Town of Milton

Transportation Master Plan Update

Draft Report | November 2024

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Executive Summary

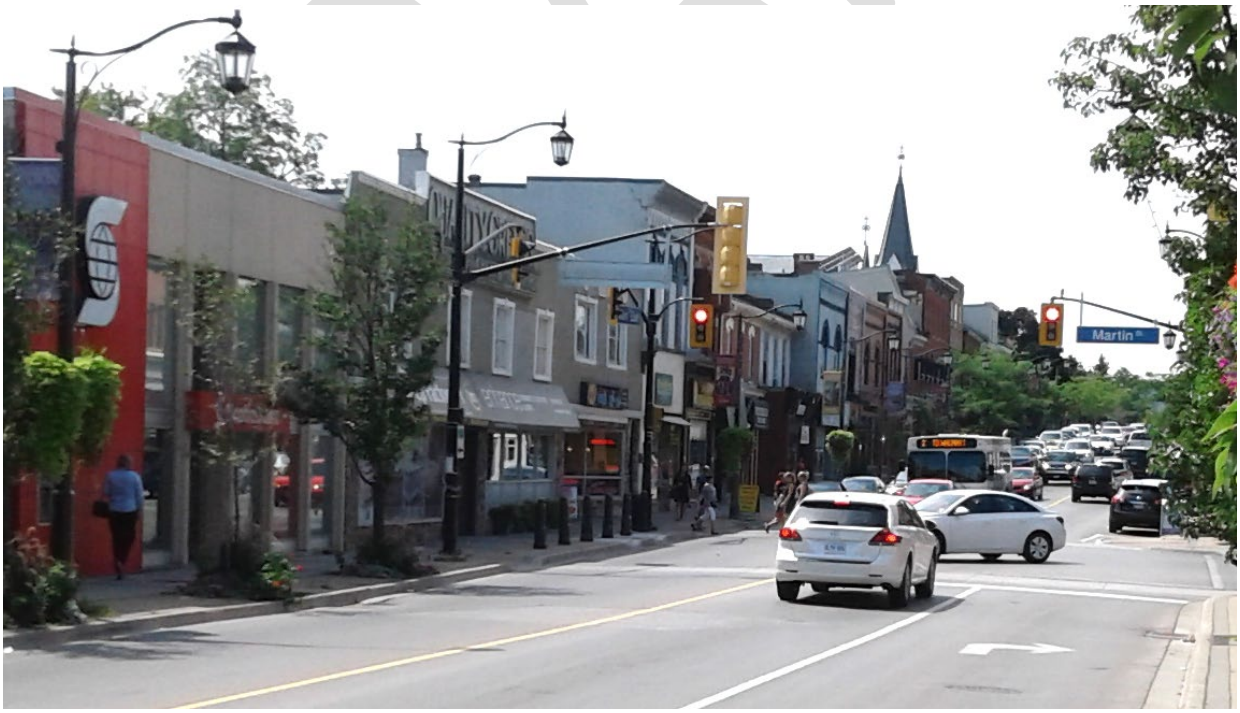
Knowing Milton

The Town of Milton is expected to experience a surge in its population in the next 30 years, growing from approximately 135,000 people in 2021 to 400,400 people in 2051[1]. To accommodate this growing population, and the trips they are expected to make, the Town is updating its Transportation Master Plan (TMP).

The TMP Update builds on the existing 2018 TMP, updating the multi-modal transportation network set out in 2018 to accommodate the needs of Milton's growing community. The Update also accounts for areas in the Town that are undeveloped now but will become urban in the next thirty years.

What is a TMP?

A Transportation Master Plan is a document that outlines strategic transportation planning direction for a specific community. It sets out the long-term vision and goals for transportation and identifies a recommended future transportation network and supporting policies. It is driven by a community's goals and aspirations and involves comprehensive analysis of the transportation system as well as public consultation.



[1] Town of Milton (2024). Staff Report DS-049-24. Retrieved from: https://calendar.milton.ca/Meetings/Detail/2024-06-03-1900-Council-Meeting/c0565565-a68d-4809-a765-b18800e08f13

Shaping Milton

The TMP Update follows the Municipal Class Environmental Assessment Process for Master Plans. It defines transportation needs and opportunities through the creation of a vision, assesses alternative transportation solutions to the Town's challenges, and is informed by comprehensive consultation with the public and interested stakeholders.

Building on the 2018 TMP's vision, as well as extensive engagement with Town residents, the TMP update sets out the following vision: to provide a multi-modal network that allows users of all ages and abilities to access all modes of transportation, contributing to a complete street community. The success of the Plan will be based on its ability to accentuate the Town's unique urban and rural areas, while accommodating future travel demands as the community continues to grow. Its success will be based on the implementation of achievable and relevant programming, looking to the 30-year planning horizon.

The vision for Milton's transportation future integrates four key principles:

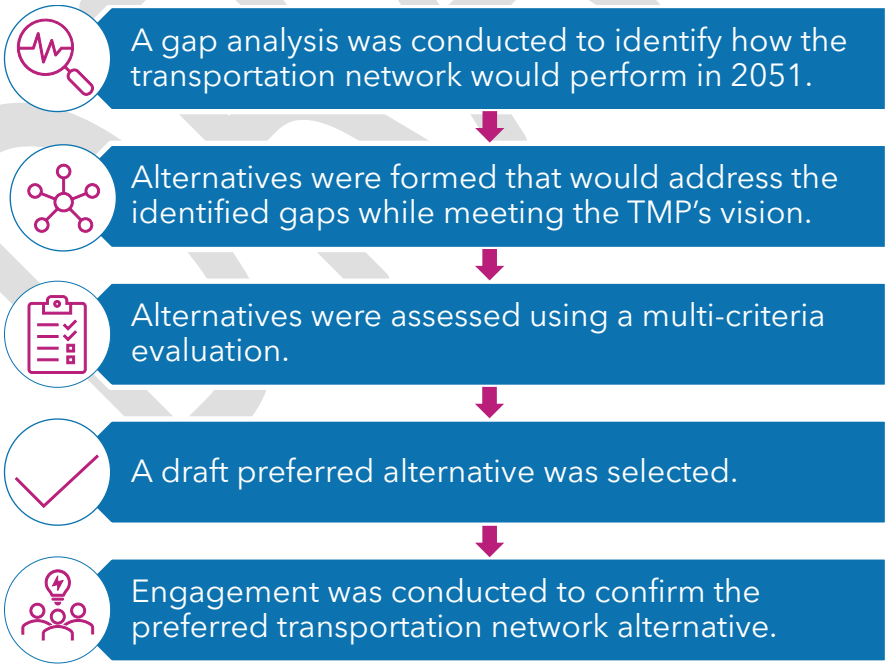
- **Accommodate future growth and associated travel demands**
- **Support mobility for all modes of transportation**
- **Promote equitable and accessible travel for all ages and abilities**
- **Promote sustainability**

Moving Milton

The TMP Update, like its 2018 predecessor, takes a balanced approach to transportation investments to help achieve the vision, including improvements for active transportation, transit, and roads. It seeks to balance investments between modes (such as walking, cycling, transit, and cars) to create viable transportation alternatives that support quality of life and sustainable choices for present and future generations. Investments in transportation should benefit all users equally rather than disproportionally benefitting one travel mode at the cost of another mode, and in turn other users.

The TMP Update considers that some levels of automobile traffic congestion need to be tolerated and expected in key locations during peak hours, particularly in areas where improvements to vehicular traffic are constrained and would have negative impacts on the environment and other forms of transportation. This is the trade-off taken to help ensure equitable investment between different modes of transportation, while maintaining the look and feel of the Town and managing budgets. However, the TMP Update also recognizes that different modes may work better in different areas of the Town. For example, higher density and more compact and walkable urban neighbourhoods are better able to support investments in transit and active transportation.

With these principles in mind, comprehensive analysis was conducted to identify recommendations for the transportation network, informed by feedback from the public and stakeholders. An overview of the process to identify the recommended transportation network is shown below.



The recommended transportation network resulting from this process is summarized by mode in the following subsections. It includes selected road network improvements, particularly in the Town's urban expansion areas where increased trips are projected

due to substantial population growth and includes active transportation and transit investments to provide residents of Milton with more travel options.

Active Transportation

The TMP Update recommends a comprehensive active transportation network, building on the network recommended in the 2018 TMP. The updated network consists of 271.3 km of infrastructure, up from 233.6 km in 2018, including multi-use trails, bike lanes, separated bike lanes, paved shoulders, and signed routes. These improvements help fill in missing links in the network and ensure the most suitable and safe type of infrastructure is provided for each location. Improvements were guided by the latest trends in active transportation planning, updated provincial guidelines, and industry best practices.

The active transportation network is shown in **Figure 1** and **Figure 2**. It is supported by a strategy focusing on the development of Complete Streets – streets that accommodate all users, regardless of age and ability, and regardless of the transportation mode they take.

Transit

The Milton Transit Five-Year Service Plan and Master Plan Update was endorsed by Council in June 2024. The long-term goal of the Five-Year Service Plan is to advance an investment strategy that achieves one service hour per capita by 2041. Recognizing the information and guidance provided within the Five-Year Service Plan, the TMP Update does not establish a comprehensive future transit network. However, it recommends high-level policies for such a network to help Milton achieve its transit vision.

The TMP Update also establishes transit priority corridors – routes where technology or transit-focused road widening can help improve transit travel times and boost reliability. These corridors are shown in **Figure 3**. They will offer residents of Milton an alternative mode of travel on specific roads that are expected to see high levels of congestion in the future.

Milton's local transit network integrates seamlessly with regional GO services at Milton GO Station and connects to adjacent municipalities. Moving forward, the Town will want to continue to support Metrolinx in its planning and implementation of two-way all-day GO rail service to downtown Toronto along the Milton rail corridor, as well as increased GO bus service to surrounding municipalities.

Roads

The TMP Update identifies a recommended future road network, expanding on the network recommended in the 2018 TMP. This includes selected road widenings from two to four lanes on corridors connecting to urban expansion areas, as well as a further extension of Louis St. Laurent Avenue, as shown in **Figure 4** and **Figure 5**.

The TMP Update also suggests road network improvements in the area around the Milton GO train station to support redevelopment of the designated Major Transit Station Area (MTSA), increase connectivity to the station, provide smaller block sizes, move property accesses to side streets to improve multi-modal travel and the public realm along major streets, and provide more ways for active transportation users of all

ages and abilities to travel. The refined street network around the station is shown in the inset in **Figure 5**.

Supporting Milton

The transportation network recommended in the TMP Update is supported by several strategies to address goods movement, transportation demand management, traffic safety, roadway classification and right-of-way, and parking. It is recommended that Milton conducts additional studies on these topics to ensure the efficient and safe functioning of the recommended transportation network.

Building Milton

To support implementation of the recommendations contained in this TMP Update, an implementation plan was developed. This includes a plan for when recommended improvements should be constructed, the high-level cost of each improvement, indicative costs to maintain the new infrastructure, and an overview of mechanisms through which the Town can fund the plan. It will be important to coordinate the implementation of all modes of transportation in construction projects to maximize the investment as well as support all modes of travel.

Monitoring the outcomes of the recommendations made will also be crucial. The TMP Update builds on key performance indicators set out in 2018 to provide the Town with a framework to track the TMP Update's performance. This will help confirm the transportation projects included in the TMP Update and will also help identify where modifications or updates are needed.

Summary of TMP Recommendations

Active Transportation Network

- Implement the active transportation network improvements highlighted in **Figure 1** and **Figure 2** in accordance with the phasing schedule shown in **Figure 58** and **Figure 59**.
- Apply a Complete Streets approach and the facility selection processes in OTM Book 18 when considering additional active transportation facilities, including future road reconstructions and new roads in Secondary Plan areas.
- Develop consistent guidance for active transportation through the development of a Complete Streets Design Manual for Milton for linear active transportation facilities and intersection treatments, including protected intersections.
- Coordinate with Halton Region for the planning and implementation of active transportation facilities on Regional roads.
- Provide sidewalks on roadways consistent with the Right-of-Way Strategies discussed in **Section 5.4**.
- Collect data to ensure accurate counts of cyclists and pedestrians in Milton.
- Ensure the new Official Plan refers to the recommended active transportation network and the recommended Complete Streets Design Manual.

Transit Network

- Implement the transit priority corridors highlighted in **Figure 3** in accordance with the phasing schedule shown in **Table 25**.
- Work alongside Metrolinx and Halton Region to support the development of transit priority infrastructure that would be desirable to implement the Priority Bus network identified in the 2041 Regional Transportation Plan.
- Examine the benefits of transit priority treatments in relation to access/egress to planned future transit hubs at Milton Education Village and Kennedy Circle.
- Continue implementing the Five-Year Service Plan and Master Plan Update.
- Continue to provide services for persons with disabilities under a theme of universal accessibility.
- Continue to invest in bus stop infrastructure.
- Identify and implement the following key transit node locations:
  - Redevelopment of Milton GO Station (to accommodate additional bus capacity)
  - New Trafalgar/Agerton GO Station
  - Milton Education Village Transit Hub (as noted in the Transit Five-Year Plan)
  - Bristol Park/Kennedy Circle Transfer Point (as noted in the Transit Five-Year Plan)
- Increase multi-jurisdictional trips where advantageous by continuing to support the advancement of two-way, all-day GO rail service between Milton GO and Union Station in Downtown Toronto.
- Continue to encourage enhancing the connection between land-use and transit.
- Expand services alongside development.
- Build supporting active transportation along transit corridors.
- Develop partnerships with rideshare and bike-share services to provide connectivity to transit hubs.
- Improve and maintain active transportation infrastructure to ensure safe and accessible pathways that will encourage walking to and from transit stops.
- Implement transit hubs that integrate various modes of transportation (buses, bikes, rideshare) to create easy transfers and improve connectivity.

Road Network

- Implement the recommended road network improvements highlighted in **Figure 4** and **Figure 5**, in accordance with the phasing schedule shown in **Table 24**.
- Implement the recommended intersection improvements noted in **Section 1.3.3.2**.

Rural Milton

- Continue upgrading two-way stop-controlled intersections to be double signed.
- Continue to review and address the areas of concern noted by residents as shown in **Section 3**.
- Implement the recommendations related to the active transportation network, road network, goods movement, and traffic safety.

Goods Movement

- Retain the goods movement network shown in the 2018 TMP, with the exception of the link along Louis St. Laurent Avenue from Tremaine Road to James Snow Parkway, which should be removed from the network.
- Reflect the updated goods movement network in the new Official Plan, and ensure the Official Plan contains policies that ensure the network does not conflict with existing or new sensitive land uses or major transit routes.
- Continue to designate and monitor designated goods movement corridors.
- Collaborate with Halton Region and adjacent lower-tier municipalities to better understand their goods movement needs to, from, and through the Town.
- Continue to evaluate how best to manage and communicate truck route details. This will form part of the work required to separate the Traffic and Parking By-laws, and will require cross-divisional input within the Town.

Transportation Demand Management

- Create a Transportation Demand Management Strategy in accordance with the scope set out in **Section 5.2.2**.
- Establish a TDM checklist for evaluating TDM-related items that need fulfillment within existing development projects and enforce a minimum scoring requirement or green development standard for TDM items during site planning and approvals.
- Enact policies that support TDM initiatives and zoning regulations that promote mixed land-use development.
- Utilize smart parking management strategies, including pricing, location-based permits, and efficient use of parking spaces.
- Enhance the partnership with SmartCommute Halton Region to further encourage carpooling.
- Provide discounted transit passes to qualifying residents of Milton to enhance transit ridership.
- Enhance partnerships and collaboration by supporting workplace TDM champions, preferably through allocated full-time staff.
- Seek grant opportunities to undertake TDM initiatives and provide more financial incentives to the public to enhance the uptake of sustainable modes of transportation.
- Understand the challenges associated with transit and ways to deliver excellent transit service to encourage mode shift.
- Provide education through potential public engagement opportunities to increase community awareness of alternative transportation modes and their various benefits, such as health, financial savings, and addressing environmental issues.
- Encourage businesses to implement telecommuting and flexible work arrangements to reduce the need for daily commuting.
- Provide real-time travel information through apps and websites, helping commuters make informed choices about their travel routes and modes.

- Hold public engagement sessions to engage with the community and understand their needs through conversational prompts. The feedback can be used to inform TDM programs and policies to best address the needs of the community.
- Support active transportation by providing end-of-trip facilities such as bike rooms, lockers, and bike repair stations to enhance the user comfort and experience.
- Increase connectivity to existing and future transit and active transportation facilities as a requirement within the site planning approval process.

Traffic Safety

- Develop a road safety strategy in accordance with the scope set out in **Section 5.3.3**. Policies should be included in the new Official Plan that align with this strategy.

Roadway Classification & Right-of-Way

- Adopt the right of way widths and standard cross-sections identified in **Section 5.4.3** and undertake the next steps identified in that section.
- Update the Town's Engineering Standards or Design Guidelines to review the decision-making matrix for the right-of-way widths of Town streets.

Parking

- Initiate a parking study to identify and address parking challenges and opportunities in accordance with the scope set out in **Section 5.5.3**.

Other Recommendations & Future Studies

- Create a transportation related GHG reduction strategy and ensure policies within the Town's new Official Plan support this strategy, including policies that require the installation of electric vehicle infrastructure into new development and construction projects.
- Create Transit Supportive Communities Guidelines.
- Explore a Sustainable Mobility Coordinator role within the Town to champion and coordinate plans, policies, and actions related to walking, cycling, Transportation Demand Management, and micro-mobility.
- Create a resource management plan to support implementation of the TMP recommendations, as set out in **Section 6.1.2**.
- Collect and analyze data to measure progress towards the TMP Update's vision, in accordance with the key performance indicators set out in **Section 6.5**.

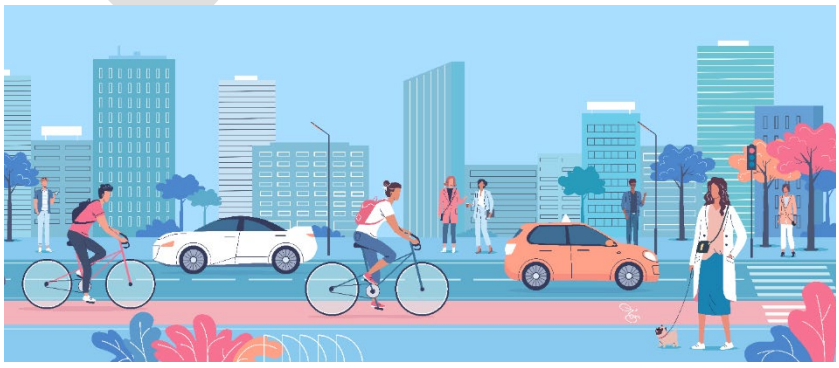


Figure 1. Proposed Active Transportation Network (Town-wide)

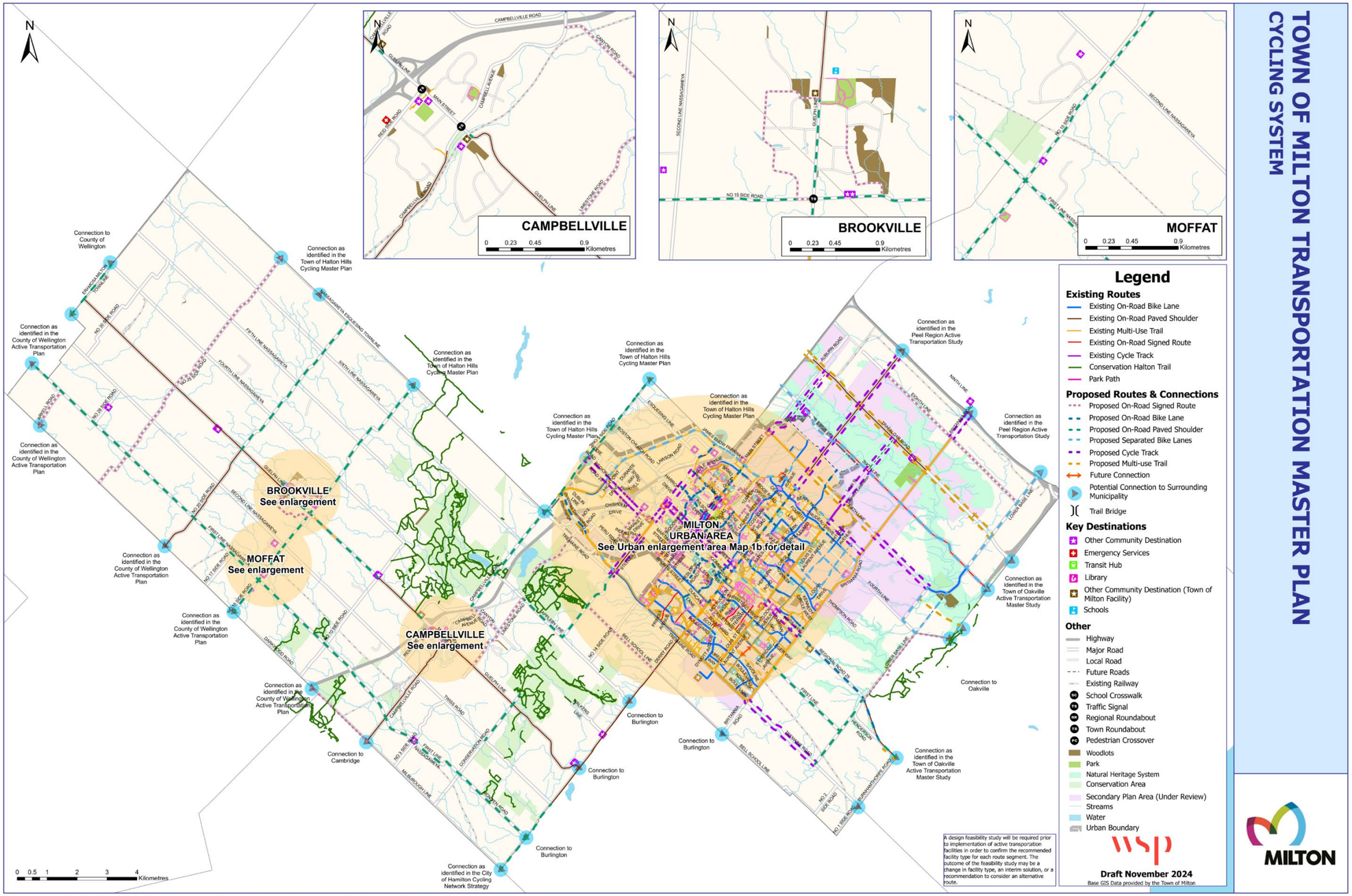


Figure 2. Proposed Active Transportation Network (Urban Area)

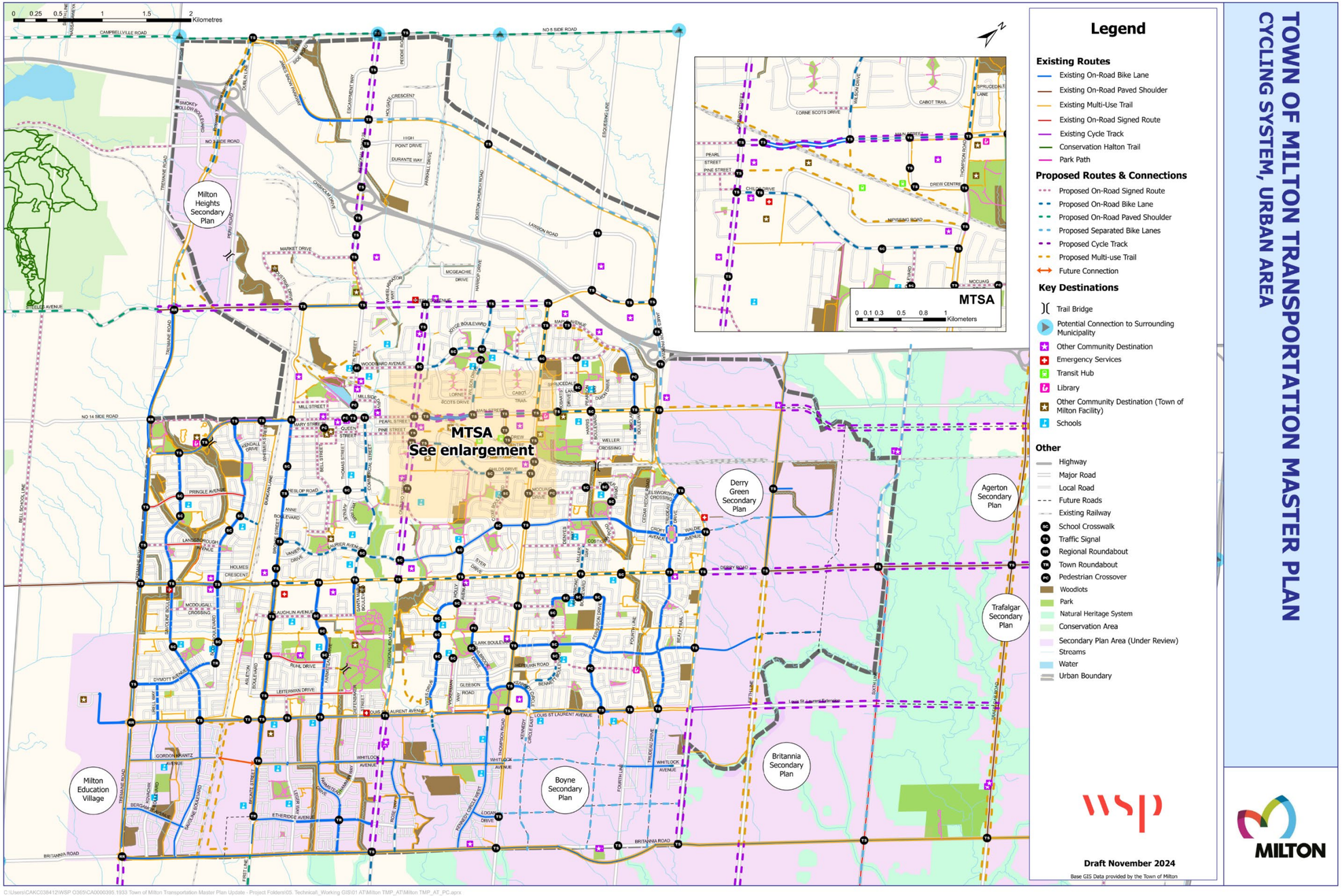


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Figure 3. Proposed Transit Priority Corridors

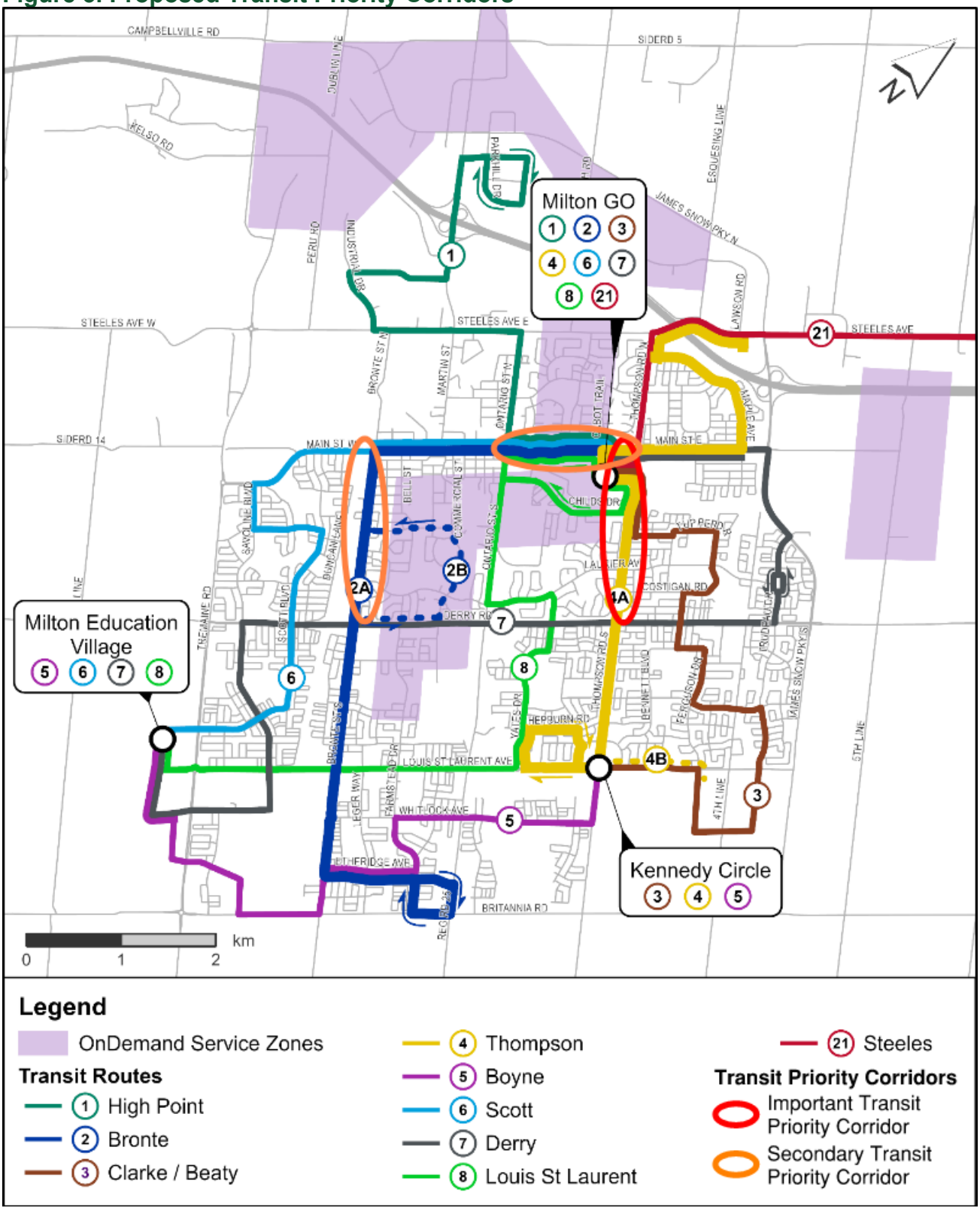

Figure 4. Proposed Road Network (Town-wide)

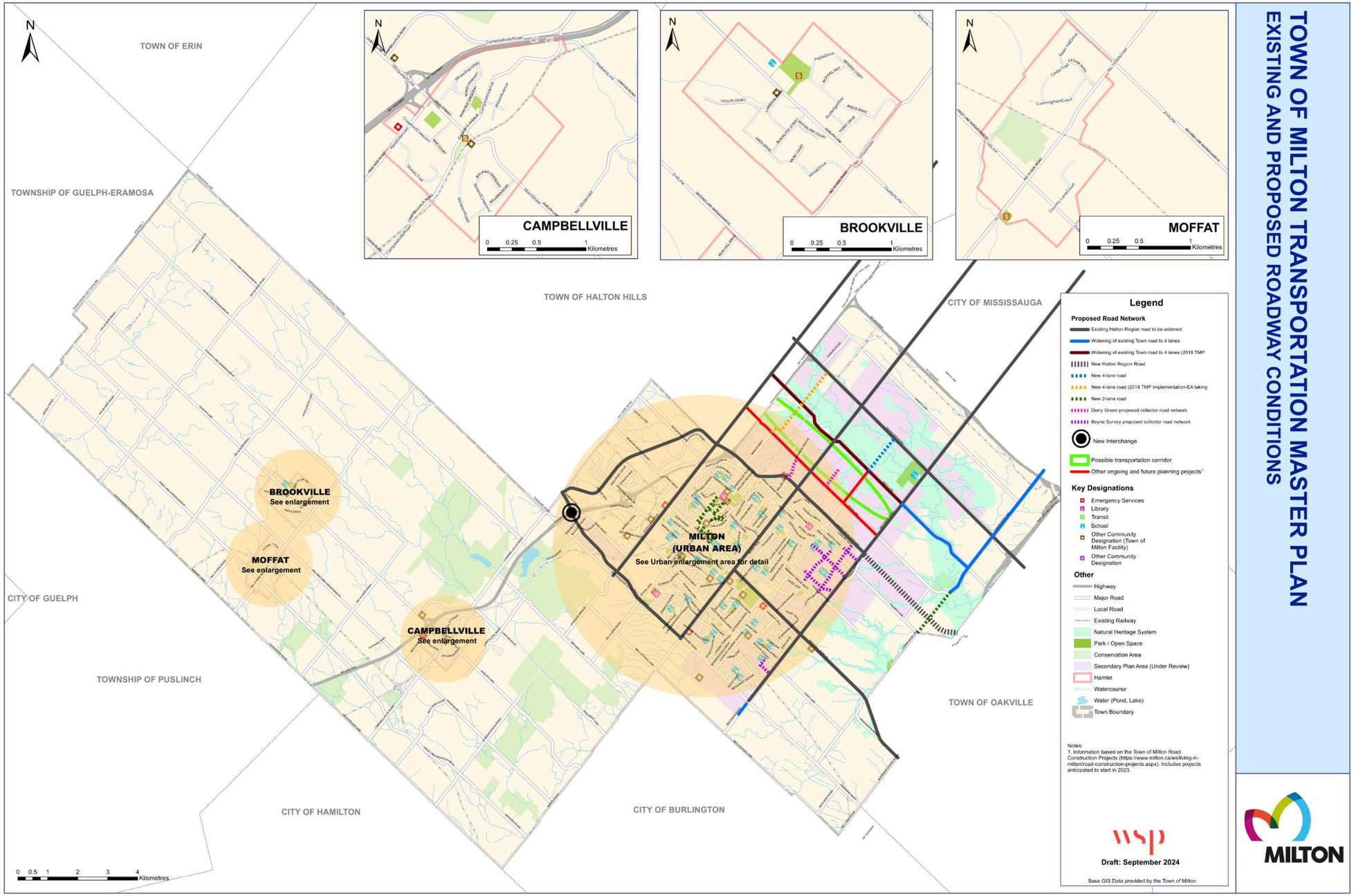

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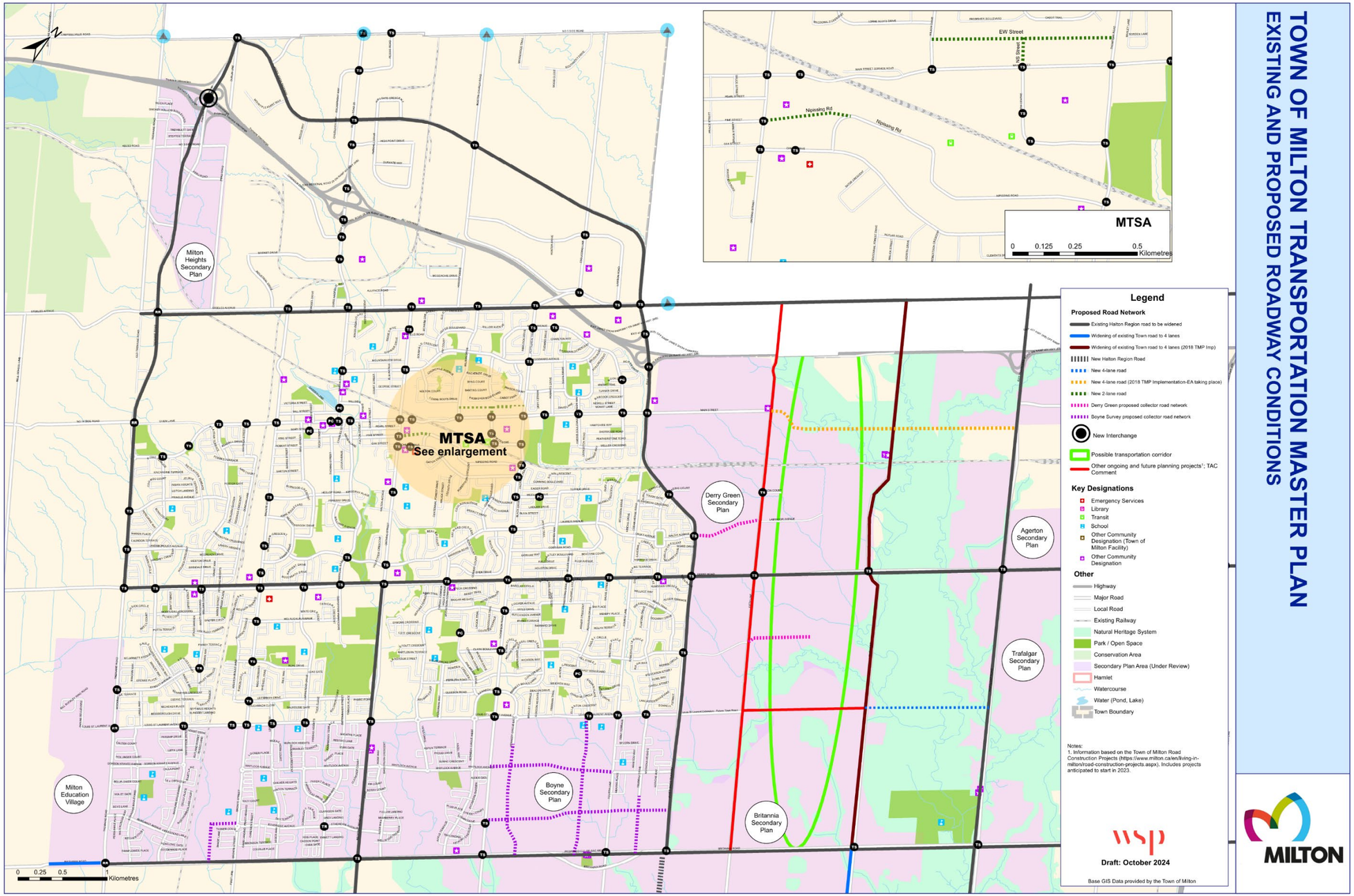
Figure 5. Proposed Road Network (Urban Area)



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1 Knowing Milton

1.1 Plan Context

The Town of Milton's current Transportation Master Plan (TMP) was published in April 2018 and had been developed to provide the Town with guidance on how to create a balanced and multi-modal community for its future. The 2018 TMP outlined both capital improvements and further studies needed to assist the Town in achieving its vision, which was anchored upon these six transportation principles:

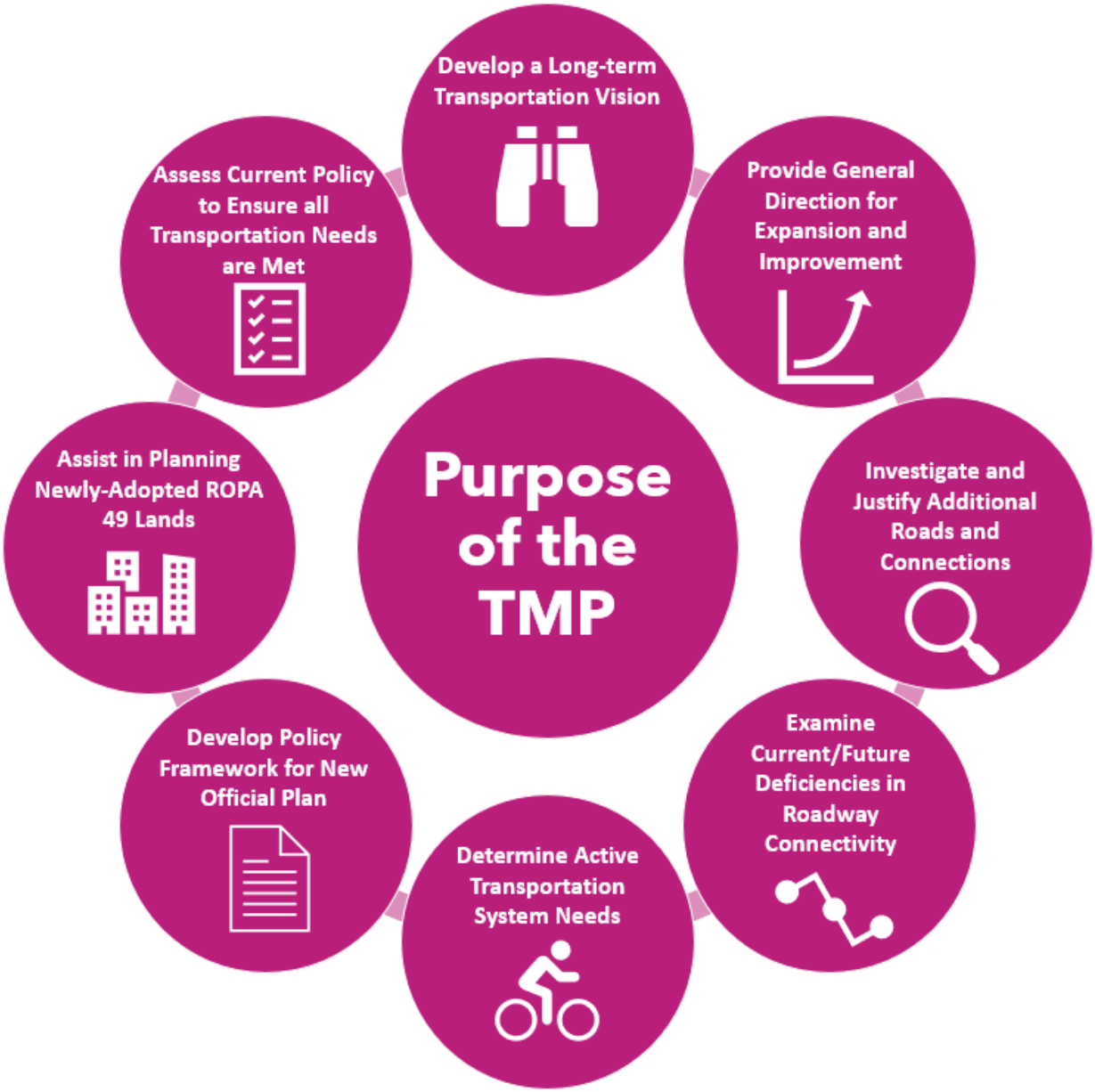
1. Provide residents and visitors with viable transportation options and choices to travel in and around the Town;
2. Design a system that is meant for all modes of travel and transportation users of all ages and abilities;
3. Establish a connected and continuous network of different transportation options that accommodates walking, cycling, transit, and motorized vehicle traffic in a safe and efficient manner;
4. Establish a system that not only moves people, but also moves goods and services that support the Town's economy and that of surrounding areas;
5. Provide connections to surrounding municipalities and to the greater region; and
6. Establish a foundation for balanced investment in transportation to the year 2031 and beyond.

