a secondary snow removal priority.

As the trail network is implemented, consideration should be given to expanding trail winter maintenance programs. Certain trail routes may be considered as important corridors for pedestrians and potential commuter cyclists. These facilities should be candidates to be restored to adequate conditions soon after a snow event. An example of a route that could be considered is the Hydro-Corridor Trail which has the potential to become a commuter pedestrian and cycling route to a major employment center.

Annual unit costs for maintenance of on-road facilities for non-winter and winter months are provided below in Table 15 and Table 16.



Facility Type	Per km Cost (per year)
Off-Road Trail	\$1060
In-Boulevard Trail	\$4,235 - \$4,860

Table 15: Estimated Trail Network Maintenance Costs during Non-Winter Months

Facility Type	Per km Cost (per year)
Off-Road Trail	\$6,750 - \$12,500
In-Boulevard Trail	\$6,750 - \$12,500

Table 16: Estimated Trail Network Maintenance Costs during Winter Months

Recommendations:

22

The Town should identify specific maintenance and operation practices for facility types included in the active transportation network. As new facilities are implemented, the Town should consider whether the current maintenance practices address the needs of the new facilities.

23

The Town should review and revise maintenance and monitoring practices to reflect changes made the updated Minimum Maintenance Standards O. Reg. 239/02. In conjunction with the updated standards, the Town should develop a level of service standard for maintenance and operations of active transportation facilities during winter months.

24

The Town should budget for an increase in maintenance tasks in an incremental fashion as the network expands. Therefore, as each new network segment is added, the impact to the operations budget should be calculated by Town staff so that it can be added into the annual maintenance request.



Trail maintenance and Re-surfacing at Joe Persechini Park



5.6 Monitoring and Evaluation

Implementation does not end with construction. Evaluating and documenting what is achieved will help assess the implementation's plans progress and effect in Newmarket. Performance measures can help to prioritize projects, track project progress and gauge user interest.



- Demonstrate the value of pedestrian and bicycle projects to citizens and elected officials;
- Inform smarter investments through data-driven measures of success;
- Comply with funding requirements at varying levels of government; and
- Provide information to engage a broad set of stakeholders in project identification and prioritization.



The type of performance measures applied by municipalities can vary depending on desired outcomes and available data. As performance measures become more widely used by municipalities, the need to incorporate them into municipal planning processes becomes increasingly more important. Specifically, the development and documentation of performance measures will help to inform the annual budgeting process and to leverage increased capital investments that support the implementation of the plan.



In 2017, Statistics Canada released Journey to Work data from the 2016 Census that includes mode share data for the Town of Newmarket's reference. In addition, the updated Transportation Tomorrow Survey (TTS) that was released in 2018 includes insight about how people move within Newmarket. The TTS and Census data can be used to create a baseline image of Newmarket's active transportation environment in 2016. Future data measurement programs can reference the baseline condition to identify where there is growth in active transportation in Newmarket and how much growth is occurring.



While Statistics Canada and TTS data focus on utilitarian usage, recreational cycling and walking will remain significant to Newmarket. A bike count program either by manual counts or an automated counter can provide data regarding both recreational and commuter trips. York Region has currently deployed a bike counter on the Tom Taylor Trail to collect data on pedestrian and cyclist volumes.



Identifying and applying a set of performance measures can help staff assess the level of impact that new facilities and routes have on active transportation usage. Data collected to quantify and measure performance targets to inform future priorities and justify capital investments that support future active transportation developments in Newmarket.



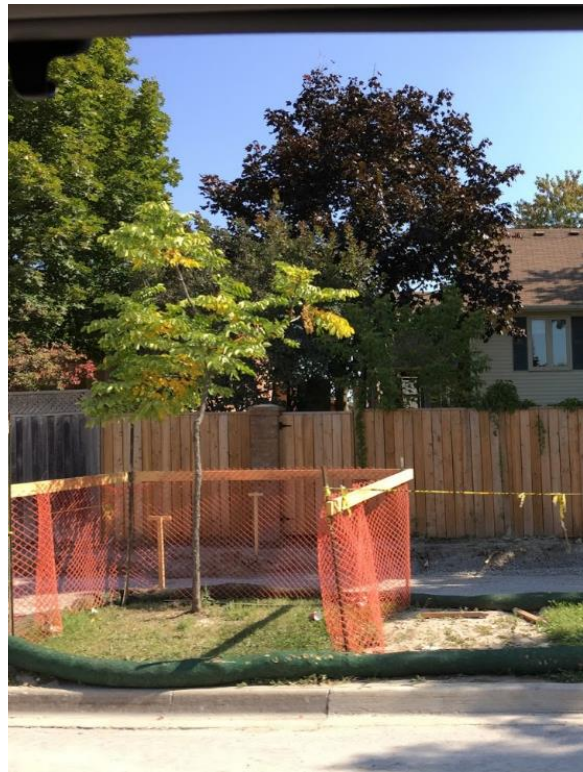
Recommendations:

25

Consideration should be given to use Statistics Canada and Transportation Tomorrow Survey data as a baseline condition for the current state of active transportation in 2016. It is recommended to monitor usage through a pedestrian and cyclist count program to identify how frequently facilities are used.

26

Develop a suite of metrics to show network usage, ATIP investment, current conditions, maintenance of facilities and safety statistics.



Construction of a Two-way In-boulevard Multi-use pathway on Eagle St. W for the EW Bikeway in 2017

6 Recommendations and Next Steps



This Active Transportation Implementation Plan (ATIP) is the Town's blueprint for creating a more comprehensive, efficient and accessible active transportation network for residents and visitors.



The content included in the ATIP was shaped through the input received from Town staff and those who engaged with the study team. The ATIP responds to the growing demand for active transportation. The plan should be used as a tool by Town staff to inform future decision making regarding the prioritization and investment for active transportation in Newmarket over the next 10+ Years. The recommendations outlined below act as a guide for the Town to implement change.

Network Development



1

The proposed active transportation network illustrated in **Map 2, Map 3A and 3B** should be adopted by the Town to guide future AT network expansion, facility design and implementation.

2

As the active transportation networks change over time, the route network mapping should be updated to reflect the most up to date conditions. The Town should strive to review and update the mapping on an annual basis, with comprehensive updates planned every five years.

3

Active transportation networks need to be flexible. There may be opportunities for additional or alternative connections based on new developments or partnerships. Should these connections be made, the mapping should be updated to reflect the changes.

4

On routes that have been recommended as a bike lane where a shared facility would be sufficient as per provincial cycling guidance, consultation with the public should be completed. If there are significant challenges that arise from the consultation process, the route could be implemented as a shared facility at the Town staffs' discretion.

5

Prior to implementing trail facilities, further evaluation and survey work should be completed prior to facility design to confirm a route alignment that minimizes environmental effects and reduces implementation cost.



Facility Design and Wayfinding

6

The Town should adopt the design guidelines for active transportation facilities as identified in sections 4.1 and 4.2, as well as primary provincial guidelines such as, but not limited to OTM Book 18, OTM Book 15 and the MTO Bikeways Design Manual.

7

The Town should look for opportunities to implement amenities and route enhancements that would encourage walking and cycling and improve the sense of comfort for users.

8

The Town should consider adopting the wayfinding signage scheme and principles from the Design Standards for York Region Pedestrian and Cycling Facilities. Wayfinding and trail head signs should be implemented on the existing active transportation system and new routes as they are added to the network.

9

The Town should evaluate their trail system to identify areas that do not meet the current AODA standards for trail facilities. This accessibility information, including length and slope, should be provided at trailheads and major access points to allow users to navigate the system based on their accessibility needs.

10

The Town should consider following the APBP Bicycle Parking Guidelines when implementing bike parking in public spaces. Consideration should be given to enhance bike parking provisions beyond the bylaw requirements if there is sufficient cycling demand at key destinations.

Implementation and Phasing

11

Town staff should periodically review the potential opportunities for additional partners to support the Town in the implementation and execution of the ATIP.

12

Town staff from various departments should continue to work together to coordinate the implementation of the ATIP. A single point of contact from each relevant department should be identified to manage the ATIP and track the progress of implementation.

13

The Town should adopt the proposed network phasing illustrated on **Map 5A and Map 5B**. These maps should be used by staff as a guide for implementation of the proposed active transportation network.

14

The phasing plan should be reviewed on an annual basis to ensure the projects and priorities identified are feasible based on the available budgets and/or coordination with other capital projects and land developments.





15

The proposed phasing identified in this plan should be communicated to Town partners including but not limited to MTO, York Region and the surrounding municipalities. The Town should work with these partners to coordinate the implementation of the network.

16

The Town should pursue opportunities to implement active transportation facilities in conjunction with new developments. The Town should work with developers to ensure that subdivisions and plans accommodate suitable active transportation connections.

17

The cost estimates for on-road and trail facilities should be used as a reference to inform the Town's future budgeting and costing for AT routes and facilities.



18

Costing estimates and unit-prices should be updated on a regular basis to account for inflation and other external factors as needed.

19

As facilities are implemented into the future, projects in the long and future phases should be re-evaluated and re-costed. If future phase projects are within the 10-year budget horizon, they should be added to the phasing plan and costed with up-to-date unit prices.



20

The Town should continue to identify opportunities to coordinate large-scale capital projects to achieve economies of scale and include the cost of active transportation facilities into the annual budget request.



21

The Town should explore external funding sources and partnerships to help fund the implementation of the active transportation network.



Operations and Maintenance

22

The Town should identify specific maintenance and operation practices for facility types included in the active transportation network. As new facilities are implemented, the Town should consider whether the current maintenance practices address the needs of the new facilities.



23

The Town should review and revise maintenance and monitoring practices to reflect changes made the updated Minimum Maintenance Standards O. Reg. 239/02. In conjunction with the updated standards, the Town should develop a level of service standard for maintenance and operations of active transportation facilities during winter months.

24

The Town should budget for an increase in maintenance tasks in an incremental fashion as the network expands. Therefore, as each new network segment is added, the impact to the operations budget should be calculated by Town staff so that it can be added into the annual maintenance request.

Monitoring and Evaluation

25

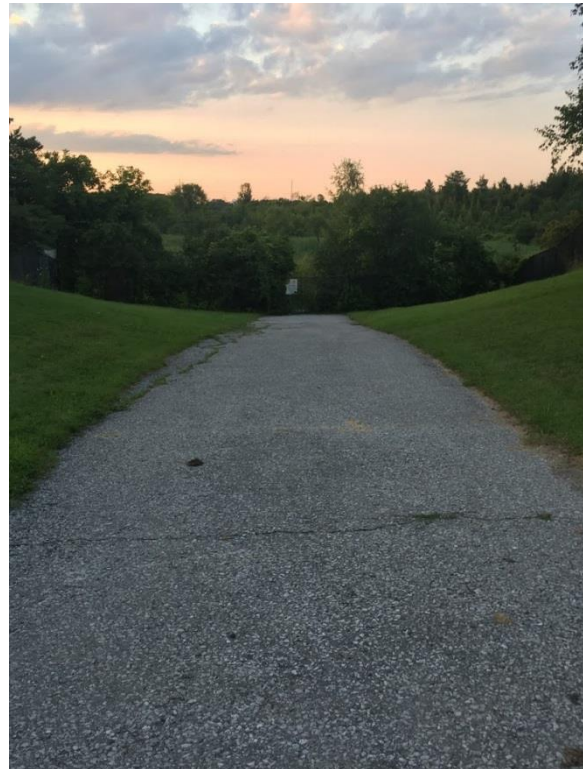
Consideration should be given to use Statistics Canada and Transportation Tomorrow Survey data as a baseline condition for the current state of active transportation in 2016. It is recommended to monitor usage through a pedestrian and cyclist count program to identify how frequently facilities are used.

26

Develop a suite of metrics to show network usage, ATIP investment, current conditions, maintenance of facilities and safety statistics.



East-West Bikeway at Srigley St. and Lorne Ave.



Trail Segment North of Marilyn Powell Park



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Appendix A: Consultation Summary Report



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ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

- DRAFT CONSULTATION &
ENGAGEMENT SUMMARY -

September 13th,
2017

PREPARED FOR THE TOWN OF:



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1 INTRODUCTION

1.1 Engagement Process

The Town of Newmarket's Active Transportation Implementation Plan (ATIP) will serve as a guide to the development, design and implementation of walking, cycling and rolling routes and facilities throughout the Town. To inform the development of the Implementation Plan, the consultant team provided a number of engagement opportunities.

In any plan development process, consultation and engagement is a key component. Various audiences and interest groups were invited to provide their input, concerns, and recommendations through a variety of engagement tools including an online survey, a public open house and interactive display boards, stakeholder meetings, etc. Activities were tailored to ensure each target audience was able to provide input at each stage of the ATIP development. The process used to gather input and engage the various audiences is outlined in **Figure 1** below including the key milestones.

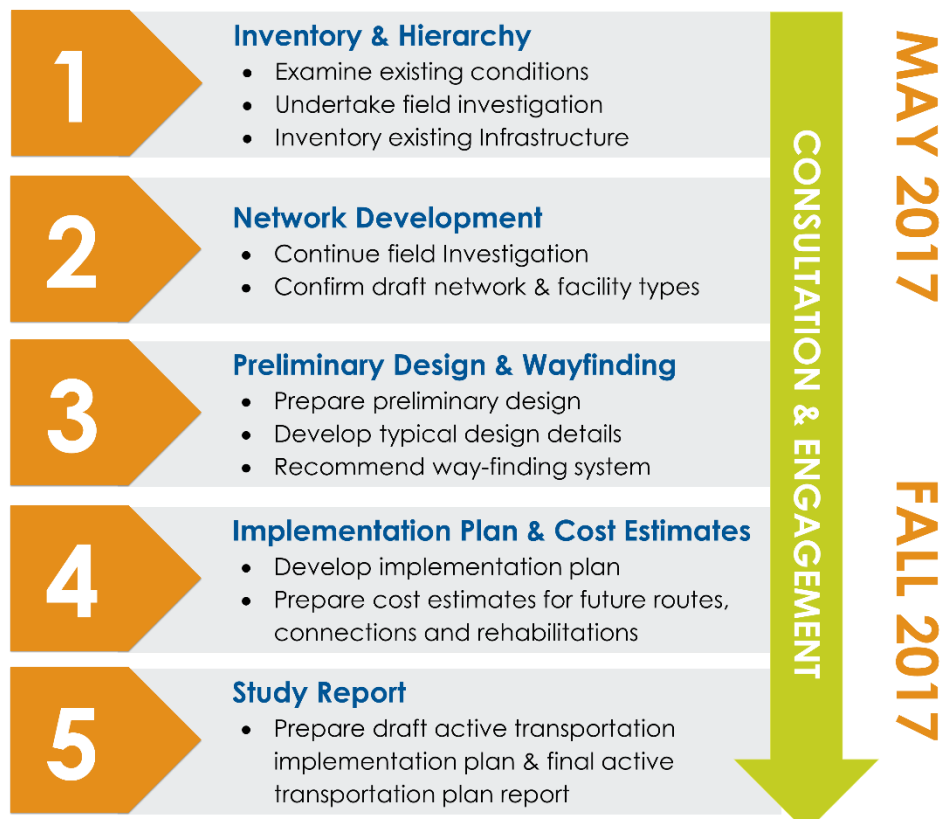
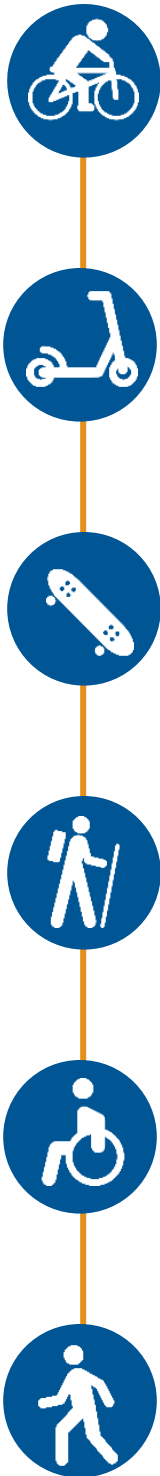


Figure 1 Overview of the Engagement Process

1.2 Engagement Principles

The engagement process was developed based on the following seven (7) key principles:

1. **ACCESSIBLE** provide those involved with information and engagement that is not only accessible from a technical standpoint but also venues and events which can be easily accessed by people of all ages and abilities
2. **CREATIVE** establish consultation and engagement activities that are considered creative and innovative but are also based on best practices and tailored to the audiences that are being engaged
3. **BEST PRACTICE** built on past consultation efforts and best practice in the Town of Newmarket as well as other communities of similar scope and scale
4. **ADAPTIVE** be adaptive and flexible, allowing for additional consultation events and/or methods of promotion and education to be integrated into the program
5. **MEANINGFUL** establish opportunities for meaningful exchange of information, dialogue, and input-gathering between the project team members and community representatives
6. **EQUITABLE** provide a range of opportunities that target all potential audiences, resulting in an equitable process
7. **COMPLEMENTARY** establish an approach that complements ongoing planning initiatives being undertaken by the Town and its partners

The above engagement principles were developed to follow the consultation and engagement process set-out by the International Association of Public Participation (IAP2). The IAP2 process outlines a five (5) level “spectrum of involvement” with each level helping to define the commitment of the project team to engaging the various audiences. **Figure 2** provides an outline of the IAP2 process and some engagement activities used to gather input.

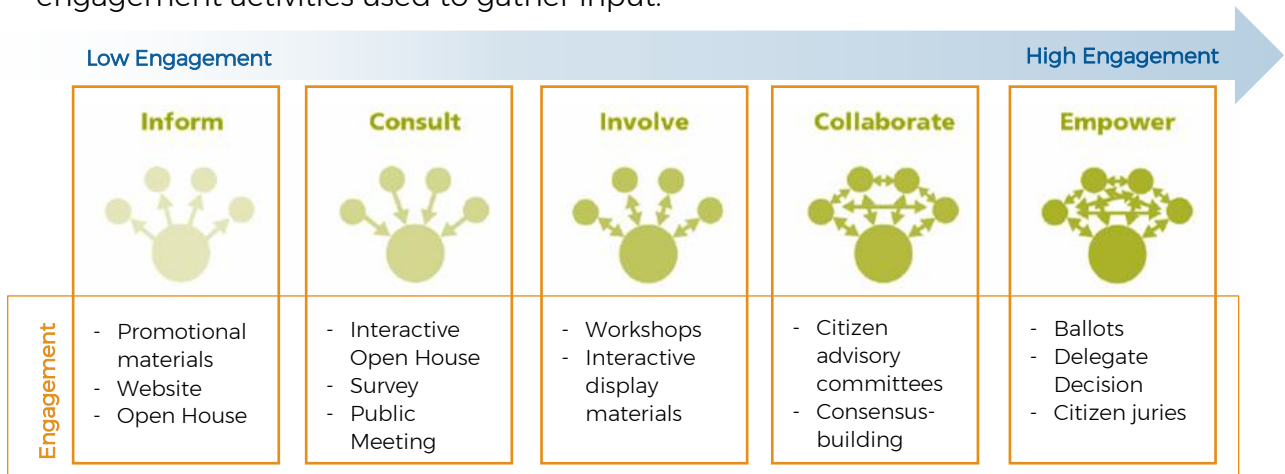


Figure 2 Overview of the IAP2 Process

1.3 Who was Engaged?

The engagement activities and events were directly linked to the preferences, needs, and interests of four (4) target audiences. The four (4) audiences were identified early on in the study process to ensure appropriate types of activities and engagement tools were used. The identified and engaged target audiences throughout the study process include members of the Public, Town Councillors, Town Staff, and Stakeholders (technical experts and interest groups). Each audience has a different level of understanding of the project, different preferences for how they would like to be engaged and a different level of commitment to the outcomes and recommendations of the study. Overviews of each target audience and their engagement over the development and the Implementation Plan is provided below.



Member of the Public

The people who live, work and play within the Town of Newmarket. They have a wide range of understanding, familiarity and interests related to the neighbourhoods that make up the Town. They are most concerned with the impact of the plan on their day to day lives.



Town Councillors

The Mayor and Councillors are responsible for municipal by-in and ultimately the adoption of the AITP. Councillors represent the opinions and interests of their constituents and have an interest in the success of Newmarket's active transportation.



Town Staff

Town Staff includes representatives from the Town of Newmarket from each of the Town's departments including but not limited to planners, engineers, etc. This group has strong working knowledge of the Town's processes and protocols related to decision making. Town Staff are invested in the outcomes of the Plan.



Stakeholders

These individuals and organizations have a higher level of technical knowledge and / or responsibility over some of the decisions that need to be made when implementing the AITP. They have an active interest in the projects outcomes and, if not already, can support the development and implementation of programming and outreach.

1.4 Consultation Overview

1.4.1 Consultation Process

The engagement strategy was designed to inform each stage of the ATIP, and provide an outlet for the various audiences to learn more about the project and provide their input. The consultation and engagement activities were developed based on the target audiences and the objective of each phase of the study. The five (5) phase process took place over the course of 10 months. Below is an overview of the five (5) phases in developing the ATIP and the objective of each phase.

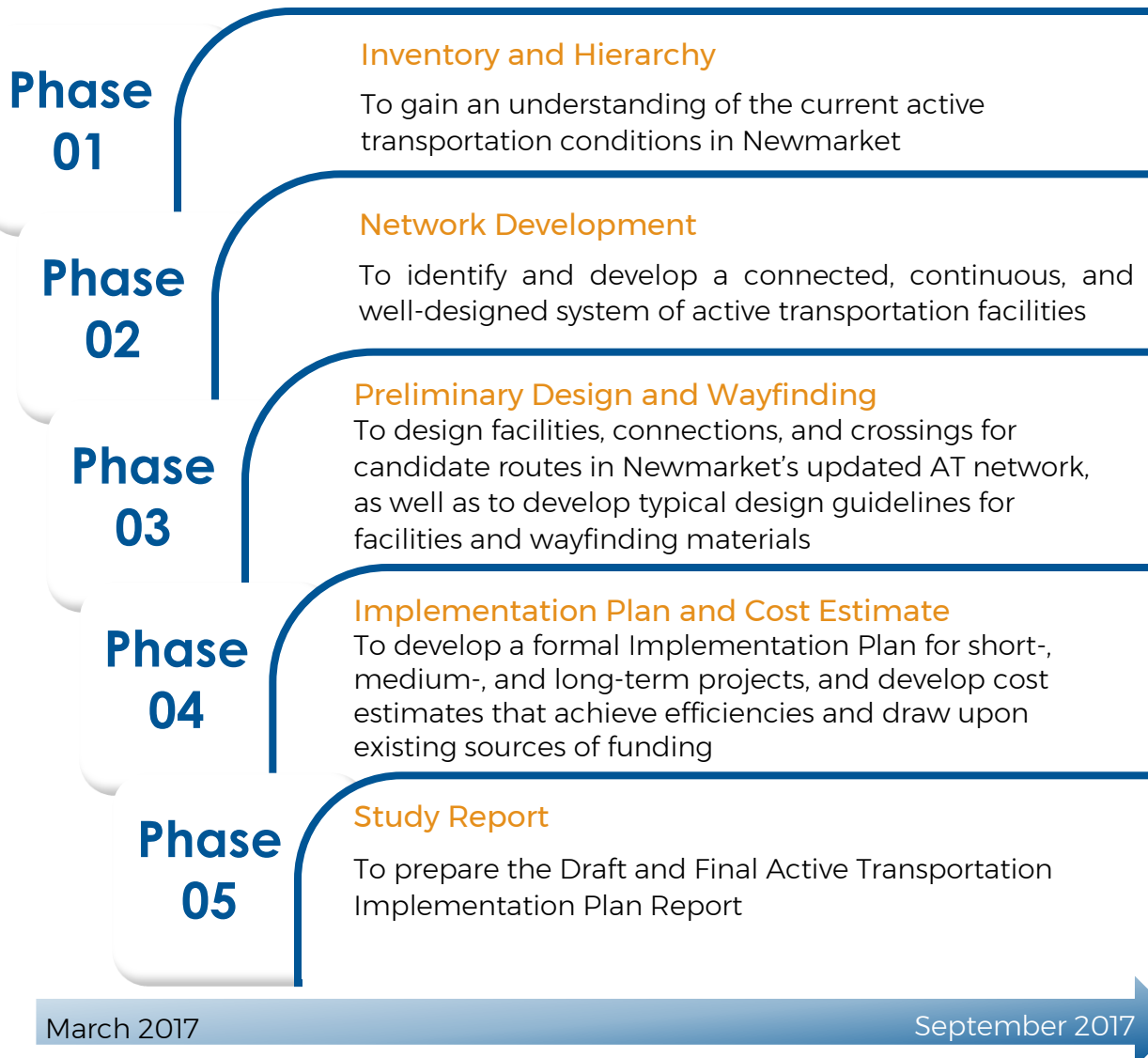
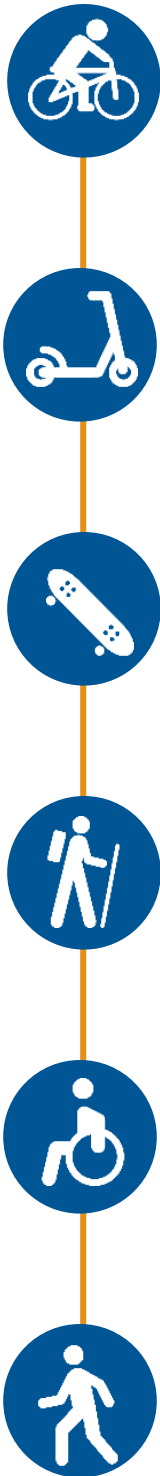


Figure 4 Overview of the Five (5) Phases of Developing the ATIP

1.4.2 Key Milestones

Over the course of the study phases, the consultant team used a variety of communication, engagement, and consultation methods to inform, involve, and collaborate with the target audiences. The input received over the course of the study helped the consultant team to understand the concerns, ideas, and preferences of the various audiences. The engagement milestones included in-person and online engagement and, promotion & outreach. The milestones that were undertaken during each phase of the study are presented below.