As the Town of Milton is facing increased growth pressures, a TMP Update is required to support the community's ongoing development and expansion. There are eight key reasons that have been identified for this TMP Update, as presented in **Figure 6**, to ensure the new TMP will provide the transportation policy direction that reflects the needs of Milton's growing community.

In particular, since the development of the 2018 TMP, an urban boundary expansion was identified for Milton in Halton Region's Official Plan, through Regional Official Plan Amendment (ROPA) 49, and as approved by Bill 150. This TMP Update must consider these new lands and the planning context that has been set out / is being developed for them.

Concurrently with the TMP Update, the Town is preparing a new Official Plan (OP) through the "We Make Milton" project. The Official Plan Review (OPR) will set out a land use vision for long-term development in the Town to the year 2051, including key themes and policies for transportation. This TMP Update will inform the transportation strategies and policies that will form part of the OPR. The OPR and TMP Update have an iterative relationship and feed information into each other as they evolve through the lifecycles of their Plans.

Figure 6. Purpose of the TMP



1.1.1 Study Overview

The Milton TMP Update study process includes the following three phases (**Table 1**):

Table 1. Town of Milton Transportation Master Plan Update Development Process

Phases	Engagements
Phase 1: • **Part 1 -** Vision, Goals and Objectives for Transportation in the Town of Milton • **Part 2 –** Alternative Assessment and Preferred Solution	Engagement Round 1
Phase 2: Supporting Strategies and Level of Service Review	Engagement Round 2
Phase 3: Consolidated Transportation Master Plan Preparation	Council Presentation

1.1.2 Municipal Class Environmental Assessment Process

The TMP Update has been developed in accordance with the Municipal Class Environmental Assessment (MCEA) process. The MCEA process outlines an approach for municipal infrastructure projects in accordance with the Environmental Assessment Act. Master Plans, such as a TMP, are required to complete Phases 1 and 2 of the five-phased MCEA process. These are:

- **Phase 1**: Development of an opportunity statement, objectives, and an overall TMP vision.
- **Phase 2**: Alternative scenarios development and evaluation, leading to a preferred alternative.

Consultation with the public and stakeholders is an integral component of the study, which includes two rounds of consultation. Completion of Phases 1 and 2 allows the Town to progress with the implementation of any Schedule B projects (subject to screening), and advance to Phase 3 (Assessment of Design Alternatives) for recommended projects that fall under Schedule C of the Class EA document. Schedule C projects have potential for significant environmental effects and require further consultation from the public and review agencies.

After the selection of the preferred alternative in Phase 2, a draft TMP is developed, and ultimately the final TMP, shown in **Figure 7**.

Figure 7. TMP Development Process

1.1.3 How will the TMP Update be used?

The TMP Update is strategically developed to provide a framework that supports growth management and land use planning through a long-term multi-modal transportation network. This TMP Update looks to address and accommodate the anticipated demands of the Town's expansion and development and will promote the inclusion of connectivity and accessibility as key themes. The TMP addresses urban growth as well as transportation concerns of rural communities.

1.2 Town Context

It is important to have a thorough understanding of the Town's current context as it will inform how the recommendations, strategies, and improvements that are incorporated within the updated TMP will best address the Town's future trends and needs. The framework for the updated TMP is shaped by three fundamental priorities:

- **The People**: This includes residents, employees and individuals who live, work, learn and play within the Town (both in urban and rural communities) and utilize the transportation system to travel throughout the Town and to neighbouring municipalities.
- **The Transportation Network**: The transportation network facilitates movement throughout the Town, connecting people to key destinations within Milton as well as to surrounding areas and regional destinations.
- **The Community**: The evolving land use patterns and development trends that are occurring throughout Milton, driven by the Town's growth and transformation, drive how people use the transportation network.

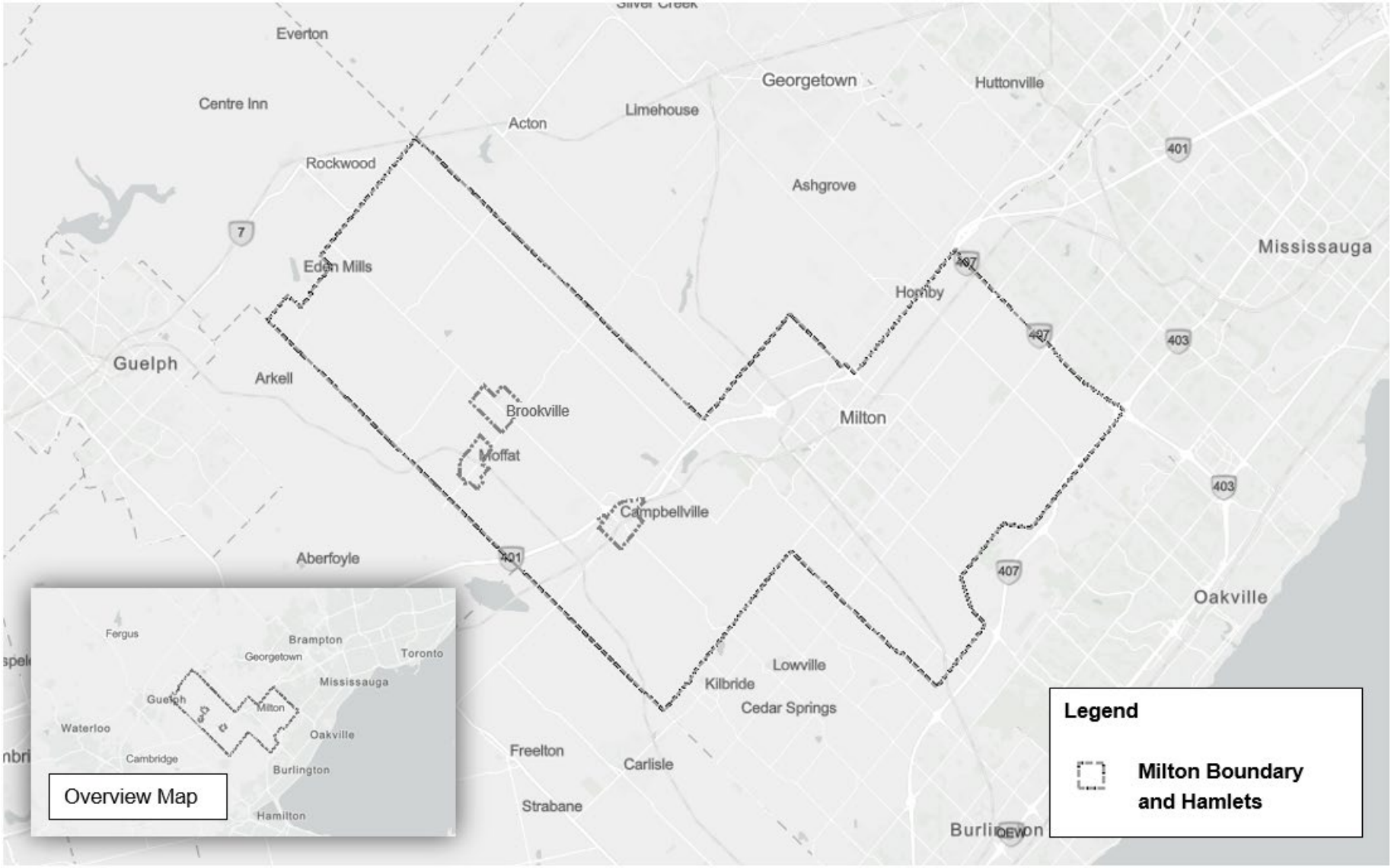
The following sections will provide further details regarding the first two categories and provide the context behind the updated TMP and how it supports the future evolution of the Town. The Community, as identified in the Milton Official Plan, is reviewed in the next chapter as part of the policy framework directing this TMP Update.

1.2.1 Geographic Location

The Town of Milton is situated in Halton Region, which is classified as an upper-tier municipality (and also consists of the municipalities of Burlington, Oakville, and Halton Hills), as illustrated in **Figure 8**. The Town of Milton is strategically located within the Greater Toronto and Hamilton Area, which enables a high degree of commuting activity to employment centres in nearby communities, and throughout the greater region. Milton is also located in the Toronto-Waterloo Innovation Corridor, which is the second-largest technology cluster in North America. The corridor is home to an abundance of Canada's top academic institutions, start-up incubators, and research facilities, and also includes 20% of Canada's university students. This high concentration of technology and knowledge-focused initiatives draw in multiple STEM-educated talent, resources, and investment opportunities to the area, benefiting all business sectors in Milton.

Hamlets located within the Town of Milton include Brookville, Moffat, and Campbellville.

Figure 8. Town of Milton and Neighbouring Municipalities

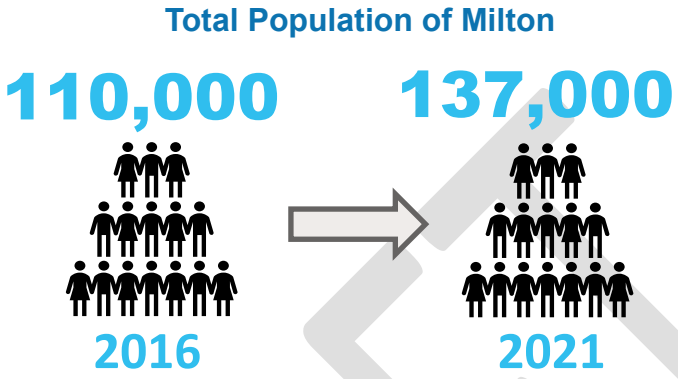


Source: Town of Milton, Milton GIS, 2023

1.2.2 The People

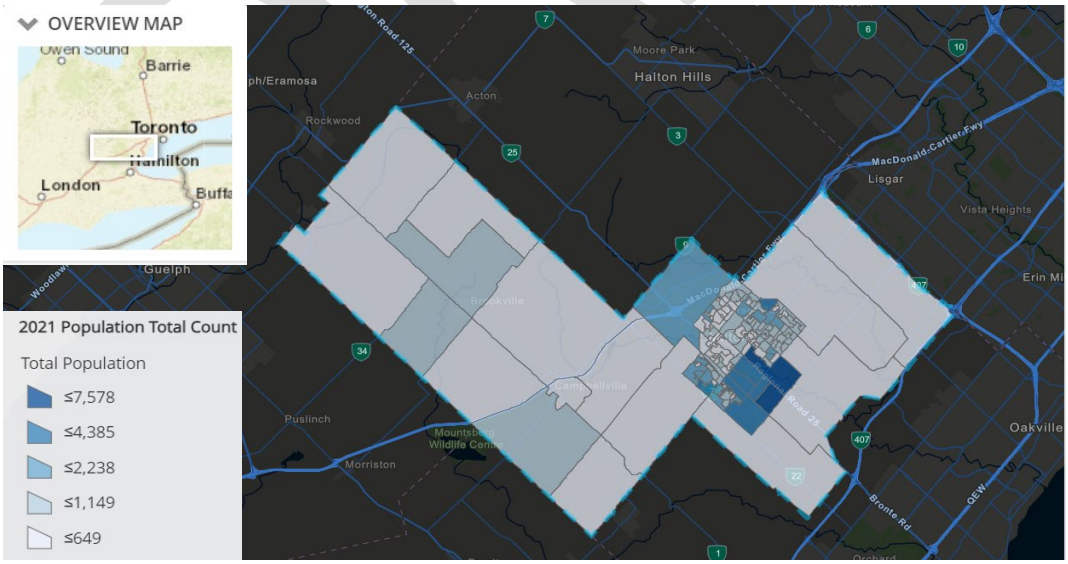
1.2.2.1 *Population*

The 2021 Canadian Census indicates that from 2016 to 2021, Milton's population grew from approximately 110,000 to 137,000, an increase of approximately 20.7%[2]. Between 2011 and 2016, Milton's population grew from approximately 84,000 to over 110,000.



This population change is significantly greater than the provincial average of 5.8% and the national average of 5.2%. It is projected that the population could reach 246,000 by 2031 and 400,000 by 2051. With the anticipated population growth, more pressure is placed on the existing infrastructure and services to be able to support the places where residents live, work, learn, play, and to accommodate people of all ages and abilities. The increase in population has also increased development and investment in the area to accommodate social and economic changes. The highest concentration of residents is near the centre of the Town, near the intersection of Regional Road 25 and Louis St. Laurent Ave, as shown in **Figure 9**.

Figure 9. Population by Dissemination Areas



Source: Statistics Canada, 2021

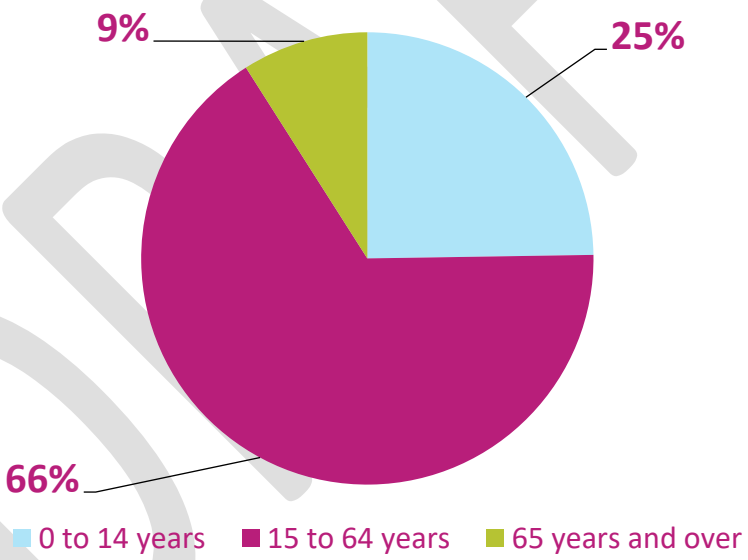
[2] Includes a net census undercount estimated at 3.3%

1.2.2.2 *Median Age*

According to the 2021 Canadian Census, the majority of residents (66%) that live in Milton are between the ages of 15 and 64 years of age. The second largest age group classification is 0 to 14 years with 25%, and the senior population with an age classification of 65 years and over has a distribution of 9%, shown in **Figure 10**. Identifying the age distribution in the Town is important because the youth and senior categories experience the most limited mobility, for example the ability to legally operate vehicles, and/or physical capability to access other travel modal choices. These two vulnerable age groups should be considered when planning the transportation multi-modal network.

The median age of the Town of Milton population is 36 years of age. In comparison, Ontario has a median age of 41.6 years of age. One of the main reasons for Milton's relatively younger median age is that young and more economically mobile households are more inclined to move to Milton to begin raising families. Other positive factors that make Milton an attractive lifestyle choice, include flexible housing options, walkable communities, year-round recreation, and many more.

Figure 10. Milton Age Group Distribution



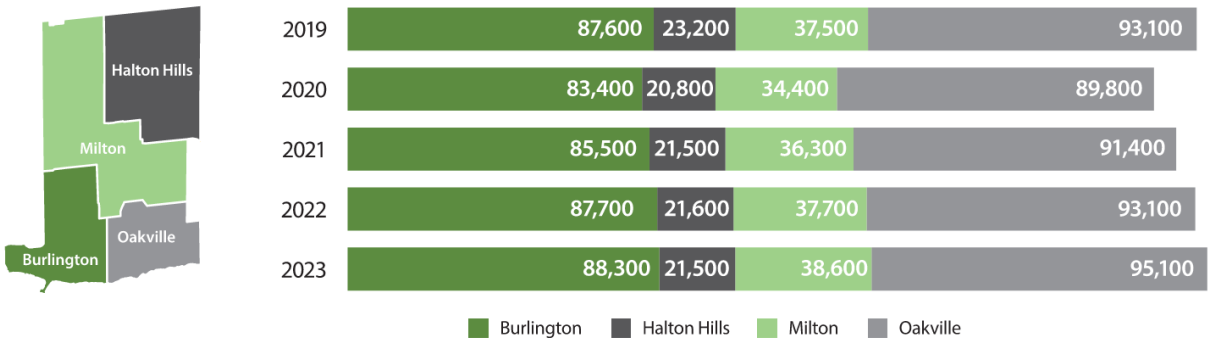
Source: Canadian Census, 2021

1.2.2.3 *Employment Trends*

The 2023 Halton Region Employment Survey results present employment data across the region spanning from 2019 to 2023. The data shows that employment in the region has fluctuated over the past five years, but overall, the region has experienced employment growth. Although the data shows rising and falling employment numbers, Halton Region has experienced an overall employment growth of 0.9% over the past five years with an annual average growth of 0.3%.

Focusing solely on employment figures for the Town of Milton, the data shows that employment numbers have grown from 2019 to 2023, with a dip in 2020. Overall, the Town of Milton has experienced the greatest employment growth throughout Halton Region with a 2.9% increase in employment over the past five years and an annual average growth of approximately 0.9% percent, exceeding Halton Region's overall rate of 0.9% and 0.3%, respectively. **Figure 11** presents a summary of Halton Region's Employment Survey.

Figure 11. Halton Region Employment Statistics 2019-2023



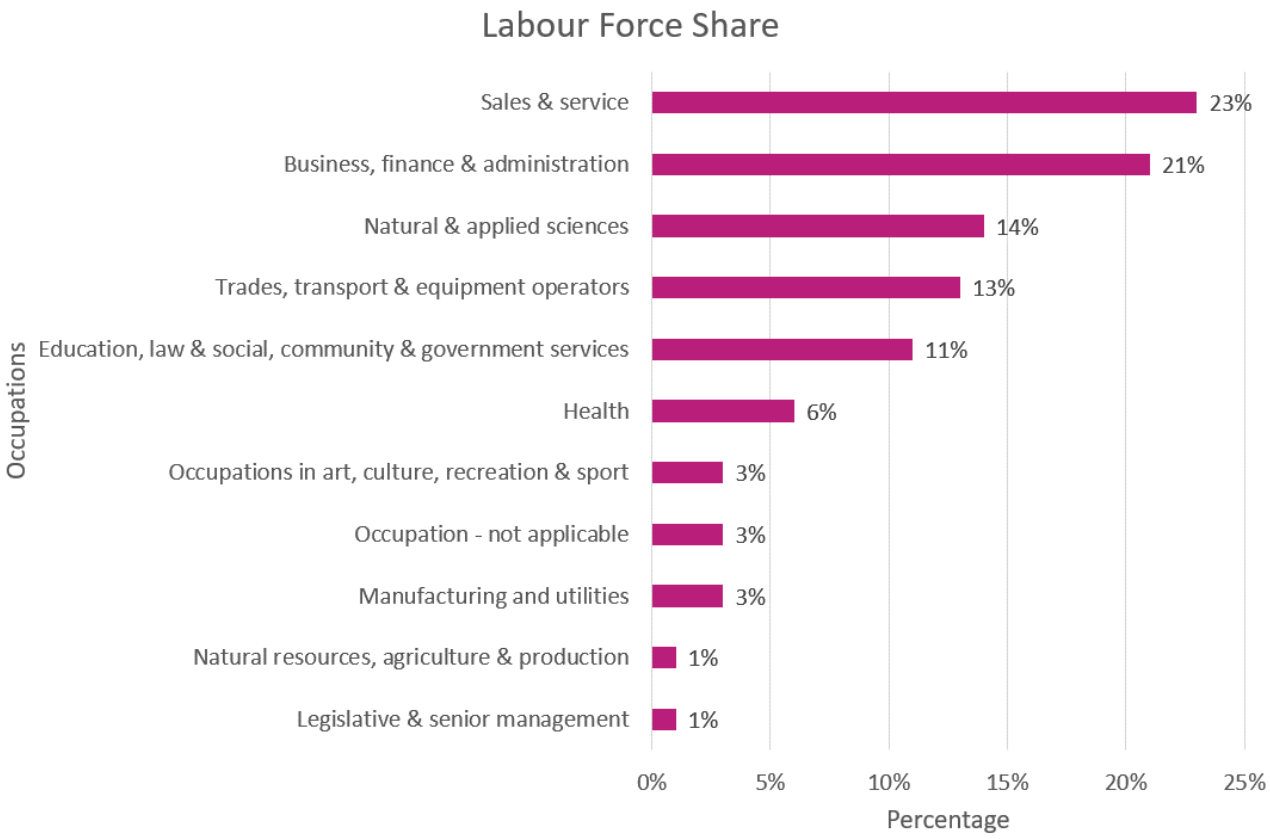
	Burlington	Halton Hills	Milton	Oakville	Halton Region
Five-year change (2019 – 2023)	**0.8%**	**-7.3%**	**2.9%**	**2.1%**	**0.9%**
Annual average (2019 – 2023)	0.2%	-1.7%	0.9%	0.6%	0.3%

Source: Halton Region Employment Survey, 2023

According to the 2021 Canadian Census, the employment rate (percentage of people aged 15 years and over who are employed) for the Town of Milton is approximately 63%. In comparison, Ontario has an employment rate of approximately 55%, which is considerably lower than the Town's employment rate.

Figure 12 shows the largest shares of labour force are sales and service (23%), as well as business, finance, and administration (21%). Most of the employed labour force works in industries related to natural and applied sciences (14%), trades, transport, and equipment operators (13%), education, law, social, community and government (11%). Trades such as sales and service, as well as trades, transport, and equipment operators rely heavily on efficient supply-chains and transportation logistics, which reinforces the importance of the transportation network in supporting the different employment sectors.

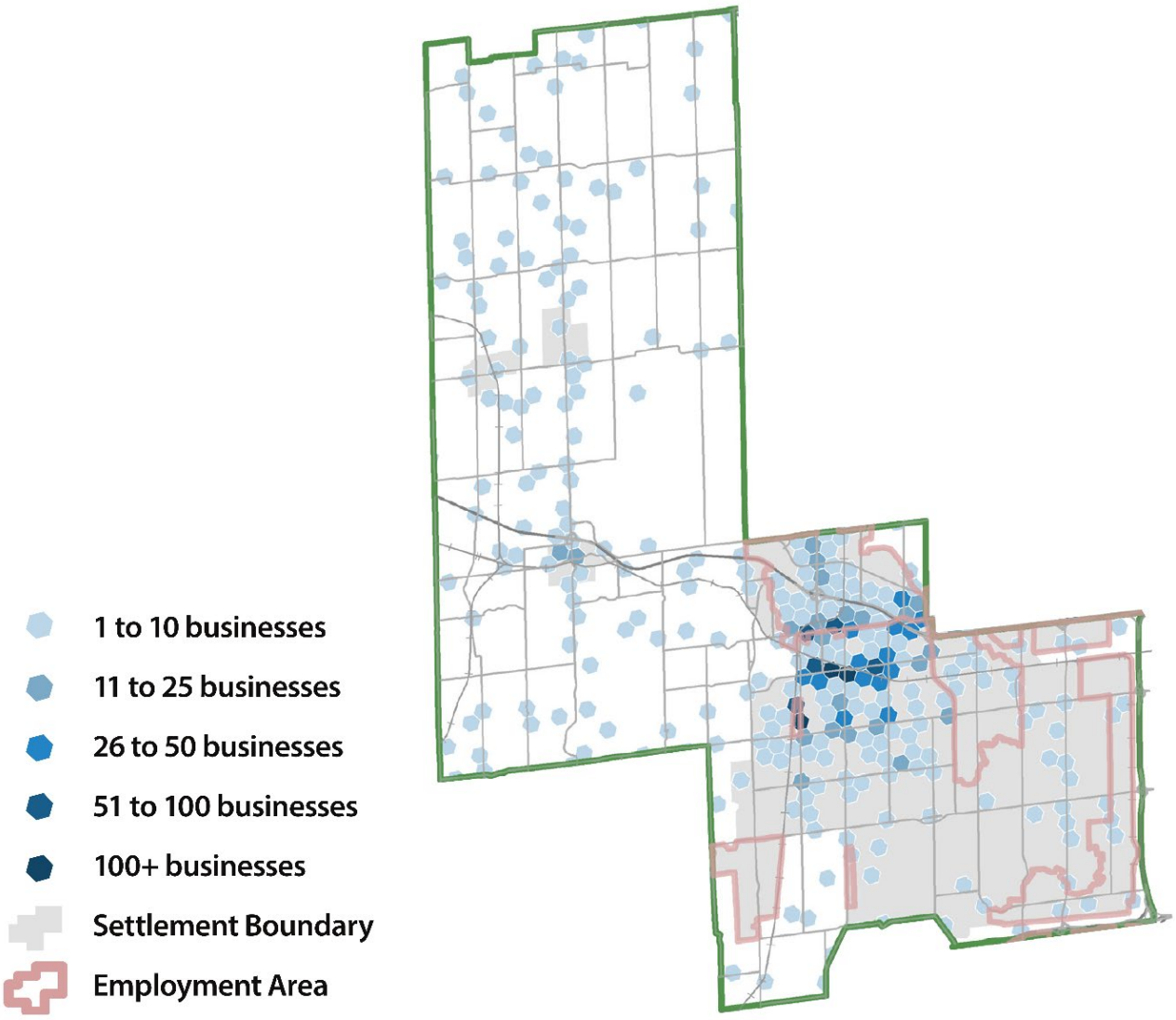
Figure 12. Town of Milton Top Employment Industries Total Employed Labour Force



Source: Canadian Census, 2021

The Halton Region 2023 Employment Survey provides a map (**Figure 13**) of the spatial distribution of businesses throughout the Town of Milton, including locations of urban areas, hamlets, and employment area boundaries. There are various businesses relatively evenly distributed across the Town, however, the majority are concentrated in the downtown and surrounding area. It is important to recognize that employment areas and businesses are closely correlated with how the transportation network is planned for the future. The Derry Green and Agerton areas are two examples of employment areas that are expected to grow in future years.

Figure 13. 2023 Spatial Distribution of Businesses



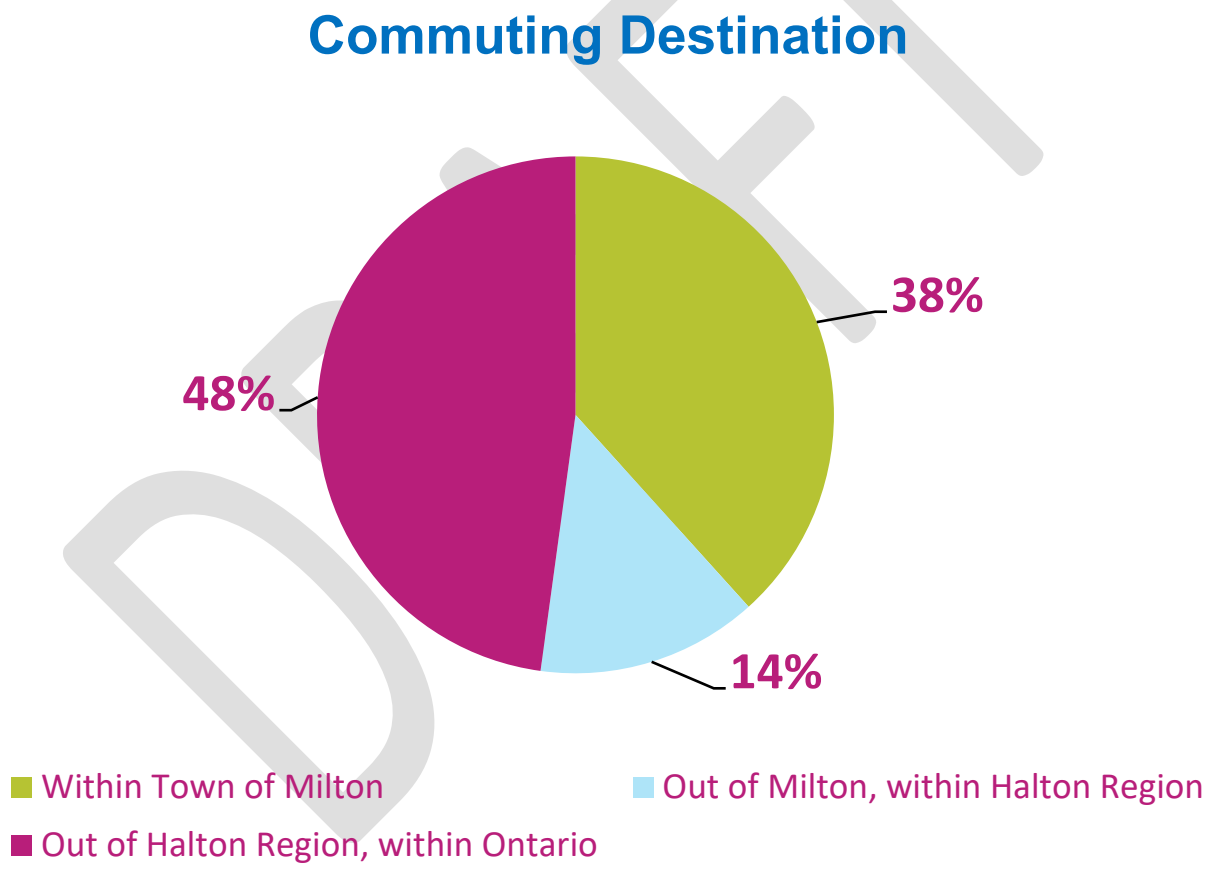
Source: Halton Region 2023 Employment Survey

1.2.3 The Transportation Network

1.2.3.1 *Travel Behaviour*

To understand where people are going, commuting destination data from the 2021 Canadian Census was analyzed. Although Milton is evolving and growing a more diversified employment base, the commuting patterns continue to demonstrate that most residents are travelling outside of the Town for work. The 2021 data in **Figure 14** demonstrates 14% of residents are commuting outside of the Town but within Halton Region and a further 48% traveling outside of the Region altogether. The data shows that 38% of residents have commuting destinations within the Town, which is generally in line with other municipalities such as Oshawa (38%), Halton Hills (41%), Oakville (46%).

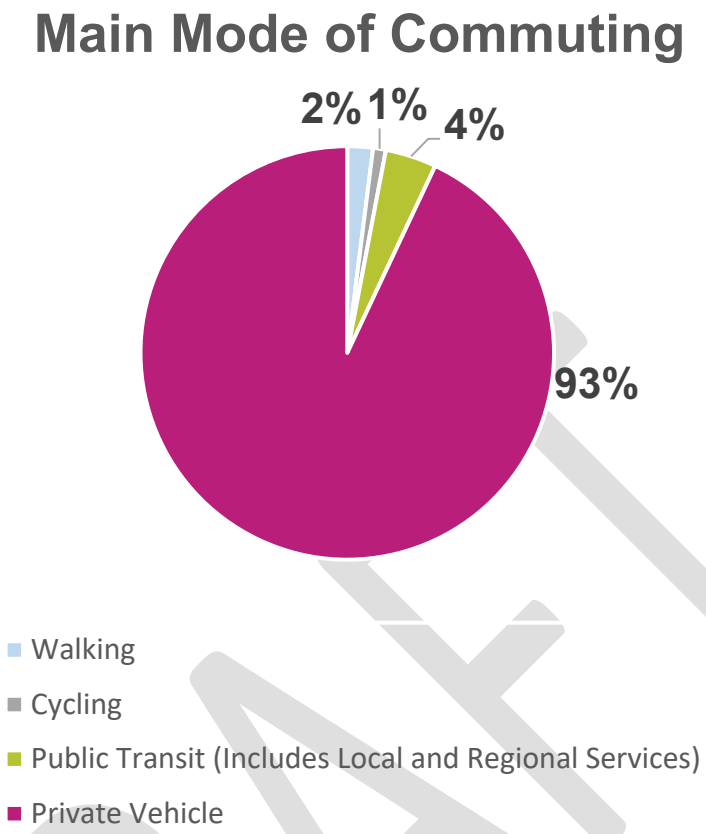
Figure 14. Existing Travel Patterns



Source: Canadian Census, 2021

The private automobile remains the dominant mode of transportation in Milton for all trips. **Figure 15** provides an overview of the current distribution of commute trips by mode in Milton (extracted from the 2021 Canadian Census). Private vehicles account for 93% of all trips, followed by public transit, which includes local and regional services (4%), walking (2%), and cycling (1%).

Figure 15. Modal Split of all Trip Types in Milton



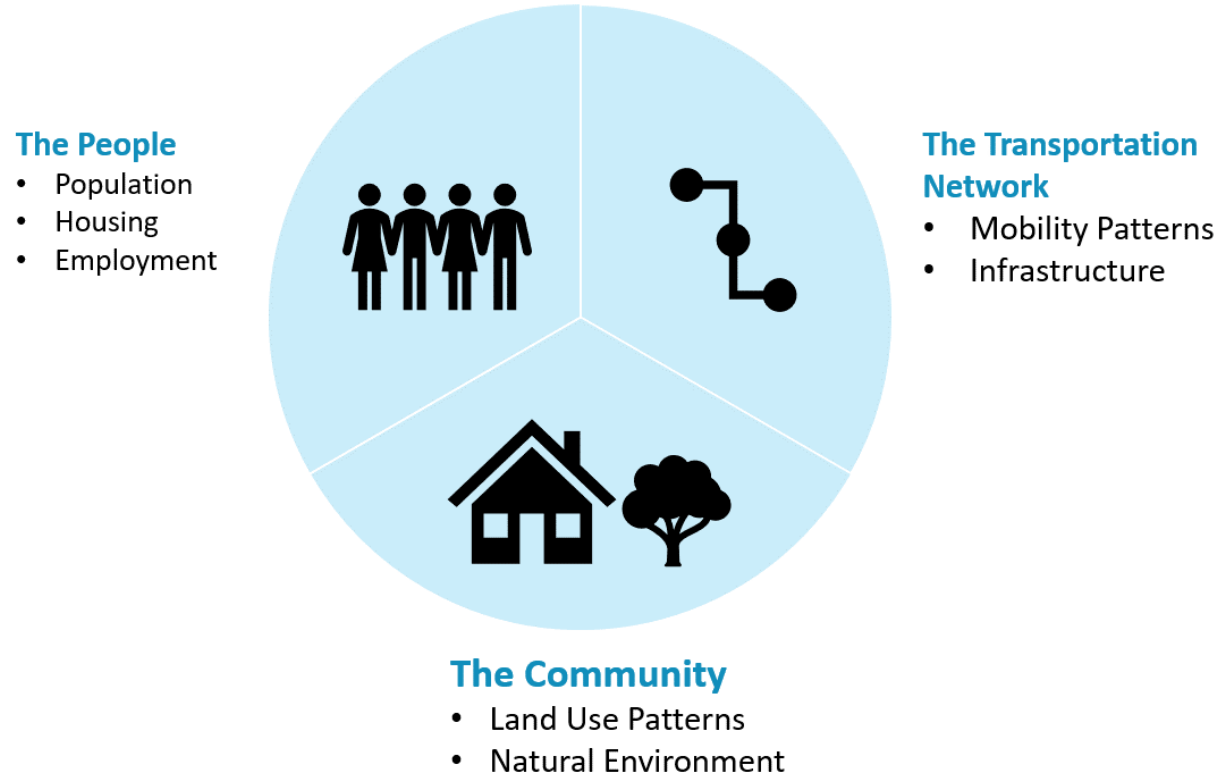
Source: Canadian Census, 2021

1.3 Existing Transportation Conditions

This section analyzes the current transportation network in Milton. Understanding existing transportation challenges and opportunities when considering the projected population growth helps inform multi-modal recommendations to better address future transportation demands. The content of this section can be used to develop a baseline for monitoring the impact of transportation public policy on travel behaviour in the upcoming years. An overview of the key transportation systems and modes, starting from the most vulnerable road user to the least are provided in this section.

The existing transportation conditions and trends of Milton have been reviewed based on the three fundamental priorities of the TMP Update: The People, The Community, and The Transportation Network. These priorities are illustrated in **Figure 16**, which lists all the sub-elements that were analyzed to create a current snapshot of Milton.

Figure 16. Transportation Planning Contextual Lenses



- **The People**: Socio-economic information on the residents or visitors who live, work, and play in the Town of Milton.
- **The Community**: The land use patterns and natural environment which act as origin and destination nodes within and outside the Town including natural, residential, employment, commercial, educational, and recreational areas and/or amenities.
- **The Transportation Network**: The system of roads, multi-use trails, and supporting end-of-trip facilities (for example, parking) that allow people to travel within the Town and around the neighbouring communities.

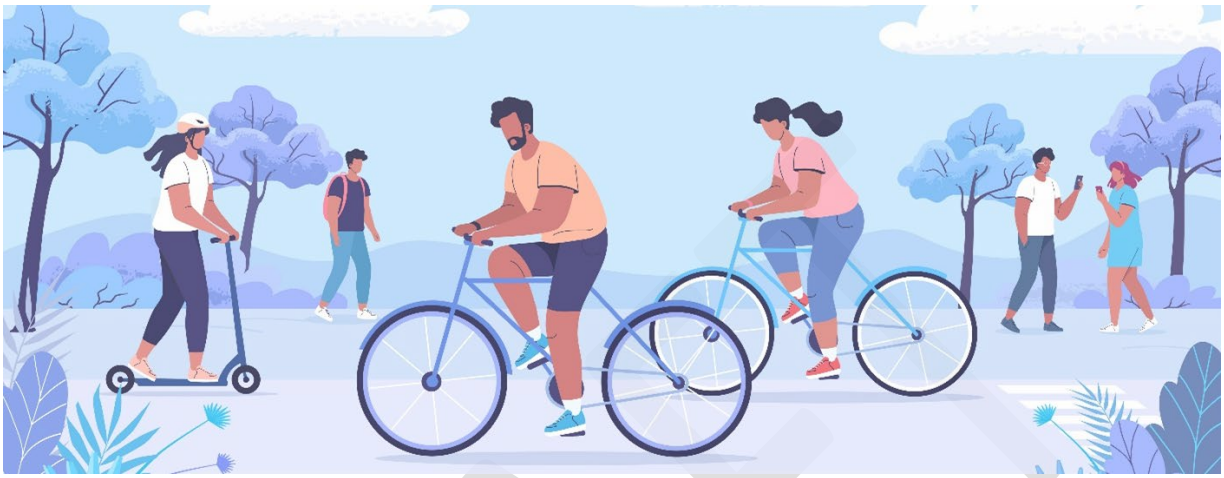
1.3.1 Active Transportation

Active transportation encompasses all forms of movement that are primarily human-powered. This can include walking, cycling, using a wheelchair or other mobility-support device, as well as a variety of other active recreation and transportation modes like rollerblading, skateboarding and more. Given the popularity and the growing usage of semi-powered active transportation mobility options such as electric cargo bikes, electric bikes and electric scooters, these mobility options also fall under the active transportation category.

Active transportation is considered an important part of Milton's transportation system and is a viable transportation alternative for many day-to-day trips. With increasing demands on the transportation system due to the projected significant population growth in Milton, active transportation plays a crucial role in striking the balance

between different transportation modes. Active transportation is a healthy option for the environment and for people.

There are 866.5 kilometres of existing active transportation facilities in Milton. These include facilities owned by the Town of Milton and Halton Region, and facilities within conservation areas. **Table 2** provides an overview of total length by facility types based on 2023 data.



The following are highlights of the current active transportation programs and initiatives provided within Milton:

1. On an annual basis the Town prepares a community connection map which illustrates the various on and off-road linkages available to pedestrians and cyclists;
2. The Town collaborates with Halton Region to implement facilities, specifically along Regional roads. Partnerships are also pursued with the local conservation authorities and organizations (Bruce Trail, Share the Road Coalition, Ontario Trails Council, and so forth);
3. The Town has an online reporting mechanism which allows residents and visitors to document any trail issues or observations which are addressed by Town staff;
4. Cycle Milton is a website that promotes cycling opportunities available in Milton;
5. A pedestrian charter was established in 2013 which identifies the vision and objectives for the future of pedestrian connectivity within the Town;
6. The Town is working to promote alternative transportation for a healthy and active lifestyle. Trails will be created through subdivision and development processes; and
7. The Town works to attain funding from other levels of government to support opportunities to incorporate new sustainable initiatives or planning.

Table 2. Summary of Existing Active Transportation Facilities in Milton

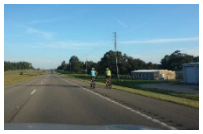
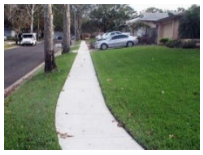
	Multi-Use Trail	**170.5 km**
	Bike Lane	**125.1 km**
	Paved Shoulder	**47.4 km**
	Signed Bike Route	**10.5 km**
	Sidewalk	**393.7 km**
	Conservation Trails	**160.8 km**
	Greenbelt Cycling Route	**24.2 km**
	Bruce Trail	**25.7 km**

Figure 17 and **Figure 18** demonstrate the map of the existing active transportation facilities town-wide and within the urban areas, respectively.

Figure 17. Cycling & Multi-Use Network - Existing & Proposed Recommendations (Town-Wide)

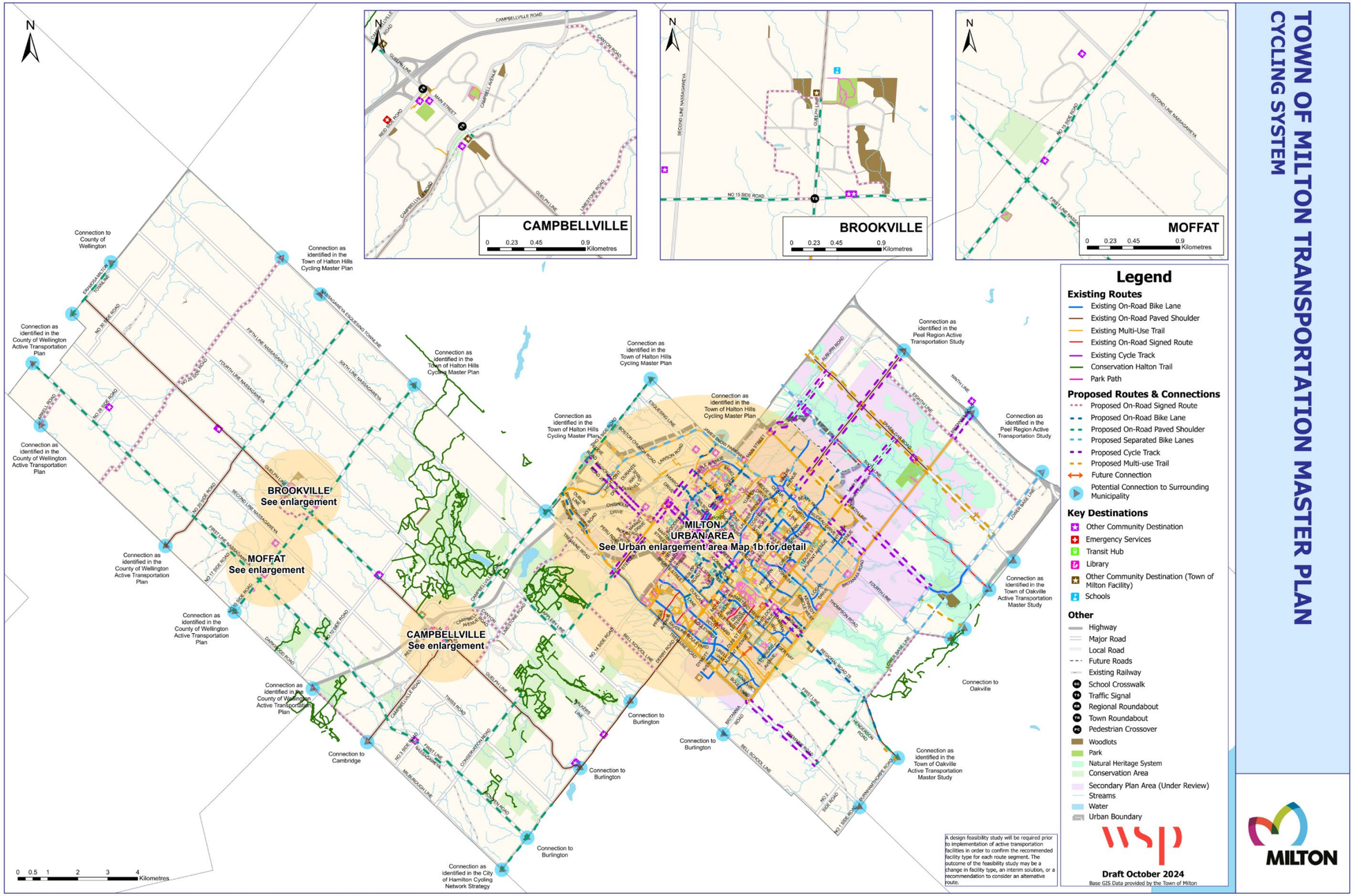
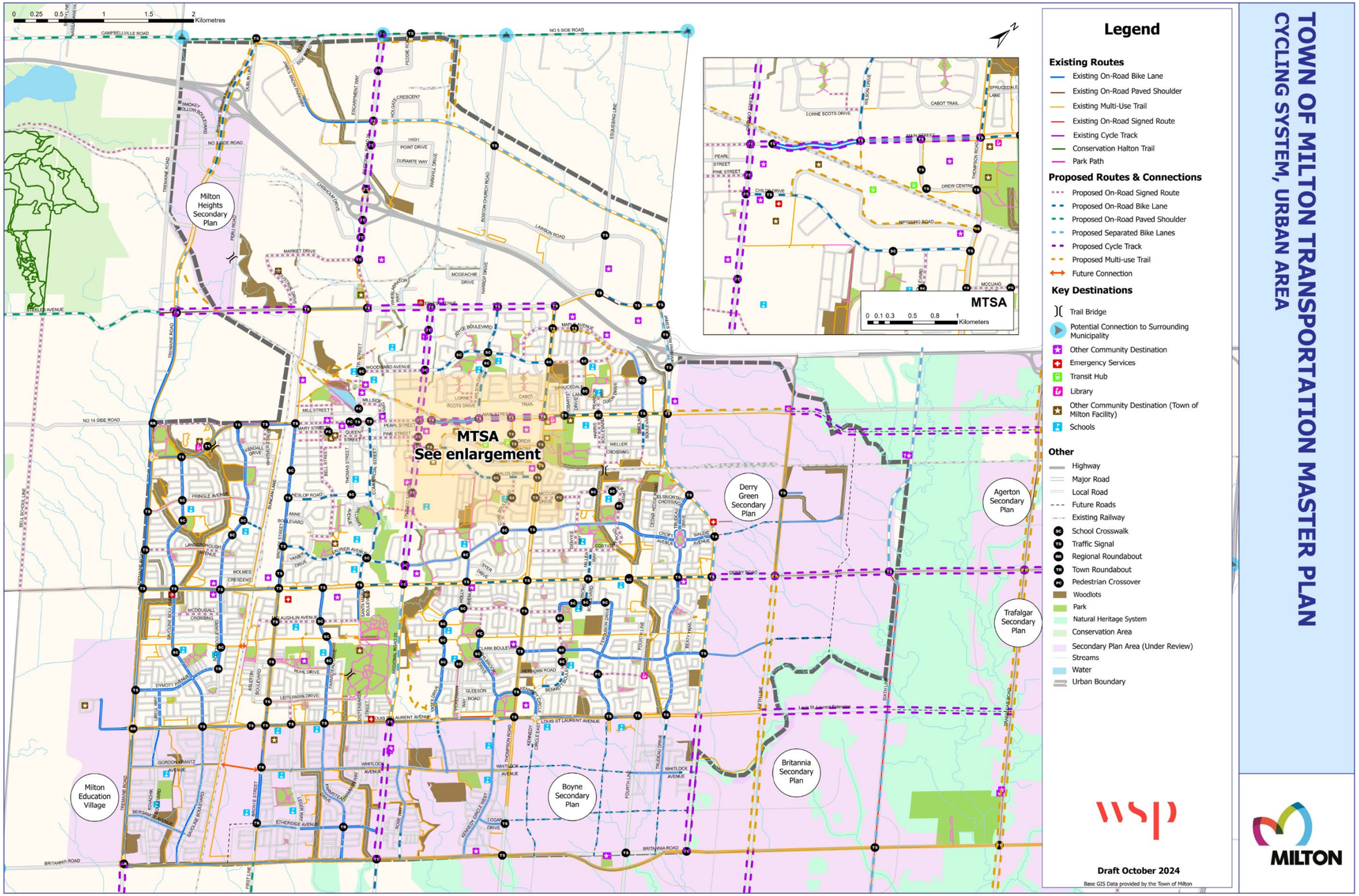


Figure 18. Cycling & Multi-Use Network - Existing & Proposed Recommendations (Milton Urban Area)



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1.3.2 Transit

Public transit including both regional (GO Transit) and local (Milton Transit) represents 4% of the Town's modal split for commuting trips. Of this 4% split, approximately 2-3% represents the local services provided by Milton Transit. This section will provide further insights into the existing public transit services, ridership, and coverage to enhance understanding of the transit network and identify potential improvements needed to better serve the community.

Regional Transit Service

GO Transit, a division of Metrolinx, provides regional public transit service for the GTHA. As displayed in **Figure 19**, GO Transit operates seven commuter rail lines connecting 68 stations including Union Station in downtown Toronto, and 37 regional bus routes that provide additional connectivity when rail services are unavailable or for places without rail access.

Milton is the western most terminus on the Milton GO rail line, which connects to Union Station in downtown Toronto. Prior to the pandemic, the Milton GO Line was the third most travelled corridor in the GO network. However, the pandemic and subsequent shifts to hybrid and remote work resulted in a drop of ridership on the line. As of May 2023, the Milton GO corridor is the fifth most travelled corridor in the network, averaging approximately 10,300 passenger trips each day.

Effective August 2024, nine eastbound trains operate from Milton to Union Station during weekday AM peak periods, between 6:00 AM to 9:30 AM, and nine westbound trains return to Milton in the PM peak period between 3:40 PM to 7:10 PM. Regional rail service is supplemented by GO bus service, which provides counter-peak and two-way off-peak service connecting Milton to Mississauga and Toronto-Union.

In addition to the Milton Line rail and bus services, GO bus serves Milton and plays an important role in connecting Milton with other municipalities within the GTHA. GO bus services are especially useful for traveling to areas that are not accessible by GO rail service. GO bus routes are currently the only transit service that connects Milton to surrounding municipalities including Mississauga, Oakville and Guelph. The list below summarizes existing GO bus service that serve Milton:

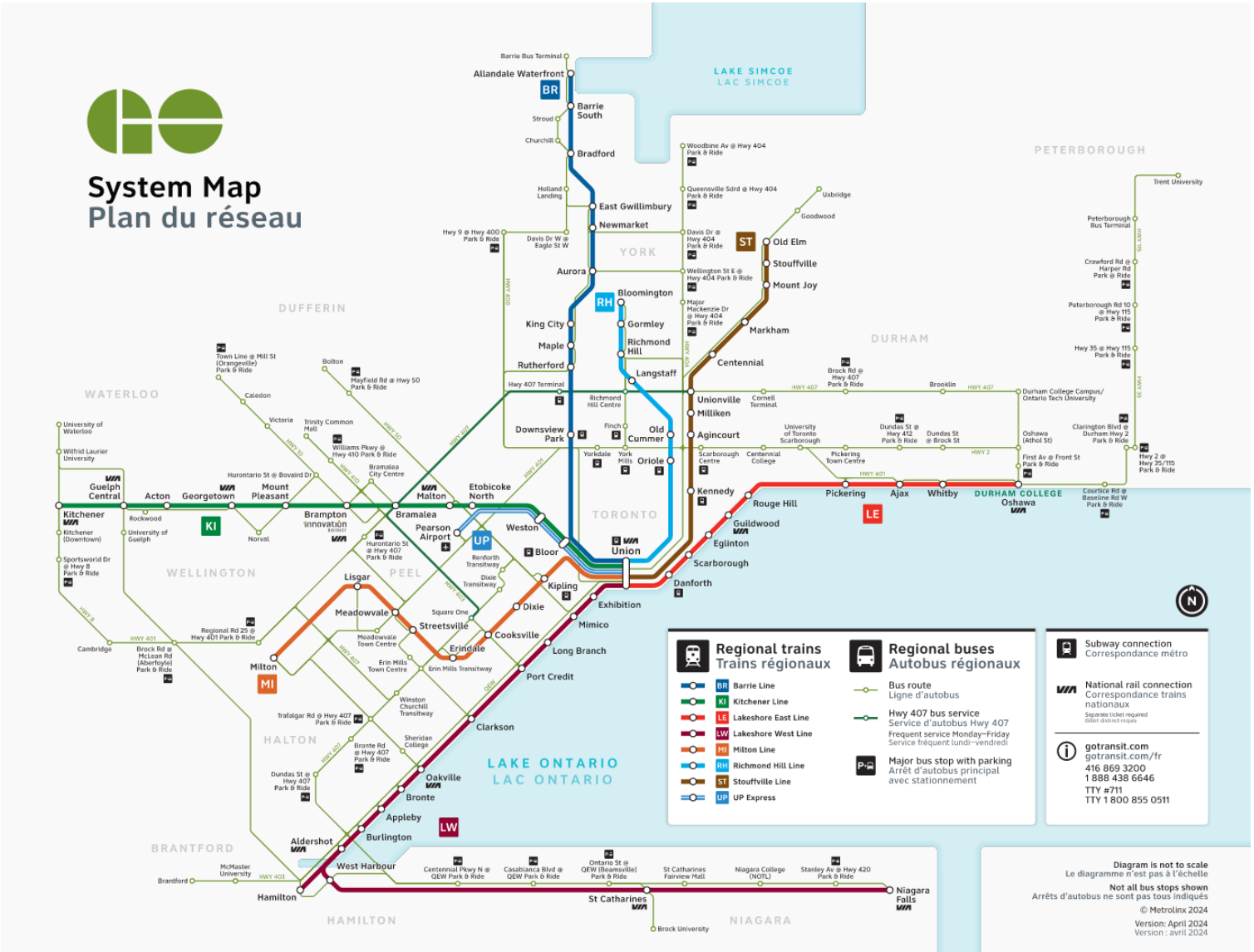
- 27A Milton/North York;
- 21A Milton;
- 25 Waterloo/Mississauga; and
- 29 Guelph/Mississauga.

Routing details are provided in **Table 3**.

Table 3. GO Bus Routes and Descriptions Serving Milton

Route	Description of Route	Travel way	Location of Commuter Parking Lots
27A Milton/North York	This route connects Milton GO Station in Milton to Finch Bus Terminal in North York. The route includes stops in Mississauga.	• Highway 401	• Milton GO Station
21A Milton	This route connects Milton GO Station in Milton to Union Station in Toronto. The route includes stops in Mississauga and Etobicoke.	• Highway 401 • Highway 427 • Gardiner Express	• Milton GO Station
25 Waterloo/ Mississauga	This route connects the University of Waterloo in Waterloo to Square One in Mississauga. The route includes stops in Kitchener, Cambridge, Puslinch and Milton.	• Highway 401 • Highway 407 • Highway 403	• Milton Carpool Lot (Highway 401 and Martin Street – RR25)
29 Guelph/ Mississauga	This route connects Guelph Central GO in Guelph to Kipling Bus Terminal in Etobicoke. The route includes stops in Puslinch, Milton and Mississauga.	• Highway 401 • Highway 407 • Highway 403 • Highway 427	• Milton Carpool Lot (Highway 401 and Martin Street – RR25)

Figure 19. GO Transit System Map



Source: Metrolinx, 2024

Local Transit Service

The Milton Transit fixed-route network is presently being operated under contract by Pacific Western Transit Canada. Milton Transit operates on weekdays between 5:15 AM to 10:30 PM as well as on Saturdays from 7:10 AM to 7:40 PM. Transit services are not provided on Sundays or statutory holidays.

The Town of Milton's current transit network is displayed in **Figure 20**. The system is designed around 10 fixed-routes, 9 of which are primarily designed to provide area coverage around Milton's built-up area. Route 21, Milton Transit's newest route, connects Milton GO Station to Lisgar GO Station along Steeles Avenue, with stops at the Toronto Premium Outlets in Halton Hills as well as the Amazon Fulfillment Centre on Winston Churchill Boulevard. The Town's transit coverage is bolstered by four OnDemand zones, serving industrial zones and lower-density or developing residential areas.

Currently, all routes provided by Milton Transit start and end at Milton GO Station located off Main Street East along Drew Centre. This gives Milton Transit customers the ability to transfer to other routes in the local network or onto GO train and regional bus services for onward travel throughout the Greater Toronto and Hamilton Area. The existing hub includes weather-protected bus shelters, benches, and layover zones and is adjacent to a large commuter-oriented parking lot, primarily serving GO Transit customers.

Transit service is supported by on-street infrastructure including accessible bus stops and connecting adjacent sidewalks and cross-walks. Passenger amenity provision at bus stops range from a simple bus stop flag to benches and shelters.

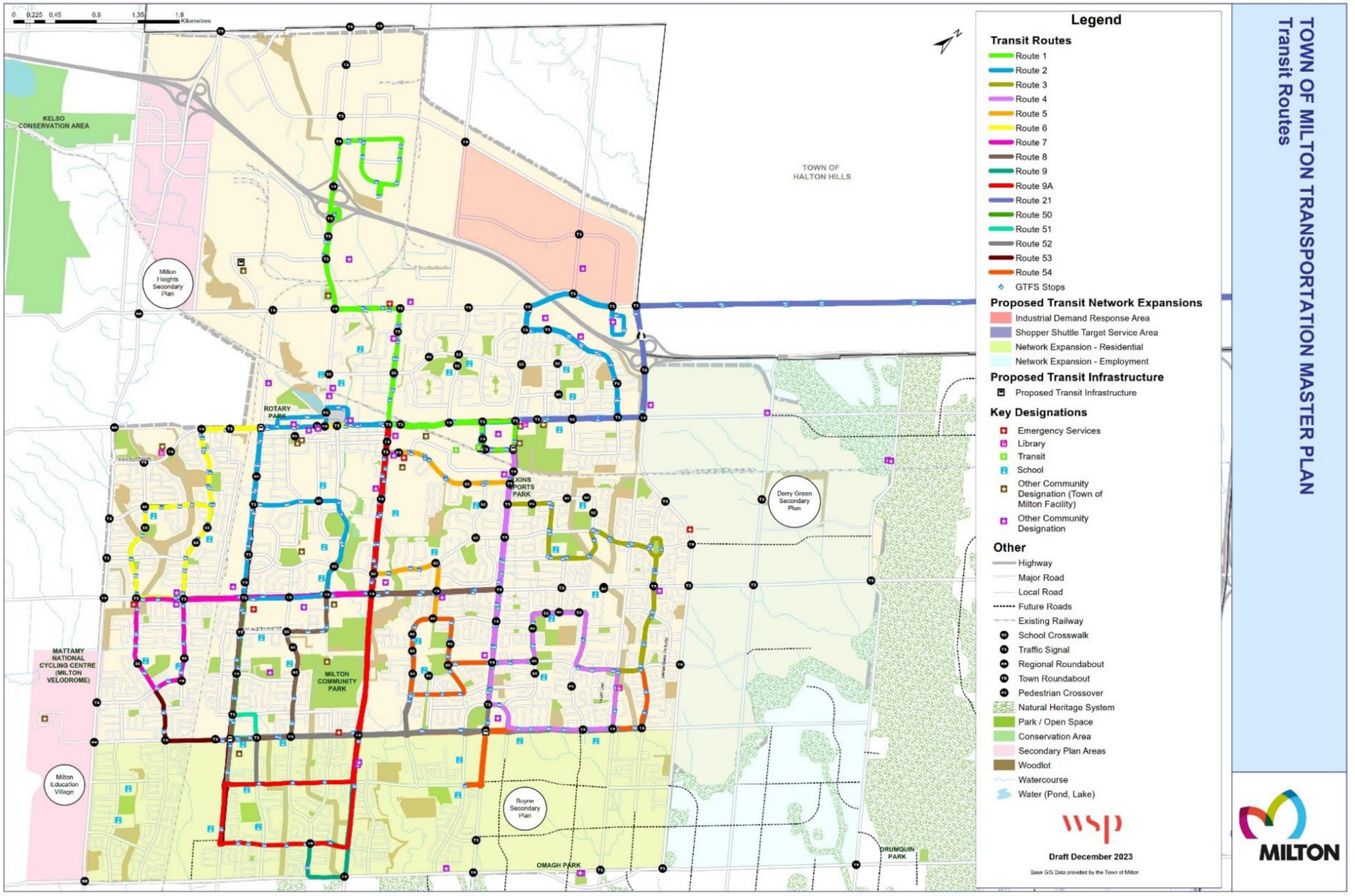
During the school year, Milton Transit additionally provides services for students that are traveling to and from secondary school. These services run from September to June during instructional school days and include routes 50, 51, 52, 53 and 54.

In addition to conventional fixed-route services, Milton Transit operates an OnDemand service which is a flexible, shared-ride service that provides transit to riders within one of the four eligible service areas which includes:

- 401 Industrial Zone;
- Boyne Zone 1;
- Boyne Zone 2; and
- Derry Green Zone.

The Milton Transit OnDemand Service can be booked through the mobile app. Riders are expected to book a ride at least 15 minutes prior to the start of the service day and no later than 40 minutes before the end of the service day. OnDemand service periods coincide with fixed route periods of operation.

Figure 20. Milton Transit Routes



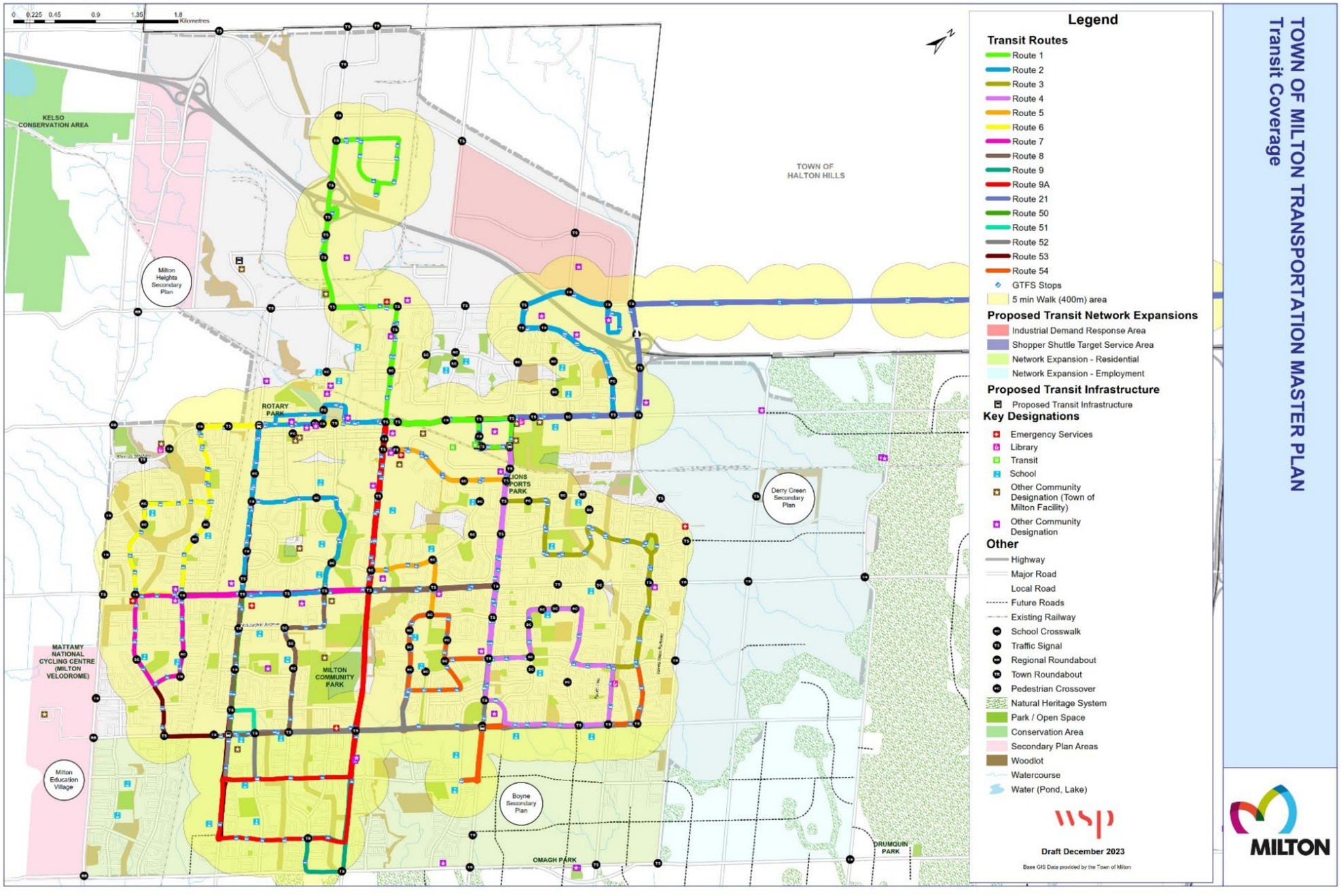
Milton Transit Coverage

Milton Transit's conventional service serves approximately 55% of the Town of Milton with conventional transit, with the vast majority of Milton's developed area being within a 5-minute walking distance or 400m of transit service as shown in **Figure 21**. Specialized services are delivered by Milton access+ which provides door-to-door shared ride transit services for individuals with disabilities. Milton access+ serves the entire municipality and is offered Monday through Friday from 5:20 AM to 10:11 PM and on Saturdays from 7:10 AM to 7:40 PM. Despite most of Milton's built-up community being well served by fixed-route transit, there are a few notable areas that do not fall within 400m coverage ranges. These include the following areas, which are served by Milton Transit OnDemand services:

- The surrounding area of Dorset Park south of Steeles Avenue;
- Newly developed residential neighbourhood to the east of the planned Milton Education Village (southeast of the Louis St. Laurent Avenue / Tremaine Road intersection); and,
- Newly developed residential neighbourhoods northwest of the Britannia Road / Thompson Road South intersection.

Milton Transit has identified various areas for proposed transit network expansion around industrial, residential and employment areas as shown in **Figure 21**. Additionally, the Town has identified various Secondary Plan areas that are generally located near the Town's urban borders. As Secondary Plan areas develop it is important to further investigate transit needs and expansion into those respective communities in short order to effectively serve its residents.

Figure 21. Milton Transit Coverage



Milton Transit Frequency

Table 4 provides an overview of the operational periods for conventional service routes offered by Milton Transit, along with their respective service frequencies.

Milton Transit's peak period service frequency is every 15 to 30 minutes apart from Route 21 – Steeles, which has a 35-minute frequency during the peak period. Milton Transit typically has a service frequency of every 60 minutes during off-peak periods, with three routes operating more frequently including:

- Route 1 – High Point: 40-minute frequency
- Route 2 – Main: 30-minute frequency
- Route 4 – Thompson/Clark: 30-minute frequency

On Saturdays, route frequencies are mostly every 60 minutes with the exception of Route 2 – Main and Route 4 – Thompson/Clark with 30-minute frequencies and Route 21 – Steeles with 35-minute frequency.

Table 4. Milton Transit Service Overview

Route #	Route Name	Conventional Service Period of Operation	OnDemand Service Period of Operation	Peak Period Frequency	Off Peak Frequency	Saturday Frequency
1	High Point (Launching January 2nd, 2024)	**Weekday:** 5:27 AM – 7:27 PM	**Weekday:** 7:30 PM – 10:11 PM	20 minutes	40 minutes	40 minutes
		Weekend: OnDemand Only	**Weekend:** 7:10 AM – 7:40 PM			
2	Main	**Weekday:** 5:27 AM – 10:15 PM	N/A	30 minutes	30 minutes	30 minutes
		Weekend: 7:00 AM – 7:28 PM				
3	Trudeau	**Weekday:** 5:27 AM – 9:15 PM	N/A	15 to 30 minutes	60 minutes	60 minutes
		Weekend: 8:00 AM – 7:28 PM				
4	Thompson / Clark	**Weekday:** 5:27 AM – 9:15 PM	N/A	15 to 30 minutes	30 minutes	30 minutes

Route #	Route Name	Conventional Service Period of Operation	OnDemand Service Period of Operation	Peak Period Frequency	Off Peak Frequency	Saturday Frequency
		Weekend: 7:30 AM – 7:58 PM				
5	Yates	**Weekday:** 5:57 AM – 9:15 PM	N/A	30 minutes	60 minutes	60 minutes
		Weekend: 8:00 AM – 7:28 PM				
6	Scott	**Weekday:** 5:27 AM – 9:15 PM	N/A	30 minutes	60 minutes	60 minutes
		Weekend: 7:30 AM – 6:58 PM				
7	Harrison	**Weekday:** 7:27 AM – 9:15 PM	N/A	15 to 30 minutes	60 minutes	60 minutes
		Weekend: 8:00 AM – 7:28 PM				
8	Willmott	**Weekday:**	N/A	30 minutes	60 minutes	60 minutes

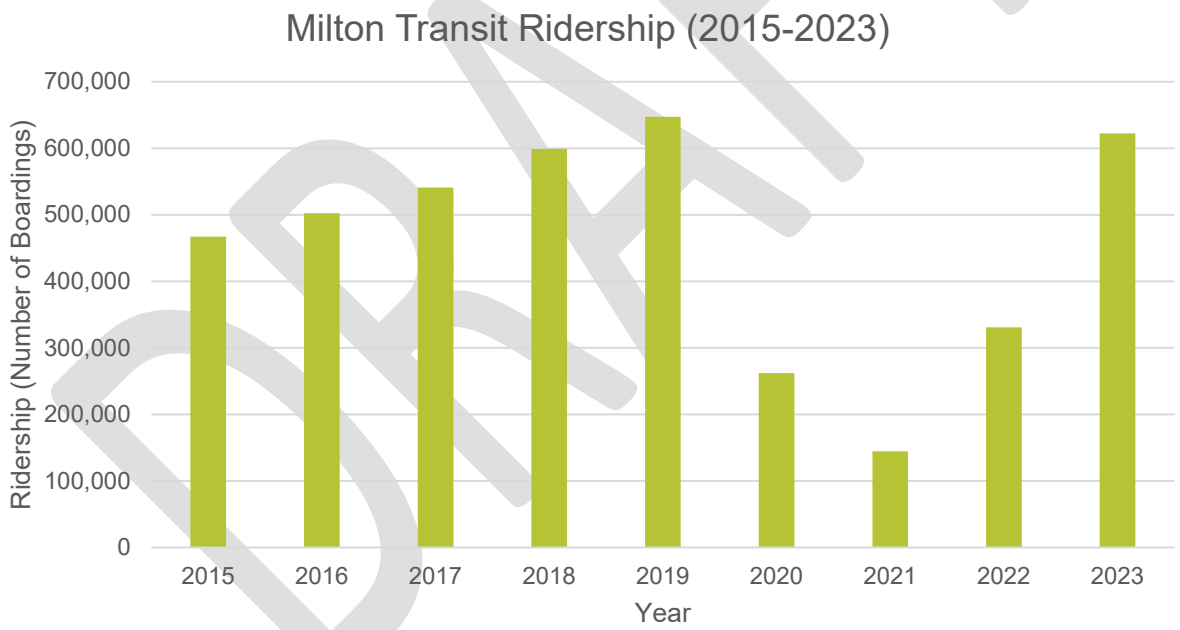
Route #	Route Name	Conventional Service Period of Operation	OnDemand Service Period of Operation	Peak Period Frequency	Off Peak Frequency	Saturday Frequency
		5:57 AM – 8:45 PM **Weekend:** 7:30 AM – 6:58 PM				
9/9A	Ontario South	**Weekday:** 5:27 AM – 9:15 PM **Weekend:** 7:30 AM – 6:58 PM	N/A	30 minutes	60 minutes	60 minutes
21	Steeles	**Weekday:** 5:57 AM – 10:17 PM **Weekend:** 7:27 AM – 7:37 PM	N/A	35 minutes	35 minutes	35 minutes

Milton Transit Ridership

Prior to the COVID-19 pandemic, Milton Transit ridership was steadily increasing with boarding numbers growing annually from 2015 to 2019. In 2019, ridership peaked at nearly 650,000 annual rides. However, the pandemic resulted in a 77% drop to 145,000 annual rides in 2021. Encouragingly, ridership began to rebound in 2022. In 2023, Milton Transit experienced record high ridership levels by the end of the year, surpassing pre-pandemic levels. Analysis conducted for the Milton Transit Five-Year Service Plan and Transit Master Plan Update highlights the rebound in ridership is driven by Route 1, which was re-instated in January 2024 to serve the new Conestoga College Campus. Ridership growth is also driven by growth on the 21 Steeles route, offering inter-municipal transit by connecting Milton GO with Lisgar GO in Mississauga. Post-secondary enrollment is set to almost quadruple in Fall 2024, which will likely drive further ridership growth.

Figure 22 presents Milton Transit ridership boardings over the past nine years demonstrating the rise and fall of ridership before and after the pandemic.

Figure 22. Milton Transit Ridership

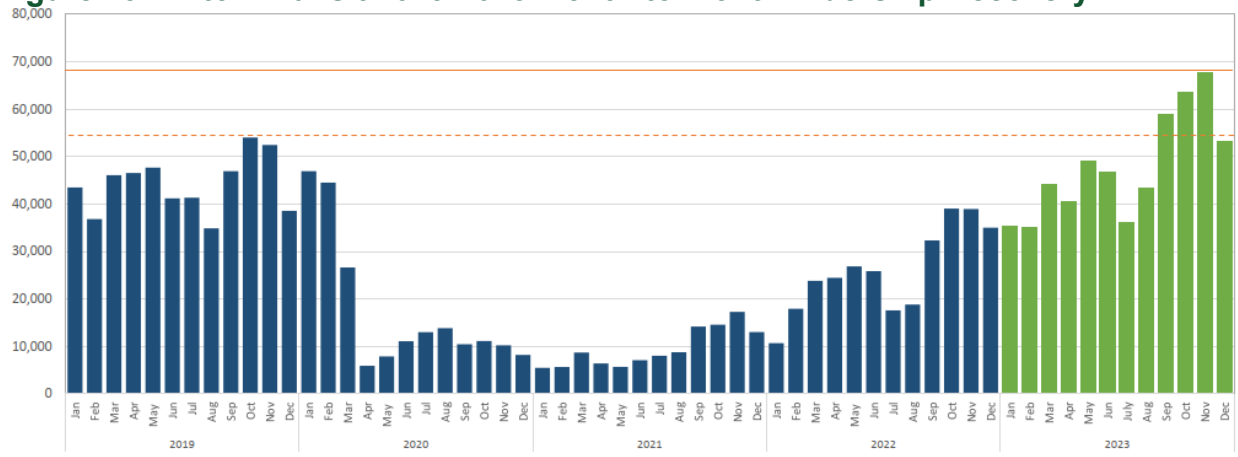


Source: Town of Milton, 2024

In 2022, Milton Transit began to experience recovery from the impacts of COVID-19, reflecting positive trends in both service delivery and ridership. The system's performance during this period demonstrated growth in both delivery of service hours and ridership with an 18% increase in service hours and a 147% increase in ridership compared to 2021 levels. This trend continued in 2023, with ridership rebounding to pre-pandemic levels.

Figure 23 displays monthly ridership prior to, during, and following the pandemic through December 2023. As displayed, monthly ridership has been steadily rebuilding since summer 2021.

Figure 23. Milton Transit 2019-2023 Month-to-Month Ridership Recovery



Source: Town of Milton, 2024; Conventional services only, excludes OnDemand

1.3.3 Roads

1.3.3.1 *Level of Service Review – Regional Forecasting Model*

Halton Region is currently undertaking an update to the regional transportation model. The existing model has been calibrated to the current (2016) Transportation Tomorrow Survey and includes the Regional and Provincial Road network within Halton Region. Output from the calibrated existing conditions model was provided by Halton Region.

The existing model output includes measurements of traffic congestion in the form of Volume-to-Capacity (V/C) ratios, which are calculated as the modeled traffic volumes on each road link divided by the total capacity of that link. V/C ratios of less than 0.8 represent acceptable operations, 0.8 to 0.9 indicates noticeable congestion, 0.9 to 1.0 indicates extensive congestion, and V/C ratios above 1.0 indicate that that the traffic demand on the roadway exceeds the available capacity and extensive congestion is expected. **Figure 24** and **Figure 25** provide an illustration of the modeled V/C ratios in Milton for the weekday AM and PM peak periods, respectively.