Promotion & Outreach



In-person Engagement



Online Engagement


Table 1 Overview of the Milestones at Each Study Phase

Phase	Milestone
01	Inventory and Hierarchy <ul style="list-style-type: none"> - Launch ATIP publicly - Project webpage - Social media
02	Network Development <ul style="list-style-type: none"> - Launch online survey - Create “look and feel” - Contact key stakeholders - Social media and project webpage
03	Preliminary Design and Wayfinding <ul style="list-style-type: none"> - Update project webpage - Meet with key stakeholders
04	Implementation Plan and Cost Estimate <ul style="list-style-type: none"> - Public information centre - Social media and project webpage
05	Study report <ul style="list-style-type: none"> - Prepare engagement summary report - Prepare reports - Close project publicly




The following sections provide a more detailed description of the various engagement opportunities and the input generated from the activities.

2 WHAT WE HEARD




The Town of Newmarket's Active Transportation Implementation Plan engagement program consisted of both in-person engagement and online engagement, complimented with ongoing promotion and outreach throughout the study process.


2.1 Engagement Process




The engagement process was designed to inform, consult, and involve members of the target audiences. The engagement tools used during the engagement process meet the following consultation objectives:

- 
- 1 To **inform** the different audiences of the intents and purposes of the project and the desired outcomes
 - 2 To **consult** with audiences to gather input regarding active transportation habits, interests, and priorities including opportunities and challenges related to the implementation of active transportation improvements.
 - 3 To **involve** key audiences to gather input on the objectives and priorities of the plan.


2.1.1 Communication and Promotion



Communication is a key component to any plan development process. Providing clear and consistent information and promotion was a priority for the project team when deciding on appropriate tools and tactics to engage a variety of audiences. The communication and promotion developed for the engagement process was developed and supported by both the consultation team and Town of Newmarket staff.



Prior to the commencement of the study, a project logo and set of promotional tools - specific to the ATIP - were created. The look and feel were developed based on the corporate communication standards and used on all communication tools and documentations for consistency.



The following sections provide an overview of the communication and promotional tools, the tactics used to increase the project's awareness, and strategies to generate interest and momentum for the development of the ATIP.

Project Email



A project email account was set up to track input received and to provide a forum to engage the ongoing dialogue between the project team and target audiences. The email is monitored and maintained by the consultation team with key issues or concerns reviewed and considered by both the consultant team and Town staff.

Project Webpage



A project page was created and added to the Town of Newmarket's existing website. The project webpage provides information about the study as well as ways to get involved. The project webpage was updated throughout the study process to provide audiences with the studies progress and next steps.

Social Media



The Town of Newmarket had a strong existing presence on social media outlets such as Twitter. The consultant team worked with the Town in producing key messages to share on social media as well as pose strategic questions to prompt engagement. Social media was also used to promote engagement opportunities such as the public information centre and the online questionnaire.

Publications



Notices of the study and consultation events were advertised in the existing local publications. Two weeks prior to the consultation events, the advertisement was distributed throughout the town. The publication included information regarding the event's purpose and background information, and provided reference to the project website and other engagement opportunities.

Town Office TV Screens



Consultation events were also advertised and promoted on the TV screens located throughout the Town office. The information provided on the TV screens included consultation event time, date and location as well as other ways to provide input to the study.



2.1.2 Public Engagement

Online Survey Results

A survey for the public was created using Survey Monkey and was promoted through the various communication and promotion tools and tactics. The survey consisted of a set of questions to gather input on current active transportation trends in Newmarket, including habits related to recreational walking, cycling, hiking and rolling, as well as day-to-day travel. The survey also provided the opportunity for individuals to identify key principles related to improving active transportation within the Town and identify preferences for facility prioritization.

Objective

To gather input on AT habits within the Town of Newmarket and provide opportunities for engagement with key study contacts and members of the public early in the project.

Who responded?

100 responses

43% male



53% female



4% other



21% 20 - 34 years

56% 35 - 54 years

17% 55 - 69 years

6% 70 years +

16% cycling survey



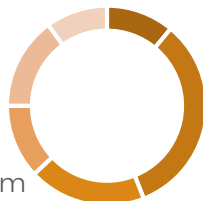
27% pedestrian survey



57% both surveys

Approximate travel distance

- Less than 2 km
- 2 - 5 km
- 6 - 10 km
- 11 - 25 km
- 26 - 50 km
- More than 50 km



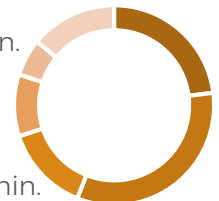
Primary mode of travel

- Drive alone
- Carpool
- Public transit
- Walk
- Bicycle
- Taxi
- In-line skate / skateboard



Approximate travel time

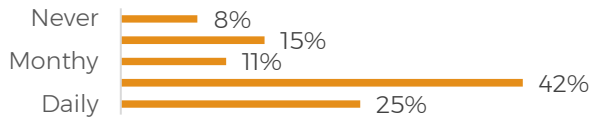
- Less than 10 min.
- 11 - 20 min.
- 21 - 30 min.
- 31 - 45 min.
- More than 60 min.





Cycle Survey

How often do you cycle?



Why do you cycle?



Do you feel comfortable cycling in Newmarket?

13% yes **58%** somewhat **28%** no

What would make you feel more comfortable?

- 81%** More cycling routes
- 57%** Improved cycling facilities
- 56%** Improved intersections
- 48%** Better crossings
- 28%** Connections to transit
- 40%** Bicycle parking
- 48%** More surrounding connections
- 4%** Nothing



Pedestrian Survey

How often do you walk?



Why do you walk?



Do you feel comfortable walking in Newmarket?

55% yes **34%** somewhat **10%** no

What would make you feel more comfortable?

- 51%** More facilities
- 52%** Better conditions
- 20%** More amenities
- 22%** Short blocks & grid network
- 42%** More parks / open space
- 14%** Proximity to major destinations
- 24%** Wayfinding & signage
- 47%** Better crossings
- 8%** Nothing

The results of the online survey helped to provide context on key issues and areas of focus for the development of the ATIP. The results from this survey provide a basis of understanding, and is supported with the combined input from other input tools such as the public information centre for a more complete picture of what the Town needs in terms of an ATIP.

Public Information Centre

A public information centre (PIC) was hosted at the Town of Newmarket offices on June 27th, 2017, between 5:30 and 7:30 p.m. The open house was advertised and promoted to Residents and other target audiences two weeks prior and up to the date of the event.

Objective

To engage members of the public at a key juncture in the study and to inform them of the work completed to-date as well as to gather feedback about the state of existing conditions, alternatives under consideration, and proposed recommendations.

The public open house was designed to allow all attendees to review informational display boards at their leisure and provide input using the interactive display boards. As well, members of the project team, including both consultants and town staff, were present to help guide attendees through the interactive display board activities and discuss active transportation in Newmarket. Comment sheets with a map of the current AT facilities were prepared for attendees to leave further comments.

Approximately 25 individuals attended the open house with all attendees providing input through the interactive boards and comment sheets. An overview of the information presented on display boards and the display boards with interactive components is presented in the table below (**Table 2**).



Table 2 Description of the Display Boards

Board #	Description
1 Welcome	An overview of the project brand and the primary contacts
2 Background	An overview of what the ATIP is and why it is being developed
3 Objectives	An overview of the objectives of the study process
4 AT	A definition of active transportation
5 Benefits	An overview of the potential benefits of active transportation
6 Existing Network	An interactive display requesting attendees to use pins and string to mark their travel patterns
7 Route Prioritization	An interactive display requesting attendees to use stickers and markers to mark which proposed routes should be implemented
8 AT Signage	An interactive display requesting attendees to use stickers and markers to mark which signage they prefer
9 Facility Types	A description and graphic of the different AT facility types
10 Facility Types	An interactive display for attendees to place a sticker next to the facility type they prefer
11 Timeline	An overview of the study process and the tasks at each stage
12 Contribute	An overview of the methods available to provide input and the key project contacts.

As shown above, there was a total of four (4) interactive display boards developed and used to gather input from attendees on specific active transportation topics. Photos of the interactive boards following the open house are complimented below with a digitized copy of the interactive display boards, as well as a summary of the input received.



Existing Network

Instructions: Use the pins and string to mark where you are travelling to and from.

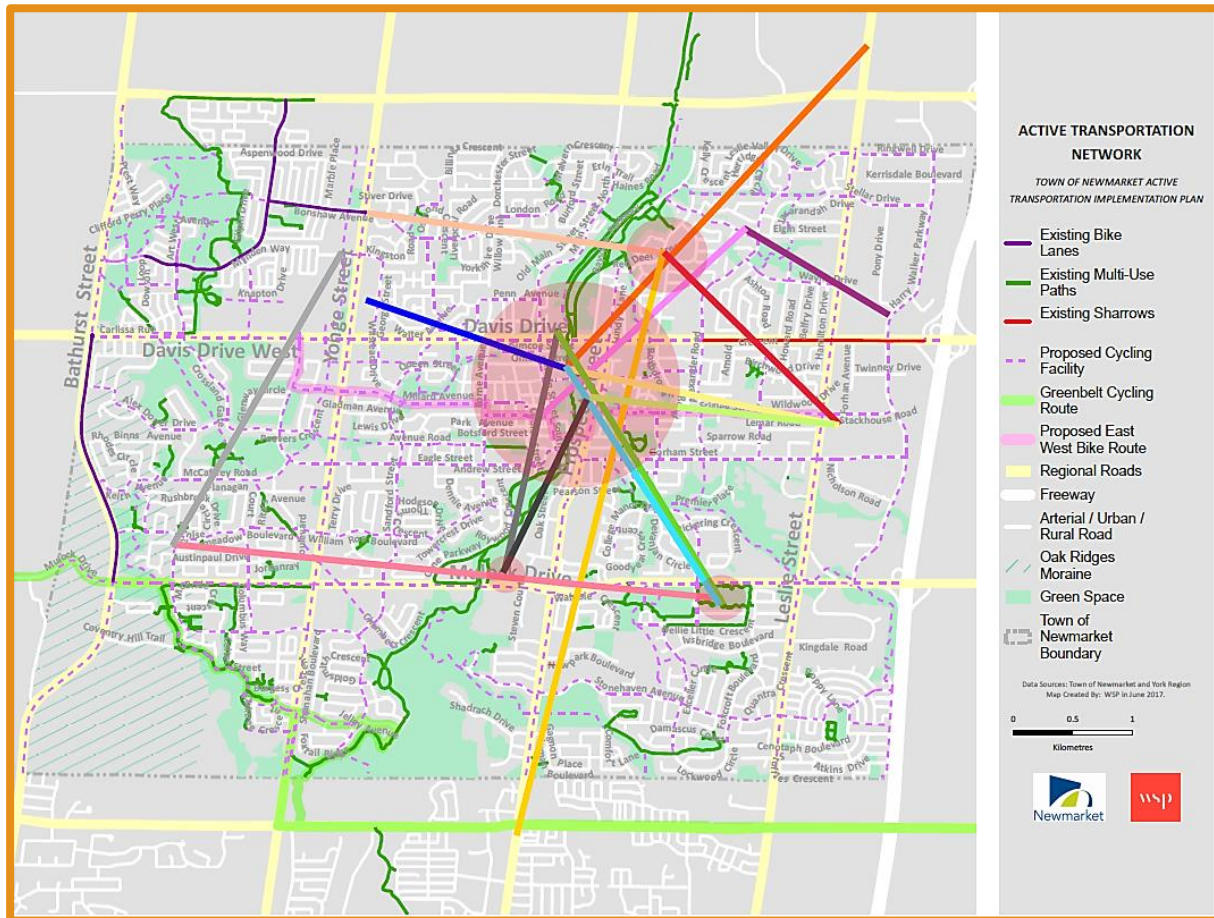
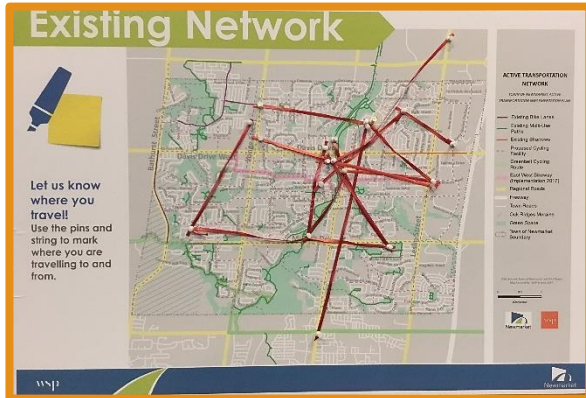


Figure 6 Existing Network Interactive Map Results

Each coloured line represents a participants travel path 'as-the-crow-flies'. The red circles indicate areas where the paths intersect and show a high amount of activity



Route Prioritization

Instructions: Use the markers and stickers to mark which proposed routes should be implemented first or if any connections are missing.