Figure 24. Existing AM Volume to Capacity Ratios

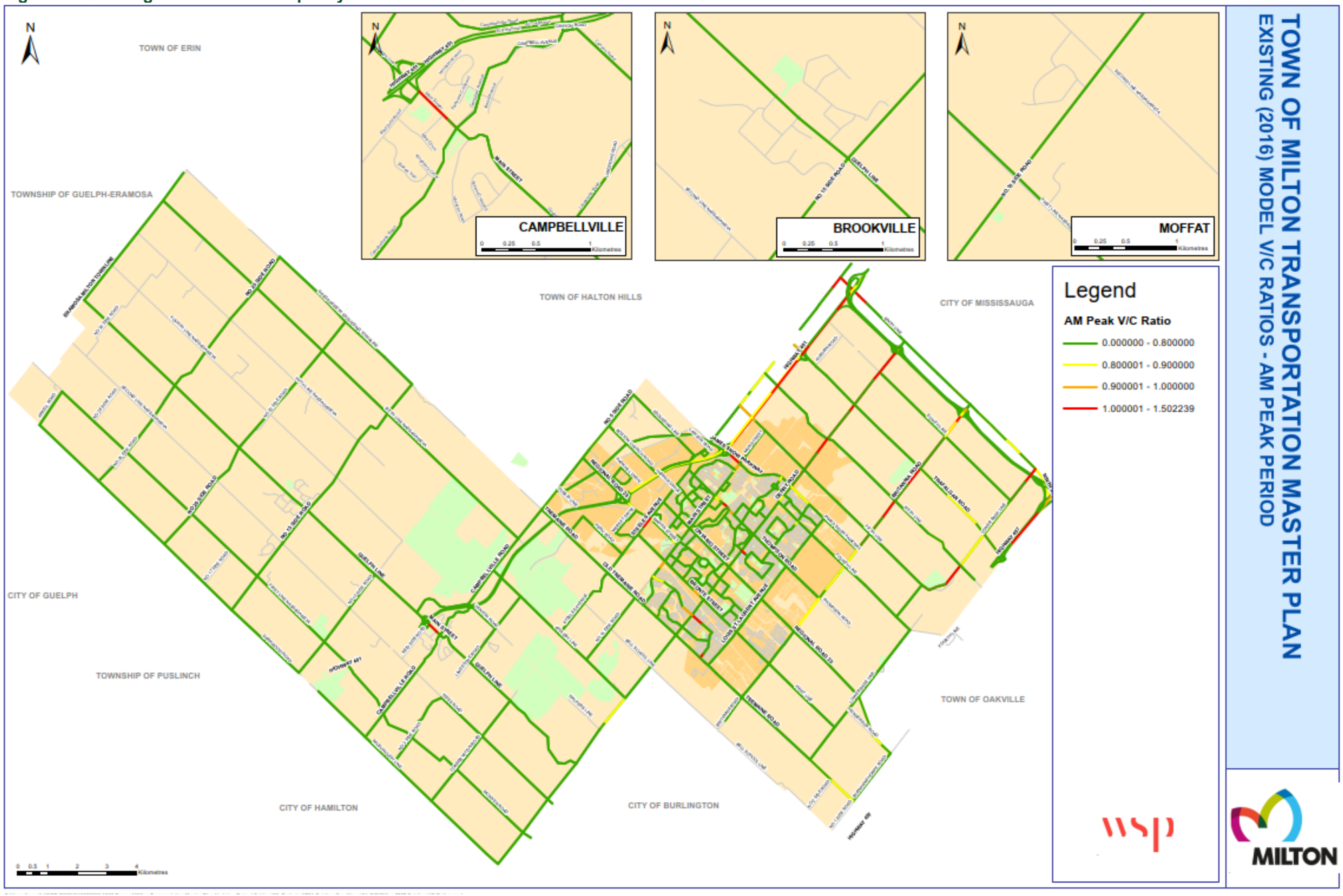
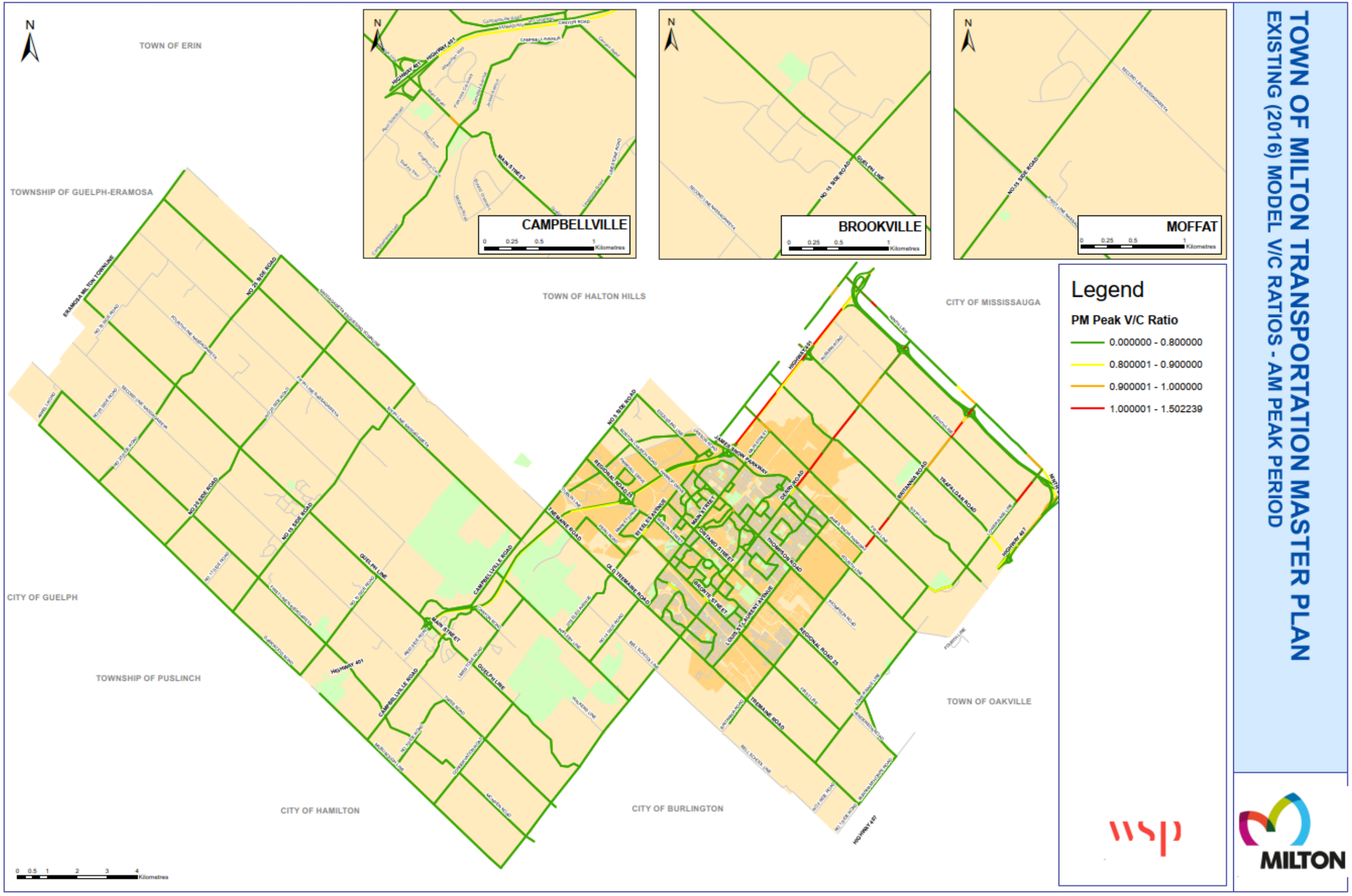


Figure 25. Existing PM Volume to Capacity Ratios



The existing model data indicates that traffic congestion in the morning peak is predominately along east-west routes that provide a commuter link from Milton towards Mississauga and Toronto; AM congestion is noticeable on Highway 401, Derry Road, Britannia Road, and the portions of Lower Base Line and Highway 407 approaching the municipal boundary with Mississauga. Some north-south segments connecting to these corridors are also congested in the morning, including segments on James Snow Parkway and Trafalgar Road. The model also indicates some AM congestion on Campbellville Main Street approaching the interchange with Highway 401. Most of the modeled road links within the Milton Urban area are expected to operate at an acceptable level of service, although there are some smaller congested segments visible on Steeles Avenue near Martin Street, Thompson Road near Main Street and Scott Boulevard approaching Derry Road.

Similar to the AM peak, the modeled PM peak hour congestion is most heavily concentrated on the east-west routes connecting to Mississauga: Highway 401, Derry Road, Britannia Road and sections of Lower Base Line and Highway 407. Most road segments in the urban area operate at a V/C of 0.8 or better during the PM peak, with the exception of short segments in the vicinity of Highway 401.

Midday and evening model output was also provided from the existing model. This data indicates that all roads in the network will operate at a V/C ratio of below 0.8 during these times.

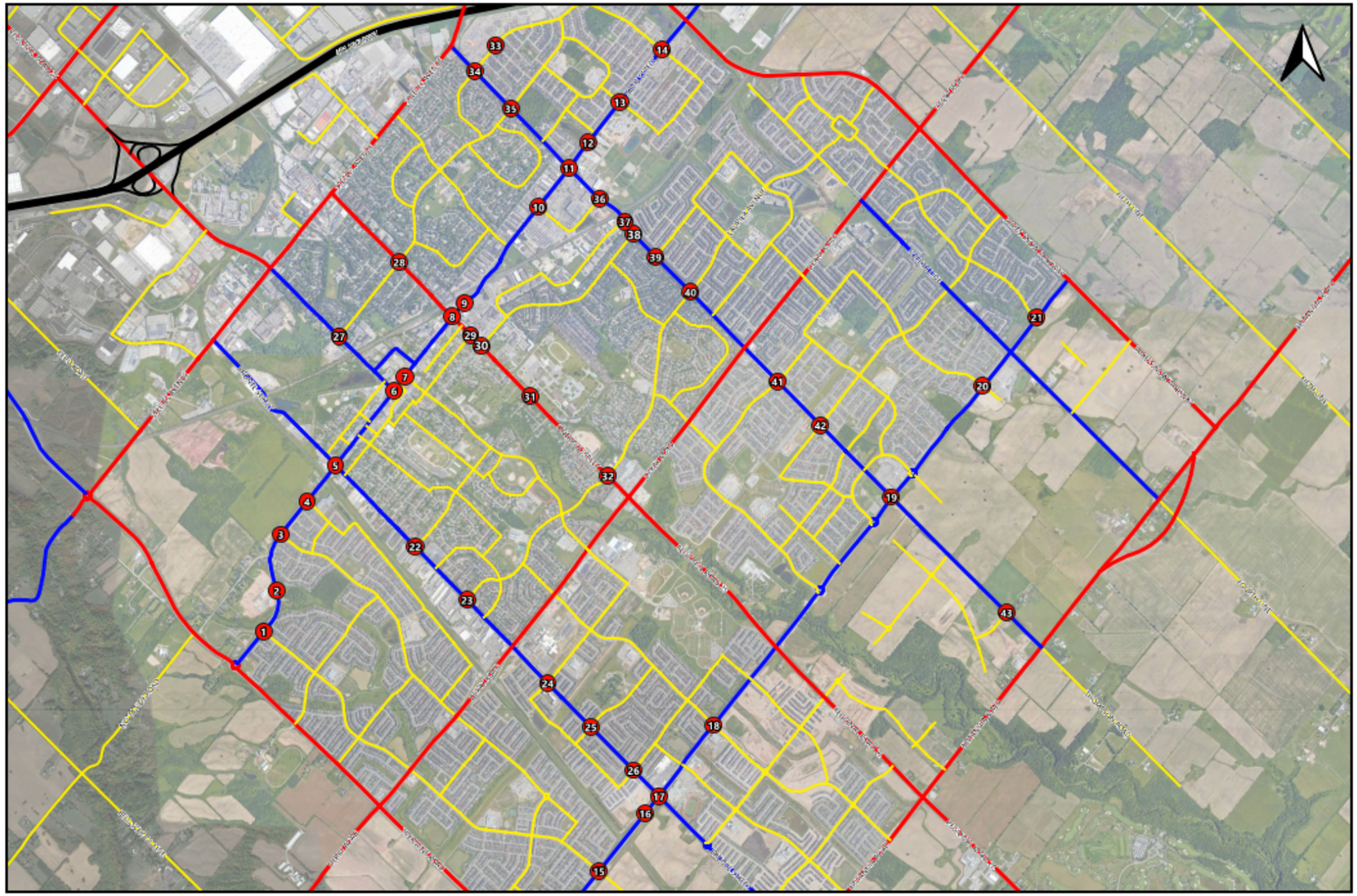
Overall, congestion in the existing conditions regional forecasting model is consistent with commuting behaviour from Milton towards Mississauga and Toronto during the AM peak and the reverse commute from Mississauga and Toronto to Milton during the PM peak.

1.3.3.2 *Level of Service Review – Synchro Intersection Analysis*

Study Intersections

An existing conditions review of intersection operations in the Milton Urban Area has been undertaken at 43 key intersections during the PM peak hour, with the goal of identifying operational improvements. Two of the key intersections were also analyzed during the AM peak hour as that is when the critical movements at these intersections occurred. All the study intersections are signal controlled and **Figure 26** shows the study intersection locations. **Appendix A** highlights detailed counts and signal timing plans for the examined intersections.

Figure 26. Study Intersection Locations



Legend

Road Network

- Highway
- Highway Ramp
- Major Arterial
- Minor Arterial
- Collector

Intersection

- Signalized

*Note:
01 - Intersections analyzed in PM
08 - Intersections analyzed in both AM and PM

500 0 500 1,000 m

No.	Intersection Name
1	Main Street West and Savoline Boulevard
2	Main Street and Sherwood
3	Main Street West and Scott Boulevard
4	Main Street West and Whitmer Street
5	Bronte Street North and Main Street West
6	Martin Street and Main Street East
7	Main Street East and Commercial Street
8	**Main Street East and Ontario Street North**
9	Main Street East and Mall Entrance
10	Main Street East and Drew Centre
11	**Thompson Road and Main Street**
12	Main Street East and Leisure Centre Driveway
13	Main Street E and Harris / Pearson
14	Main Street East and Maple / Sinclair
15	Savoline Boulevard and Louis St Laurent Avenue
16	Louis St Laurent Avenue and Commercial Plaza
17	Bronte Street South and Louis St Laurent Avenue
18	Louis St Laurent Avenue and Farmstead Drive
19	Thompson Road South and Louis St Laurent Avenue
20	Ferguson Drive and Louis St Laurent Avenue
21	Trudeau Drive and Louis St Laurent Avenue
22	Bronte Street South and Heslop Road
23	Bronte Street South and Laurier Avenue
24	Bronte Street South and McLaughlin Avenue
25	Ruhl Drive and Bronte Street South
26	Leiterman Drive and Bronte Street South
27	Woodward Avenue and Martin Street
28	Ontario Street North and Woodward Avenue
29	Ontario Street South and Pine Street
30	Ontario Street South and Childs Drive
31	Ontario Street South and Donald Campbell Avenue
32	Laurier Avenue and Ontario Street South
33	Maple Avenue and Galbraith Boulevard
34	Thompson Road North and Maple Avenue
35	Thompson Road North and Woodward Avenue
36	Thompson Road and Drew Centre
37	Thompson Road and Nipissing Road
38	Thompson Road and Childs Drive
39	Thompson Road and McCuaig Drive
40	Thompson Road and Laurier Avenue
41	Yates Drive and Thompson Road South
42	Clark Boulevard and Thompson Road South
43	Thompson Road South and Logan Road

Traffic Operations

The traffic operations analysis was conducted using the Synchro version 11 software following the Highway Capacity Manual (HCM) 2000 methodology. The intersection capacity analysis is based on volume-to-capacity (v/c) ratios and level of service (LOS). LOS is a measure of driver discomfort and frustration, fuel consumption, and lost travel time defined in terms of delay. The LOS categories and delay criteria for signalized intersections are summarized in **Table 5**, with detailed descriptions provided in **Appendix B**.

Table 5. Level of Service and Delay Criteria

Level Of Service (LOS)	Average Control Delay (seconds / vehicle)
	Signalized
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Under the Town's Traffic Impact Study (TIS) Terms of Reference, the following criteria indicate critical conditions and signify that mitigation measures may need to be considered:

- Volume/Capacity (V/C) ratios for overall intersection operations, through movements or shared through/turning movements increased to 0.85 or above;
- V/C ratios for exclusive movements increased to 0.95 or above; or
- Queues for an individual movement are exceeding available turning lane storage.

The existing conditions intersection capacity analysis includes a summary of the overall intersection and critical movement operations, with a focus on performance measures such as LOS, v/c ratios and delay. Overall and critical movements are summarized in **Appendix C**. Detailed Synchro output sheets for the existing conditions are provided in **Appendix D**.

The queueing results from the Synchro model were summarized for exclusive movements with storage lanes to determine whether the currently available storage lengths can accommodate the existing queues. A summary of the 95th percentile queues are provided in **Appendix C**. Queues for all movements can be found in the Synchro output sheets, which are provided in **Appendix D**.

The existing lane configurations, traffic data with intersection turning movement count details, traffic volumes, intersection capacity analysis, and intersection queuing analysis are included in **Appendix E**.

Existing Analysis Findings

The existing conditions intersection capacity analysis results show that most intersections are operating within capacity during the AM and PM peak hours. It is also observed that under existing conditions, the 95th percentile queues at several turning movements are exceeding the available storage lengths. In these instances, average queues are also provided to indicate typical queue lengths, most of which are within

storage lane capacity.

The following intersections and movements are operating with critical v/c ratios (the Town's criteria for identifying impact mitigations) for the existing conditions:

- Main Street E and Ontario Street N
  - Eastbound and westbound left turn movements during AM peak hour conditions; and
  - Westbound left and westbound through-right movements during PM peak hour conditions.
- Main Street E and Thompson Road intersection is operating at overall v/c ratio greater than 0.85 during AM and PM peak hour conditions with critical movements:
  - Westbound left turn movements during AM peak hour conditions; and
  - Eastbound through-right, westbound left, and southbound through-right movements during PM peak hour conditions.
- Ontario Street S and Childs Drive intersection is operating at overall V/C ratio of 0.88 during PM peak hour conditions with one critical movement:
  - Northbound through-right movement during PM peak hour conditions.
- Ontario Street S and Laurier Avenue is operating with one critical movement:
  - Westbound through-right movement during PM peak hour conditions.
- Thompson Road N and Maple Avenue is operating with a critical movement:
  - Westbound through-left movement during PM peak hour conditions.
- Thompson Road S and Drew Centre intersection is operating at critical V/C ratio of 0.90 during PM peak hour conditions with a critical movement:
  - Eastbound left turn movement during PM peak hour conditions.
- Thompson Road S and Laurier Avenue is operating with one critical movement:
  - Eastbound left turn movement during PM peak hour conditions.

Recommendations for Improving Existing Traffic Operations

The following are the mitigation measures identified to improve traffic operations at the above intersections that are operating at critical V/C ratios. Note that the geometric improvements identified below are subject to review of their feasibility to construct based on land availability and constructability:

- **Main Street E and Ontario Street N:** The AM peak hour critical movements can be eliminated by optimizing signal timing. However, during the PM peak hour, traffic operations can only be improved by adding a 30m westbound right turn storage and optimization of the signal timing. Through cursory review of Google Streetview images, it appears that private land acquisition is needed for constructing this right turn storage lane.
- **Main Street E and Thompson Road:** The AM peak hour critical movements can be eliminated by optimizing signal timing. However, during the PM peak hour, traffic operations can only be improved by adding eastbound and southbound right turn lanes with 30m storage and optimization of the signal timing. Through cursory review of Google Streetview images, it appears that there is enough right-of-way available for constructing an eastbound right turn lane, while private land acquisition will be necessary to construct the southbound right turn lane.

- **Ontario Street S and Childs Drive:** The operations at this intersection during the PM peak hour can be improved by adding a northbound right turn lane with a 30m storage length and optimization of the signal timing. It is to be noted that the northbound right turn lane is scheduled to be constructed as part of the Nipissing Road improvements.
- **Ontario Street S and Laurier Avenue:** The operations at this intersection during the PM peak hour can be improved by adding northbound and southbound right turn lanes with 30m storage length and optimization of the signal timing. Through cursory review of Google Streetview images, it appears that there is enough right-of-way available for constructing northbound and southbound right turn lanes at this intersection. However, adding a northbound right turn lane might be a challenge due to the presence of utility poles at the intersection.
- **Thompson Road N and Maple Avenue:** The operations at this intersection during the PM peak hour can be improved by adding a westbound left turn storage lane with approximately 85m storage and optimization of the signal timing. The westbound left turn lane may be added by converting the inside shared through/left lane to a left turn only lane and adding a 30m right turn storage lane. The existing westbound right turn lane can be converted to a through lane only with a slight realignment. Through cursory review of Google Streetview images, it appears that there is enough right-of-way available for constructing a westbound right turn lane at this intersection.
- **Thompson Road S and Drew Centre:** The eastbound left turn operations will be improved by optimization of signal timings. With the signal timing changes, the eastbound left turn movement will be operating at V/C ratio of 0.93 and northbound through movement with a V/C ratio of 0.86, while the overall intersection will be operating at the V/C ratio of 0.9.
- **Thompson Road S and Laurier Avenue:** The operations at this intersection during the PM peak hour can be improved by adding eastbound and westbound right turn lanes with 20m storage length and optimization of the signal timing. Through cursory review of Google Streetview images, it appears that there is enough right-of-way available for constructing both the eastbound and westbound right turn lanes at this intersection.

It is to be noted that the geometric improvements identified at the intersections may require additional ROW through private/public land acquisition and should be studied further for the feasibility of implementation of the identified improvements. No specific improvements were identified to address the queue lengths exceeding the available storage lengths as most of the movements can accommodate the average queue lengths.

1.3.4 Goods Movement

Truck Routes

Major arterial streets that are direct, linear, support heavy vehicles, and connect to controlled-access highways are typically used for goods movements. Highway 401 and Highway 407 are primary trucking routes that are used for inter-regional travel. Additionally, all Regional roads in Halton Region are designed to accommodate truck traffic for goods movement. There are approximately 20 local trucking companies that

operate out of Milton as well as three courier services, four distribution centres and two aggregate quarries that use both local and regional truck routes.

Rail Corridor

The Town of Milton has two major rail corridors that run through it which include the Canadian Pacific Kansas City Railway (CPKC) Galt Subdivision and the Canadian National Railway (CN) Halton Subdivision. The Galt Subdivision is used by CPKC for intermodal freight transport and used by Metrolinx for the Milton line commuter rail service connecting to Toronto Union Station. The Galt Subdivision of CPKC is used to move freight. It also moves passengers via GO commuter rail services. CN has also proposed a major intermodal facility in the southwest portion of Milton. At the time of writing, Federal Approval for construction of this facility in the proposed southwest location continues to be disputed.

2 Shaping Milton

The Town's TMP Update is directed and supported by policies at the Federal, Provincial, Regional, and Town level. Since the implementation of the TMP in 2018, some policies have been updated or added. This section will provide a high-level description of the policies that influence and support the TMP Update.

2.1 Policy Framework

2.1.1 In Effect Official Plan

The relationship between land use planning and transportation planning is tightly intertwined. As new development occurs, population and employment grow, which increases the need for enhanced and efficient transportation connections and increased the need to manage growth's impacts on urban and rural communities. By integrating land use and transportation planning, we can better address future travel demands.

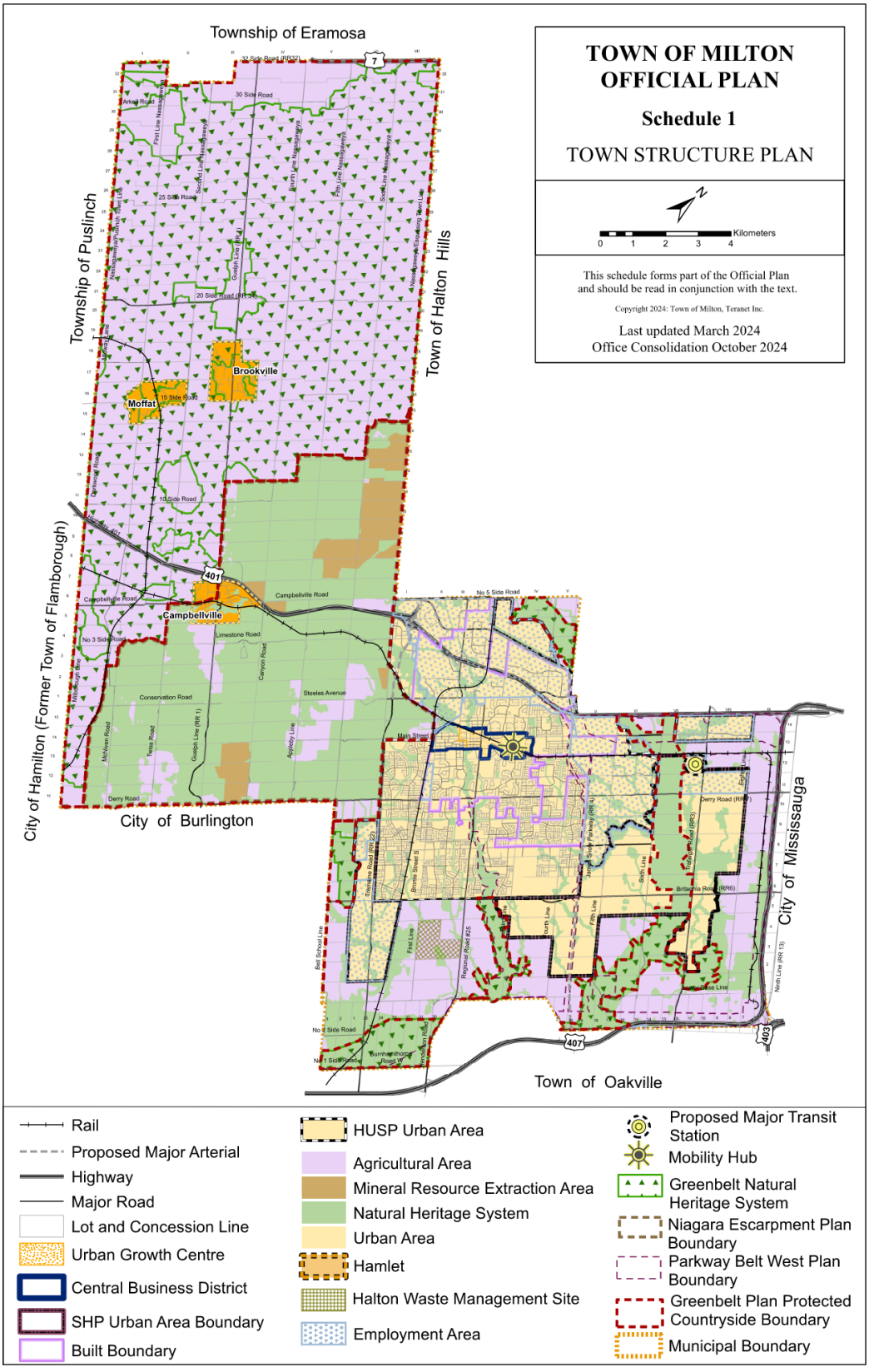
The Town of Milton's community structure is outlined in the Official Plan. **Figure 27** shows Schedule 1 of the Office Consolidated 2024 Official Plan and provides an overview of key areas throughout the Town. As the Town continues to grow, it is important to monitor the residential and employment growth areas to be able to provide the connections needed to travel around and within the Town.

Milton's urban areas are mainly concentrated on the east side of municipality. The main urban area contains a new Major Transit Station Area (MTSA) at Trafalgar Road in addition to the existing Downtown Milton GO Station. In general, land use in the urban area consists of: employment areas adjacent to 400 series highways and rail corridors; mixed use and residential community areas from Tremaine Road to James Snow Parkway and around Britannia Road/Trafalgar Road, shown in the Town's Official Plan land use designations in **Figure 28**. The Milton GO MTSA/ Downtown Milton Urban Growth Centre (UGC) is located within the Central Business District, which will further reinforce the area as a major centre of activity in the Town. As the different growth areas continue to develop, it will likely intensify traffic conditions on major roads such as Derry Road and Ontario Street and this development will simultaneously create opportunities to enhance local connectivity.

The northwest side of the Town consists of predominantly rural agricultural areas and natural heritage landscapes protected by the Greenbelt Plan and the Niagara Escarpment Plan. **Figure 29** illustrates in further detail where the Greenbelt and Niagara Escarpment Plan area are located within the Town of Milton. This area also incudes Milton's rural hamlets.

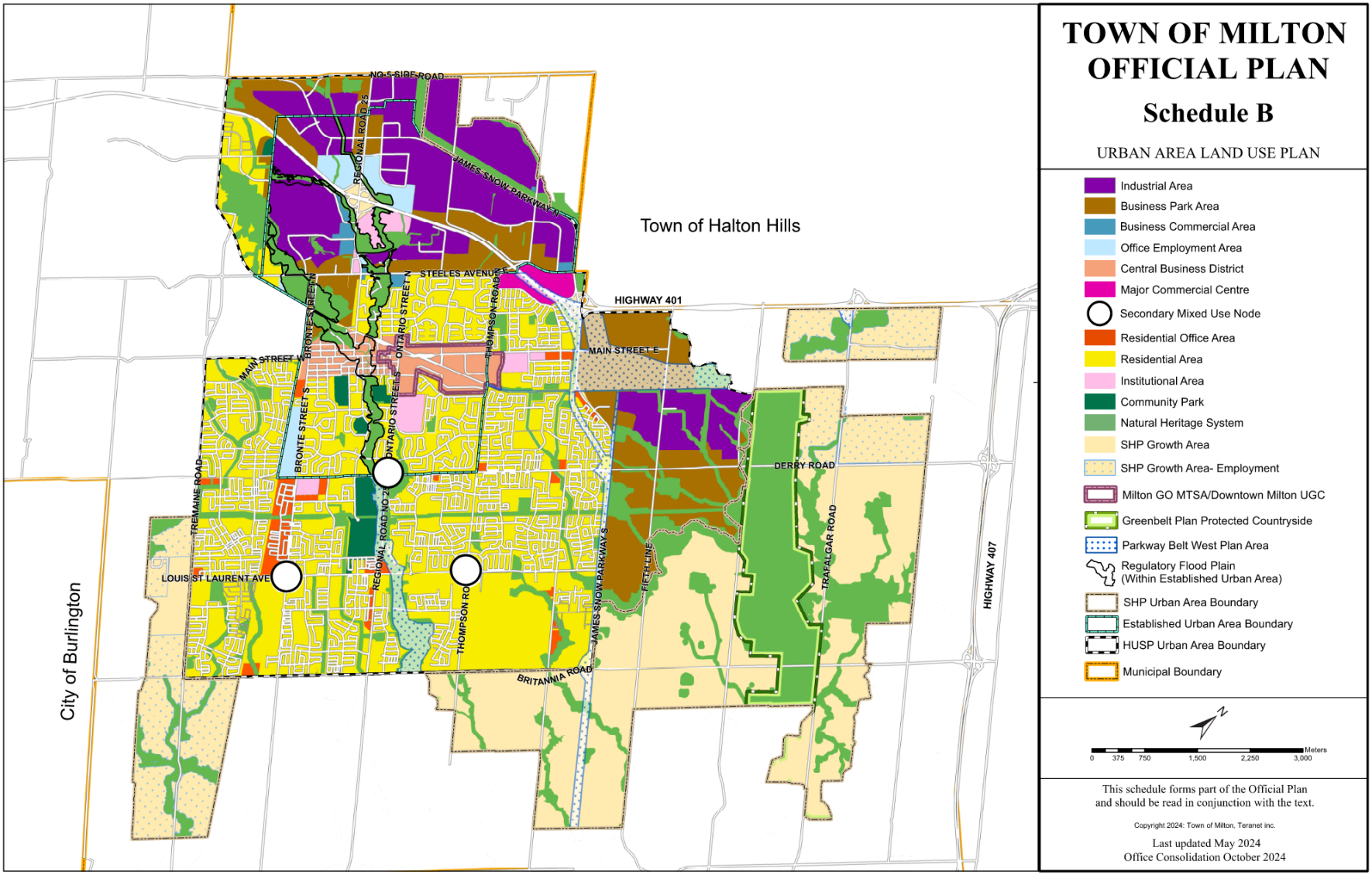
The Town's unique charm consists of a blend of urban and rural landscapes, and modern and historic features, all set against the backdrop of the Niagara Escarpment, as well as urban settlement areas that each have their own set of unique opportunities and influences across the transportation network.

Figure 27. Town Structure Plan



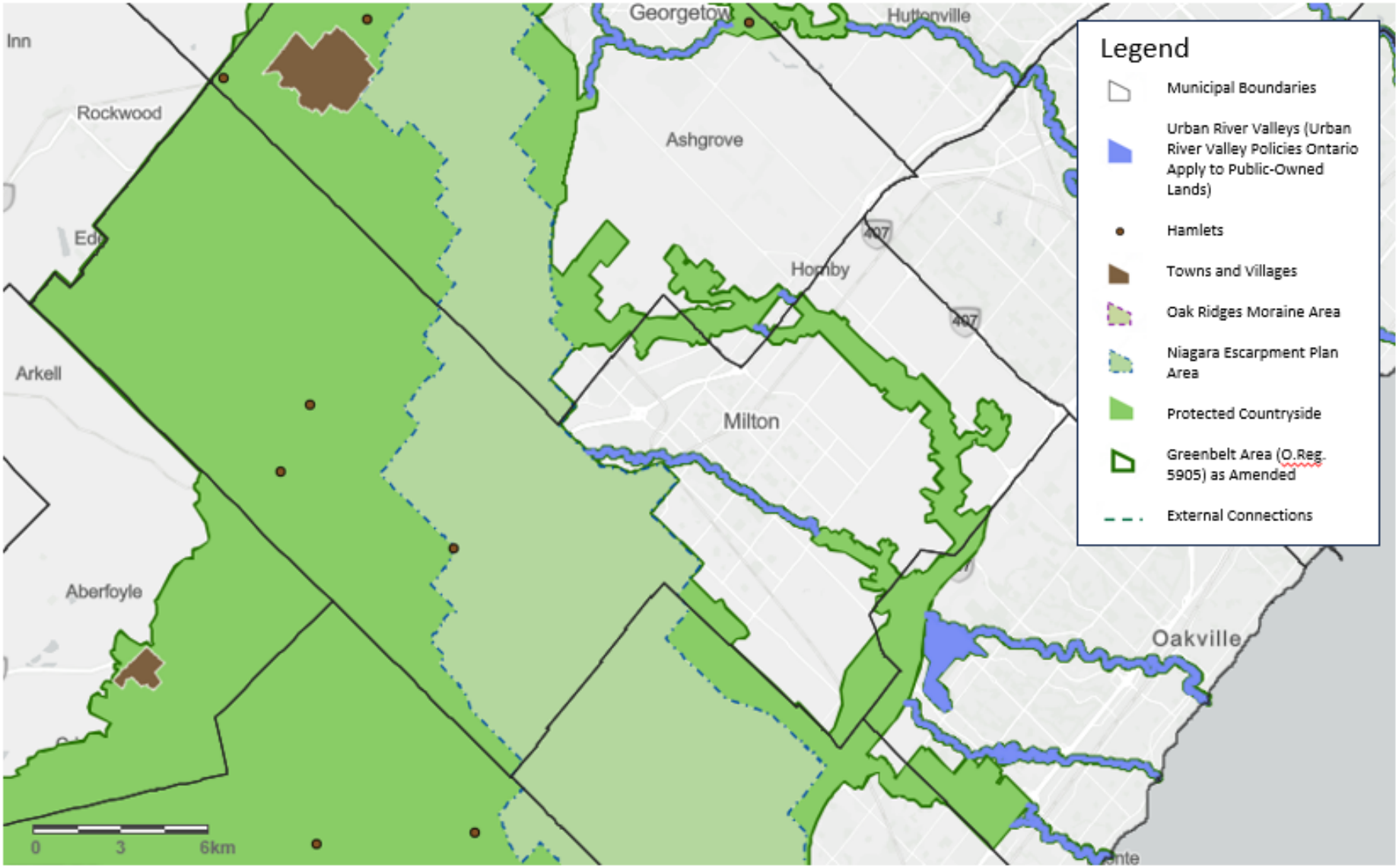
Source: Town of Milton, Official Plan, 2024

Figure 28. Urban Area Land Use Plan



Source: Town of Milton, Official Plan, 2024

Figure 29. Location of Greenbelt Within the Town of Milton



Source: Greenbelt, 2022

2.1.2 Official Plan Review

Concurrently with the TMP Update, the Town is preparing a new Official Plan (OP) to manage growth. New policies reflect recent provincial and regional policy changes and respond to local trends and needs. While the in-effect OP sets out a future vision for 2031, the new OP will assume a 2051 planning horizon, by when the Town is projected to be home to 400,400 residents and 156,300 jobs.

The following draft vision for this horizon year was developed and endorsed by Council: "In 2051, Milton offers a diversity of options for how and where we live, work, move and grow. As we evolve choice is what shapes us". Twelve guiding principles were set out to provide direction on achieving the vision statement:

1	Be creative and provide choice	7	Make connections
2	Mix uses	8	Protect our environment
3	Move efficiently and safely	9	Promote the countryside
4	Diversify and prosper	10	Encourage good, green design
5	Prioritize the public realm	11	Collaborate
6	Support arts, culture and recreation	12	Think local

Future growth is intended to take the form of complete communities with a diverse mix of housing types and forms, interspersed with certain types of employment, stores, and restaurants. They will be home to a range of development at different heights, scales and densities. Infill and intensification will be balanced with new greenfield development and urban expansion. Although large amounts of rural population and employment growth are not forecasted, the new OP is intended to support an evolving rural and agricultural industry that includes new agricultural related and on-farm diversified uses.

As it relates to transportation, the new OP includes a Moving in Milton discussion paper to begin to address a number of big questions and associated policy considerations. Several policy considerations are outlined in the report Moving in Milton. **Table 6** highlights these policy considerations and identifies, where applicable, how the TMP can support with these considerations.

Table 6. Moving in Milton Policy Considerations

Moving in Milton Policy Consideration	How the TMP Supports the Consideration
1.1: The new OP should provide policies that support the availability of equitable and inclusive transportation options and alternatives.	The TMP recommends the expansion of the all ages and abilities active transportation network (**Section 4.2**).
1.2: The new OP must provide policies and directions for the creation of complete streets.	The TMP recommends the creation of a Complete Streets guideline which can

Moving in Milton Policy Consideration	How the TMP Supports the Consideration
	inform policies for the new OP (**Section 4.2.6**).
1.3: The new OP must provide direction for building accessible spaces and connections, ensuring that all Miltonians, of all ages and abilities, have equitable access.	The TMP recommends the expansion of the all ages and abilities active transportation network (**Section 4.2**).
2.1: The new OP, in conjunction with the Transportation Master Plan, should plan for improved connections within the Town, including better connecting existing areas and planning for connections to future growth areas.	The TMP recommends a road and active transportation network to improve connections within the Town that can be reflected in the new OP (**Sections 4.2 and 4.4**).
2.2: The new OP should provide active transportation connections and access, including policies that promote and support the importance of first-mile/last-mile connections.	The TMP recommends an active transportation network (**Section 4.2**) that can be reflected in the new OP. It also identifies the need for improved first/last-mile connections, which can inform policies for the new OP (**Section 4.3**).
2.3: The new OP should recognize the importance of coordination between community partners, stakeholder agencies and neighbouring municipalities.	The TMP has been developed in coordination with Halton Region and other stakeholders.
2.4: The new OP should coordinate with Milton's Transit Master Plan and provide policies that prioritize and incentivize transit ridership.	The TMP provides transit policy recommendations, which can inform policies for the new OP (**Section 4.3**).
3.1: The new OP should implement Transportation Demand Management policies as recommend through the Transportation Master Plan.	The TMP recommends TDM policies, which can inform policies for the new OP (**Section 5.2**).
3.2: The new OP should consider reviewing parking requirements in specific areas and neighbourhoods, looking towards a reduction in parking requirements where appropriate.	The TMP recommends the Town complete a parking study, which can inform policies for the new OP (**Section 5.5**).

Moving in Milton Policy Consideration	How the TMP Supports the Consideration
3.3: The new OP should provide a policy framework that supports and implements the Town's Traffic Calming Policy.	The TMP incorporates the Town's Traffic Calming Policy.
3.4: The new OP must provide direction on Right-Of-Way designs and road classifications that align with Complete Streets objectives and allow for safe and efficient streets, while supporting transit delivery and operational needs and requirements.	The TMP recommends right-of-way (ROW) widths, minimum widths for ROW elements, and typical cross-sections that can inform policies in the new OP (**Section 5.4**).
3.5: The new OP should implement the Transportation Master Plan recommendations to address identified gaps in transportation infrastructure and services.	The TMP recommends a road and active transportation network, as well as transit priority corridors, to address gaps in transportation infrastructure (**Sections 4.2, 4.3, and 4.4**).
4.1: The new OP should identify preferred truck routes for safe and efficient goods movement by vehicle through Milton, to and from businesses and operations and to their destination and to highways.	The TMP recommends a goods movement network that can be reflected in the OP (**Section 5.1**).
4.2: The new OP should minimize conflicts between goods movement and community areas.	The TMP recommends that goods movement corridors do not conflict with existing or new sensitive land uses or major transit routes (**Section 5.1**).
4.3: The new OP should encourage multi-functional use of utility corridors, such as accommodating active transportation links, where possible.	The TMP plans for a comprehensive active transportation network (**Section 4.2**).
5.1: The new OP should promote appropriate land use planning that accommodates transit supportive neighbourhoods.	The TMP recommends the creation of a Transit Supportive Communities Guideline, which can inform policies in the new OP (**Section 6.3**).
5.2: The new OP must provide for measures to address environmental sustainability, climate adaptation and resiliency to be incorporated into future transportation planning and design.	The TMP recommends that the new OP include policies that facilitate the installation of electric vehicle infrastructure into new development and construction projects (**Section 2.5**).

Moving in Milton Policy Consideration	How the TMP Supports the Consideration
5.3: The new OP should provide land use planning direction that promotes walkable neighbourhoods, providing parks, schools, retail and, where possible, compatible employment.	Land use planning is supported by the planned multi-modal transportation network (**Sections 4.2, 4.3, and 4.4**).
5.4: The new OP should include policies that balance the need to protect sensitive environmental features and protected areas, and avoid natural hazards (such as floodplains), with the provision of new roads and active transportation where necessary.	The TMP took into account impacts on sensitive environmental features while creating alternatives.
6.1: The new OP should provide a road network that includes connectivity to the Town's Rural Area to ensure access for rural residents and businesses.	The TMP recommends a road network (**Section 4.4**), as well as other rural Milton actions (**Section 3**).
6.2: The new OP should implement the Town's Active Transportation Strategy, including the recommended improvements to the active transportation network in and to the rural area.	The TMP recommends an active transportation network. (**Sections 4.2),** as well as other rural Milton actions (**Section 3**).
6.3: The new OP's road classifications should recognize the unique rural character and needs.	The transportation needs of rural communities are addressed in (**Section 3**).

The TMP Update will feed into the forthcoming OP, while land use direction from the OP has been taken into account in the development of this TMP Update.