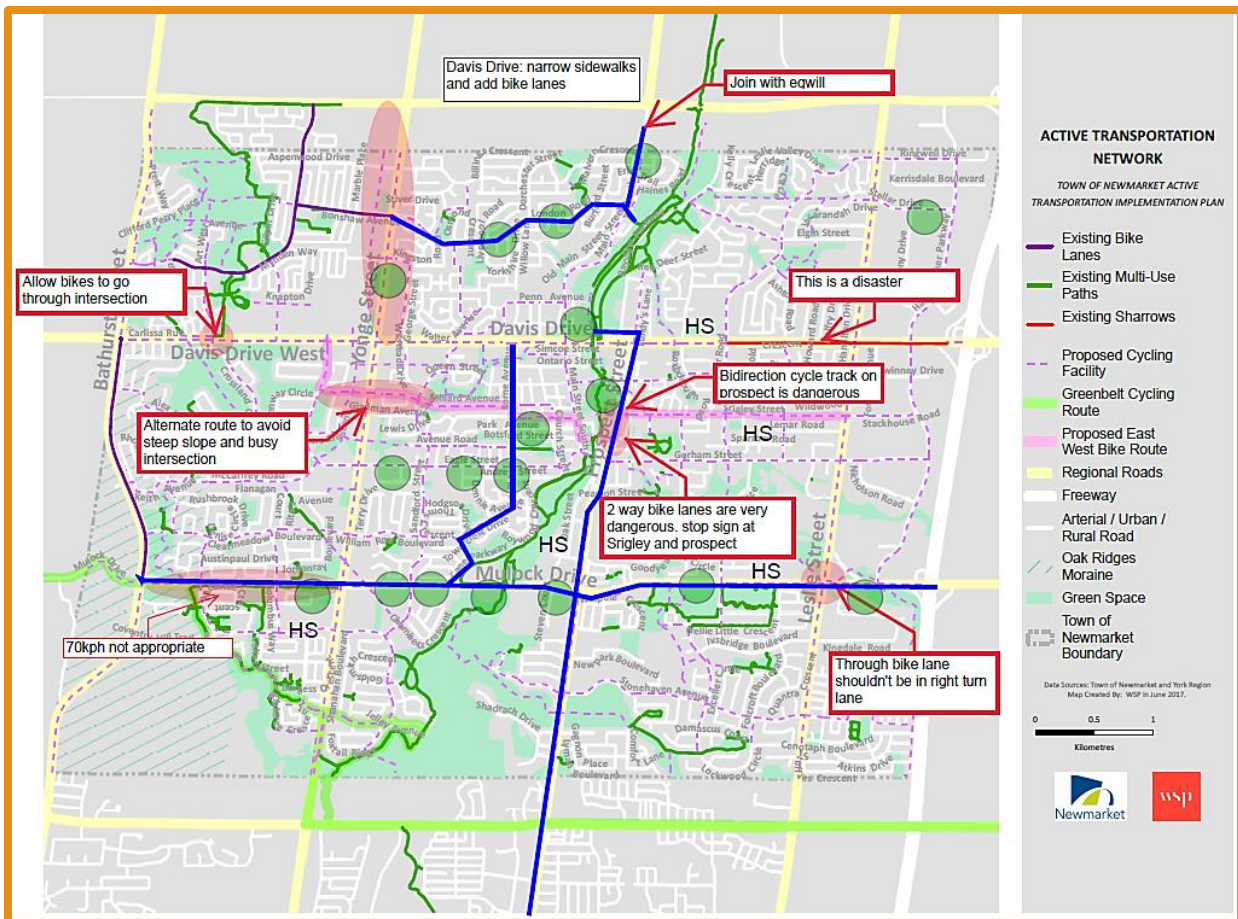
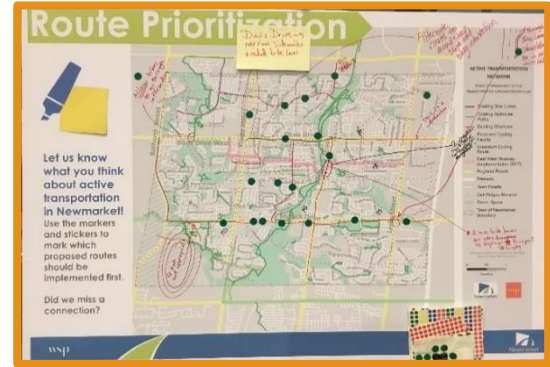
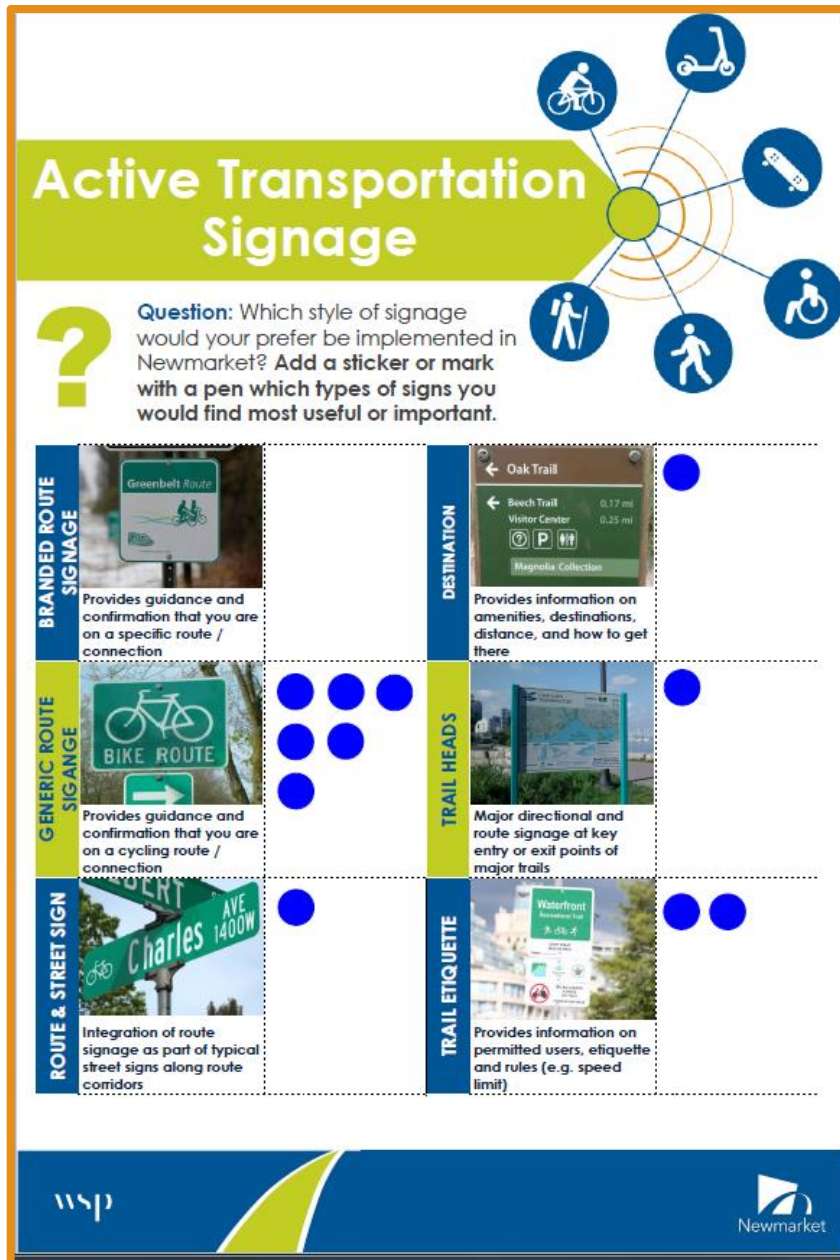
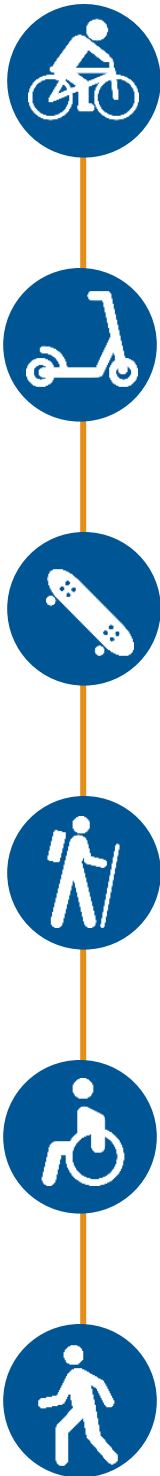


Figure 7 Route Prioritization Interactive Map Results

The blue lines represent routes and connections that are missing. The green dots represent the routes participants feel are a priority. The red zones indicate areas of concern. One common theme that emerged was the dislike of two-way cycle tracks. Cyclists feel this facility type is dangerous.

Active Transportation Signage

Instructions: Add a sticker or mark with a pen which types of sign you would find most useful or important.

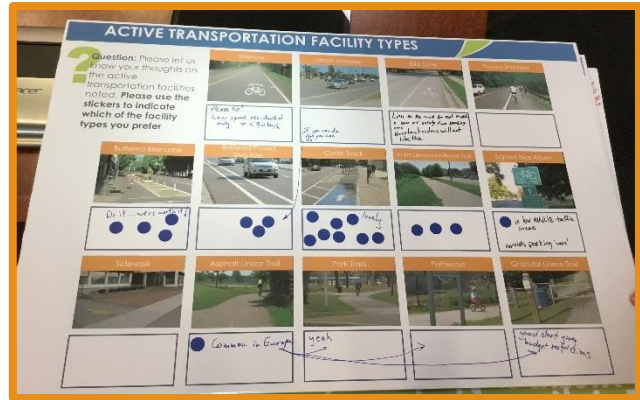


The majority of participants prefer the generic bike route signs but would also like to see an integration of trail etiquette signs. One participant provided an example of the type of etiquette signage that could be implemented:

Figure 9 Active Transportation Interactive Board Results

Active Transportation Facility Types

Instructions: Use the stickers to indicate which of the facility types you prefer.



ACTIVE TRANSPORTATION FACILITY TYPES

Question: Please let us know your thoughts on the active transportation facilities noted. Please use the stickers to indicate which of the facility types you prefer.

Sharrow Please not Low speed residential only < 30km/h	Urban Shoulder If you can do this, you can do	Bike Lane Lines on the road do not promote a sense of safety from speeding cars. Hesitant riders will not like this.	Paved Shoulder
Buffered Bike Lane Do it...we're worth it!	Buffered Paved Shoulder 	Cycle Track Lovely	In-boulevard Multi-use Trail
Sidewalk 	Asphalt Linear Trail Common in Europe	Park Trails yeah	Pathways
			Granular Linear Trail good start given budget restrictions
			Signed Bike Route In low vehicle traffic areas. Avoids parking 'wars'

Figure 11 Active Transportation Facility Types Interactive Board Results

The key message that emerged from this exercise was that the public is more comfortable with separated bicycle facilities such as buffered bike lanes, buffered paved shoulders, in-boulevard multi-use trails and cycle tracks. The argument against many of the facility types was that simply painting lines on the road does not protect the active travelers from high-speed motor vehicles.

Comment Cards

Comment cards were provided at the first public open house to allow participants yet another opportunity to provide input, concerns and recommendations. The comment cards consisted of 2 open-ended questions and a map on the reverse side to allow participants to draw out and visualize their concerns or comments (Figure 8). A summary of the comments received can be found below, along with a summary map of the areas of focus (Figure 9).

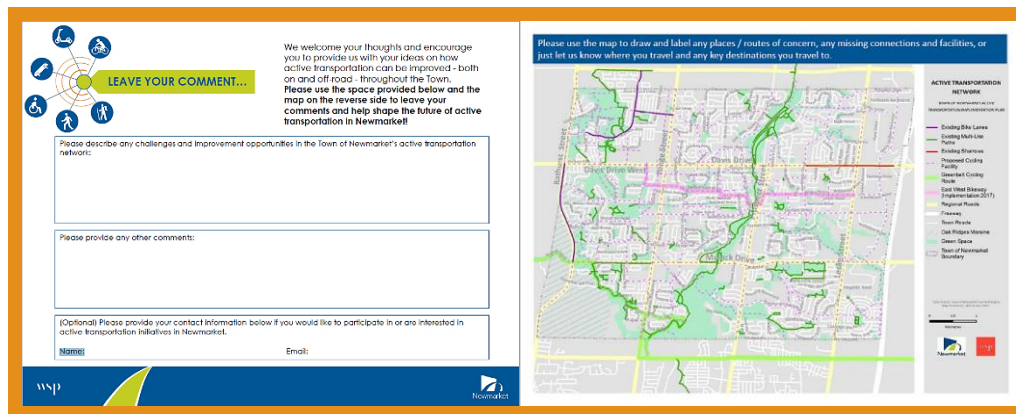


Figure 12 Example of the Front and Backside of the Comment sheet Provided During the Public Open House.

Please describe any challenges and improvement opportunities in the Town of Newmarket's active transportation network:

- ▶ Physical separation is required to make the general public feel safe while cycling
- ▶ Plan for eight and eighty years olds to feel safe and comfortable
- ▶ Consider partnerships with the region to provide separated bike lanes on regional roads
- ▶ Cyclists should be able to get to train and bus stations safely
- ▶ Two-way bike lanes are dangerous without proper education and etiquette
- ▶ Provide more bike racks in Town and repair stations
- ▶ Create bike lanes every time a road is resurfaced
- ▶ Intersection design and improvements to incorporate active transportation infrastructure and ease of use

Please provide any other comments:

- ▶ Keep cyclist and pedestrians in mind at all times
- ▶ Walking infrastructure is acceptable already
- ▶ Bicycle infrastructure needs improvement
- ▶ Multi-use trails need etiquette signs
- ▶ Engage in community education

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Please use the map to draw and label any places / routes of concern, any missing connections and facilities, or just let us know where you travel and any key destinations you travel to.

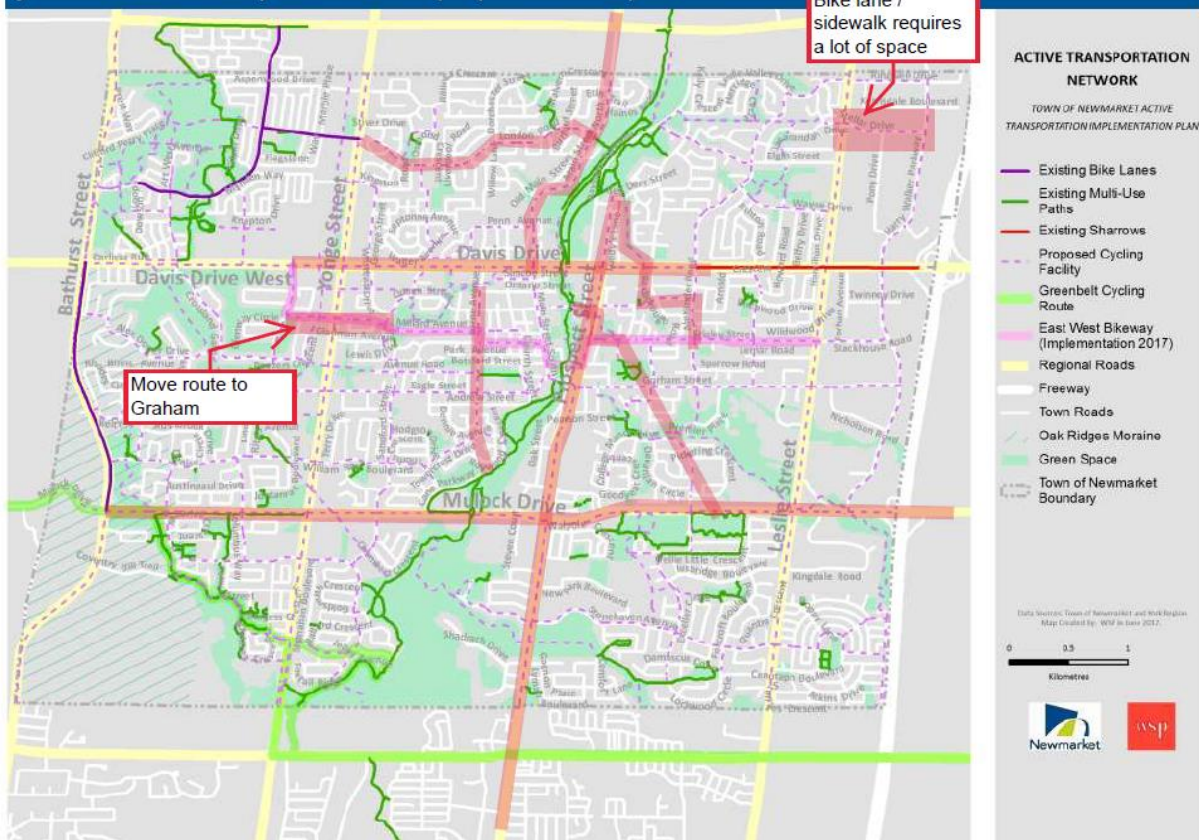
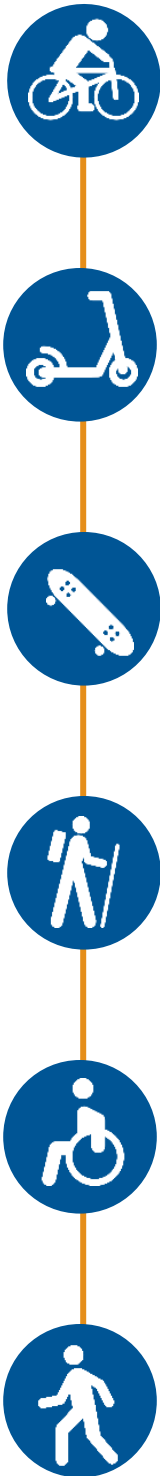


Figure 13 Summary Map of the Areas of Focus that Emerged from the Comment Sheets.



2.1.3 Key Themes

The engagement process involved a variety of audiences including but not limited to Town staff, general public and key stakeholder groups. The variety of audiences provided a wide range of information, expertise and input. Although there was a variety of audiences with varying technical knowledge and background of the study, a number of concerns and recommendations overlapped. The following are the key themes that emerged from the first round of engagement (**Table 3**).

Table 3 Summary of Key Themes

<p>Safety</p>	<p>Safety needs to be the top priority when developing the ATIP. People want to feel safe and comfortable while travelling alongside motor vehicles. Facilities need to be designed and maintained to ensure users are protected.</p>
<p>Education</p>	<p>There needs to be promotion and education around active transportation. Education should focus on behaviours and etiquette along trails.</p>
<p>Facility Type</p>	<p>The wants and needs of various types of active transportation users has an impact on the types of facilities designed. There needs to be consideration on both facility type as well as how they will be used.</p>
<p>Amenities</p>	<p>More amenities such as bicycle parking and repair stations need to be present throughout the Town to encourage more users.</p>
<p>Routes & Topography</p>	<p>Although there is already a presence of AT routes, more can be implemented to provide better connections. As well, for the commutes, more direct routes along major roads should be considered but still keeping safety in-mind.</p> <p>Many concerns emerged regarding bicycle routes along roads with steep slopes and high speed vehicles. Routes should be chosen and designed with topography and ease of use in mind.</p>

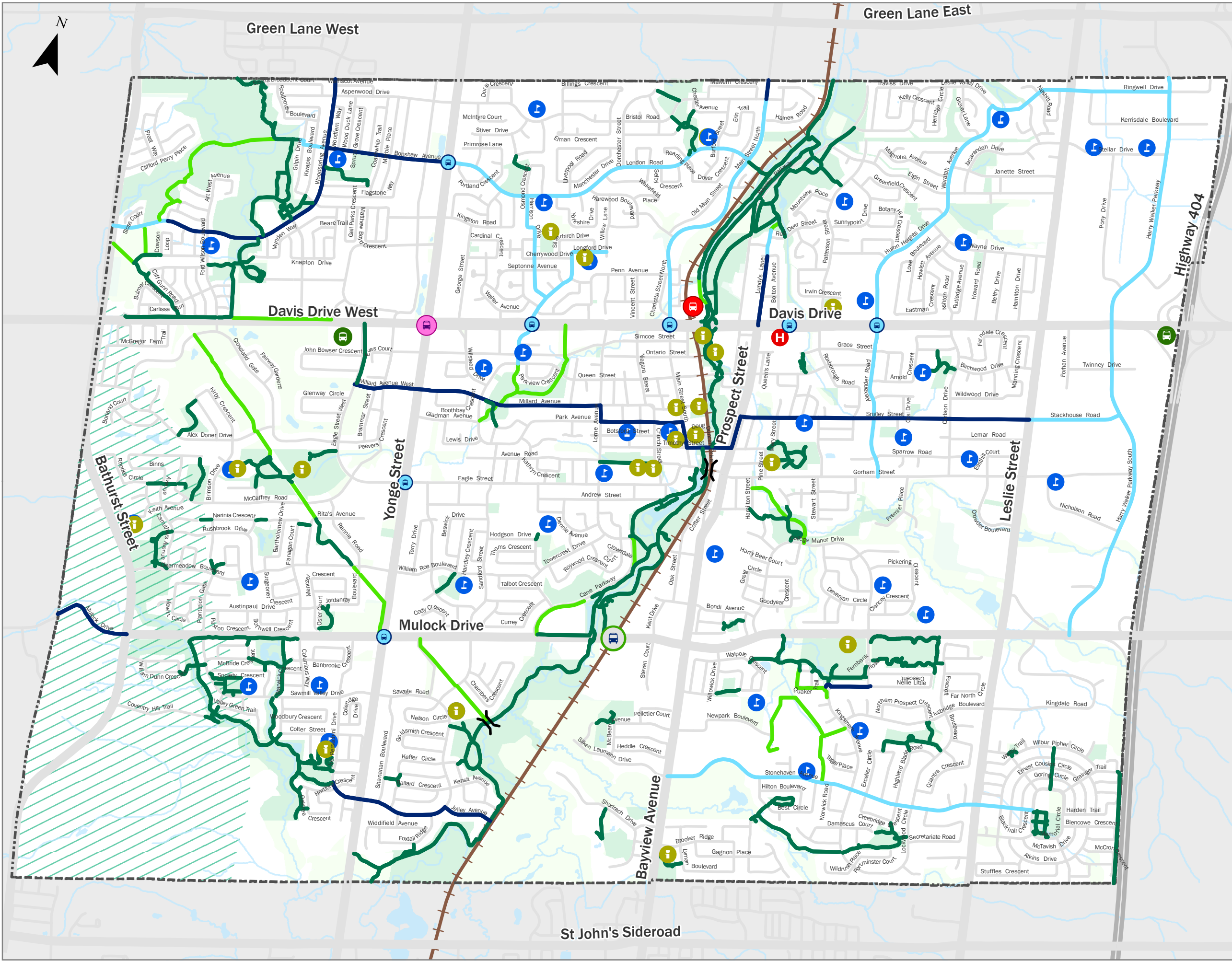




Appendix B: Appendix Mapping



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MAP 6A: PROPOSED NETWORK PHASING PROGRESSION Short Term (0-3 years):