2.1.3 Other Updated Policies

Policies and legislation that have undergone updates, are currently undergoing revision, or have been introduced for consideration since the previous iteration of the TMP include the following:

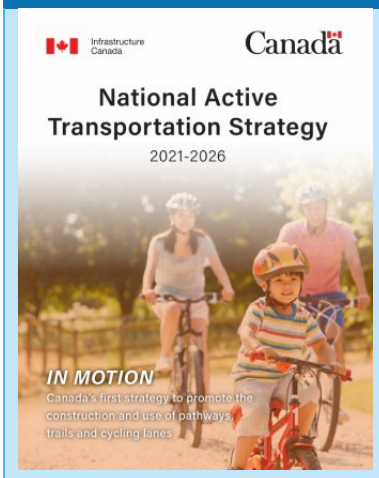
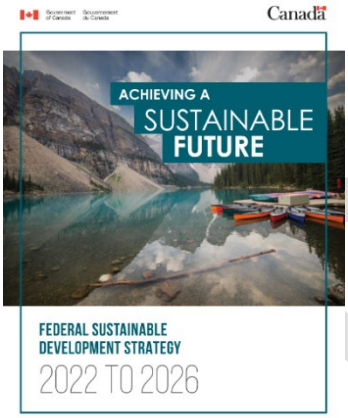
- Greenbelt Act (2021);
- Bill 185 Cutting Red Tape to Build More Homes Act (2024);
- National Vision for Urban Transit (2021-2026);
- Federal Sustainable Development Act (2022-2026);
- Niagara Escarpment Planning and Development Act (2019);
- Provincial Planning Statement (2024);
- GO Rail Station Access (2023);

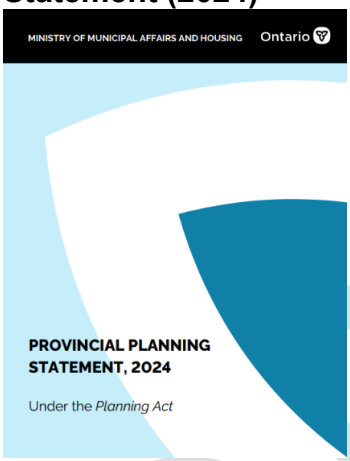
- Halton Region Official Plan Interim Office Consolidation (2022);
- Halton Region Transportation Master Plan to 2031 (2011) – Currently Undergoing Update;
- Town of Milton Five-Year Service Plan and Transit Master Plan Update (2024)
- Town of Milton Traffic Calming Policy (2023) ;
- Town of Milton Transit Accessibility Plan Draft (2023);
- Town of Milton 2023 – 2027 Strategic Plan (2023);
- Town of Milton Housing and Non-Residential Needs Assessment (2024).

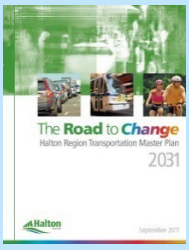
The relevance of these policies to the TMP Update is summarized in **Table 7**.

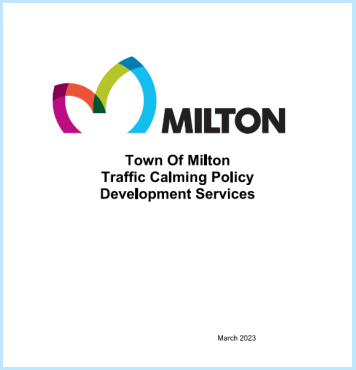
Table 7. Policy Review

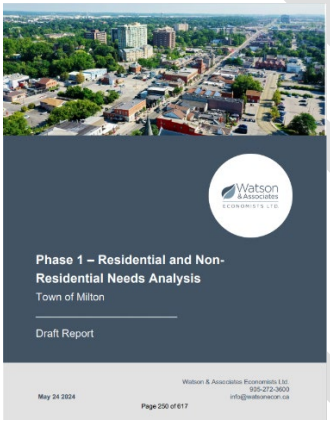
Policy	Description	Relevance to TMP
Greenbelt Act (2021) **Source: Greenbelt Foundation**	The Greenbelt Act outlines regulations for the Greenbelt Area, including the designation of land, establishment of the Greenbelt Plan, and objectives such as preserving agricultural land and promoting sustainable resource use. It addresses the conformity of decisions and plans to the Greenbelt Plan, provides for regular reviews and amendments, and establishes the Greenbelt Council.	This document is relevant to Milton's Transportation Master Plan as it establishes policies for land use, controls urbanization, and promotes environmentally sensitive development within the Greenbelt Area, impacting transportation and infrastructure decisions to ensure alignment with ecological and hydrological objectives.
Bill 185, Cutting Red Tape to Build More Homes Act (2024)	On June 6, 2024, Bill 185, the Cutting Red Tape to Build More Homes Act, received Royal Assent. The Bill prohibits municipalities from setting minimum parking requirements within Major Transit Station Areas (or other areas delineated in an Official Plan near transit where population and employment targets were identified).	This Act impacts the Transportation Master Plan as it sets rules on how parking can be provided within Milton's MTSA. Milton currently does not differentiate between minimum parking requirements within and outside of its MTSA.
National Active Transportation Strategy (2021-2026)	The National Active Transportation Strategy presents the vision to enable Canadians of diverse	This document is relevant to Milton's Transportation Master Plan as it depicts a

Policy	Description	Relevance to TMP
	backgrounds to access active transportation safely and conveniently, seeking to significantly increase the use of active transportation. Achieving this involves quality infrastructure investments and is guided by the A-C-T-I-V-E framework, focusing on Awareness, Coordination, Targets, Investment, Value, and Experience.	comprehensive vision and framework for promoting active transportation, providing guidance on infrastructure investments, and emphasizing collaboration to enhance equitable, healthy, and sustainable travel options.
Federal Sustainable Development Strategy (2022-2026) 	The 2022-2026 Federal Sustainable Development Strategy consolidates sustainable development goals, targets, short-term milestones, and implementation strategies from various Government of Canada entities into a unified framework, offering a comprehensive, whole-of-government perspective on priorities and actions to promote sustainable development across 101 federal organizations.	Milton's Transportation Master Plan will incorporate several transportation planning elements such as clean fuel, economic growth, and adaptation strategies, which are all outlined in the Federal Sustainable Development Strategy.
Niagara Escarpment Planning and Development Act (2019) Niagara Escarpment Commission An agency of the Government of Ontario	The Niagara Escarpment Planning and Development Act seeks to maintain the Niagara Escarpment and its surrounding land as a continuous natural environment, allowing only compatible development. The objectives include protecting ecologically and historically significant areas, preserving water quality, facilitating outdoor recreation, and ensuring compatibility of new development.	This Act is relevant to Milton's Transportation Master Plan as it outlines land-use objectives that prioritize environmental conservation, open landscapes, and public access. Integrating such guidelines into a transportation plan ensures that infrastructure development aligns with the goal of maintaining a continuous natural

Policy	Description	Relevance to TMP
		environment and considers factors like varying landscape objectives and ecological preservation. The Niagara Escarpment is a very important natural feature in the Town and it will continue to be protected and valued.
Provincial Planning Statement (2024) 	The Provincial Planning Statement provides provincial policy direction on key land use planning issues that affect communities, such as building more housing, making land available for development, creating opportunities for economic development and job creation, planning for transportation, water, sewer, and other infrastructure necessary to accommodate current and future needs, protecting the environment and resources including farmland, water, archeology, cultural heritage, mineral aggregates and petroleum, and protecting people, property, and community resources by directing development away from natural or human-made hazards (for example flood prone areas). All decisions affecting planning matters are required to be consistent with the Provincial Planning Statement.	Milton's Transportation Master Plan is required to consider the various policies outlined in the Provincial Planning Statement. This includes ensuring that active transportation and transit are supported, that connectivity between modes is improved, and that transportations systems are safe.
GO Rail Station Access (2023)	GO Rail Station Access is Metrolinx's plan to support enhanced GO station access, improve options for customers,	The Milton GO station plays a key role in Milton's transportation network. This document

Policy	Description	Relevance to TMP
	and increase the capacity of GO stations. In particular, it sets out mode shares and recommended upgrades for each station to accommodate more access by active modes and transit.	impacts how future users of the station will travel, by setting a target mode share of 39% drive and park by 2041, down from 56% in 2019.
Halton Region Official Plan Interim Office Consolidation (2022, as amended by Bill 150) 	Since July 1, 2024, the Regional Official Plan (ROP) acts as a Local Plan of the different municipalities in Halton (including Milton). The ROP serves to guide the physical development of the local municipalities, reflecting the collective aims and aspirations of its residents. It outlines a long-term vision, goals, and policies to shape growth, urban structure, and community character, providing clarity on regional services and responsibilities in accordance with relevant legislation.	The document is relevant to the Town of Milton's Transportation Master Plan as it provides a framework and policies for physical development within the Town. The Plan's guidance on land use and regional services inform decisions related to transportation infrastructure and planning in Milton.
Halton Region Transportation Master Plan to 2031 (2011) – Currently Undergoing Update 	Halton Region's Transportation Master Plan, The Road to Change, outlines strategies, policies, and tools to develop a balanced and sustainable transportation system in Halton Region, involving collaboration between Provincial, Regional, and local municipal agencies.	This document is relevant to the Town of Milton's Transportation Master Plan as it provides overarching strategies, policies, and tools that contribute to the development of a balanced and sustainable transportation system in Halton Region, influencing and guiding the specific transportation planning

Policy	Description	Relevance to TMP
		initiatives within the Town. The TMP is presently being updated by Halton Region.
Town of Milton Five-Year Service Plan and Transit Master Plan Update (2024) 	The Five-Year Milton Transit Service Review and Master Plan Update is a thorough assessment and planning document addressing current and future transit needs in the Town of Milton. It sets out a strategic vision and re-designed transit network to guide transit planning and operations from now to 2029 and beyond.	The Five-Year Service Plan and Transit Master Plan Update is crucial for the Town of Milton's Transportation Master Plan as it comprehensively evaluates and proposes improvements to transit services, aligning them with broader transportation goals and ensuring an integrated approach to meet the community's mobility needs.
Town of Milton Traffic Calming Policy (2023) – New 	The Town of Milton's Traffic Calming Policy seeks to establish guidelines, procedures, and criteria for addressing safety concerns such as speeding and excessive traffic volume in residential neighborhoods through the initiation, investigation, and implementation of traffic calming measures.	This document's relevance to Milton's Transportation Master Plan lies in its provision of detailed guidelines and procedures for the incorporation of traffic calming measures within residential areas, aligning with the overarching objectives of the Master Plan to improve safety and mitigate traffic-related issues.
Town of Milton Transit Accessibility Plan Draft (2023)	The Transit Accessibility Plan outlines strategies to address local accessibility issues and regulatory requirements, emphasizing the importance of a fully accessible transit system beyond just buses,	This document is relevant to the Town of Milton's Transportation Master Plan as it defines strategies and commitments to enhance overall

Policy	Description	Relevance to TMP
	including service levels, fare integration, pedestrian connections, bus stops, amenities, snow clearing, and informational support.	accessibility, aligning with the broader goals and considerations of the Town's comprehensive transportation planning.
Town of Milton 2023 – 2027 Strategic Plan (2023)	Milton's 2023-2027 strategic plan sets a shared vision to guide the work of Council and staff. It includes strategic themes related to actions Milton will take in a diverse set of areas, including transportation.	The Strategic Plan sets out high level goals for transit and mobility in Milton, with key actions the Town will take. These actions will help shape Milton's future transportation system and thus impact the TMP Update.
Town of Milton Housing and Non-Residential Needs Analysis Study (2024) 	To inform the Official Plan Review, Milton is undertaking a study to forecast the Town's population and its characteristics, as well as employment, to 2051. Based on these projections, the study will examine needs for different housing types and non-residential spaces.	Population and employment forecasts developed by the Housing and Non-Residential Needs Analysis Study impact travel demand and patterns. It will be a key input into the transportation modelling conducted in the Town of Milton's Transportation Master Plan.

2.1.4 Unchanged Policies

While some policy documents have undergone updates and new documents have been added, it is important to note that there are still various policies that remain unchanged since the previous TMP. Although these policies have not been changed, they continue to play an important role in guiding the Town's TMP Update and shaping overarching transportation strategies. Relevant policies that remain and will guide the TMP Update include:

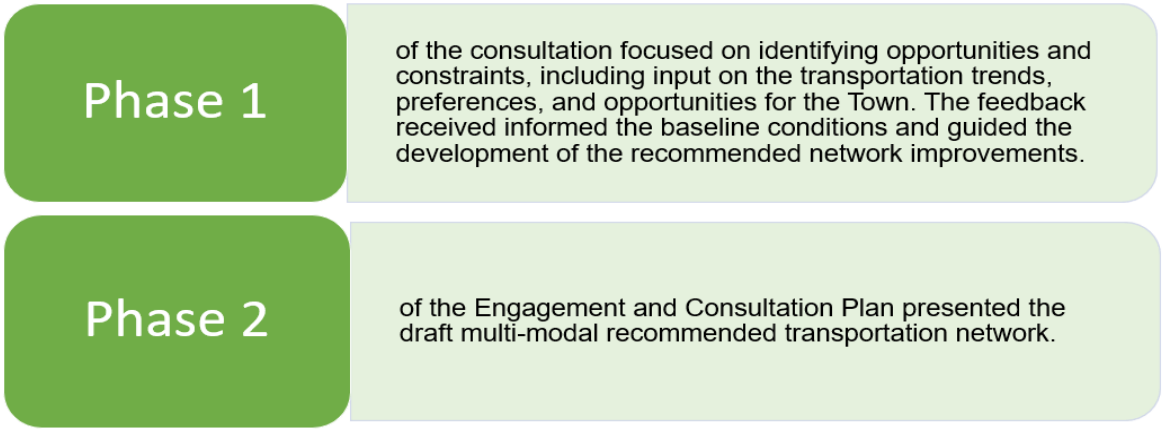
- Metrolinx 2041 Regional Transportation Plan (2018);
- Halton Region Active Transportation Master Plan (2016);
- Town of Milton Employment Land Needs Study (Land Base Analysis 2017);
- Town of Milton Community Services Master Plan 2015; and
- Boyne Secondary Plan and Derry Green Secondary Plan.

2.2 The Objectives

Objectives of the TMP Update are to develop a long-term transportation vision and strategy to support the Town's future population projections and employment growth to the year 2051 and provide a framework by which decisions regarding the Town's transportation system can be informed. The transportation policy framework shall take into consideration at a minimum the following ten objectives:

2.3 Consultation and Engagement

Engagement with technical agencies, stakeholders, and the public are core components of the TMP Update and part of the MCEA process. A comprehensive consultation and engagement plan was designed, developed, and implemented with the intent of informing the Milton TMP Update.



2.3.1 Who was Consulted?

The engagement and consultation program was designed with the intention of exchanging ideas with key audiences:

- **Residents, Employees, and Visitors:** people who live in and/or work in, commute to, and visit the Town of Milton. The study outcomes have a direct impact on their day-to-day activities.
- **Technical Advisory Committee:** representatives from adjacent municipalities, regional municipalities, conservation authorities, provincial agencies, and utility companies who share and have interests in the Town right-of-way and transportation-related assets in the Town of Milton.
- **Stakeholder Advisory Committee:** representatives from groups and advisory committees who have an interest in transportation-related decisions within the Town or who would have a role in supporting the Town in future promotion and outreach initiatives as well as implementation of critical links. This includes Town Advisory Committees, developers, and the development community:
    - Community Fund Advisory Committee;
    - Downtown Business Improvement Association;
    - Mattamy National Cycling Centre Management Committee;
    - Milton Accessibility Advisory Committee;
    - Milton Chamber of Commerce;
    - Milton Public Library Board;
    - Milton Youth Task Force; and
    - Nassagaweya Community Consultation Committee.
- **Staff and Local Decision Makers:** Councillors, through invitation to the Public Information Centres and the sharing of engagement material, and Town staff

responsible for the implementation and monitoring of the TMP Update.

- **Indigenous Partners:** A draft of the TMP Update was circulated to the Mississaugas of the Credit First Nation. As the recommendations of the TMP Update are implemented, engagement with Indigenous partners will proceed in line with the Town's Indigenous Engagement Guidelines and best practices.

2.3.2 Milestones

March 2023 – June 2023	
Engagement Round 1	
Objectives	• Introduce TMP objectives and main goals; • Identify transportation challenges and opportunities for active transportation, roads, transit, goods movement, transportation demand management, roadway classification and rights-of-way, traffic safety, and parking management and strategies; • Understand existing conditions and travel patterns; • Identify gaps and priorities; • Identify elements to develop a "Vision Statement" for Milton's long-term future transportation; and • Identify future opportunities for collaboration as well as capacity to support education and outreach tactics for long-term cultural change.
Engagement Opportunities	• Technical Agencies Committee #1 (Virtual); • Stakeholder Advisory Committee #1 (Virtual); • Public Information Centre #1 (Virtual); and • Public Information Centre #1 (In-Person).
April 2024 – June 2024	
Engagement Round 2	
Objectives	• Summarize findings from Engagement Round 1; • Describe the alternatives analyzed for future conditions; • Present proposed TMP recommendations on active transportation, roads, transit, goods movement, transportation demand management, roadway classification and rights-of-way, traffic safety, and parking management and strategies; and • Receive input from stakeholders to confirm or ways to improve proposed recommendations. • Obtain input on challenges and rural opportunities in Rural Areas.
Engagement Opportunities	• Rural Communities Engagement (In-Person): • Technical Agencies Committee #2 (Virtual); • Stakeholder Advisory Committee #2 (Virtual); and • Public Information Centre #2 (In-Person).

2.3.3 Engagement Round 1 - Summary

There were a significant number and range of comments received from various stakeholders during the first round of engagement, with a few themes emerging during the consultation process, as shown in **Table 8**. The consultation materials used are presented in **Appendix F**.

Table 8. Overview of Key Themes from Round 1 of the Consultation and Engagement Program

Theme	Feedback Received from Engagement Round 1
 ***Walking & Cycling***	• The streets with **key destinations for pedestrians and cyclists** need to **prioritize cycling and pedestrian** modes as opposed to vehicle traffic. This measure already happens sometimes, such as in the Farmers Market. • **Safer infrastructure for pedestrians and cyclists** is needed throughout the Town. This could include improving connectivity of existing pedestrian and cycling routes, providing physically separated bike lanes, and considering improving connectivity to the existing trails network. • Suggest improving **connectivity with rural roads** west of Tremaine Road for cyclists and pedestrians.
 ***Transit***	• **The transit system needs to be re-assessed and prioritized** for rural areas within the Town. Many residents in these areas rely on transit for their daily transportation needs.
 ***Sustainable Transportation***	• It is important to provide **sustainable transportation options** within the Town, especially in newer subdivisions and rural areas, and school zones, to create a safer community for everyone.
	• **Improved and clear signage** is necessary to prevent confusion among road users, particularly when yielding to vehicles.

Theme	Feedback Received from Engagement Round 1
Signage	
 ***Road Design and Traffic***	• **Changing the design of roads and adhering to best practices on standard road design** was a clear priority for residents, especially as residents learned more about how transportation planning for Milton's updated TMP can enhance the experience for users and residents. • **Improving traffic flow on Regional roads** is a way to address concerns on local streets. Collaboration with Halton Region and adjacent local municipalities was suggested to ensure effective solutions.
 ***Mapping***	• Some helpful comments were received in relation to how to **integrate ongoing projects** and additional considerations in the updated TMP and the network maps.
 ***Education***	• **Education** is essential for this project's success, as a significant number of individuals may not be well-informed on how to interact appropriately with upcoming updates for Milton's TMP, potentially leading to confusion.

2.3.4 Engagement Round 2 - Summary

There were a range of comments received from various stakeholders during the second round of engagement. **Table 9** shows comments summarized by key themes for each mode of transportation. Key findings from the Rural Communities consultation are shown in **Chapter 3**. The consultation materials used are presented in **Appendix F**.

Table 9. Overview of Key Themes from Round 2 of the Consultation and Engagement Program

Theme	Feedback Received from Engagement Round *2*
	• **Improve pedestrian safety** on arterial and collector roads, for example by installing a pedestrian overpass or underpass across Tremaine Road on Louis St. Laurent Avenue.

Theme	**Feedback Received from Engagement Round *2***
Cycling & Multi-Use Network	• **Improve cycling and multi-use network connectivity.** This will have a direct impact on encouraging cycling and active transportation. • **Set out regulations for e-scooters, e-bikes, and one-wheelers** on multi-use paths, bike facilities, and sidewalks, informed by a jurisdictional scan. • **Add bike parking facilities**, such as bike racks, on Main Street, especially for events like the Farmers Market. • **Improve cyclist safety** to encourage more cycling by exploring potential barriers between cyclists and drivers and adding bicycle crossings and protected intersections throughout the Town. Consider widening bike lanes and reduce vehicular speeds along Main Street.
 ***Transit***	• **Improve transit connectivity**, especially to accommodate seniors during the winter season. • **Increase frequency of trains** to/from Milton GO and Union Station and add all day service on weekends. • **Coordinate bus and GO train schedules**, especially in the morning. • **Explore Transit Signal Priority** (TSP) along Thompson Road and along Main Street. • **Advocate for accessible stations and services**.
 ***Road Network***	• **Address congestion** on main roads for both existing and forecasted demand, especially during peak hours. • **Educate and implement consistent etiquette for pedestrians crossing roundabouts** and for drivers to know how to drive at a roundabout.
 ***Goods Movement***	• **Concern about timelines for the interchange between Tremaine Road and Highway 401** and coordination with the widening of Steeles Avenue, as there will be heavy truck traffic. • Objection to the Canadian National (CN) **intermodal facility**.

2.4 Vision Statement and Objectives

Milton's transportation vision was shaped by the residents, stakeholders, municipal Staff, and decision makers of the Town. The draft vision has been updated from the previous 2018 Milton TMP and presented to key stakeholders and members of the public to align with community priorities, reflect the Town's projected growth to the year 2051, and the overall shift in priorities. The final Vision Statement is outlined below.

> To provide a multi-modal network that allows users of **all ages and abilities** to **access all modes of transportation**, contributing to a **complete street** community. The success of the Plan will be based on its ability to accentuate the Town's unique urban and rural areas, while accommodating future travel demands as the community continues to grow. Its success will be based on the implementation of achievable and relevant programming, looking to the 30-year planning horizon.

The Vision Statement also fulfills Phase 1 of the Municipal Class Environmental Assessment process for master plans, which identifies that a problem or opportunity statement was developed and presented for public review for the public to understand the purpose for this study.

The vision for Milton's transportation future integrates **four key principles** (**Figure 30**):

Figure 30. Four Key Principles Integrated in Milton's Vision Statement

2.5 Where We are Going

2.5.1 Overall Policy Direction

Sections 2.5.1.1 to **2.5.1.4** provide transportation network policy directions that should be reflected in the Town's new Official Plan. The proposed policy directions will be used to transform, enhance, and develop the transportation network in Milton to be efficient and function in an effective manner. The proposed policy directions include the following topics:

- Promoting a transportation network that supports and encourages active transportation and transit-supportive communities;

- Reducing Greenhouse Gas Emissions;
- Creating complete streets and streetscapes for all modes of travel, ages and abilities in new and existing neighbourhoods; and
- Improving road safety for all modes of travel, ages, and abilities in new and existing neighbourhoods.

2.5.1.1 Expand the Transportation Network to Support and Encourage Active Transportation and Transit Supportive Communities

Given the Town's vision of creating an accessible multi-modal network for residents of all ages and abilities and accounting for Milton's anticipated growth, it is important to expand the active transportation and transit networks throughout the community. This also aligns with policies within the Town's Official Plan (and the new OP being prepared) to support active transportation facilities and transit routes across the Town as they serve an important role in providing convenient and equitable access.

This TMP Update recommends the development of an active transportation network that is continuous and well connected, for all members of the community. The TMP Update also incorporates work from the Transit Master Plan Update to reflect transit connectivity.

Recommendation	Key TMP Principles Addressed
Incorporate the recommended active transportation network in the Town's new Official Plan.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability

2.5.1.2 Reduce Greenhouse Gas Emissions

The Town of Milton's Official Plan seeks to create a community that is safe, liveable, healthy, and complete. To ensure alignment with the broader objectives of the OP, policies within the TMP will be strategically developed to aid in the reduction of greenhouse gas (GHG) emissions. GHG reduction policies will contribute to creating a community that is safe, liveable, and healthy.

In efforts to decrease GHG emissions, the TMP Update focuses on improving active transportation options and refining the Town's road network to reduce traffic congestion. Along with these efforts, it is also important that the TMP Update places an emphasis on enhancing the transit network throughout Milton as it offers residents a sustainable mode of commuting that will be beneficial in limiting GHG emissions through reducing reliance on personal vehicles, hence lowering emissions. Town Council has endorsed in principle the Zero-Emissions Bus Feasibility Strategy and Fleet Transition Plan to gradually convert the fleet to battery-electric propulsion. To that effect, the Town is

currently undertaking a pilot project to convert a diesel-powered bus to battery electric propulsion mid-life.

Additionally, policies within the TMP Update will support and encourage the adoption of electric vehicle infrastructure as it will play a role in promoting an environmentally friendly mode of transportation. The overall policies within the TMP Update will aid in shaping a safe, liveable, healthy, and complete community supported by sustainable modes of transportation for all residents in the community.

Recommendation	Key TMP Principles Addressed
Align the Town's new Official Plan with the TMP Update on GHG reduction policies. In particular, the new Official Plan should include policies that facilitate the installation of electric vehicle infrastructure into new development and construction projects.	• Promote sustainability

2.5.1.3 Implement Complete Streets

The intent of designing Complete Streets is to accommodate all transportation modes and users of all ages and abilities, such as pedestrians, cyclists, transit users, motorists, and goods movement vehicles. The concept of Complete Streets involves planning, design, construction, operation, and maintenance processes of streets. The Town's policy for Complete Streets should follow the ten guiding elements listed in Smart Growth America's Complete Streets Policy Framework, as shown in **Table 10**.

Recommendation	Key TMP Principles Addressed
Foster the design of Complete Streets in the Town's new Official Plan. Policies should be included that refer to a Town-wide Complete Streets Design Manual, which is recommended to be created in **Section 4.2.6.**	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability

Table 10. Complete Streets Guiding Elements

Guiding Element		Description
1	Establishes commitment and vision	How and why does Milton want to complete its streets? This specifies a clear statement of intent to create a complete, connected network and consider the needs of all users.
2	Prioritizes underinvested and underserved communities	Requires Milton to define who their most underinvested and underserved communities are and prioritize them throughout.
3	Applies to all projects and phases	Instead of a limited set of projects, it applies to all new projects, retrofit or reconstruction projects, maintenance projects, and ongoing operations.
4	Allows only clear exceptions	Any exceptions must be specific, with a clear procedure that requires high-level approval and public notice prior to exceptions being granted.
5	Mandates coordination	Requires private developers to comply, and interagency coordination between government departments and partner agencies.
6	Adopts excellent design guidance	Directs agencies to use the latest and best design criteria and guidelines, and sets a time frame for implementing this guidance.
7	Requires proactive land-use planning	Considers every project's greater context, as well as the surrounding community's current and expected land-use and transportation needs.
8	Measures progress	Establishes specific performance measures that match the goals of the broader vision, incorporate equity considerations, and are regularly reported to the public.
9	Sets criteria for choosing projects	Creates or updates the criteria for choosing transportation projects so that Complete Streets projects are prioritized.
10	Creates a plan for implementation	A formal commitment to the Complete Streets approach is only the beginning. It must include specific steps for implementing the policy in ways that will make a measurable impact on what gets built and where.

Source: Smart Growth America, Best Complete Streets Policies, 2023

2.5.1.4 Enhance Road Safety

Road safety is an essential element in the functionality, usability, and enjoyment of the overall transportation system. Traffic related deaths or serious injuries should not be tolerated under any circumstances. The goal of road safety is to reduce all road fatalities and serious injuries via three main avenues: education, enforcement, and engineering. Evaluation and engagement with stakeholders also play a key role in developing a comprehensive road safety strategy. Road safety can work alongside the complete streets approach to promote safety for all road users, by prioritising the safety of the most vulnerable road users (both modes and demographics).

Recommendation	Key TMP Principles Addressed
Develop a road safety strategy, as noted in **Section 5.3**. Policies should be included in the new Official Plan that align with this strategy.	• Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation

The first step in developing a road safety strategy in the Town of Milton is to understand the existing road safety approach. Currently, there are a few safety measures put in place by Milton including community safety zones, traffic safety, traffic calming, and school safety.

School Safety

School-related trips are a substantial contributor to weekday peak hour traffic with various modes of transportation used to get to and from schools including private automobiles, transit (school buses), pedestrians, and cyclists. In an ongoing effort to keep roads safe for everyone, the Town recently installed 11 new pedestrian crossovers (PXOs) and one new four-way stop in select residential neighbourhoods.

The new four-way stop was implemented at Hearst Boulevard and Ferguson Drive and the new PXOs were implemented at the following intersections, many of which are located in school areas.

1. Knight Trail and Higgins Drive;
2. Woodward Avenue and Robarts Drive;
3. Dixon Drive and Hatton Crossing;
4. Clark Boulevard and Watson Terrace;
5. Bennett Boulevard and Hutchinson Avenue;
6. Wilson Drive between Woodward Avenue and Mackenzie Drive;
7. Bennet Boulevard and Hepburn Road;
8. Sauve Street (near house #659);
9. McLaughlin Avenue and Serafini Crescent;

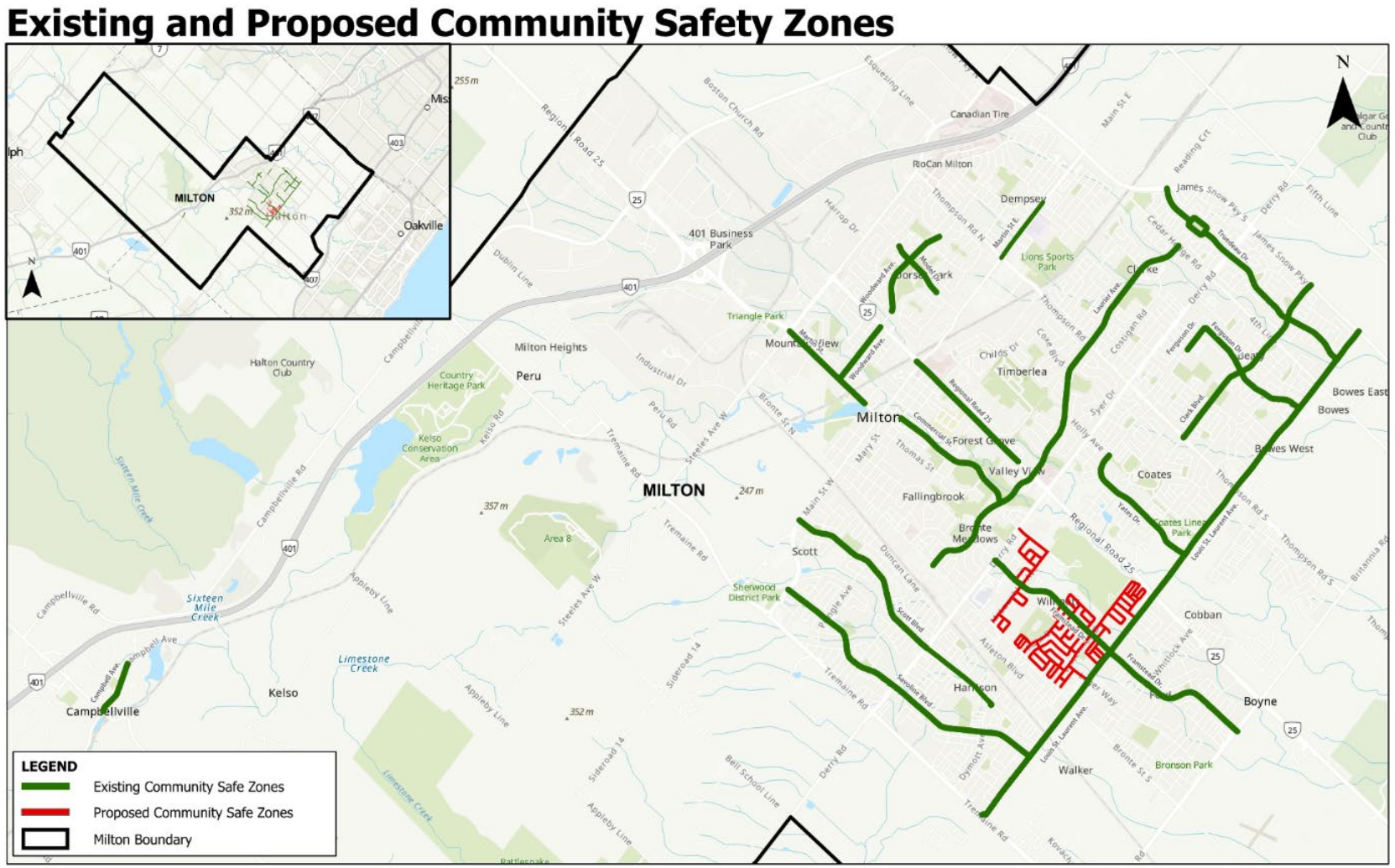
10. Trudeau and Union Gas Trail; and
11. Whitlock Avenue and Walnut Landing.

To further enforce school safety, Halton Regional Police launched its 16th annual Project Safe Start campaign during the back-to-school season, which seeks to remind residents of road safety and to task all drivers and pedestrians to be aware of their behaviours and surroundings. The combination of enhancing infrastructure, crossing guards, and awareness campaigns for all modes of transportation will increase school safety throughout the Town.

Community Safety Zones

There is particular importance and emphasis on the notion of safety within Community Safety Zones (CSZ). These zones are a designated stretch of roadway, that are identified under provincial legislation and authorizes the doubling of fines for speeding if there is a CSZ sign present. In addition, under section of Bill 65, 2017 Safer School Zones Act enables the utilization of automated speed enforcement system. CSZ serve a particularly vulnerable demographic since these zones are typically located near schools, day cares, playgrounds, parks, hospitals, and more. **Figure 31** shows the existing and proposed CSZ that are located throughout Milton.

Figure 31. Existing and Proposed Community Safety Zones



Source: Created by WSP using Town of Milton Data

3 Rural Communities

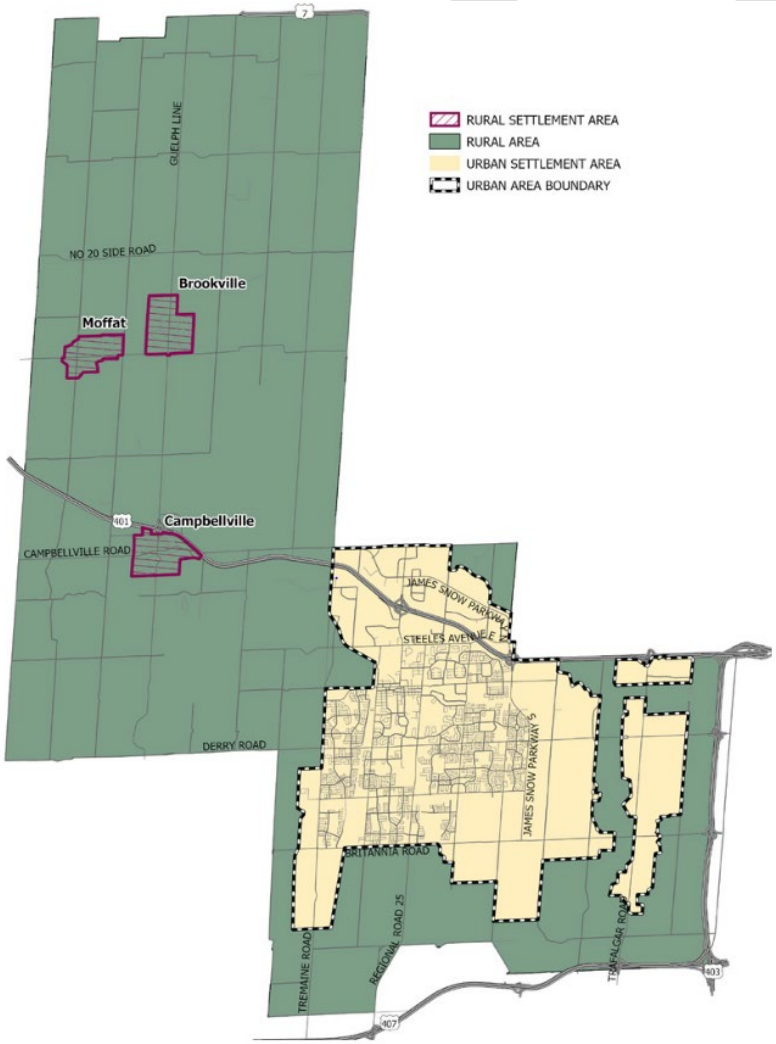
Milton is home to both urban and rural communities. While most residents reside within the urban area, approximately 7% of people in Milton live in its rural areas. These residents experience different transportation challenges that require tailored solutions.

This chapter describes the transportation challenges experienced by rural residents in Milton, as expressed in public consultation, and provides recommendations.

3.1 The Rural Context

Milton's geographic area is overwhelmingly rural, representing 77% of the Town's total land area, as shown in **Figure 32**.

Figure 32. Urban and Rural Milton



Source: Town of Milton, We Make Milton. Living in Milton: Background and Information Report, 2023

Milton's rural communities are distinct from its urban area in many ways that can impact transportation patterns, challenges, and opportunities. For example:

- The rural area is mostly home to single residential housing units on large lots. Some of these residential units are associated with an active farm or other agricultural use. This development pattern leads to longer travel distances than in Milton's urban area and leads to the presence of agricultural vehicles on rural roads.
- Unlike urban Milton, a significant portion of the rural area is protected by either the Provincial Greenbelt Plan or the Niagara Escarpment Plan. This means that future development (and any associated new travel demands) will be limited in rural areas.
- Although large amounts of rural population and employment growth are not forecasted, the Town's new Official Plan is intended to support an evolving rural and agricultural industry that includes new agricultural-related and on-farm diversified uses. This is likely to change the transportation needs of the rural area in the future.
- The multi-modal transportation network is sparser in rural areas, with more limited active transportation and transit infrastructure/service.
- The generally lower levels of traffic demand on rural roads can lead to speeding.
- Commuter traffic not associated with Milton's rural areas is known to use roads in the rural areas to access other areas, which can lead to higher traffic volumes and increased congestion than what we be expected in a rural area.

3.2 Rural Transportation Challenges

3.2.1 Engagement

Dedicated engagement was undertaken with rural communities to better understand their challenges with transportation in Milton. Recognizing the importance of reporting on the rural communities' engagement efforts undertaken, this chapter provides an overview of the feedback received.

On April 4, 2024, the rural communities' consultation event was held at the Nassagaweya Tennis Club (9267 Guelph Line, Milton, ON L0P 1B0), from 6:30 PM to 8:30 PM. There was a formal presentation held at 7:00 PM to provide the attendees an overview of the TMP Update and how significant population and economic growth would affect the transportation network, specifically in rural communities. Approximately 40 people attended the in-person engagement event. A notice to promote the rural communities' consultation event was published on the Town's (Let's Talk Milton) webpage as well as the Town's official Facebook page on March 22, 2024. The consultation materials used are presented in **Appendix F**.

The project team had constructive discussions about the problems and opportunities that the transportation network faces in rural areas, residents' perceived solutions and suggestions for improving and updating the existing conditions, and if the 2018 TMP recommendations were still applicable. The purpose of the rural communities' consultation event was to:

- Hear concerns about travel in rural areas of Milton.
- Consider past recommendations and if they still meet rural community needs.
- Solicit ideas on how to improve travel in rural communities.
- Explain next steps about the TMP's review and future engagement.

Concerns noted by rural residents related mainly to safety and connectivity.

3.2.2 What Was Said: Transportation Challenges and Opportunities

3.2.2.1 *Active Transportation*

Pedestrian Network

One comment was received related to the existing pedestrian network. Participants:

- Expressed a desire to extend the walkway along 15 Side Road from Moffat Park to Concession Road 11 to improve connectivity.

Cycling Network

Three comments were received related to the existing cycling network, including:

- Suggestions for the implementation of paved shoulders on 20 Side Road;
- Tourists' parking interfering with cyclist safety along Sixth Line; and
- Recommendation for parking provision at trails to encourage active transportation.

3.2.2.2 *Transit*

Four comments were received related to the existing transit network, including:

- Request for a new transit route to the southern part of Milton;
- Request for a Milton Transit pilot program between Brookville and Milton;
- Request for plans to construct a future GO Transit terminal in Campbellville; and
- Questions regarding future mobility options for older adults who are unable to drive.

3.2.2.3 *Road Network*

Seven comments were received related to the existing road network, including:

- Intersection operations are impacted by the reconstruction of Guelph Line, which is also causing delays on Highway 401;
- The intersection at Campbellville Road and Sixth Line is creating issues;
- Data should be collected on the operation of the intersections on 15 Side Road and First Line, 20 Side Road and Second Line, and 25 Side Road and First Line to examine potential implementation of roundabouts;
- Request to implement roundabouts at north-south line and east-west side roads on Guelph Line;
- Guelph Line (Main Street) is unable to accommodate traffic volumes due to insufficient turn lanes and poor timing plans;
- Westbound traffic from Highway 6 is backing up traffic at the Campbellville Road and Twiss Road intersection, forcing trucks onto Twiss Road; and
- Question whether the proposed roadway improvement on Campbellville Road east of Guelph Line is compatible with the cycling network.

3.2.2.4 *Safety and Speed Enforcement*

Road safety was a topic of discussion at the engagement event. Participants:

- Expressed concerns about safety at the intersections of Sixth Line and 25 Side Road, as well as 15 Side Road and Second Line;
- Noted there exists a blind spot on the southeast corner of the intersection at First Line and 20 Side Road; and
- Highlighted there is frequent rear-ending on Cameron Drive in Brookeville.

Four comments were made regarding speed reduction and enforcement. Participants:

- Suggested the implementation of all-way stops at intersections that currently have north-south stop signs, or a review of current travel patterns to determine if travel has changed and north-south travel is now the predominant travel pattern, and east-west travel is now secondary, which could lead to switching the routes that are stop-

controlled;
- Were concerned about speeding along 30 Side Road;
- Suggested a uniform speed limit along 15 Side Road to ensure consistency; and
- Were concerned about cars passing through the intersection at 20 Side Road and Second Line without stopping at stop signs.

3.2.2.5 *Goods Movement*

Seven comments were received regarding freight vehicles:

- Several trucks are driving along 30 Side Road, First Line, Second Line, and other local roads instead of Highway 7;
- Heavy trucks use 30 Side Road as a bypass to avoid Rockwood between Highway 7 and Guelph Line;
- There has been an increase in truck traffic on 15 Side Road, particularly during closures of Highway 401;
- There were concerns regarding a potential increase in traffic volumes following the opening of a new quarry;
- There were questions about how a truck route map will benefit truck drivers with the recent use of technology like Google Maps;
- Paved shoulders with roll curbs should be implemented to accommodate agricultural vehicles; and
- There were questions regarding how haul routes agreements will be enforced.

3.3 Recommendations

In response to the safety concerns noted by rural residents, the Town has upgraded several two-way stop-controlled intersections to be double signed to have two stop signs at the stop approaches to increase visibility of the requirement to stop:

- Fourth Line Nassagaweya and 15 Side Road
- First Line Nassagaweya and 10 Side Road
- Sixth Line Nassagaweya and 20 Side Road
- Sixth Line Nassagaweya and 15 Side Road

The Town also intends to review the remaining areas of concern noted by residents. This review is expected to include traffic studies (speeds, turning movement counts and so forth), a collision analysis of intersections and road segments, as well as a review of existing signage, flashing beacons and pavement markings. These studies are intended to be completed in the short-term.

Recommendation	Key TMP Principles Addressed
Continue upgrading two-way stop-controlled intersections to be double signed to alleviate rural Milton safety concerns.	• Promote equitable and accessible travel for all ages and abilities

Recommendation	Key TMP Principles Addressed
Continue to review and address the areas of concern noted by residents as shown in **Section 3** to alleviate rural Milton safety and connectivity concerns.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation
Develop a road safety strategy to alleviate rural Milton safety concerns. More information on what such a strategy would entail is available in **Section 5.3**.	• Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation
Implement the goods movement network recommended in **Section 5.1** to alleviate rural Milton safety concerns. Goods movement corridors should be located to minimize conflict with existing or new sensitive land uses and reflected in the Town's new Official Plan.	• Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation
Implement the active transportation network identified in **Figure 40** to support the connectivity challenges noted by rural residents. Several bike routes and paved shoulders are recommended within rural Milton. The Town's new Official Plan should implement the recommended active transportation improvements.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Implement the road network identified in **Figure 46** to support the connectivity challenges noted by rural residents. The Town's new Official Plan should implement the recommended road improvements.	• Accommodate future growth and associated travel demands • Support mobility for all modes of transportation

4 Moving Milton

A core component of any TMP is the identification and selection of the future preferred transportation network. To identify this network, a robust, comprehensive, and iterative process was used to analyze and assess different alternatives, informed by technical analysis as well as inputs from various stakeholders, as mentioned in Section 2.3.

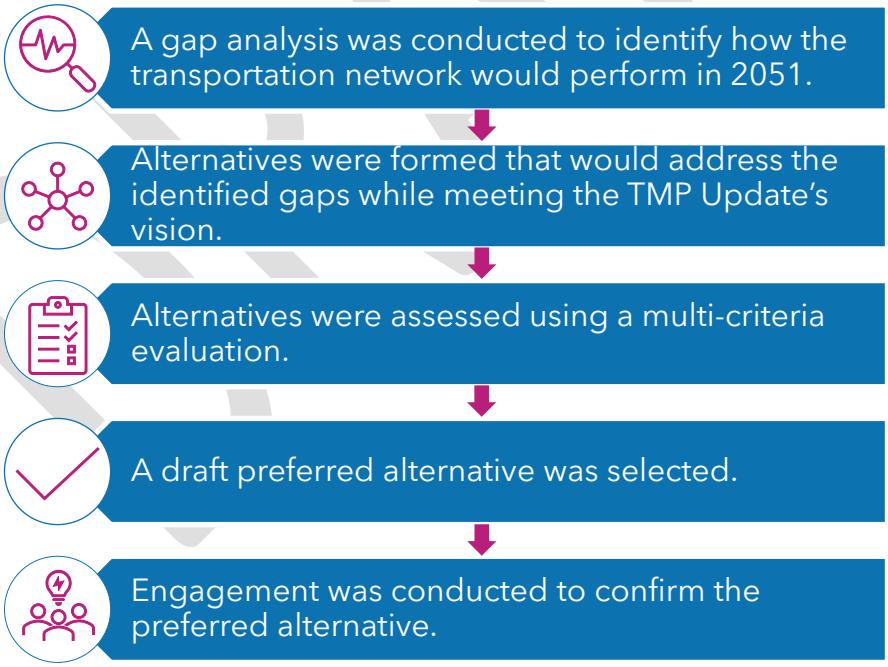
This chapter provides an understanding of the analysis used to identify the future preferred transportation network, showing key steps taken as well as any assumptions made, and highlights key features of the preferred transportation network for all modes.

4.1 The Process

This TMP Update follows the Municipal Class Environmental Assessment process. To complete phase 2 of this process, the TMP Update must identify and evaluate different transportation alternatives to help inform the ultimate selection of the preferred alternative.

This section describes how alternatives were identified and how the final preferred alternative was chosen. The steps taken are shown in **Figure 33**, with more detail in each of the following subsections.

Figure 33. Process to Identify and Select the Preferred Alternative



4.1.1 Identifying Alternatives

Transportation network alternatives were identified for the TMP Update's 2051 horizon year. The first alternative, a base case alternative, was formed as a reference for the other alternatives, which represents the current transportation network plus projects that

have already been committed to by the Region and Province. The recommended transportation network from the 2018 TMP was also retained as the second alternative for this TMP Update, to identify whether the recommendations included in the previous TMP would still serve residents of Milton well.

One new alternative (the third alternative overall) was created to address projected gaps in the future transportation network's performance while also supporting the TMP Update's vision.

4.1.1.1 *Gap Analysis*

To support development of the new alternative, a gap analysis was conducted using travel demand forecasting outputs extracted from the Halton Region Activity-Based Model (ABM) specific to the Town of Milton. The Halton Region ABM is a state-of-the-art travel demand forecasting model built upon the GTAModel V4 framework that uses an activity-based approach that microsimulates activity schedules and daily travel patterns and behaviours for each individual person living in Halton Region, as well as the Greater Toronto and Hamilton Area, based on highly detailed inputs for population, land uses and employment, transportation networks, and policy decisions.

The gap analysis identified how the base case transportation network and the network recommended in the 2018 TMP would perform in 2051, considering the Town's future population and employment. While the Town is currently forecasting 400,400 people and 156,300 jobs in the Town by 2051, this TMP Update plans for higher estimates by using Halton Region's Joint Best Planning Estimates. This will ensure that the TMP Update is resilient to changes in future population forecasts (for example, if more people move to Milton than currently expected by the Town).

Halton Region only provided model outputs related to car demand and flows. No information was received to determine transit or active transportation demand and flows. Due to these limitations, the gap analysis focused on highlighting the future projected volume of cars along all roads, compared to the capacity of those same roads (the volume-to-capacity ratio or v/c ratio). For those roads where volumes exceeded 1.1 times capacity (a v/c ratio higher than 1.1), improvements were identified and explored. **Figure 34** and **Figure 35** highlight 2051 v/c ratios for roads in Milton and identify those roads that are predicted to be over capacity, for the base case (alternative 1) and the 2018 TMP recommended network (alternative 2), respectively. While the 2018 TMP recommended network shows improvements in congestion along north-south corridors, congestion remains along several east-west roads, such as Derry Road, Britannia Road, and Lower Base Line; some north-south roads, such as Sixth Line and Trafalgar Road; and streets within urban Milton, such as Main Street East, Bronte Street, Ontario Street, and Thompson Road.

The identified gaps can be addressed through a variety of modes and policies. To inform which solutions among these modes or policies should be included in the new alternative, several guidelines were followed to ensure improvements would be in line with the TMP Update's vision.

Figure 34. Future 2051 Model Volume to Capacity Ratios in the Base Case – PM Peak Period

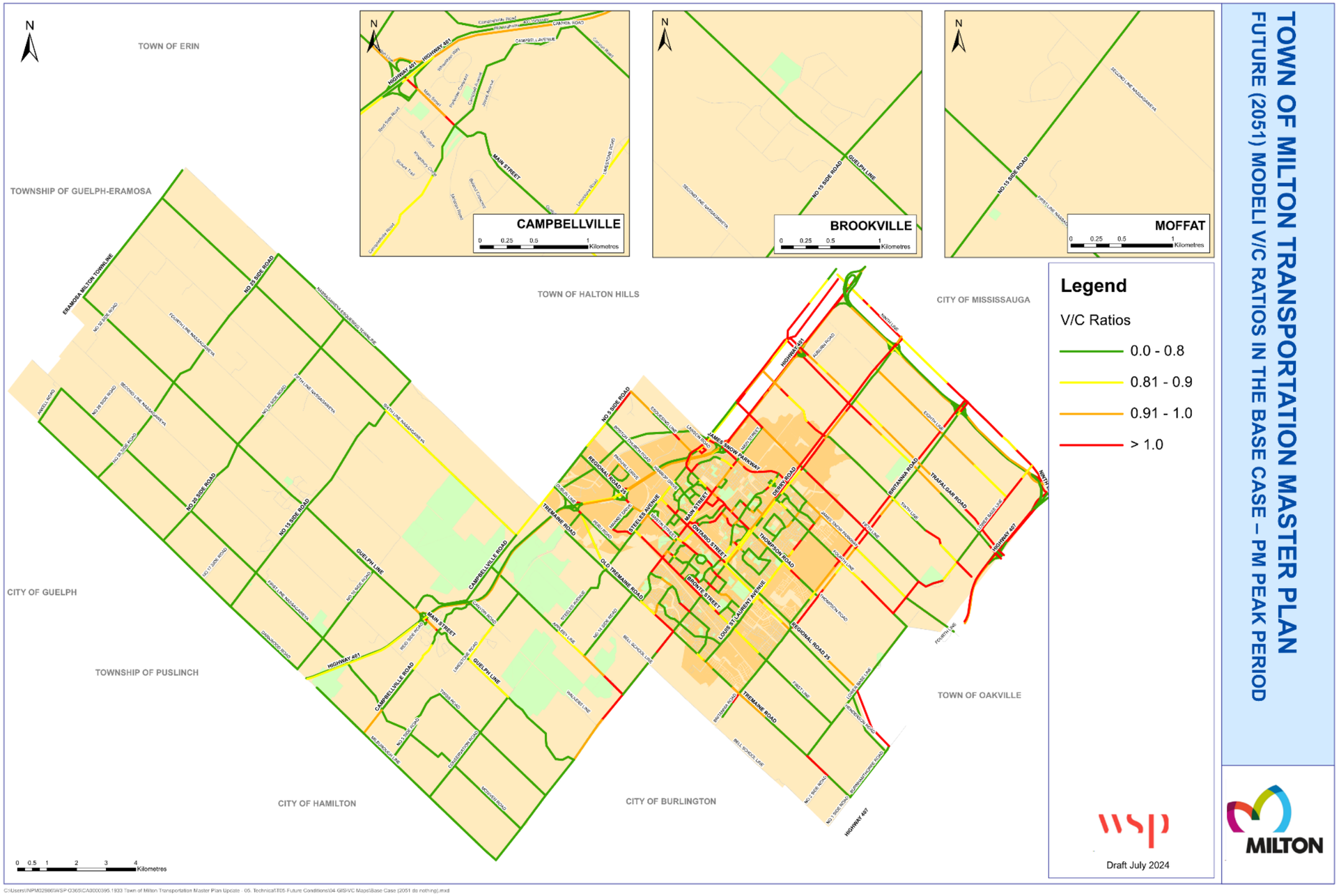
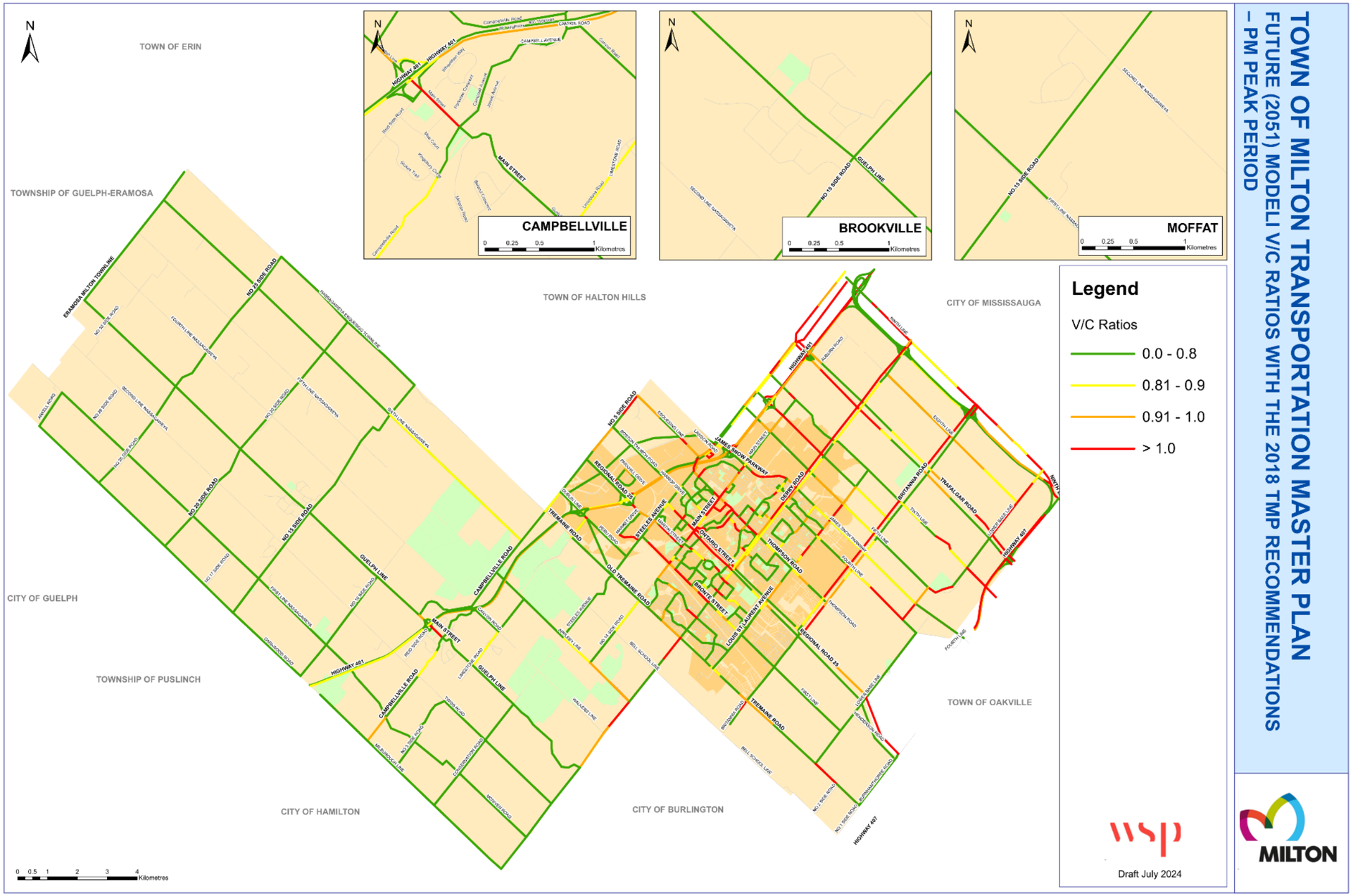


Figure 35. Future 2051 Model Volume to Capacity Ratios with the 2018 TMP Recommendations – PM Peak Period



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4.1.1.2 *Guidelines to Support the Vision*

To ensure the TMP Update's vision was embedded in the new alternative network, guidelines were set out to address the vision's four key principles:

- To support mobility for all modes of transportation, the new alternative must:
  - Include investments in all modes of transportation to manage the expected surge in the Town's population and employment.
  - Recognize that different modes may work better in different areas of the Town. For example, active transportation and transit may not be as effective or efficient in the Town's rural areas considering the low densities and distances between destinations.
  - Focus active transportation investments on filling in missing links.
  - Be supportive of the future transit network being planned as part of the Five-Year Service Plan and Transit Master Plan Update.
- To accommodate future growth and associated travel demands, the new alternative must:
  - Ensure that multi-modal transportation infrastructure in new development areas is constructed concurrently with the opening of the residential or employment development.
  - Include multiple modes. People in transit vehicles and on bicycles occupy less road space per person than the same volume of people in single-occupant vehicles, and the incorporation of these modes into the roadway network increases its people-carrying capacity.
  - Include select road widenings or extensions.
- To promote equitable and accessible travel for all ages and abilities, the new alternative must:
  - Ensure all new roads are designed as complete streets, including appropriate active transportation facilities.
  - Ensure an all ages and abilities active transportation network.
- To promote sustainability, the new alternative must:
  - Accept that some levels of traffic congestion may need to be tolerated and expected during peak times. This helps ensure equitable investment between different modes of transportation (thus enticing more active transportation and transit, reducing emissions). It also reflects a need to maintain the look and feel of the Town and manage budgets.

4.1.1.3 *The New Alternative*

Based on these guidelines and the gap analysis, a new alternative was identified. This alternative includes selected road network improvements, particularly in the Town's urban expansion areas where the gap analysis identified potential capacity issues, and includes active transportation investments to provide residents of Milton with more travel options. Transit priority corridors were also suggested in specific areas in the Town, taking into account the identified gaps as well as the location of existing transit lines. New transit network elements, such as new routes or changes to service frequencies,

were not included in the alternative as that is the subject of a separate Five-Year Service Plan and Transit Master Plan Update.

Specific improvements included in the new alternative are highlighted in **Table 11**. The gap analysis also found that the 2018 TMP recommendation to widen Savoline Boulevard would not be necessary to accommodate 2051 travel demand. This recommendation was thus removed from the new alternative.

Table 11. Improvements Included in the New Alternative

Gap Identified	Improvement in the New Alternative
Congestion on roads in Milton's urban areas, including along segments of Main Street East, Bronte Street, Ontario Street, Thompson Road South, and James Snow Parkway.	Active transportation infrastructure. Transit priority corridors along Bronte Street and Thompson Road South.
Congestion on Britannia Road from Tremaine Road to the western boundary of the future Milton Education Village.	Road widening from 2 lanes to 4 lanes.
General congestion along east-west corridors, particularly along Derry Road and Britannia Road from Regional Road 25 to Mississauga	Extension of Louis St. Laurent Avenue to Trafalgar Road.
Congestion on Lower Base Line from Fourth Line to Mississauga.	Road widening from 2 lanes to 4 lanes between Fifth Line and Mississauga, in addition to creating a new 2-lane extension of Lower Base Line, from the south limit of Fourth Line to Fifth Line. The existing Lower Base Line between Fourth Line and Fifth Line would remain.
Congestion on Sixth Line between Britannia Road and Lower Base Line	Road widening from 2 lanes to 4 lanes.
Congestion on Fourth Line from Louis St. Laurent Avenue to Lower Base Line	Road widening from 2 lanes to 4 lanes.

4.1.1.4 *Summary of the Alternatives Identified*

The new alternative shown above supplements the base case and 2018 TMP alternatives. An overview of the core features of each of these alternatives is provided in **Table 12**.

Table 12. Alternatives Identified

1: Base Case	2: 2018 TMP	3: New Alternative
Milton's current transportation network, plus projects already committed to by the Region and Province.	The transportation network recommended in the 2018 TMP. This includes new roads/road extensions to Milton's Secondary Plan Areas, including an extension of Louis St. Laurent Avenue to Sixth Line. It also includes an extension of Main Street East to Trafalgar. More details on the exact network elements are available in the 2018 TMP.	A new alternative that addresses network performance gaps that persist in the 2018 TMP network. It contains all recommendations from the 2018 TMP (excluding the widening of Savoline Boulevard) plus additional active transportation investments and transit priority corridors in Milton's urban area, as well as select road widenings or extensions elsewhere, as noted in **Table 11**.

4.1.2 Evaluating Alternatives

A multiple account evaluation (MAE) was used to evaluate the three alternatives on their ability to meet the TMP Update's vision. The MAE scored each alternative on a score of 0 to 4, based on how well the alternative aligns with each of the four key principles of the TMP Update's vision.

Each of the four key principles were assessed, as shown in **Table 13**. For each criterion, each alternative was assessed against the others: the best alternative received the highest possible score, while the worst alternative received the lowest possible score.

Halton Region only provided model outputs related to car demand and flows. No information was received to determine transit or active transportation demand and flows, nor was the model re-run by the Region to identify the impacts of the proposed recommendations on overall mode shares, car ownership, household and employment location decisions, and so forth. Due to these limitations with the travel demand model and associated outputs received from Halton Region, one criterion (promote equitable and accessible travel for all ages and abilities) can only be assessed qualitatively.

Table 13. Criteria Used in the Multiple Account Evaluation to Assess the Three Alternatives

Key Principles of the Vision	Criteria
Support mobility for all modes of transportation	• Total length of new active transportation infrastructure constructed.
Accommodate future growth and associated travel demands	• Total length of roads with v/c ratios greater than 1 in the PM peak.

Key Principles of the Vision	Criteria
	• Total vehicle hours travelled within Milton in the PM peak.
Promote equitable and accessible travel for all ages and abilities	• Qualitative assessment considering the level of safety of the proposed active transportation network.
Promote sustainability	• Total vehicle kilometres travelled within Milton in the PM peak.

Table 14 highlights the results of the MAE, showing that the new alterative scores highest. A detailed look at the scores for each of the four key principles is provided in the subsections below.

Table 14. Multiple Account Evaluation Results for the Three Alternatives

Key Principle	1: Base Case	2: 2018 TMP	3: New Alternative
Support mobility for all modes of transportation	○	●	●
Accommodate future growth and associated travel demands	○	◑	●
Promote equitable and accessible travel for all ages and abilities	○	◑	●
Promote sustainability	○	◔	●
Overall Assessment	○	◔	●

4.1.2.1 *Support Mobility for All Modes of Transportation*

All three alternatives were scored on their ability to support mobility for all modes of transportation. This was operationalized by examining the length of new active transportation infrastructure that was built in each alternative, quantified using GIS. The scores were then normalized on a range between 0 and 4. Other metrics to measure this key principle, such as transit and active mode shares, were not available due to limitations with the model outputs received from Halton Region.

Alternative 1 (Base Case) has no new Town infrastructure, and thus no new active transportation infrastructure. Alternative 2 (2018 TMP) includes a new active transportation network totalling 233.6 km. Alternative 3 (New Alternative) builds on alternative 2 by adding additional infrastructure, including active transport infrastructure, and thus scores higher on the first criterion, as shown in **Table 15**.

Table 15. Assessment of the Three Alternatives on the First Principle

Criterion	1: Base Case	2: 2018 TMP	3: New Alternative
Total length of new active transportation infrastructure constructed	0 km Normalized value: 0	233.6 km Normalized value: 3.44	271.3 km Normalized value: 4

4.1.2.2 *Accommodate Future Growth and Associated Travel Demands*

The three alternatives were scored on their ability to accommodate future growth and associated travel demands. This was measured by examining three metrics, assessing all roads within the Halton Region ABM subarea representing the Town of Milton, as provided by Halton Region:

- Total length of roads with v/c ratios greater than 1.0 for the PM peak.
- Total amount of hours travelled by all vehicles in the PM peak minus the total hours travelled if all roads experienced free flow travel times (time spent in congestion).
- Average speed along the network in the PM peak (total vehicle hours travelled divided by total vehicle kilometers travelled).

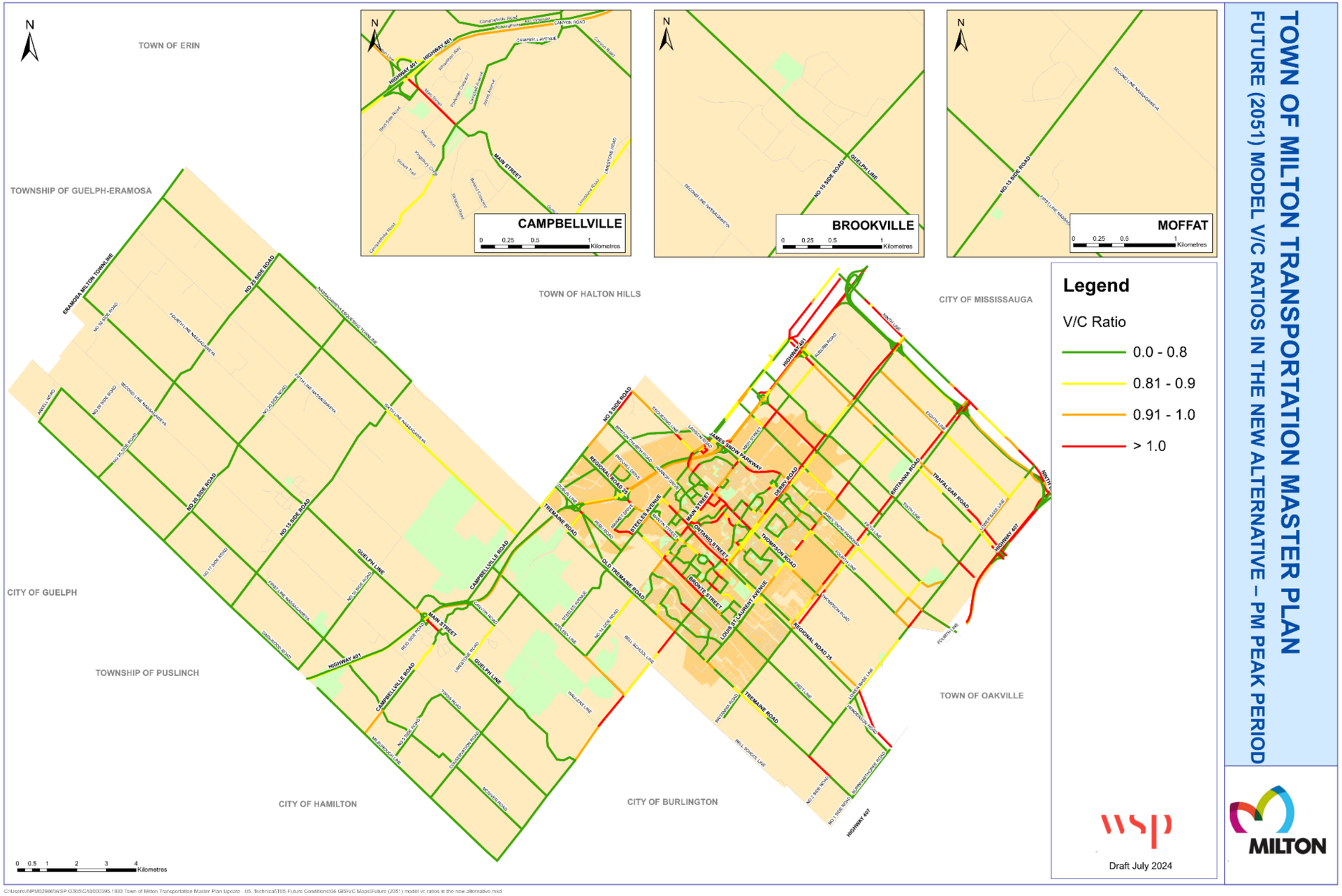
Alternatives having a lower number of congested roads, a lower amount of vehicle hours travelled in congestion, and higher average speeds have less congestion and thus score higher. The scores for each metric were normalized on a scale of 0 to 4 and are reported in **Table 16**. The normalized scores were then averaged across the three metrics to represent a total score for this key principle of the vision.

Alternative 1 (Base Case) has the most amount of road length under congested conditions, the highest vehicle hours travelled in congestion, and the lowest speeds, followed by Alternative 2 (2018 TMP). Alternative 3 (New Alternative) reduces congestion the most and thus scores highest on this key principle of the vision. Volume to capacity ratios are visualized in **Figure 34** and **Figure 35** for Alternatives 1 and 2, respectively. **Figure 36** shows volume to capacity ratios for Alternative 3.

Table 16. Assessment of the Three Alternatives on the Second Principle

Criterion	1: Base Case	2: 2018 TMP	3: New Alternative
Total length of roads with v/c ratios greater than 1 in the PM peak	241.72 km Normalized value: 0	210.74 km Normalized value: 2.37	189.48 km Normalized value: 4
Total vehicle hours travelled in the PM peak minus total hours travelled if all roads were free flow	17,655 hours Normalized value: 0	15,810 hours Normalized value: 2.37	14,457 hours Normalized value: 4
Average speed	46.68 km/h Normalized value: 0	48.92 km/h Normalized value: 2.27	50.63 km/h Normalized value: 4
Total score	0	2.32	4

Figure 36. Future 2051 Model Volume to Capacity Ratios in the New Alternative – PM Peak Period



4.1.2.3 *Promote Equitable and Accessible Travel for All Ages and Abilities*

The ability of the alternatives to promote equitable and accessible travel for all ages and abilities was assessed qualitatively, by considering the characteristics of the active transportation infrastructure recommended in each alternative. Safer active transportation infrastructure (for example, separated bike lanes compared to on-road routes) were assumed to accommodate a wider variety of people with different ages and abilities.

Alternative 1 (Base Case) has no new active transportation infrastructure and thus scores the lowest on this criterion. Alternative 2 (2018 TMP) includes an extensive active transportation network, with many on-road bike lanes. Alternative 3 (New Alternative) includes improvements on the 2018 TMP network, with additional routes as well as new separated bicycle lanes, which can better accommodate different people thanks to their increased safety. It thus scores highest on this criterion.

4.1.2.4 *Promote Sustainability*

The alternatives were assessed on their alignment with the sustainability principle of the vision by identifying how they may decrease the number and distance of car trips, as measured by vehicle kilometres travelled (VKT) within Milton, see **Table 17**. A lower VKT is assumed to be associated with lower amounts of air and noise pollution as well as greenhouse gas emissions. VKT in the PM peak was calculated for all roads within the Town of Milton using subarea outputs from the Halton Region ABM, as provided by Halton Region.

Alternative 1 (Base Case) creates the highest levels of VKT. Alternative 2 (2018 TMP) has somewhat lower VKT, with Alternative 3 (New Alternative) reducing VKT the most and thus scoring highest on this key principle of the vision.

Table 17. Assessment of the Three Alternatives on the Fourth Principle

Criterion	1: Base Case	2: 2018 TMP	3: New Alternative
Total vehicle kilometres travelled within Milton in the PM peak	1,860,718 km Normalized value: 0	1,855,230 km Normalized value: 2.61	1,852,317 km Normalized value: 4

4.1.2.5 *Stakeholder Inputs & Preferred Alternative*

As indicated by the analysis above, alternative 3 scored highest in the MAE along all 4 key principles and was therefore selected as the draft preferred alternative. Compared to the do nothing scenario, this alternative, based on the evaluation completed above:

- Reduces total hours spent in congestion in the PM peak by 3,198 hours or 18% (from 17,655 hours to 14,457 hours).
- Increases the average trip speed by 3.9 km/h or 8% (from 46.7 km/h to 50.6 km/h).

The draft preferred alternative was then presented to the public and stakeholders. Some feedback was received on specific elements of the network, particularly for the active transportation network. These comments were used to modify alternative 3 to create the preferred alternative. In particular, the following changes were made:

- The new extension of Lower Base Line, from the south limit of Fourth Line to Fifth Line, was modified to be 2 lanes with recommended land use protections for 4 lanes, instead of an initial 4 lane build out. The existing Lower Base Line between Fourth and Fifth Line would remain.
- The widening of Fourth Line from 2 to 4 lanes was removed from the alternative, pending confirmation of more detailed transportation modelling in the Britannia Secondary Plan Area TMP.
- Main Street East was added as an additional secondary transit priority corridor.

The detailed preferred alternative network is shown by mode in the following sections. It is recommended that all improvements for the different modes are implemented together to create a balanced network.

4.2 Active Transportation Recommendations

Active Transportation (AT) refers to all forms of human-powered mobility, including non-motorized or lightly-motorized modes like walking, cycling, rolling, bike-sharing, electric bikes and e-scooters, and using other mobility-support devices. Active transportation has significant positive social, human health, environmental and economic impacts which includes balancing transportation demands. Prioritizing active transportation in Milton can lead to a more sustainable, healthy, and vibrant community for everyone, including residents, visitors, and businesses.

4.2.1 Updating the Active Transportation Strategy

The Active Transportation Strategy (ATS) guides the development of the active transportation network. It was developed alongside the Town's 2018 Transportation Master Plan (TMP) to address Milton's current and future mobility trends and support its sustainability goals. This chapter updates the 2018 ATS's guidance, strategies, and the proposed AT network in response to rapid growth that exceeds the previous projections, to reflect current Regional and Town priorities, and to align more closely with current transportation planning best practices that emphasize enhanced accessibility, safety and equity for all road users (including pedestrians and other AT users). The update utilizes a Complete Streets approach, as well as a safety and future-ready lens that considers future growth and projected mobility needs of the community, shaped by an assessment of projected growth, land use, road characteristics and configurations, traffic operations, and network continuity, among other factors.

The ATS was developed using a five-step development process:

1. Understand Milton's current active transportation and policy context;
2. Identify vision and objectives based on the previous TMP, and new priorities and interests;
3. Update the active transportation network and recommend routes, facilities, and amenities;
4. Prepare design guidelines and review best practices; and
5. Prepare a long-term plan including phasing aligned with the overall TMP phasing and costing for the proposed active transportation network.

4.2.1.1 *Active Transportation Strategy Objectives*

The objectives of the ATS are specific outcomes that support the Town's vision and are intended to be achieved through the implementation of the active transportation strategies:

- Reflect the Town's growth plans, priorities, and developments;
- Create convenient connections to existing and proposed AT facilities in the Town and provide linkages to key destinations, communities, and transit;
- Prioritize and promote a safe, accessible, and equitable AT network available to everyone;
- Engage and respond to local demand and interest and other stakeholders who could have a role in facilitating and promoting active transportation in Milton;
- Develop a realistic implementation strategy that identifies priorities and estimated capital costs;
- Achieve a coordinated, integrated multi-modal transportation system that supports the need of a variety of transportation options; and
- Support sustainability and climate initiatives.

4.2.1.2 *How is the Updated ATS Different?*

The updated key elements of the ATS are provided in this section to align more closely with current best practices and reflect the needs of Milton's growing community. The updates include:

- Recommendations in this chapter emphasize a complete streets approach to AT network design which promotes safer streets, improves accessibility for users of all ages and abilities, and enhances connectivity between neighborhoods, transit hubs, and key destinations, all while addressing environmental sustainability and supporting climate change objectives.
- Updates in the guidance and AT network addresses potential network gaps and improving safety at intersections and along roads with higher traffic volume, truck routes, and rail corridors with higher potential of conflict between different road users.
- Revisions to best practices in AT planning reflect updates in the Ontario Traffic Manual (OTM) Book 18: Cycling Facilities, as well as Ontario Traffic Council (OTC) Protected Intersections, and Vision Zero principles.
- Strategies for integrating active transportation and transit to enhance the connectivity of first and last-mile trips, a crucial component to a successful multi-modal transportation system.
- Revisions to the phasing plan to align the updated AT network with consolidated TMP phasing to ensure its feasibility of implementation.

4.2.2 Active Transportation Best Practices

Since the development of the 2018 ATS, best practices in active transportation planning and safety have evolved. The following provides updates on best practices that should be considered when designing and implementing the AT network in Milton.

4.2.2.1 *Complete Streets*

Complete Streets design intends to create a functional, efficient street network that prioritizes road safety and accessibility. While accommodating every user type on a street may not be feasible, Complete Streets seek to balance the needs of all road users, including people who cycle, walk, take transit, and drive. This approach shifts the priority away from an auto-centric design, creating a safer and more welcoming environment for all ages, abilities, and modes of travel (**Figure 37**). Active transportation is considered a key element of Complete Streets as it offers more diverse transportation options, and facilitates greater access to goods, services, employment, and recreation.

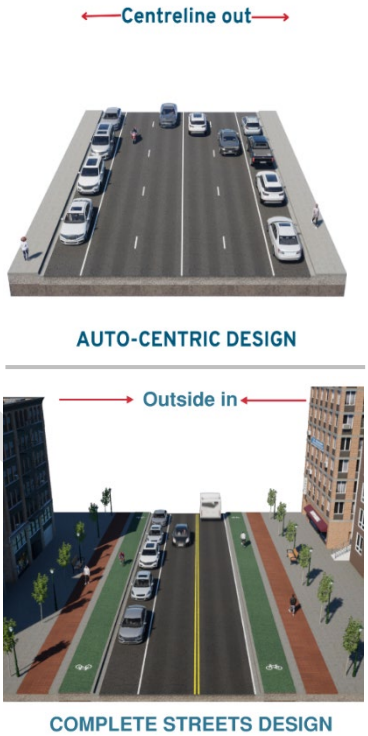


Figure 37. Complete Streets Design (Source: City of Toronto/DTAH & WSP)

There is no singular solution to implementing Complete Streets; every street is different with its own defining elements and characteristics. Road user needs vary based on the street type, function, location, and context. Key elements of Complete Streets for Milton to consider when designing streets include:

- **Consider Street Context**: Streets vary in their land use, function (for example, primarily for movement or access), and their context (for example, a local residential road or a rural road). The Town should consider these factors, as well as a street's main design users, in street design.
- **Enhance Safety and Accessibility**: Complete Streets prioritize safety, accessibility, and comfort for transit users, pedestrians, and cyclists. By incorporating elements that address these, like wider sidewalks, crosswalks, and traffic calming measures, these streets encourage leisurely activity and create safer, more comfortable, and welcoming environments.
- **Prioritize Transit and Active Transportation**: Enhanced mobility of a street is directly linked to convenient access to transit and active transportation infrastructure. These modes can be prioritized by improving the user experience through comfortable, safe, and accessible amenities and facilities, like bus shelters, designated spaces for active transportation, and bike racks. While transit plays a role in longer distance trips, active transportation can be a key option for completing the first and last-mile of trips.
- **Create Attractive, Vibrant Places**: Attractive and vibrant streets that support pedestrians create a strong sense of place and identity. Designing streets as multi-functional with appealing streetscaping encourages street activity and multiple visits while supporting the local economy.
- **Prioritize Connectivity**: The Town's roads must be cohesive and well-connected to other roads and key destinations to encourage active transportation. It is important to provide active transportation infrastructure and amenities along streets with many connections to retail, community spaces, and green space.

- **Consider Cost Effectiveness**: Complete Street design involves taking into account environmental, social, and economic factors, including the direct and indirect costs of construction, operation, and maintenance of a street. This approach minimizes the need for costly retrofit projects in the future.