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

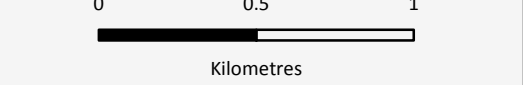
- Phasing Plan**
- On-road**
- Existing Facility As of 2018
 - New Phase Facility
- Trail**
- Existing Facility As of 2018
 - New Phase Facility

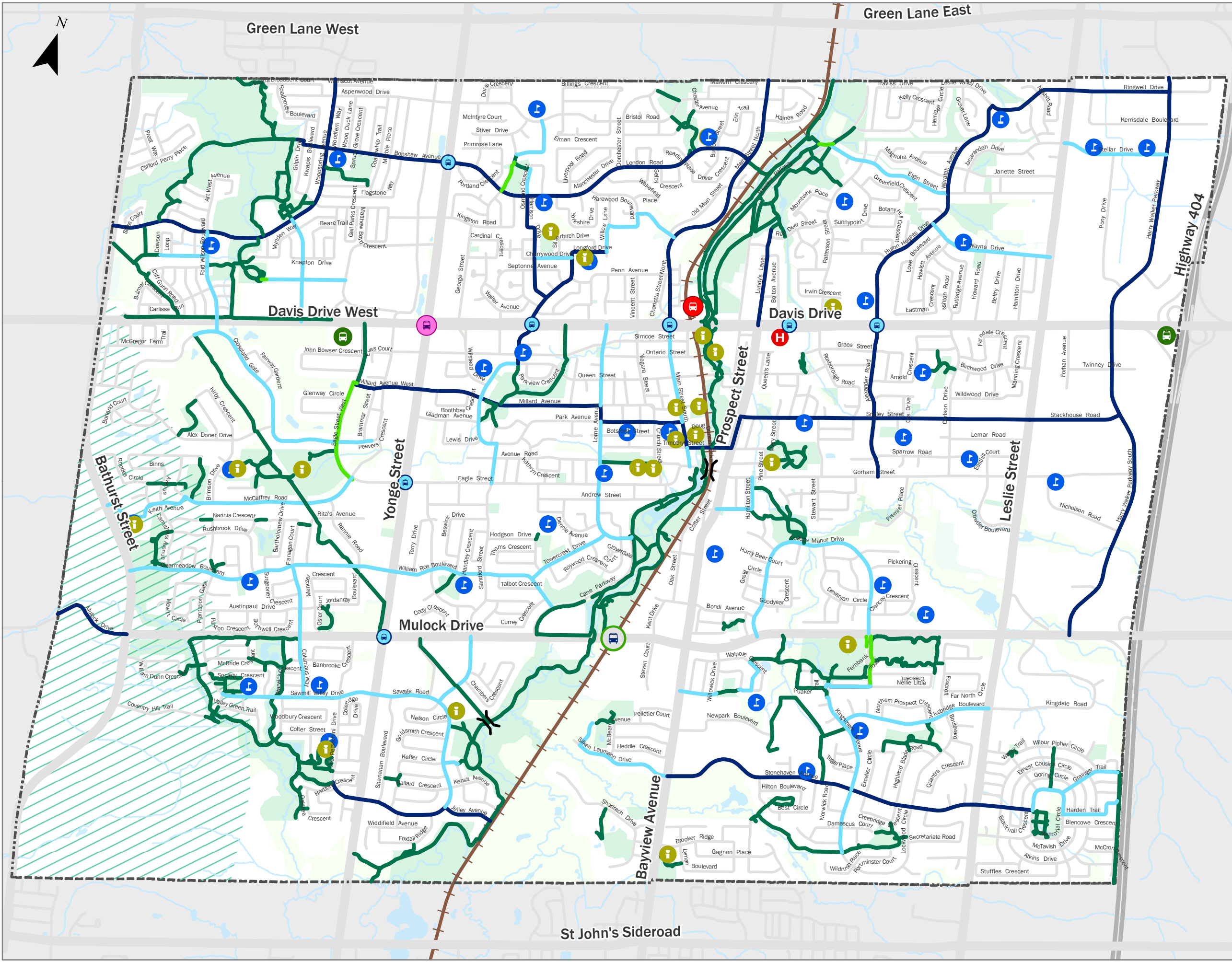
NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

- Other Items**
- Town of Newmarket Boundary
 - Regional Roads
 - Railway
 - Highway
 - Town Roads
 - Watercourse
 - Green Space
 - Oak Ridges Moraine

- Key Destinations**
- School
 - Hospital
 - Recreation Centre
 - Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)
 - Viva Stop
 - GO Transit Station
 - Viva Stop Mobility Hub
 - GO Station Mobility Hub
 - Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.





**MAP 6B: PROPOSED NETWORK
PHASING PROGRESSION
Medium Term (3-5 years):**

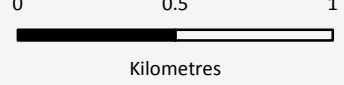
*TOWN OF NEWMARKET ACTIVE
TRANSPORTATION IMPLEMENTATION PLAN*

- Phasing Plan**
- On-road**
 - Existing Facility As of Year 3
 - New Phase Facility
 - Trail**
 - Existing Facility As of Year 3
 - New Phase Facility
- NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

- Other Items**
- Town of Newmarket Boundary
 - Regional Roads
 - Railway
 - Highway
 - Town Roads
 - Watercourse
 - Green Space
 - Oak Ridges Moraine

- Key Destinations**
- School
 - Hospital
 - Recreation Centre
 - Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)
 - Viva Stop
 - GO Transit Station
 - Viva Stop Mobility Hub
 - GO Station Mobility Hub
 - Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.



MAP 6C: PROPOSED NETWORK PHASING PROGRESSION Long Term (5-10 years):

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Phasing Plan

On-road

- Existing Facility As of Year 5
- New Phase Facility

Trail

- Existing Facility As of Year 5
- New Phase Facility

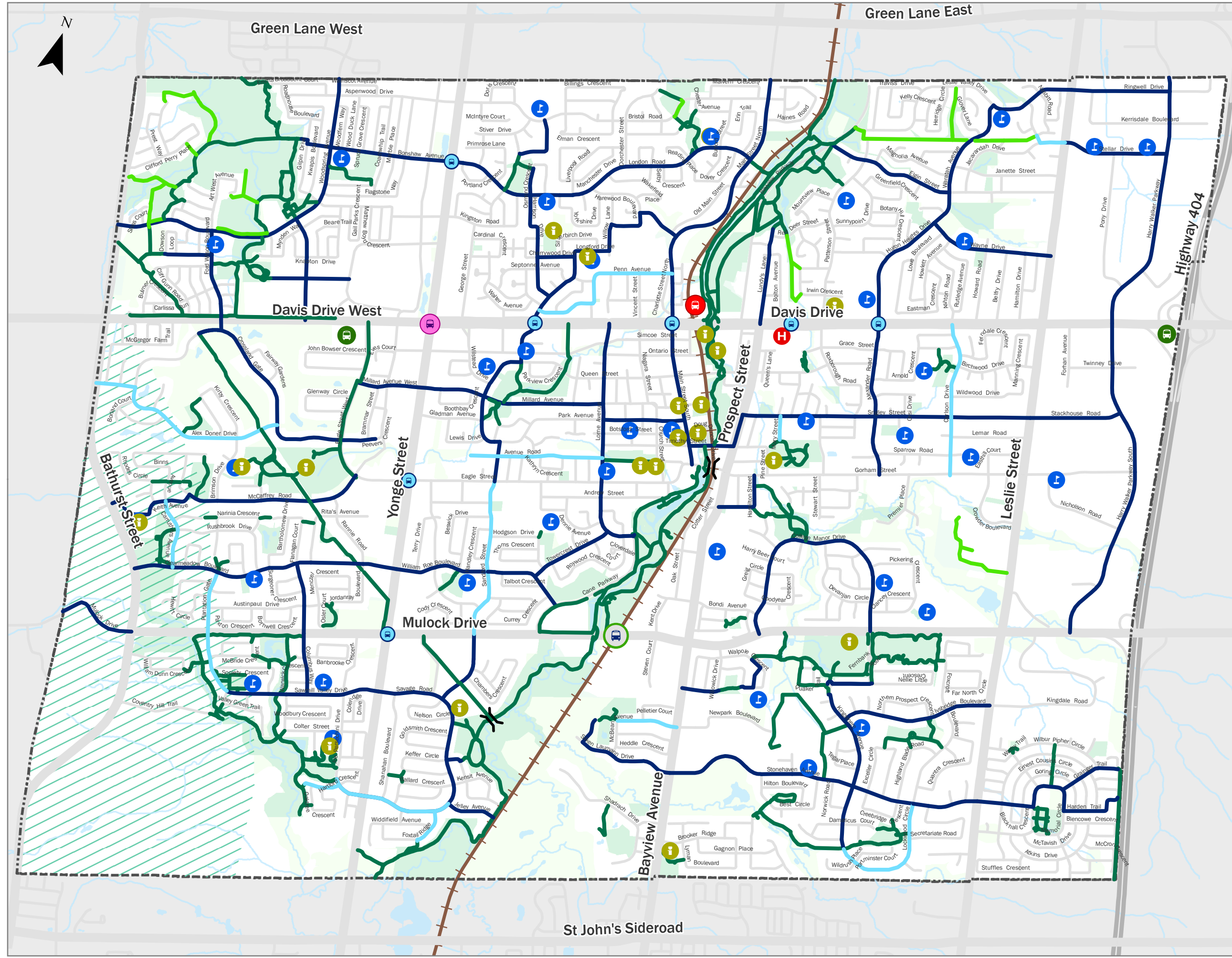
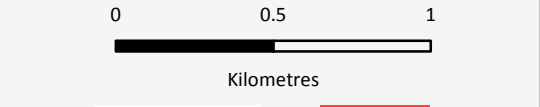
Other Items

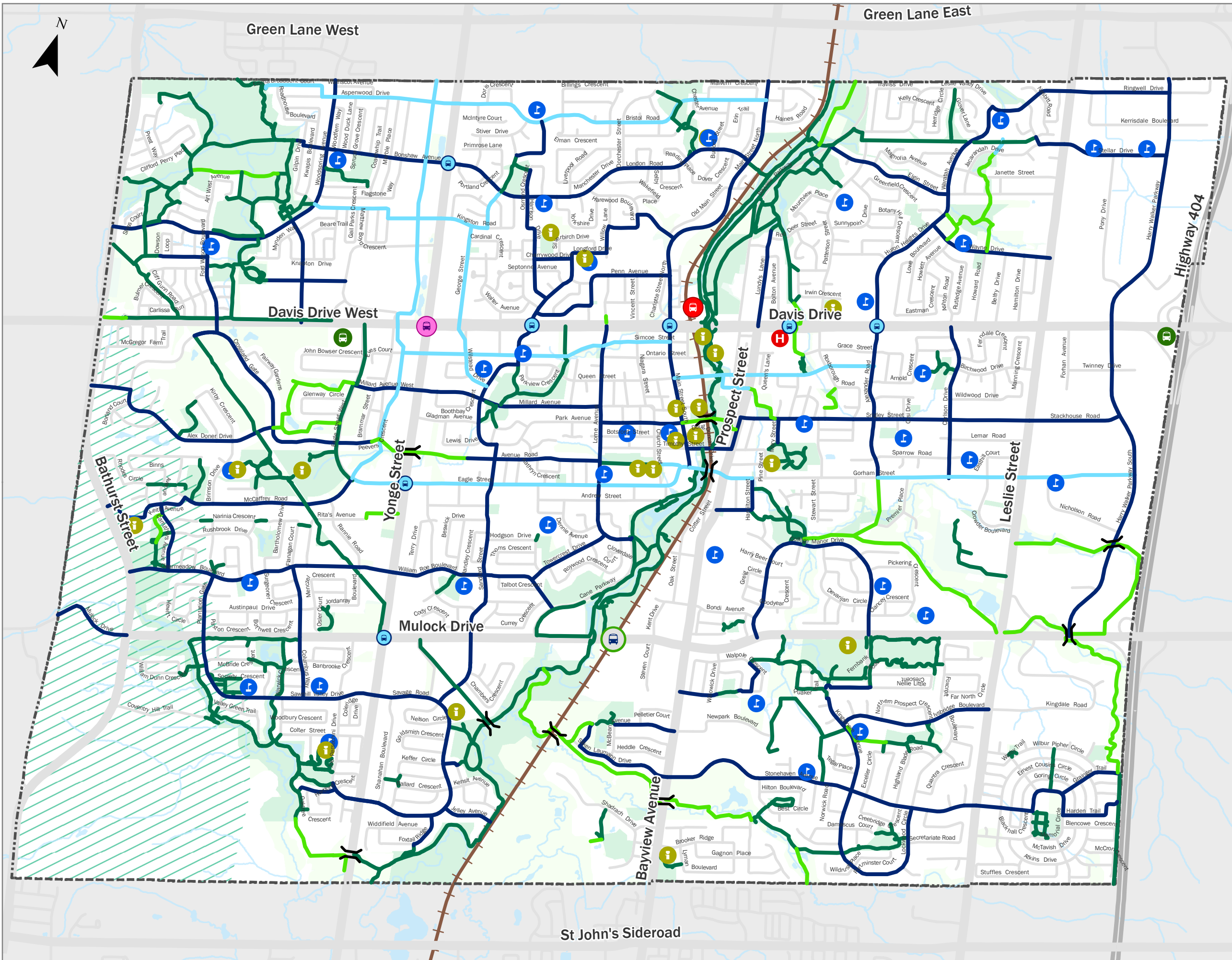
- Town of Newmarket Boundary
- Regional Roads
- Railway
- Highway
- Town Roads
- Watercourse
- Green Space
- Oak Ridges Moraine

Key Destinations

- School
- Hospital
- Recreation Centre
- Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)
- Viva Stop
- GO Transit Station
- Viva Stop Mobility Hub
- GO Station Mobility Hub
- Future GO Station

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.