4.2.2.2 *Ontario Traffic Council's Protected Intersection Guidelines (2022)*

Intersections witness a disproportionately high number of collisions and fatalities. In Ontario, approximately 60% of pedestrian fatalities and 70% of pedestrian injuries occur while crossing at intersections. Conventional intersection design poses significant issues for road user safety and comfort, particularly for pedestrians and cyclists. To ensure a safe and reliable transportation network, it is imperative to prioritize the design and operation of intersections.

The OTC. *Protected Intersection Guideline*, developed in 2022, provides the latest best practices in the planning, design, and operation of protected intersections in the Ontario context. Key elements from this guide the Town should consider in the design of intersections include:

- Reducing motor vehicle speed
- Separating high-risk conflicts
- Minimizing crossing distance
- Maximizing visibility
- Using clear and consistent design language
- Minimizing delay for all users

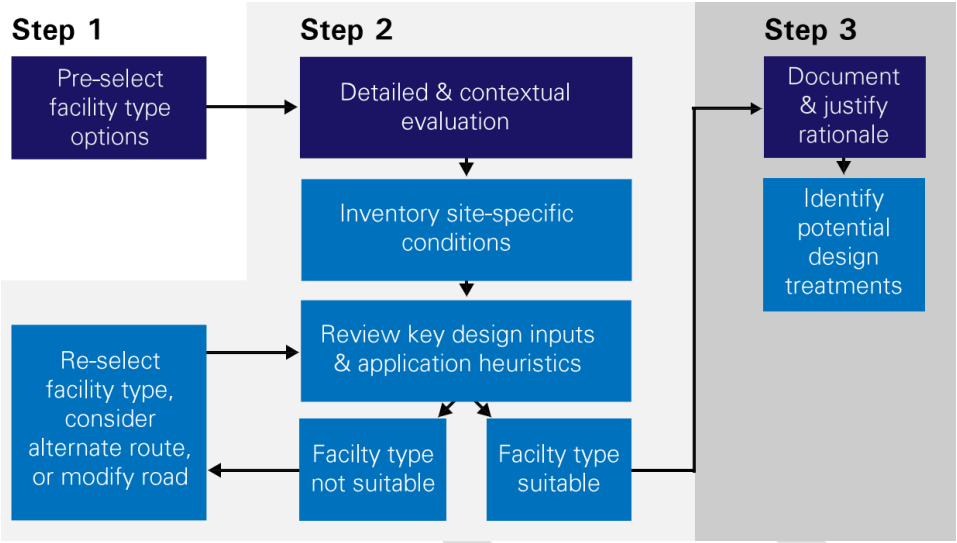
4.2.2.3 *Ontario Traffic Manual Book 18: Cycling Facilities*

Ontario Traffic Manual *Book 18: Cycling Facilities* was updated in 2021 with new sections including *Design Users* and *Guidance on Intersection and Crossings* which describe user considerations for realizing a fully utilized facility network and pavement markings, and signage and signalization features for intersections.

In *Design Users*, cyclists were categorized into those who are "interested but concerned", "somewhat confident" and "highly confident". The manual recognizes that the largest group is riders who are "interested but concerned", hence this group is considered as the "design cyclist" whom planners and designers seek to accommodate. Enhancing safety and separation from motor vehicles are primary considerations when selecting a cycling facility type.

With the updated high-level candidate route network, the next step for Milton is to determine the most appropriate facility-type for the specific context, using Book 18's three-step facility selection tool (summarized in **Figure 38** as a basis for this assessment.

Figure 38. Three-Step Facility Selection Tool



Source: OTM Book 18, 2021

4.2.3 Evaluating the Existing Active Transportation Network

To identify a recommended active transportation network for Milton, the previously recommended network in the 2018 Transportation Master Plan was evaluated and updated considering multiple factors that influence network connectivity, quality, and safety. Drawing upon the best practices outlined in this chapter, the active transportation network was updated to reflect the latest changes in best practices and to ensure the network is future-ready and effective in responding to the expected growing demand in Milton.

4.2.3.1 *Network Gaps*

Since 2018, Halton Region and the Town of Milton have developed transportation projects in the form of new construction, reconstruction, and retrofits within the boundaries of the Town of Milton. A desktop review of these new facilities was conducted to understand the existing active transportation network gaps and opportunities for improvement in the TMP update.

4.2.3.2 *Network Analysis*

Active transportation network and facility design is informed and derived from various elements such as traffic volumes, posted speed limits, adjacent land use context, and available right-of-way. For each corridor, these factors were overlaid to decide on the suitable facility, aligned with the OTM Book 18 guidance on facility selection.

4.2.3.3 *Community Input*

Facilities are designed by planners and engineers and ultimately used by people who live and work in Milton. It is crucial to ensure that the opportunities and challenges perceived by the community are reflected in the recommendations of the report. Throughout the public engagement activities for the TMP Update, comments received

from the public were reviewed and documented. Comments received pertaining to active transportation were summarized and reviewed to ensure they are reflected in the updated Active Transportation Strategies. A summary of these comments is provided below:

- Reducing traffic congestion
- Construction management and improving safety around construction sites
- Managing and limiting truck traffic in high-traffic pedestrian areas
- Improving road design, such as adjusting stop bars at intersections to provide setback crossings for vulnerable road users
- Addressing traffic congestion and improving traffic flow

4.2.4 Updating the Active Transportation Network

A core component of the ATS is active transportation network and additional network enhancements. In order to better address safety, equity, and accessibility within Milton, the network introduced in the 2018 ATS underwent updates. These improvements were guided by the latest AT trends, updated provincial guidelines, and industry best practices. The network development process, detailed in the 2018 ATS, included the following steps:

1. **Review existing routes and facility types**: Identify what is currently on the ground and what has been previously proposed.
2. **Identify route selection criteria**: Review the criteria and revise, if necessary, based on the land use context and latest best practices. The route selection criteria are presented in **Figure 39**.
3. **Identify missing links and facilities**: Based on steps 1 and 2, identify missing links or connection opportunities in the network and confirm applicability of proposed facility types using the OTM Book 18 three-step selection tool.
4. **Identify network enhancements**: Identify potential features and enhancements to the network that support active travel and increase a user's experience, with special attention to conflict points (intersections and accesses) and transition areas between facilities, and crossings.

Figure 39. Overview of Route Selection Criteria

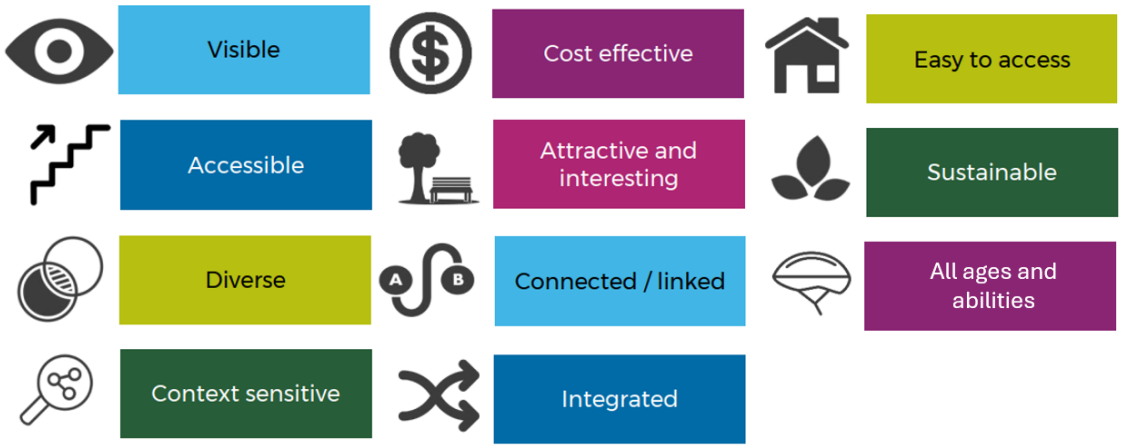


Figure 40 and **Figure 41** illustrate the updated active transportation network. Overall, there are 271.3 kilometres of proposed cycling and pedestrian facilities, including on-road cycling routes, facilities in the boulevard, off-road trails and sidewalks. **Table 18** provides an overview of the proposed AT network facilities in Milton. Note that any Regional facilities shown will be confirmed / analyzed as part of the ongoing Halton Region Integrated Master Plan.

Table 18. Summary of the Updated Proposed Active Transportation Network in Milton

Facility Types	Proposed in 2018 TMP (km)	Currently Proposed (km)
Multi-use Trails	56.7	42.6
Cycle Tracks	-	36.1
Bike Lanes	30.8	26.5
Separated Bicycle Lanes	-	35.9
Paved Shoulders	14.3	70.4
Signed Routes	131.8	59.9
Total	233.6	271.3

[1] Separated bike lanes include on-road physically separated bike lanes and in-boulevard cycle tracks.

4.2.5 Intersection Treatments

As discussed above, the updated active transportation network proposes cycle tracks as a new type of facility that was not previously considered in the previous TMP. Cycle tracks are recommended to be implemented with a buffer between vehicle lanes and cycle tracks for the safety of active transportation users. This results in setback

crossings of the cycle track and crossrides at road crossings, which designate a crossing location for cyclists, similar to how crosswalks designate a crossing for pedestrians.

Where two roads with cycle tracks intersect, additional considerations are needed to design an intersection that operates well for all users. The setback crossings of intersecting cycle tracks result in a protected intersection, which provides several safety benefits for cyclists and pedestrians. Recent guidance on protected intersections has been developed and published in the OTC Protected Intersection Guide. It is recommended that Milton develop guidelines and standards for the implementation of protected intersections, similar to work being done by other municipalities across the province.

4.2.6 Recommendations

The Active Transportation Strategy and other strategies in the TMP are inherently linked for a consistent approach to providing active transportation infrastructure and supporting infrastructure. The Right-of-Way Strategies follow a Complete Streets approach to updating typical road right-of-way standards to include active transportation infrastructure. The Transportation Demand Management Strategies include recommendations that promote shifting travel choices from single-occupancy vehicle trips, which include active transportation. In addition to these strategies, the following recommendations should be adopted for the implementation of the Active Transportation Strategy:

Recommendation	Key TMP Principles Addressed
Adopt and implement the recommended active transportation network. The network should be reflected in the new Official Plan.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Apply a Complete Streets approach and the facility selection processes in OTM Book 18 when considering additional active transportation facilities, including future road reconstructions and new roads in Secondary Plan areas.	
Develop consistent guidance for active transportation through the development of a Complete Streets Design Manual for Milton for linear active transportation facilities and intersection treatments, including protected intersections.	
Coordinate with Halton Region for the planning and implementation of active transportation facilities on Regional roads. The recommended facilities for Regional roads in this plan reflect the preferred facility from the perspective of the	

Recommendation	Key TMP Principles Addressed
Town of Milton for the Region's consideration. Any regional facilities will be confirmed / analyzed as part of the ongoing Halton Region Integrated Master Plan.	
Provide sidewalks on roadways consistent with the Right-of-Way Strategies discussed in **Section 5.4**. Sidewalks should be a minimum width of 1.8 metres or 2.0 metres or wider where high pedestrian volumes are expected. Sidewalks should be provided on both sides of all major local, collector, and arterial roads and on at least one side of minor local roads.	
Collect data to ensure accurate counts of cyclists and pedestrians in Milton.	

Figure 40. Proposed Active Transportation Network (Town-wide)

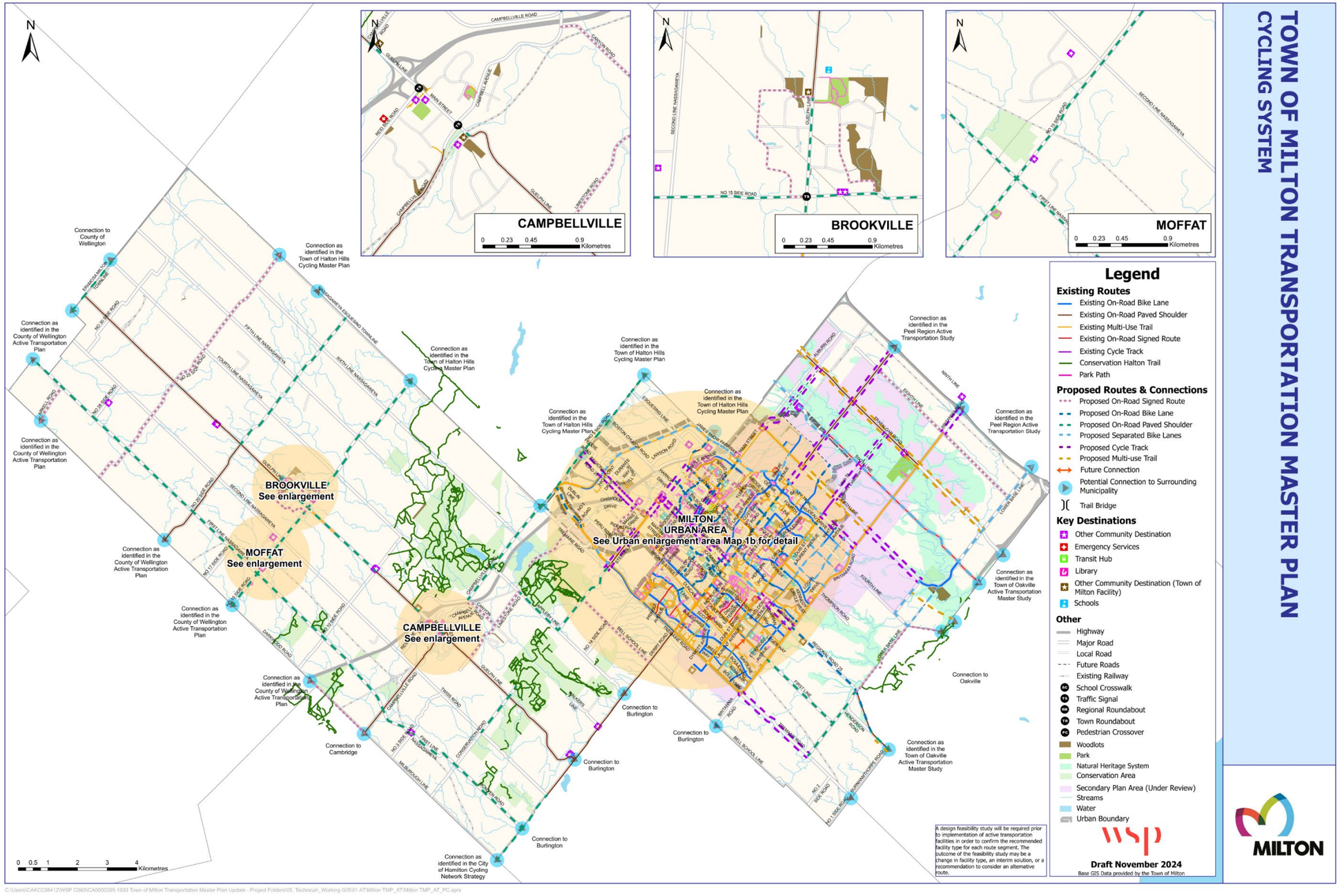
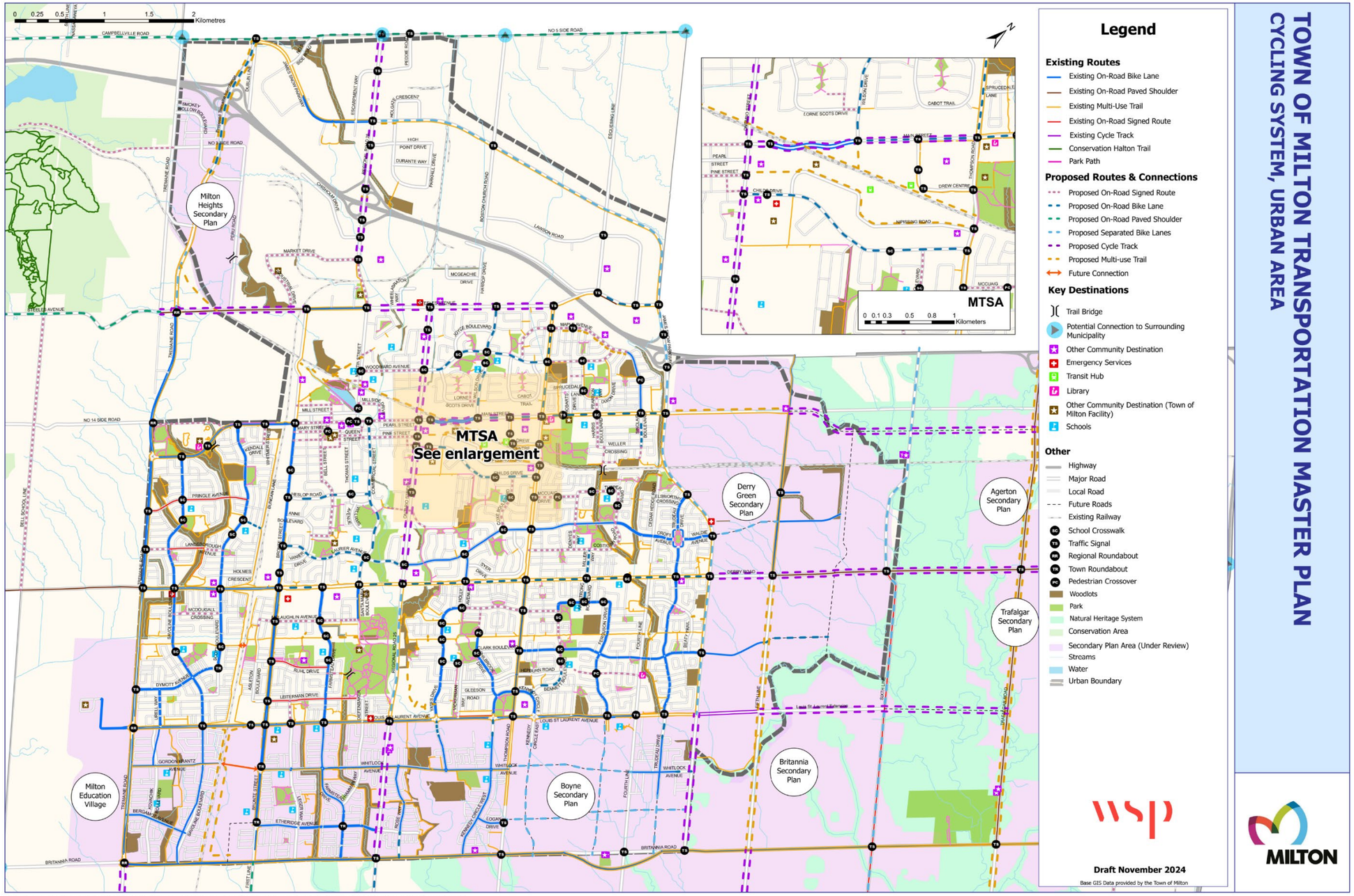


Figure 41. Proposed Active Transportation Network (Urban Area)



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4.3 Transit Recommendations

The recommended transportation alternative includes a set of transit policies to support a future transit network to meet the vision outlined in the TMP Update. It also includes a strategy for transit priority corridors and measures, such as bus lanes, queue jump lanes, and transit signal priority. Transit priority corridors identified for the Town through this TMP Update are intended to complement Halton Region's Transit Priority Corridor Network identified in its 2019 Defining Major Transit Requirements in Halton Region report.

The recommended transportation alternative does not include a comprehensive transit network plan, as that is the subject of a separate study, the Five-Year Service Plan and Transit Master Plan Update.

4.3.1 Transit Policies

The following general recommendations should be considered to align future transit networks with the TMP Update's vision:

Recommendation	Key TMP Principles Addressed
Implement the Five-Year Service Plan and Master Plan Update, which identifies an Investment Strategy to achieve one (1) service hour per resident by 2041.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Continue to provide services for persons with disabilities under a theme of universal accessibility. While Milton Transit already supports a comfortable, well-maintained, 100% accessible fleet, additional actions can be taken to further improve customer experience. These include: • Transitioning to PRESTO fare card payment in order to standardize with the rest of the GTHA, in alignment with recommendations from the Five Year Service Plan Update; • Continuing to invest in bus stop infrastructure such as accessible / hard surface bus stop pads, bus stop amenities such as bus shelters, benches, garbage / recycling receptacles, lighting, bike locks or lockers, and specified signage such as system maps in select locations; and the provision of additional passenger amenities such as next bus signage at select bus stops.	
Identify and implement the following key transit node locations:	

Recommendation	Key TMP Principles Addressed
• Redevelopment of Milton GO Station (to accommodate additional bus capacity) • New Trafalgar/Agerton GO Station • Milton Education Village Transit Hub (as noted in the Transit Five-Year Plan) • Bristol Park/Kennedy Circle Transfer Point (as noted in the Transit Five-Year Plan)	
Increase multi-jurisdictional trips, where advantageous by continuing to support the advancement of two-way, all-day GO rail service between Milton GO and Union Station in Downtown Toronto. Separately, continue to investigate service feasibility to/from current and future regional trip generators including Meadowvale Town Centre (Mississauga), Erin Mills Transitway Station (Mississauga), Trafalgar Road and Highway 407 Park-and-Ride (Oakville), the planned Palermo Terminal (Oakville), and Oakville Trafalgar Memorial Hospital (Oakville)	
Continue to encourage enhancing the connection between land-use and transit to improve competitiveness of transit at early stages of development and promote transit as a preferred mode choice to connect dense, urban areas.	
Expand services alongside development. As the Town grows, transit service coverage will need to be continually adjusted to ensure new neighbourhoods are being served as they are populated. Initially, transit expansion can be delivered through OnDemand services, which are within the Town's current service offerings. As communities grow, ridership and service thresholds can be applied to determine when to transition to fixed-route services.	
Build supporting active transportation along transit corridors. All transit users start and end their trips as pedestrians or cyclists. As such, effective active transportation linkages along and connecting to transit routes are a necessity to support current and future ridership. All transit routes should be supported by sidewalks on both sides of the street, alongside appropriate cycling infrastructure. Moreover, sidewalks and passageways connecting adjacent	

Recommendation	Key TMP Principles Addressed
neighbourhoods should be constructed to minimize approach distance to / from transit.	

4.3.2 Enhance transit accessibility, comfort, and dignity. Enhancing First Mile and Last Mile Connectivity

The first and last mile can be obstacles for many potential transit users as they may find it difficult to access transit stops due to inadequate pedestrian infrastructure or limited options for connecting transportation such as rideshare services. These complications can deter those who require flexible and convenient travel solutions. This makes the private automobile a more appealing option as it provides users with the highest level of mobility allowing them to travel directly to their desired destination while transit users must travel to a focal pick-up/drop-off point. Potential solutions for improving first and last mile connectivity to transit include the following:

Recommendation	Key TMP Principles Addressed
Develop partnerships with rideshare and bike-share services to provide connectivity to transit hubs. Demand for such services may increase with soaring post-secondary enrollment in the Town.	— Accommodate future growth and associated travel demands — Promote equitable and accessible travel for all ages and abilities — Support mobility for all modes of transportation — Promote sustainability
Improve and maintain active transportation infrastructure to ensure safe and accessible pathways that will encourage walking to and from transit stops.	
Implement transit hubs that integrate various modes of transportation (buses, bikes, rideshare) to create easy transfers and improve connectivity.	

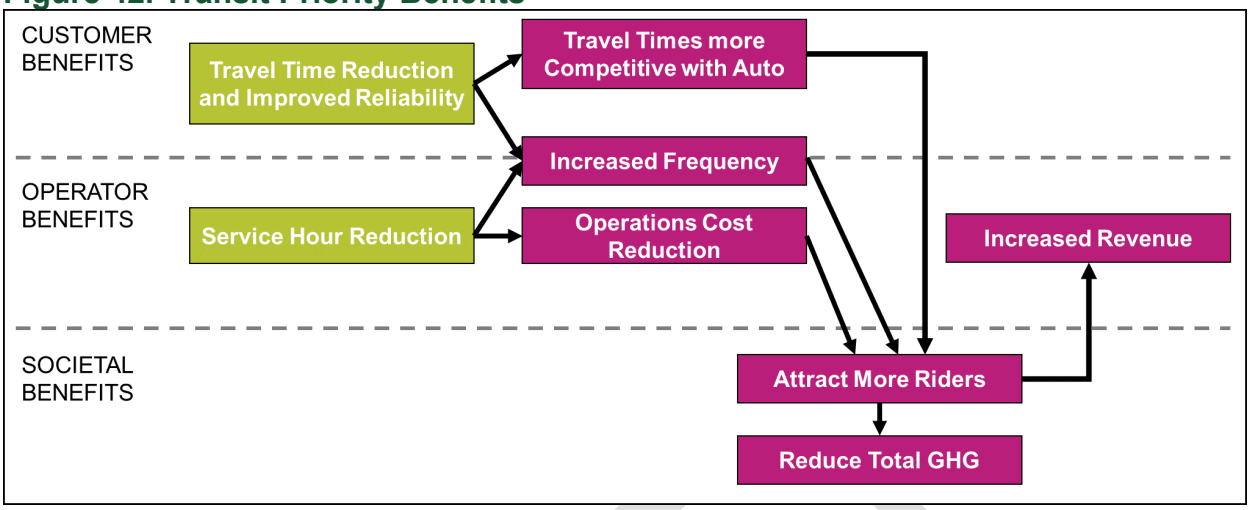
4.3.3 Transit Priority Measures

4.3.3.1 *What are Transit Priority measures?*

Transit priority measures use technology and/or road widening to enhance transit travel times, boost reliability and increase bus speeds compared to private vehicles, as shown in **Figure 42**. By minimizing travel durations and enhancing reliability, these treatments can deliver significant advantages to passengers, including reduced travel times and increased route speeds, thereby leading to decreased operational costs. This can:

- Help attract additional riders, hence increasing revenue for Milton Transit; and
- Take private vehicles off the road, aiding in the reduction of GHG emissions and improving transit mode share levels.

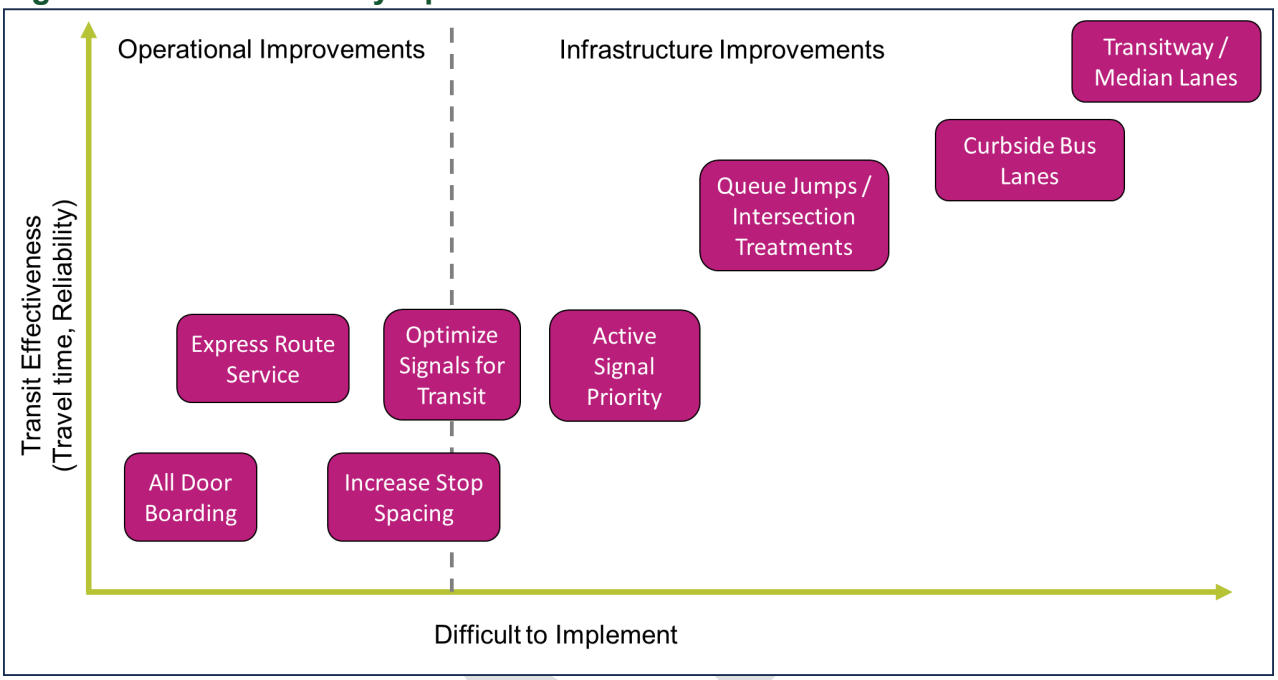
Figure 42. Transit Priority Benefits



Improving transit speed can be achieved through a range of operational infrastructure enhancements, each differing in effectiveness and difficulty of implementation (see **Figure 43**). Operational improvements such as all door boarding facilitated by off-board fare payment and increasing transit stop spacing serve to minimize dwell time at transit stops. Passive transit signal prioritization involves retiming signals to match typical transit operating speeds, providing buses with the ability to ride a 'green wave' along the corridor. Active signal priority allows signals to detect buses in the corridor and actively alter signal phasing in real time to support bus movement.

While beneficial, infrastructure upgrades such as dedicated bus lanes (including queue jumps or curbside lanes) often require reallocating existing general purpose facilities or significant construction.

Figure 43. Transit Priority Options



4.3.4 Transit Priority Measures Implementation Guidelines

Transit priority measures are usually most beneficial where:

- Transit ridership is relatively high; and
- Traffic conditions are currently or projected to be slow and/or unreliable.

Transit priority improvements are most justified when both conditions are present.

An examination of both current bus routing as well as projected future peak period performance conditions highlights the importance of transit priority along Thompson Road, Bronte Street, and Main Street East.

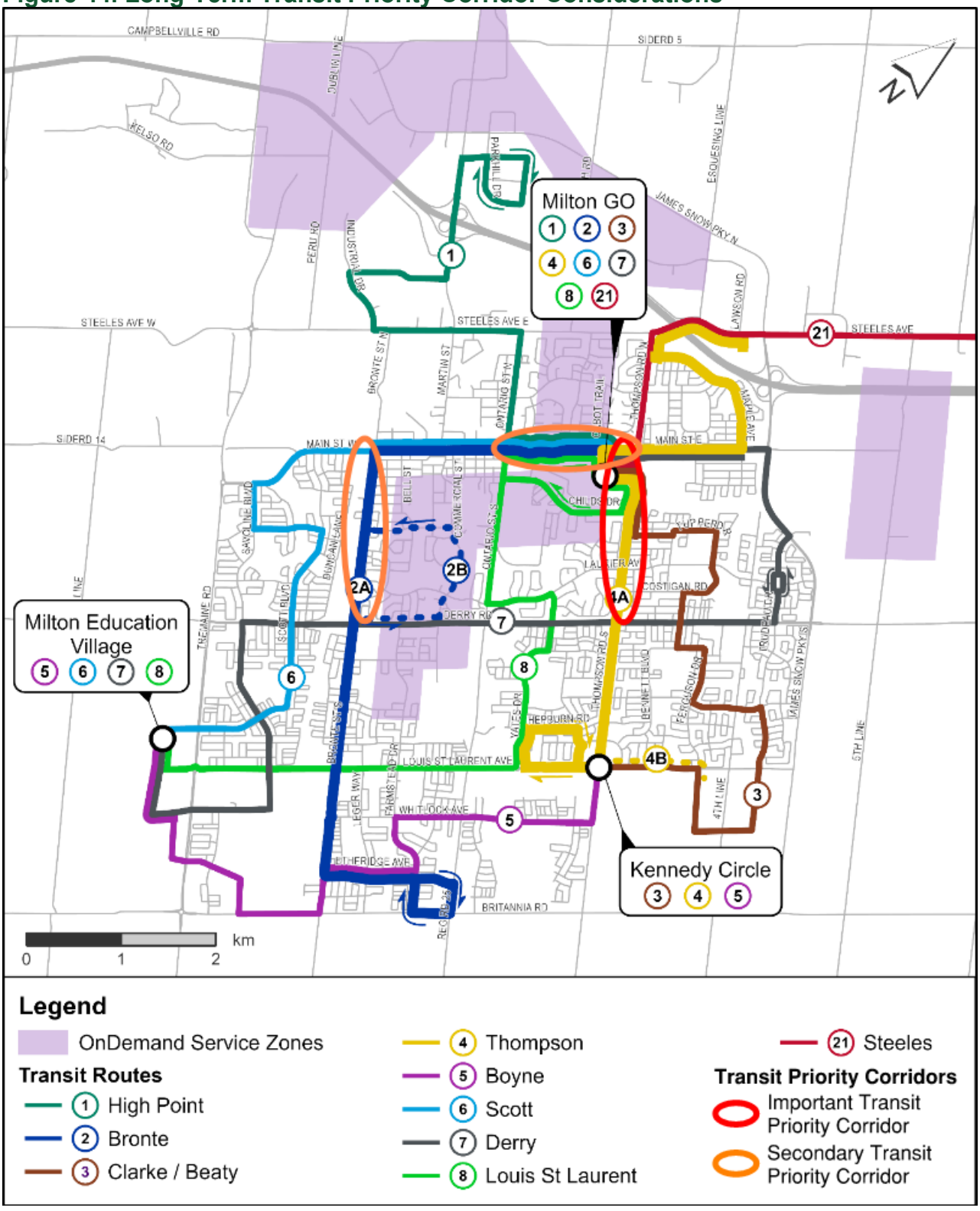
Recommendation	Key TMP Principles Addressed

Implement transit priority along the following corridors:
• Thompson Road (Main Street to Derry Road) is strongly recommended for transit priority as it serves seven transit routes (four Milton Transit routes and three GO bus routes) and is flagged as having future traffic performance issues. Notably:
  • Queue jump treatments could be considered at Thompson Road / Drew Centre to ensure reliable access to Milton Transit's central hub at Milton GO Station;
  • Performance at other signals along the Thompson
	• Accommodate future growth and associated travel demands
	• Promote equitable and accessible travel for all ages and abilities
	• Support mobility for all modes of transportation

Recommendation	Key TMP Principles Addressed
Road corridor between Main Street and Derry Road should be monitored to determine transit priority locations required in the future. • Bronte Street (Main Street to Derry Road) is identified as a secondary transit priority corridor, where measures may be required in the future. • Main Street East (Ontario Street to Thompson Road) is also identified as a secondary transit priority corridor, where measures may be required in the future.	• Promote sustainability
Work alongside Metrolinx and Halton Region to support the development of transit priority infrastructure that would be desirable to implement the Priority Bus network identified in the 2041 Regional Transportation Plan. These include: • Access to a new and expanded Milton GO Station bus loop. • Main Street (west from Milton GO Station) and Ontario Street / Regional Road #25 (to southern Town limits) Priority Bus service (RTP Project #56). • Derry Road (Bronte Street to eastern Town limits) Priority Bus service (RTP Project #57). • Trafalgar Road (CPR Tracks to southern Town limits) Priority Bus service (RTP Project #60). • Thompson Road (Main Street to Steeles Avenue) and Steeles Avenue (Thompson Road to eastern Town limits) Priority Bus service (RTP Project #69).	
Examine the benefits of transit priority treatments in relation to access/egress to planned future transit hubs at Milton Education Village and Kennedy Circle.	

Long-Term Transit Priority corridor considerations are illustrated graphically in **Figure 44**, on top of Milton's planned 2029 transit network. Note that the Halton Region IMP is conducting additional analysis for transit corridors.

Figure 44. Long-Term Transit Priority Corridor Considerations



Source: Milton Transit Five-Year Service Plan, 2024 (Base Map). Transit Priority Corridors added by WSP.

4.4 Road Recommendations

The preferred road network, as identified through the process outlined in **Section 4.1**, is shown in **Figure 46** and **Figure 47**. Key features of this network are highlighted in **Table 19**.

Recommendation	Key TMP Principles Addressed
Implement the road network identified in **Figure 46** and **Figure 47.**	• Accommodate future growth and associated travel demands • Support mobility for all modes of transportation

Note that the inclusion of 5 ½ Line in the provided maps is dependent on the outcome of a future environmental assessment (EA) for the North Halton Corridor to be conducted by the Region of Halton. EAs are also underway for proposed improvements along Sixth Line between Highway 401 and Britannia Road, and for a proposed extension of Main Street East from Fifth Line to Trafalgar. These EAs could impact the future transportation network and the road recommendations presented in this report.

Road improvements within Secondary Plan Areas in the Town are intended to be identified through their respective Secondary Plan processes; no recommendations for these improvements were made within this TMP update.

Road improvements along Regional roads shown on the map are based on the Region's 2011 Transportation Master Plan. These improvements are currently being reviewed and updated through the Region's Integrated Master Plan.

Table 19. Road Recommendations

No.	Road	From	To	Recommended Improvement	Identified in
1	Ontario Street South	Derry Road	Main Street East	Converting 2 lanes to HOV lanes	2018 TMP
2	Main Street East*	Fifth Line	Trafalgar Road	4-lane extension	
3	Louis St. Laurent Avenue**	Fifth Line	Sixth Line	4-lane extension	
4	Sixth Line*	Highway 401	Britannia Road	Widening from 2 to 4 lanes	
5	Britannia Road	Tremaine Road	Milton Education	Widening from 2 to 4 lanes	Current TMP

No.	Road	From	To	Recommended Improvement	Identified in
			Village west boundary		
6	Lower Base Line	Fourth Line	Fifth Line	2-lane extension	
7	Louis St. Laurent Avenue	Sixth Line	Trafalgar Road	4-lane extension	
8	Lower Base Line	Fifth Line	Town east boundary	Widening from 2 to 4 lanes	
9	Sixth Line	Britannia Road	Lower Base Line	Widening from 2 to 4 lanes	

* EA underway
** The extension of Louis St. Laurent was proposed in the 2018 TMP to start at James Snow Parkway. The section between James Snow Parkway and Fifth Line has since been constructed. An EA is slated to start in 2026 for a widening of Louis St. Laurent Avenue Between Fifth Line and Sixth Line.

4.4.1 Road Improvements in the Existing Urban Area of Milton

The road network in the existing urban area of Milton is almost completely built out. The Town has few opportunities to expand the road network in this area, and does not wish to add more general purpose vehicle lanes that would attract more cars. Improvements to mobility in the urban area are therefore focused on transit improvements and active transportation improvements.

However, road network improvements in the area around the Milton GO train station, which has been identified as a Major Transit Station Area (MTSA), are required to support redevelopment of the area, increase connectivity to the station, provide smaller block sizes, move property accesses to side streets to improve multi-modal travel and the public realm along major streets, and provide more ways for active transportation users of all ages and abilities to travel. Through redevelopment of the MTSA, a finer grain road network is expected to emerge. A critical component of this redeveloped road network is the introduction of local roads parallel to arterial roads, such as Main Street. Redeveloped buildings would front onto Main Street with vehicle parking behind the buildings. Parking would be accessed from public streets, and driveways onto Main Street would be removed. This would improve the safety of active transportation along Main Street, with fewer conflict points between vehicles and people walking, rolling, or cycling. It would also create a more people-centric place, with buildings and the transportation network catering more to the needs of people, while still providing access to those in cars.

The street network shown in the Milton MTSA & Mobility Hub Study is provided in **Figure 45** and includes:

- Extension of Nipissing Road to Ontario Street South (developer responsibility, as per the Town's Local Service Policy).
- Construction of a new East-West (EW) Street to facilitate redevelopment of properties along Main Street East and to provide access from the rear of these properties from EW Street (EA scheduled to start in 2025).
- Construction of a north-south (NS) street to connect the new EW Street with Main Street East (developer responsibility, as per the Town's Local Service Policy).