MAP 6D: PROPOSED NETWORK PHASING PROGRESSION
Future Phases (10+ years):

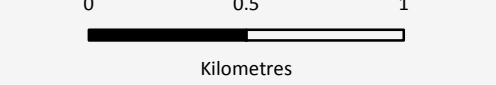
TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

- Phasing Plan**
- On-road**
 - Existing Facility As of Year 10
 - New Phase Facility
 - Trail**
 - Existing Facility As of Year 10
 - New Phase Facility
- NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

- Other Items**
- Town of Newmarket Boundary
 - Regional Roads
 - Railway
 - Highway
 - Town Roads
 - Watercourse
 - Green Space
 - Oak Ridges Moraine

- Key Destinations**
- School
 - Hospital
 - Recreation Centre
 - Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)
 - Viva Stop
 - GO Transit Station
 - Viva Stop Mobility Hub
 - GO Station Mobility Hub
 - Future GO Station

Data Sources: Town of Newmarket and York Region
 Map Created By: WSP in July 2018.



MAP 6: CHANGES FROM PROPOSED NETWORK IN OPA11 SCHEDULE D

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Facility Types on Local Town Roads

Existing	Proposed	Description
		Multi-use paths & trails
		Buffered Bike Lane
		Bike Lane
		Signed Route
		Desire Line

Facility Types on Regional Roads

Existing	Proposed

NOTE: For information regarding regional facility type and phasing, refer to York Region's 2016 Transportation Master Plan

Other Items

	OPA11 Schedule D AT Network
	Town of Newmarket Boundary
	Regional Roads
	Railway
	Highway
	Town Roads
	Watercourse
	Green Space
	Oak Ridges Moraine

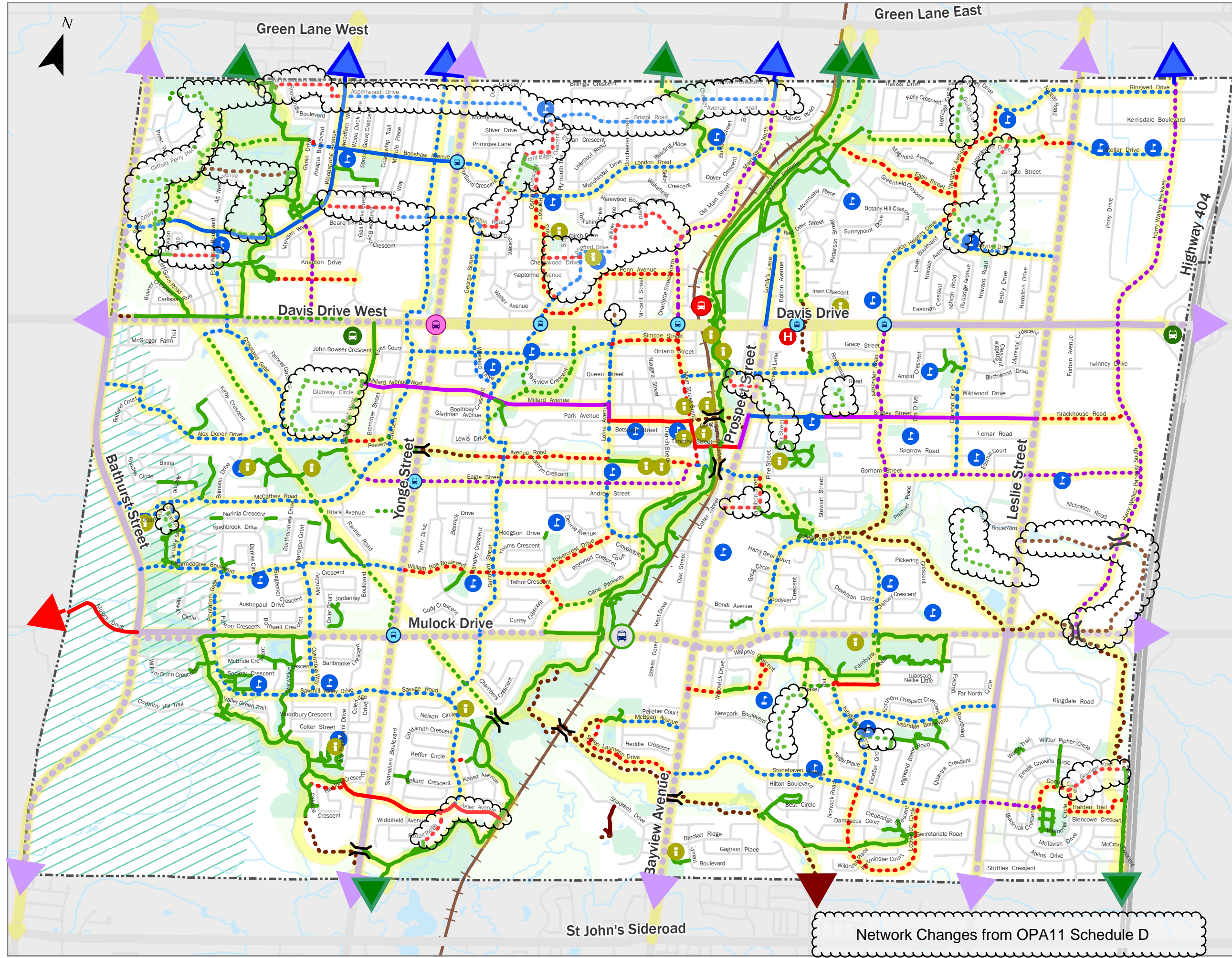
Key Destinations

	School		Viva Stop
	Hospital		GO Transit
	Recreation Centre		Viva Stop
	Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)		GO Station
	Potential Future Pedestrian Bridge/Underpass (OPA Schedule D)		Future GO

Data Sources: Town of Newmarket and York Region
Map Created By: WSP in July 2018.

0 0.5 1

Kilometres

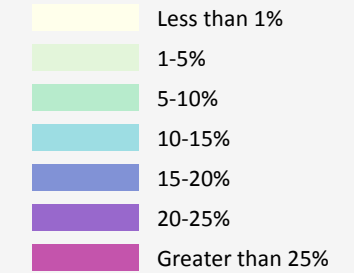


Network Changes from OPA11 Schedule D

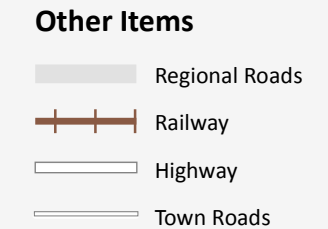
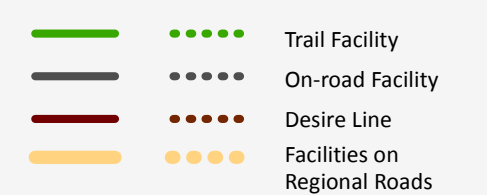
MAP 8A: SUSTAINABLE TRANSPORTATION MODE SHARE AND PROPOSED NETWORK

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

Sustainable Transportation Mode Share

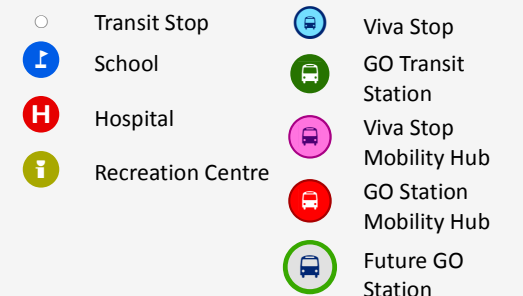


Active Transportation Network

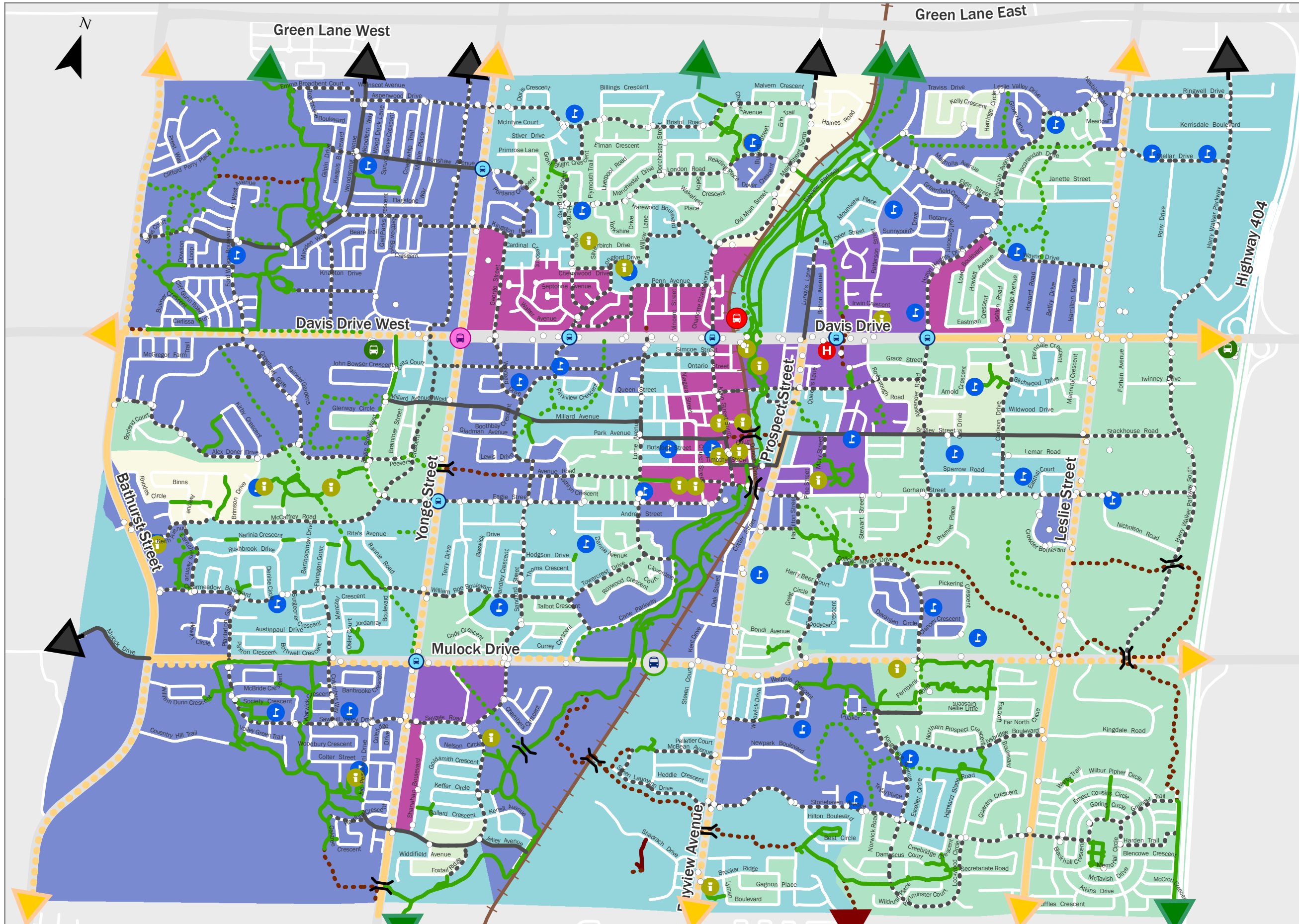


NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

Key Destinations



Data Sources: Town of Newmarket, York Region, and Statistics Canada
Map Created By: WSP in July 2018.

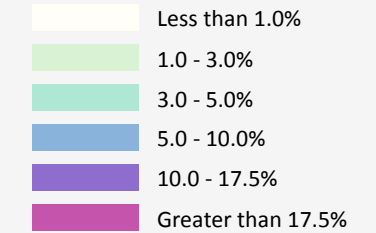


This map shows the Sustainable Transportation mode share in Newmarket. The existing and proposed active transportation network and transit stops have been displayed for reference. **Sustainable transportation is defined as the combination of cycling, walking and transit modes.** The Sustainable Transportation mode share has been calculated from Statistics Canada 2016 Journey to Work Census Data by combining cycling, walking and transit data. Census respondents were asked to indicate their main mode of commuting.

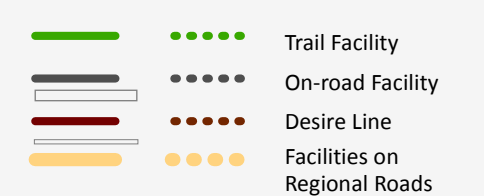
MAP 8B: ACTIVE TRANSPORTATION MODE SHARE AND PROPOSED NETWORK

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

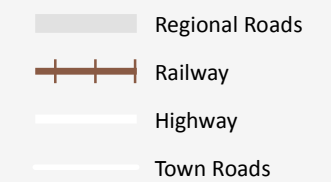
Active Transportation Mode Share



Active Transportation Network

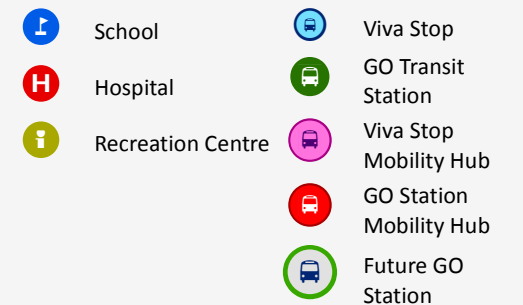


Other Items

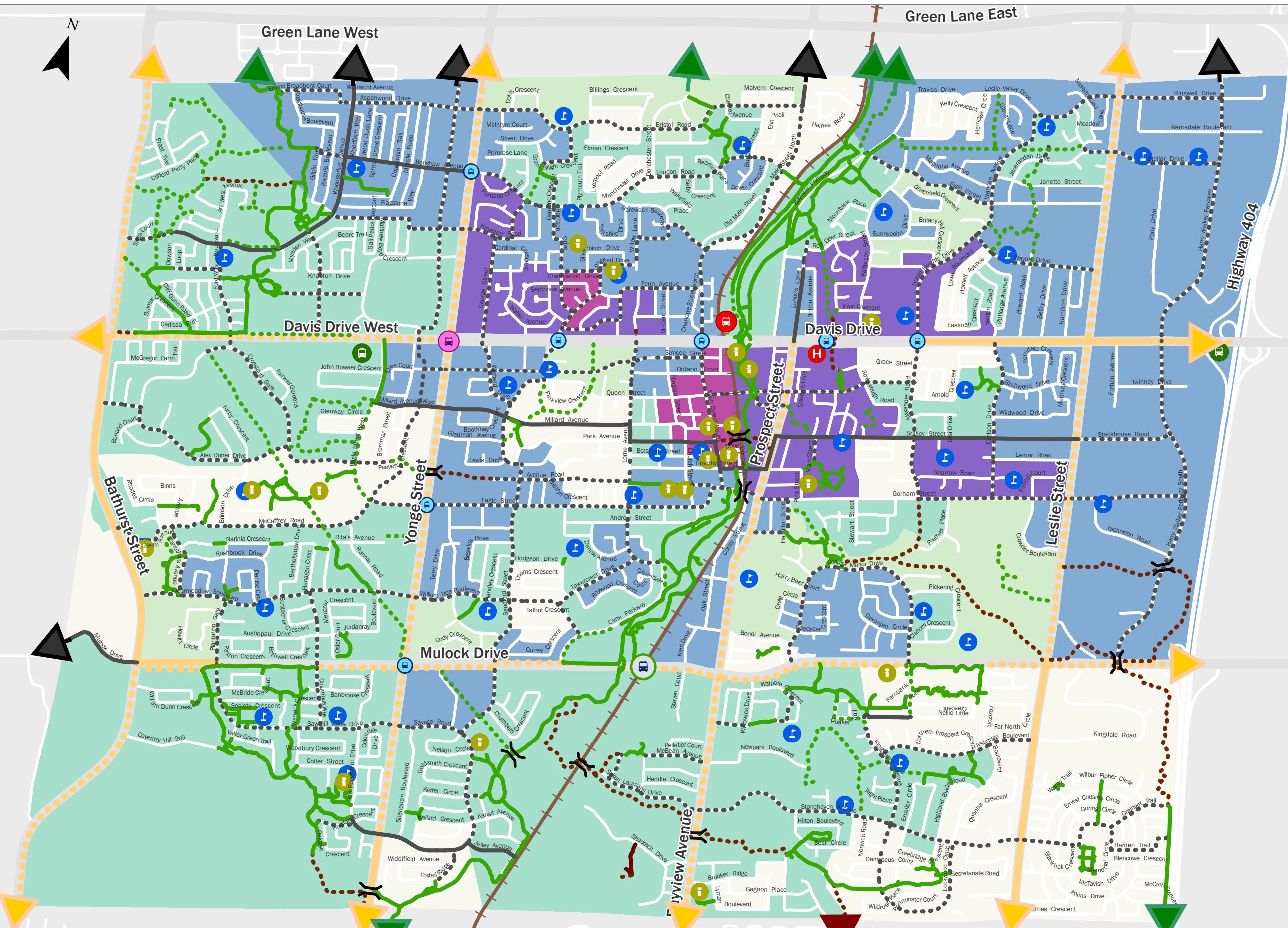
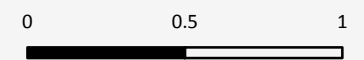


NOTE: For information regarding Regional facility types and phasing information, refer to York Region's Transportation Master Plan

Key Destinations



Data Sources: Town of Newmarket, York Region, and Statistics Canada
Map Created By: WSP in July 2018.

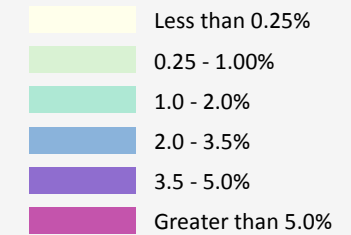


This map shows the Active Transportation mode share in Newmarket. The existing and proposed active transportation network and transit stops have been displayed for reference. **Active transportation is defined as the combination of cycling and walking modes.** The Active Transportation mode share has been calculated from Statistics Canada 2016 Journey to Work Census Data by combining cycling, walking and transit data. Census respondents were asked to indicate their main mode of commuting.

MAP 8C: CYCLING MODE SHARE AND PROPOSED NETWORK

TOWN OF NEWMARKET ACTIVE TRANSPORTATION IMPLEMENTATION PLAN

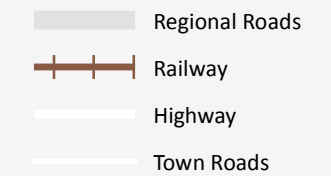
Cycling Mode Share



Active Transportation Network

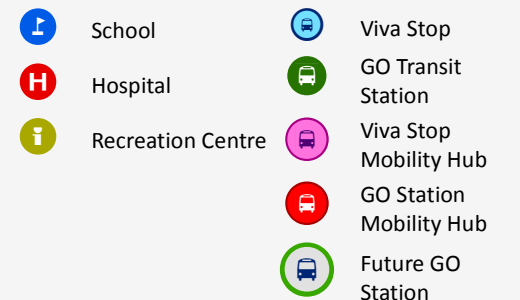


Other Items

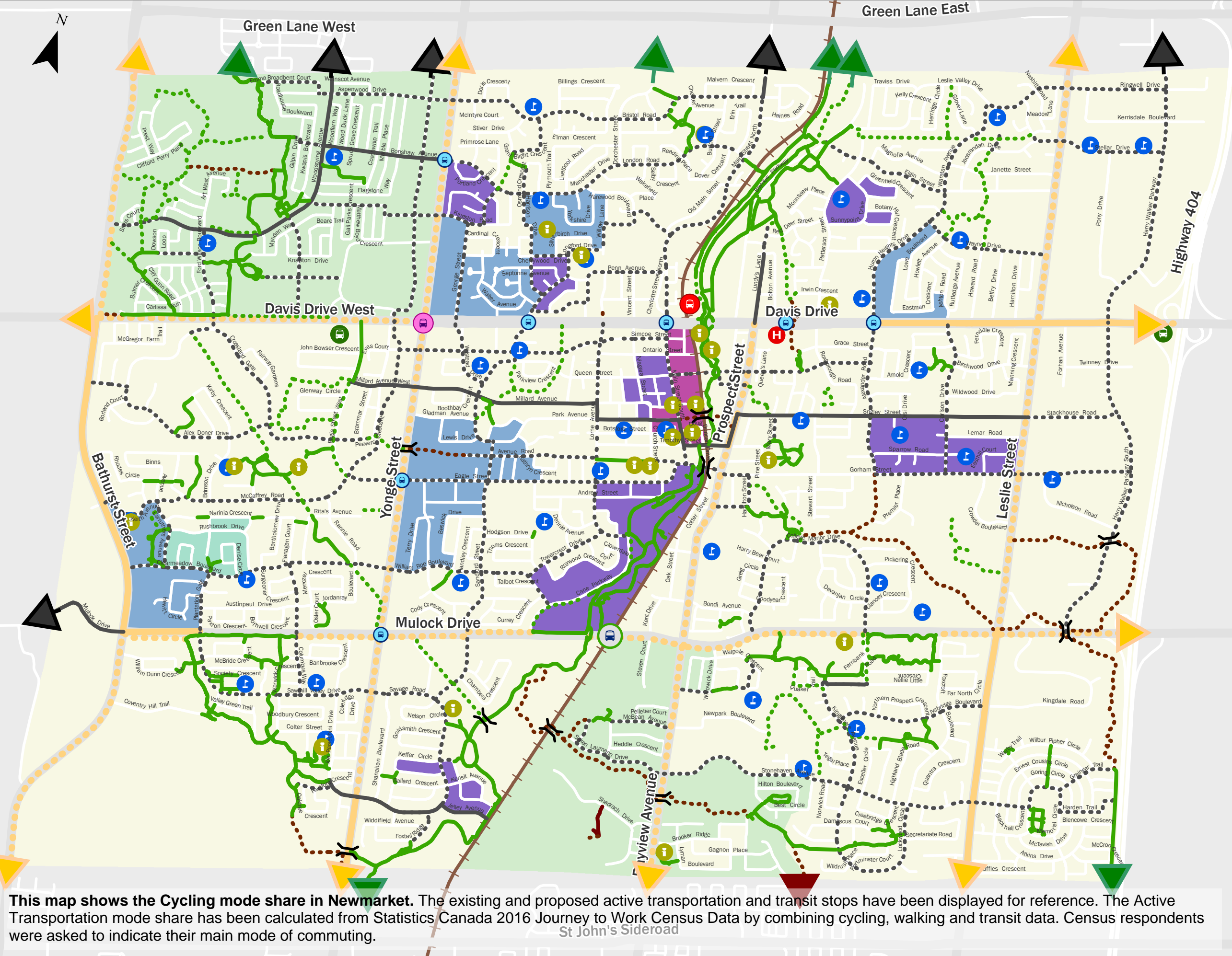
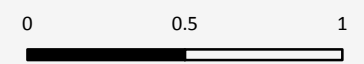


NOTE: For information regarding regional facility type and phasing, refer to York Region's 2016 Transportation Master Plan

Key Destinations



Data Sources: Town of Newmarket, York Region, and Statistics Canada
Map Created By: WSP in July 2018.



This map shows the Cycling mode share in Newmarket. The existing and proposed active transportation and transit stops have been displayed for reference. The Active Transportation mode share has been calculated from Statistics Canada 2016 Journey to Work Census Data by combining cycling, walking and transit data. Census respondents were asked to indicate their main mode of commuting.