Figure 45. Milton MTSA Road Network as Shown in the Mobility Hub Study

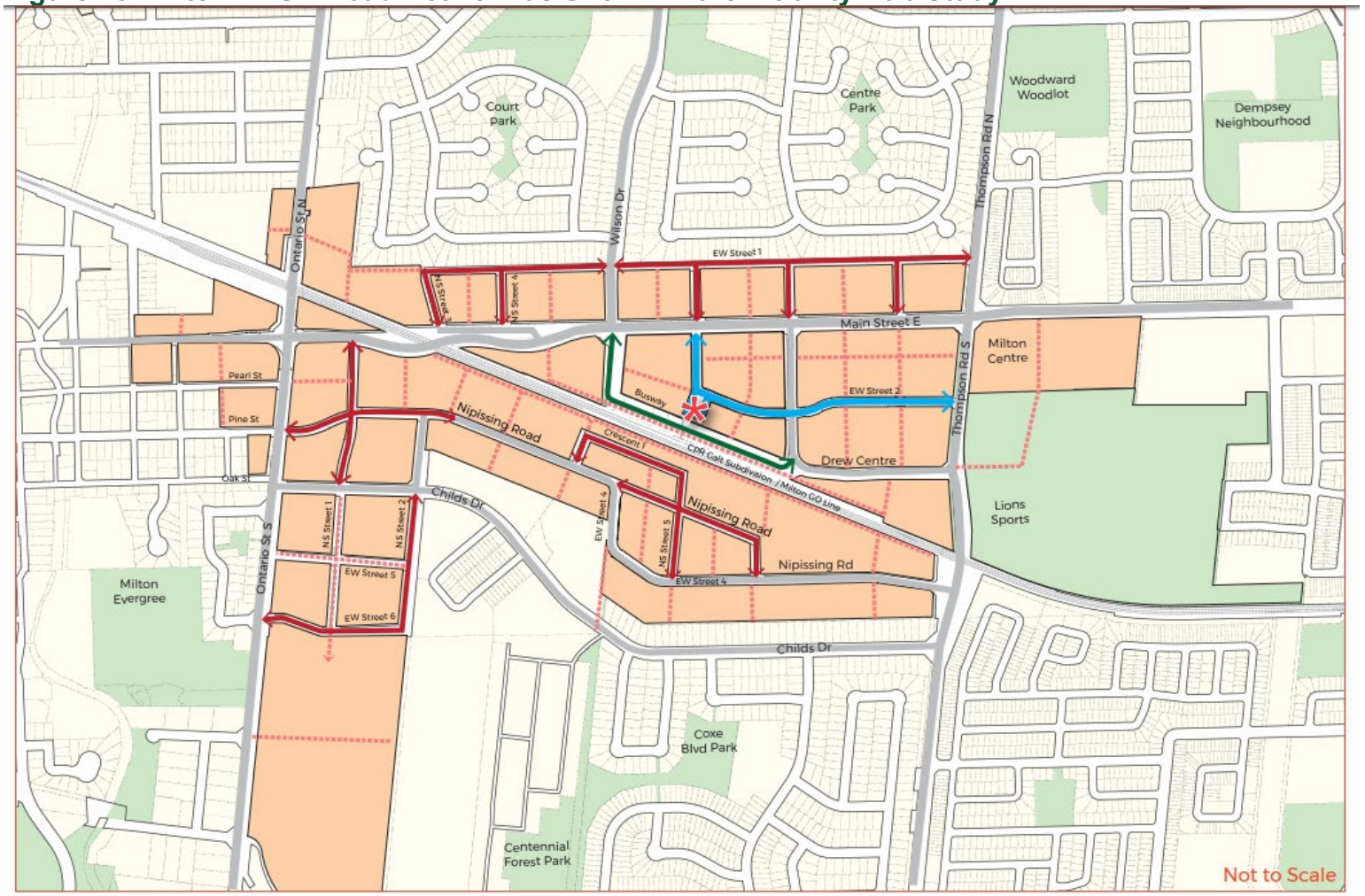


Figure 46. Proposed Roadway Network (Town-wide)

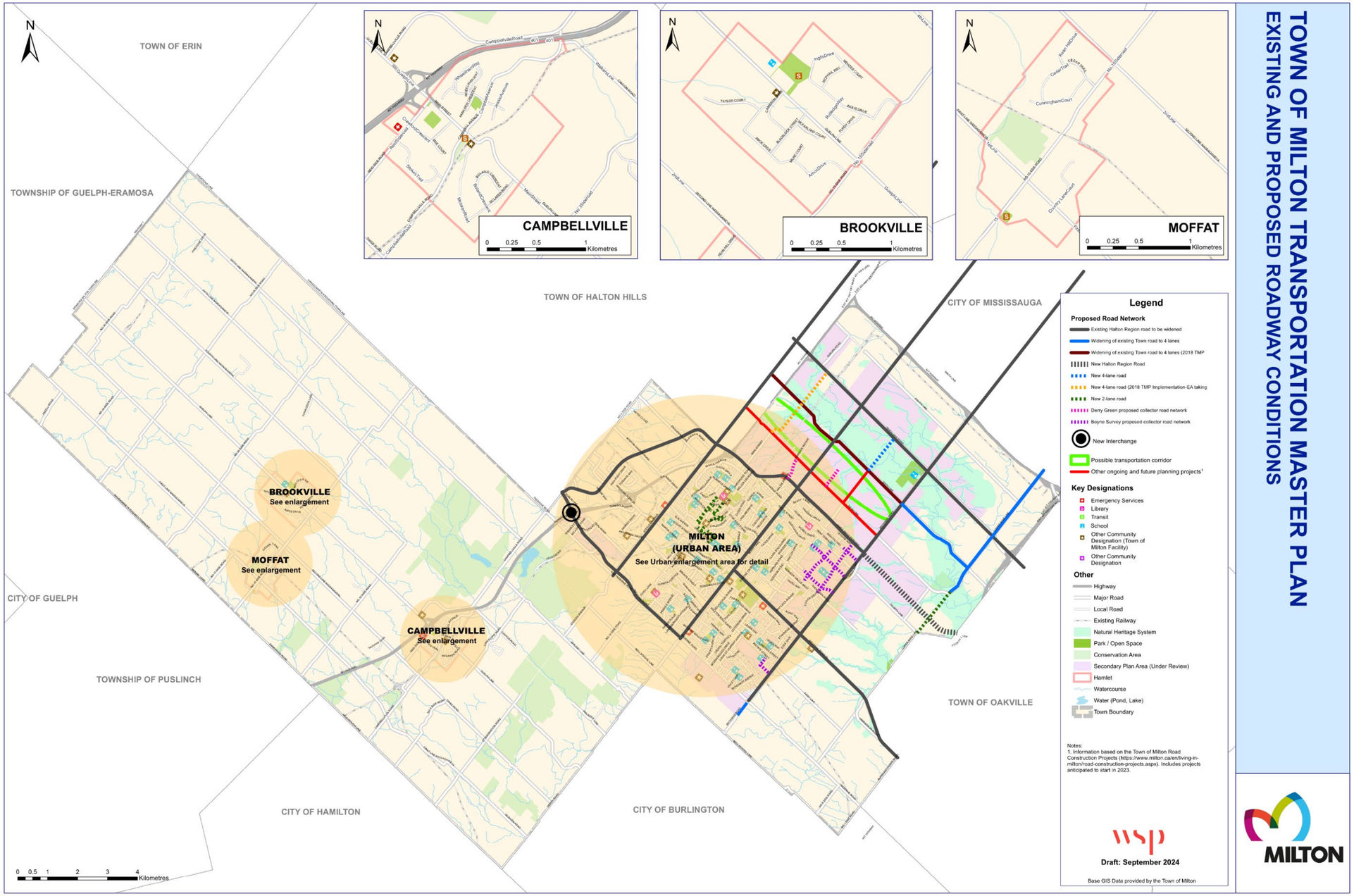


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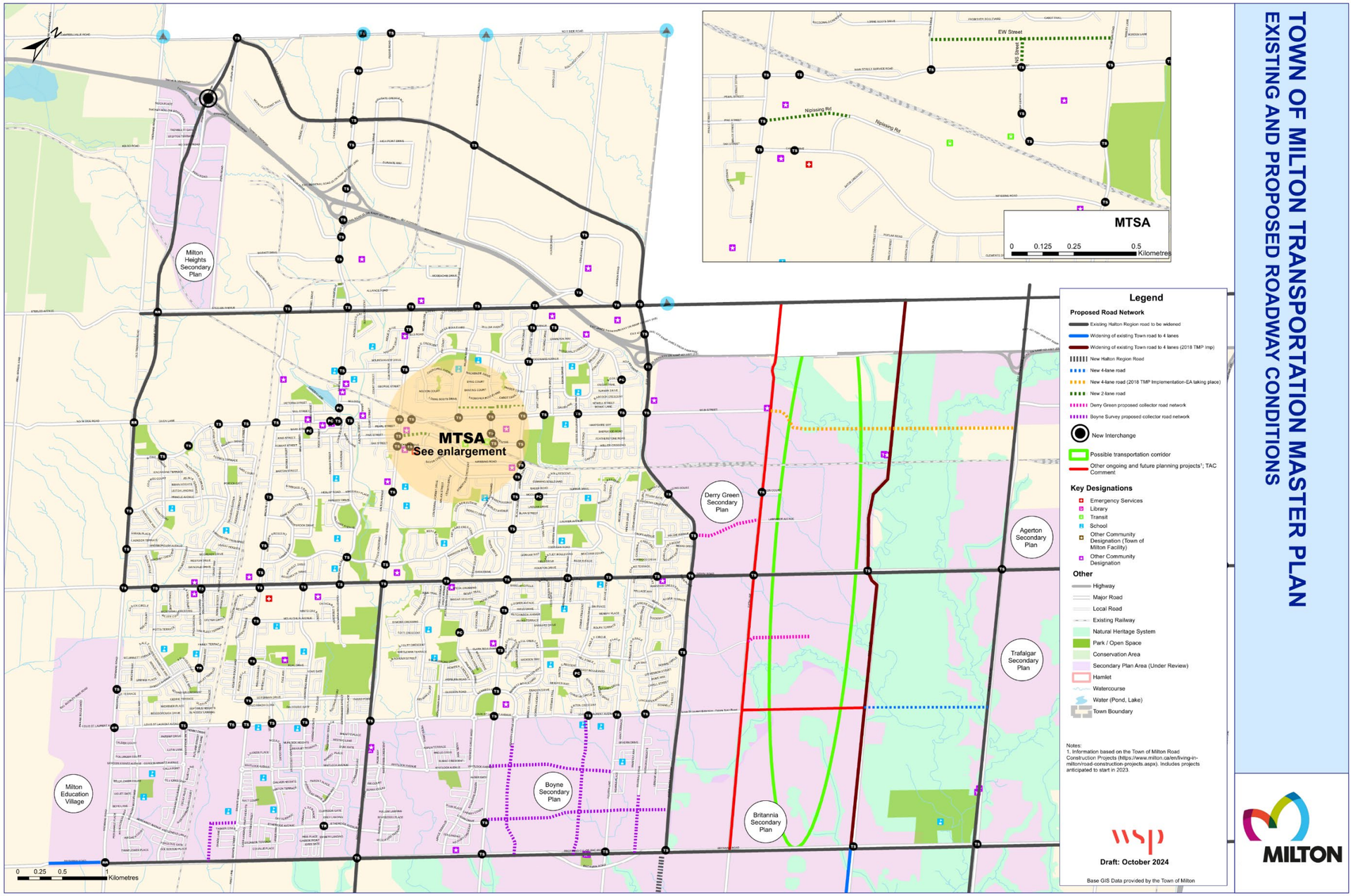
Figure 47. Proposed Road Network (Urban Area)



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5 Supporting Strategies

To ensure the recommended transportation network serves the needs of residents of Milton well, several supporting strategies were developed, highlighting how the Town can support the future transportation network through a goods movement network, transportation demand management, a traffic safety strategy, roadway classification and right-of-way designation, and a parking strategy.

5.1 Goods Movement

The Town of Milton is evolving, with increased development and changing land-use patterns over the next several decades. As a result, goods movement in the Town is expected to continue and grow.

The movement of goods is a crucial consideration to appropriately plan for future infrastructure maintenance and improvements, as well as to determine the corridors that are the most compatible with its adjacent land use. This is especially true in Milton, due to its proximity to Highways 401 and 407, Toronto Pearson International Airport, and as a mid-way point between the Toronto area and the Kitchener Waterloo area. Designated truck routes can optimize the transportation network to support the needs of businesses and industries. The design and management of truck routes and strategies for moving goods are critical to support economic development, reduce congestion, enhance safety, and promote sustainable transportation practices. Such strategies help balance the needs of freight transportation with the broader goals of the transportation network, including accommodating passenger vehicles, public transit, and non-motorized modes of transportation.

5.1.1 Town of Milton Goods Movement Policies

5.1.1.1 *Town of Milton Official Plan*

The Town of Milton's Official Plan (OP) identifies the need to promote a diverse transportation system and encourage urban development that supports multi-modal transportation. This is elaborated upon in the Moving Milton Discussion Paper that has been prepared for the new Official Plan.

The OP recognizes that economic investments can be improved through the "expeditious movement of goods by truck and rail." It outlines that the "transportation system shall provide a safe, economic and efficient rail and highway network for both people and goods", which is in line with the strategies set in the Halton Region Transportation Master Plan.

The OP further outlines the importance of parking and goods movement by trucks and rail to the Town. It states that the Town will work with local businesses to ensure truck routes meet their needs while protecting residential areas from the nuisances and hazards of commercial vehicles.

5.1.1.2 *Existing Truck Route By-Law*

Specific truck routes and prohibitions are designated in the Town of Milton's By-law 1984-1 Designated Heavy Traffic and Truck Route Provisions. The Town completed a Traffic Engineering Practices Study (TEPS) in 2008, which resulted in changes to the 1984 By-law. Specific routes within the urban and rural system were addressed to reduce heavy vehicle impact. In particular, more routes were added to the "no heavy truck" designation. The definitions of "commercial motor vehicle", "local delivery" and "heavy traffic" were also updated as part of the 2008 By-law.

The Town of Milton defines three tiers of truck regulation:

- **No heavy truck permitted**: roadways where heavy traffic is not permitted. Current issues include lack of prohibiting signage on local and collector roads that connect to designated truck routes;
- **Load restrictions**: roadways where current infrastructure or Regional noise restrictions limit the sizing and weight of truck loads that use the roadway; and
- **Heavy truck permitted**: remaining major arterial roads that are full-time designated for all truck use.

At the time of the previous TMP (2018), the existing truck route by-law was sufficient in satisfying the goods movement needs of Milton. As goods movement networks continue to evolve due to growth and changes to land use patterns, there is a potential need for the Town to address concerns of safety and efficiency of the existing goods movement network. As the goods movement needs within the municipality and the Region change, some possible strategic directions are discussed in the following sections.

5.1.1.3 *Town of Milton Transportation Master Plan (2018)*

The Town's 2018 TMP indicated that major arterial streets that are direct, linear, support heavy vehicles, and connect to controlled-access highways are typically used for goods movement. Inter-regionally, Highway 401 and Highway 407 are used as the primary trucking routes. Approximately 20 local trucking companies operate out of Milton. There are also three courier services, four distribution centres, and two aggregate quarries that use Town and Regional truck routes.

There were three main recommendations related to goods movement in the 2018 TMP:

- Revise and update the Town truck network;
- Publish a truck route map; and
- Implement goods movement supporting policies.

2018 TMP Recommendation 1: Update Truck Network

The 2018 TMP recommended that the Town revise and update the Town truck network, based on new development. As the Greater Toronto Area urbanizes and grows, the urban and rural land use fabric changes, along with the residential and economic context. As a result of these changes to urban form and the business environment, the truck network may need to be revised and updated so that it follows the goals and vision set in the Milton and Halton Region Official Plans and broader Regional plans. Changes proposed in the 2018 truck route network are shown in **Table 20**.

Table 20. Town TMP (2018) Recommended Truck Routes

No.	Route	From	To	Note
1	Main Street easterly extension	James Snow Parkway	Trafalgar Road	Add to designated truck routes.
2	Potential Fifth Line or 5 ½ Line	North-south corridor through Derry Green Secondary Plan Area	-	Add to designated truck routes.
3	Proposed easterly extension of Waldie Avenue	James Snow Parkway	Fifth Line or 5 ½ Line	Add to designated truck routes.
4	Proposed extension of Clark Boulevard	James Snow Parkway	Fifth Line or 5 ½ Line	Add to designated truck routes.
5	Louis St. Laurent Avenue	Regional Road 25 (Ontario Street South)	Easterly limit	Add to designated truck routes.
6	Thompson Road South	Louis St. Laurent Avenue	Britannia Road	Add to designated truck routes.
7	Proposed extension of James Snow Parkway	Britannia Road	Milton – Oakville boundary	Regional road. Add to designated truck routes.
8	James Snow Parkway	Steeles Avenue	Proposed northerly realignment of Tremaine Road	Regional road. Add to designated truck routes.
9	Realignment of Tremaine Road	Main Street	Proposed northerly realignment of James Snow Parkway	Regional road. Add to designated truck routes.
10	Old Tremaine Road	Main Street	Campbellville Road	Regional road. Remove from designated truck routes due to Tremaine realignment.
11	Louis St. Laurent Avenue	Regional Road 25	James Snow Parkway	Add to designated truck routes when widening is completed

2018 TMP Recommendation 2: Publish a Truck Route Map

The 2018 TMP recommended that the Town truck network is updated to reflect current conditions, and a map is published and made available to businesses and freight and logistics firms. The truck route network will likely not be used by companies unless Milton promotes and educates freight and logistics companies to use designated routes, or through enforcement.

2018 TMP Recommendation 3: Implement Goods Movement Supporting Policies

The 2018 TMP discussed the future of goods movement modes and delivery models. These include small distribution centres (local delivery model for urban centres), autonomous robot deliveries, drone deliveries, off-peak deliveries, and load pooling. The 2018 TMP recommended that the Town implement policies to:

- Integrate goods movement within the Regional transportation network;
- Promote safe and environmentally sustainable goods movement; and
- Plan for the future.

5.1.2 Existing and Future Land Use

The Town of Milton's existing land use and proposed developments are shown in **Figure 48** and **Figure 49**, respectively. These evolving land use patterns provide the tools for the Town to plan, monitor and adapt truck routes to be compatible with the land uses, and to serve the industries that rely on freight.

The Ministry of Transportation's Freight-Supportive Guidelines recommend considering alternative freight routes when those routes are adjacent to existing or new sensitive land uses (residential, commercial, institutional, or significant natural heritage features or areas) to minimize or avoid impacts. The Guidelines also recommend locating major signed freight roads and corridors on roads parallel to major transit roads.

5.1.3 Goods Movement Flows

Milton's existing goods movement network was developed based, in part, on heavy truck volumes predicted as part of the 2018 TMP. This ensured that the network was informed by a thorough understanding of where and how trucks were predicted to travel.

As this TMP Update plans for 2051 instead of 2031, and recommends additional transportation infrastructure, a new heavy truck volume forecast was generated. These forecasts are shown in **Figure 50**. In general, heavy trucks are predicted to travel along the network recommended in 2018. No additional changes to the network are therefore suggested.

5.1.4 Recommendations

Based on the future land uses and goods movement flows, the following recommendations are proposed:

Recommendation	Key TMP Principles Addressed
Retain the goods movement network shown in the 2018 TMP, with one exception: considering the several schools along Louis St. Laurent Avenue from Tremaine Road to James Snow Parkway, it is recommended that the truck route along that road be removed. This is reflected in the network provided in **Figure 49**. It is recommended that this network is identified in in the new Official Plan.	• Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation
Continue to designate and monitor designated goods movement corridors to ensure that they: • Are compatible with adjacent land use / do not conflict with existing or new sensitive land uses or major transit routes. • Support the needs of businesses and industries and support economic development. • Reduce congestion. • Enhance safety. • Promote sustainable transportation practices.	
Conduct on-going freight monitoring and planning, given anticipated development in the Town.	
Collaborate with the Region and adjacent lower-tier municipalities to better understand their goods movement needs to, from and through the Town, in order to appropriately plan and designate routes for goods movement.	
Continue to evaluate how best to manage and communicate truck route details. This will form part of the work required to separate the Traffic and Parking By-**laws, and will** require **cross-divisional input within the Town.**	

Figure 48. Draft Zoning and Land Use Map

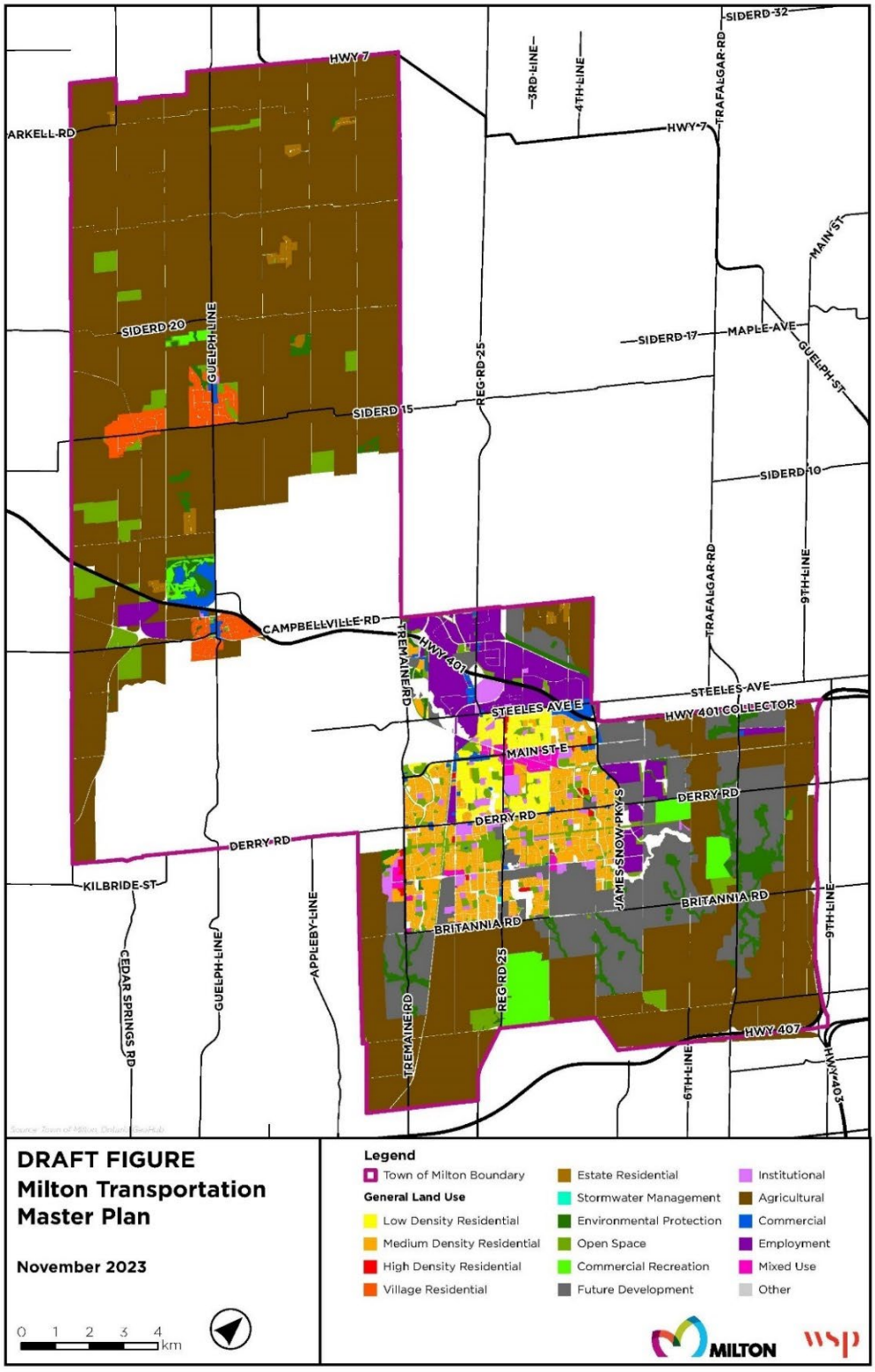


Figure 49. Draft Future Development Application Map and Recommended Goods Movement Network

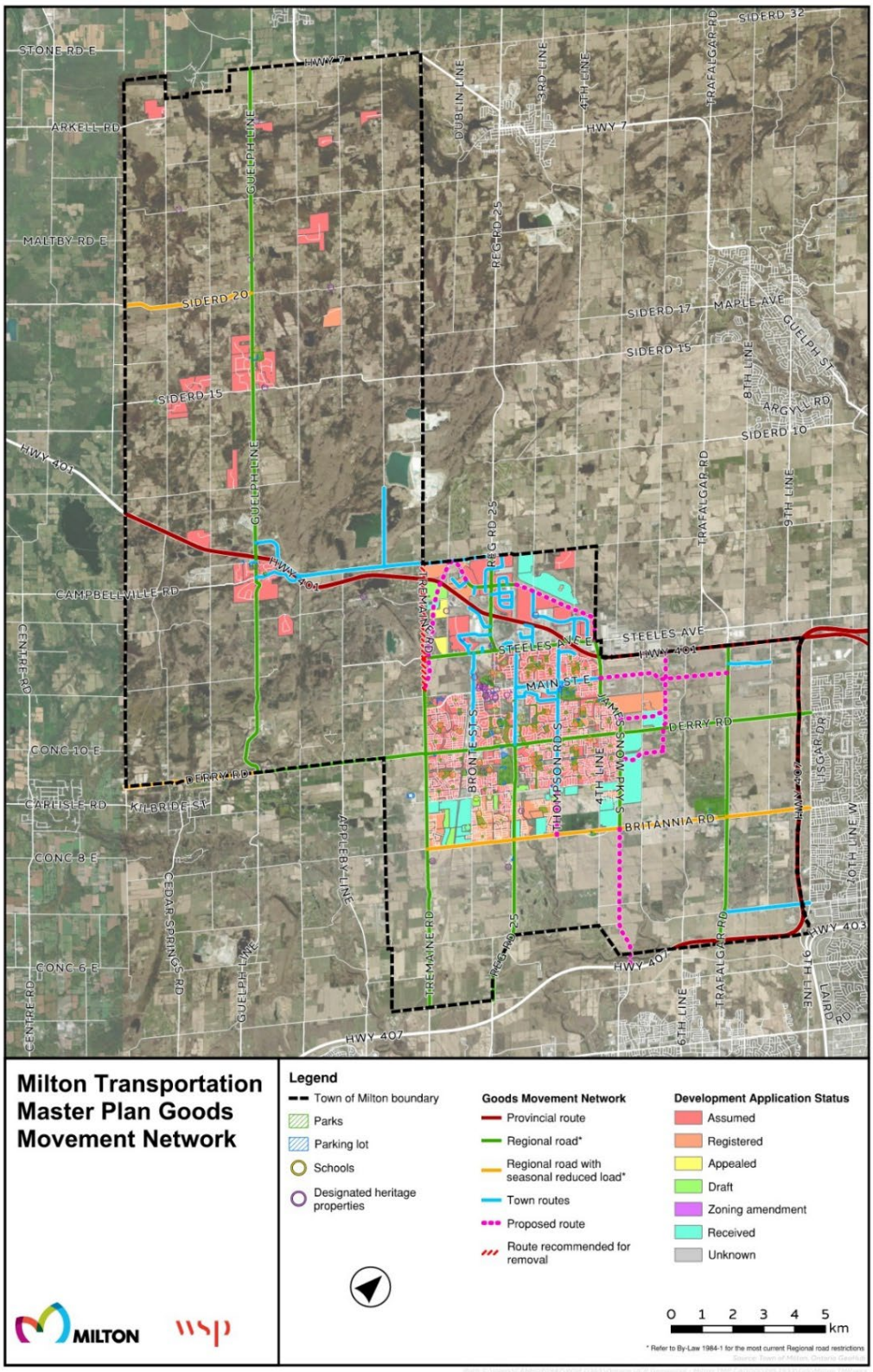
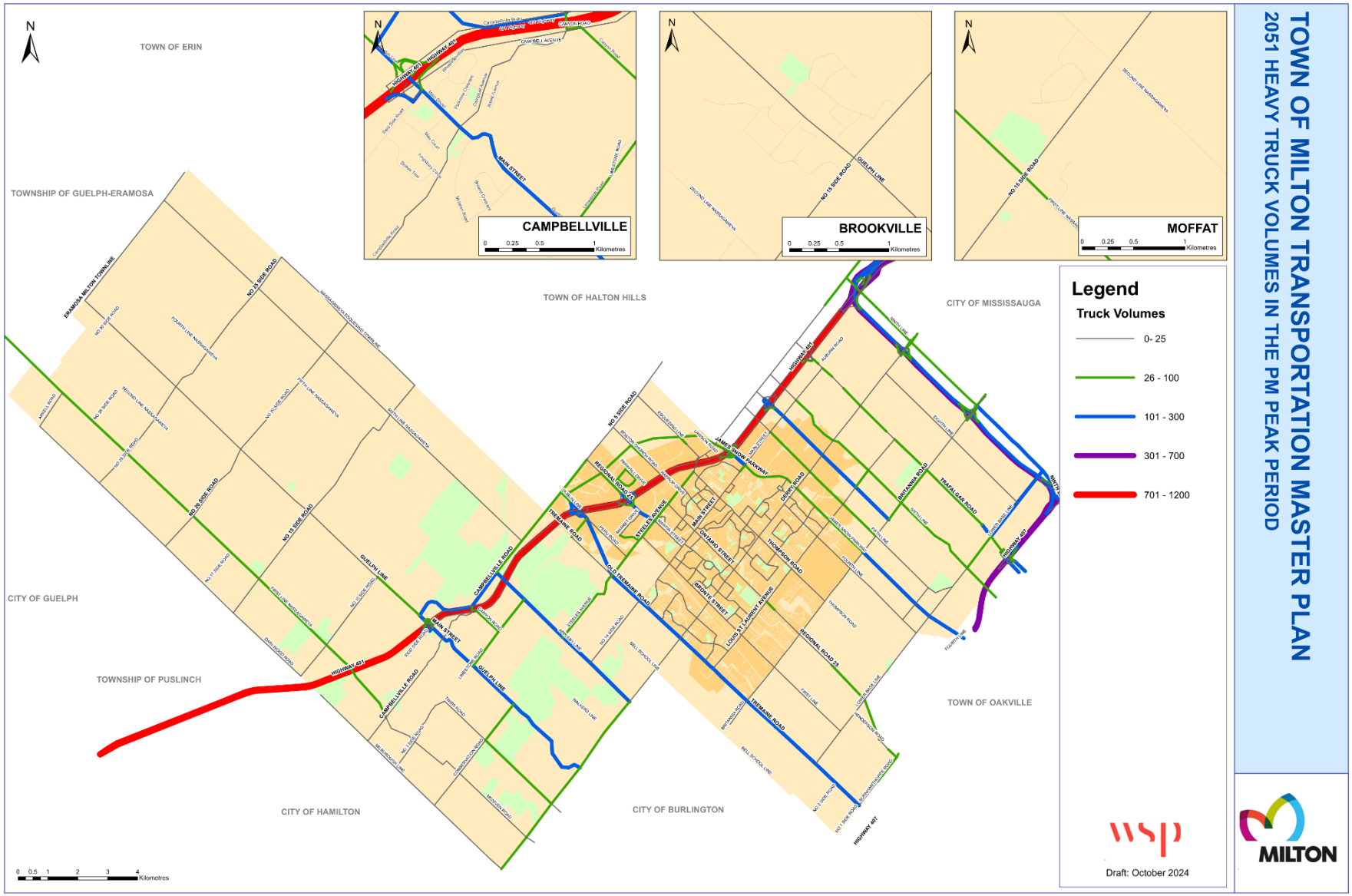


Figure 50. 2051 Heavy Truck Volumes in the PM Peak Period



5.2 Transportation Demand Management

Transportation Demand Management (TDM) consists of a set of strategies and policies that seek to influence travel behaviour to reduce travel demand, particularly for single-occupant vehicle use, and to influence when and where the demand occurs. TDM focuses on encouraging more sustainable modes of transportation and reducing or shortening vehicle trips. An example of TDM already deployed by the Town is Halton Region's SPLIT Subsidized Pass Program, that promotes early transit use through economic incentives. TDM can also encompass re-routing certain trips to reduce congestion, as well moving trips to different times of the day.

5.2.1 Opportunities for TDM Improvements

Dependence on single occupancy vehicles, is becoming less and less tenable in rapidly growing areas such as Milton. The Town should therefore seek an opportunity for a transition towards a transportation system that has less reliance on automobiles. A comprehensive TDM strategy can help the Town achieve this.

Communities with little TDM experience have several options when starting out to build the cornerstones of what could become a comprehensive TDM program. Developing active transportation and transit, promoting carpooling programs, and supporting car-sharing programs are all ways a local government can encourage residents to reduce their vehicle use and cut greenhouse gas (GHG) emissions. It is key to start with a small, achievable project, where municipalities can build support for expanding a one-off initiative into an ongoing and diversified TDM program.

5.2.2 Updated TDM Recommendations

The following TDM measures are recommended to support meeting the TMP Update's vision:

Recommendation	Key TMP Principles Addressed
Recommended Policy Support	
Enhance the Town's partnership with SmartCommute Halton Region by creating a Milton-specific Transportation Demand Management policy document to outline the goals and strategies for reducing single occupancy vehicles.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Establish a TDM checklist for evaluating TDM-related items that need fulfillment within existing development projects and enforce a minimum scoring requirement or green development standard for TDM items during site planning and approvals.	
Enact policies that support Transportation Demand Management initiatives and zoning regulations that promote mixed land-use development.	
Utilize smart parking management strategies, including pricing, location-based permits, and efficient use of parking spaces.	
Recommended TMP Programs	
Enhance the partnership with SmartCommute Halton Region to further encourage carpooling.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Provide discounted transit passes to qualifying residents of Milton to enhance transit ridership.	
Enhance partnerships and collaboration by supporting workplace TDM champions, preferably through allocated full-time staff.	
Seek grant opportunities to undertake TDM initiatives and provide more financial incentives to the public to enhance the uptake of sustainable modes of transportation.	

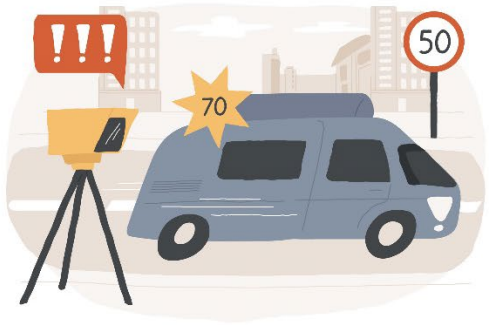
Recommendation	Key TMP Principles Addressed
Recommended Education and Awareness Programs:	
Understand the challenges associated with transit and ways to deliver excellent transit service to encourage mode shift.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Provide education through potential public engagement opportunities to increase community awareness of alternative transportation modes and their various benefits, such as health, financial savings, and addressing environmental issues.	
Encourage businesses to implement telecommuting and flexible work arrangements to reduce the need for daily commuting.	
Provide real-time travel information through apps and websites, helping commuters make informed choices about their travel routes and modes.	
Hold public engagement sessions to engage with the community and understand their needs through conversational prompts. The feedback can be used to inform TDM programs and policies to best address the needs of the community.	
Recommended Infrastructure Components	
Support active transportation by providing end-of-trip facilities such as bike rooms, lockers, and bike repair stations to enhance the user comfort and experience.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Increase connectivity to existing and future transit and active transportation facilities as a requirement within the site planning approval process.	

5.3 Traffic Safety

Milton aims to continue to be a safe, livable, healthy, and complete community. To foster this vision, prioritizing traffic safety is essential. That is why the Town has initiated several proven traffic safety initiatives to safeguard its residents' health, including through education, engineering, and enforcement.

Mitigating the profound impacts the safety of Milton's transportation network can have on the Town's residents and economy will always be a continuous, ongoing process. To better guide and improve this process, this TMP Update examined best practices in transportation safety frameworks, and reviewed the Town's current safety functions against these frameworks. Policy recommendations are provided based on this review. In particular, Milton can consider building upon its existing safety initiatives to create a strategic safety policy framework to further guide its actions and decision-making to move Milton's residents and visitors more safely.

TRAFFIC LAWS



SPEED CONTROL

5.3.1 Traffic Safety Best Practices

The Transportation Association of Canada (TAC) [3], the Ontario Traffic Council (OTC)[4], and the Canadian Council for Motor Transport Administrators (CCMTA)[5] all advocate for the adoption of Vision Zero/Towards Zero and the Safe System Approach as a best practice.

Vision Zero is the concept that road fatalities and serious injuries are unacceptable and should be eliminated. At the time of writing, it has been formally adopted by three provinces and 27 municipalities in Canada (12 of which are located in Ontario), meaning that these jurisdictions use Vision Zero as a guiding principle from which all safety-related initiatives are developed and monitored.

[3]Transportation Association of Canada. (2023). Vision Zero and the Safe System Approach: A Primer for Canada. https://www.tac-atc.ca/sites/default/files/site/doc/publications/2023/prm-vzss-e.pdf

[4] Ontario Traffic Council. (2023). Vision Zero Guide. https://ontario-traffic council.s3.amazonaws.com/uploads/2023/01/OTC_VisionZero-Guide_e03-1.pdf

[5] Canadian Council for Motor Transport Administrators. (2016). Canada's Road Safety Strategy 2025. https://roadsafetystrategy.ca/web/road-safety-strategy/files/public/docs/RSS-2025-Report-July-2016-with-cover.pdf

A Safe System Approach refers to a road safety approach that focuses on injuries and recognizes people are vulnerable and make mistakes. Under this framework, the safety of transportation systems is a shared responsibility between system designers and users of the transportation system. The approach generally contains six facets, of which four would fall directly under the jurisdiction of a lower-tier municipality:

- **Safe land use planning**: land use planning should reduce car travel, support vulnerable road users, and separate high-traffic roads from land uses with residential and mixed uses.
- **Safe speeds**: appropriate speed limits should be established based on road classifications and the physical tolerances of road users. This includes educating residents about the impacts of speeding, enforcing the limits, and engineering roads for the limit that was set.
- **Safe road users**: strategies should combat behaviours resulting in crashes, such as distracted driving.
- **Safe road design**: roads should be designed to minimize the risk of crashes and the severity of an injury in the case of a crash. This includes separating modes, designing for safe speed limits, and designing roads that are easy for the driver to understand.

The Safe System Approach is mostly used as the tool to achieve Vision Zero – this interaction is visualized in **Figure 51**.

Figure 51. Vision Zero and the Safe System Approach

Source: Transportation Association of Canada (TAC), 2023

To operationalize Vision Zero, municipalities often develop road safety plans or strategies that contain the actions they will take to improve safety. The most

comprehensive Vision Zero approaches include a streamlined, data-driven process to identify emphasis and problem areas and create measures to address issues in those areas. This is almost always supported by a continuous monitoring and evaluation approach with concrete, quantitative goals.

As a best practice, the concepts behind Vision Zero and the Safe System Approach can be adapted to Milton's context and used as a guide for the Town's traffic safety initiatives.

Vision Zero is often supported by a Road Safety Management (RSM) process or a Systemic Road Safety Process (SRS) to identify high risk locations and implement countermeasures, thereby reducing injuries and moving towards the stated Vision Zero goal. The SRM focuses mainly on collisions that have occurred, while the SRS considers risk factors, even if they may not have led to collisions.

5.3.2 Town of Milton Traffic Safety Strategies

5.3.2.1 *Current Strategies*

Recognizing the importance of a safe transportation system, Milton has several actions already in place to improve traffic safety. Actions are presented below, grouped under the four Safe System Approach components a local municipality can influence. Many of these actions have been publicly communicated in the Town's "Milton Moves Together" branding campaign.

Safe land use planning actions include:

- Strategic transportation policy in the Town's Official Plan (for example, the objective to "provide a safe, convenient, affordable, efficient and energy-conserving transportation system").
- Requirements for active transportation facilities and policies through the subdivision approval process.

Safe speed actions include:

- A comprehensive speed limit policy that sets out maximum speeds based on road classifications for urban and rural sections of roads. The Town investigates any speed concerns by completing speed studies and analyzing resulting data to determine if requests for enforcement should be sent to Halton Regional Police.
- A comprehensive traffic calming policy that sets out the guidelines to determine how, where and when traffic calming measures may be installed in streets.
- Community safety zones near schools, day cares, playgrounds, parks, hospitals and more, where certain Highway Traffic Act fines (including speeding) are doubled.
- A pilot of a 40 km/h speed limit within neighbourhoods, which is now to be extended across the Town pending Council and budget approval.
- Messaging tools to reduce speeds, including feedback boards, the slow down lawn sign program, and community entrance signs.

Safe road user actions include:

- School safety initiatives, including crossing guards and safety tips for walking and cycling to school.
- Education and outreach on social media, including through the Milton Moves

Together campaign in partnership with Halton Regional Police and school boards.

Safe road design actions include:

- Complete Streets as a road design guiding principle, with associated implementation of an active transportation network. So far, Milton has:
  - Installed multi-use paths and on-road bike lanes when arterial roads are constructed.
  - Installed on-road bike lanes along collector roads through the subdivision approval process.
  - Included pedestrian crosswalks at all trail/path connections that cross collector roads, for all new subdivisions.
  - Developed pedestrian routing plans through subdivision design, to ensure safety for all road users.
- Roadway design improvements, including barrier curbs, ensuring physical separation of pedestrian and cycling spaces from vehicular lanes for bridges, discouraging curb-faced sidewalks, and so forth.
- The installation of over 50 pedestrian cross-overs.

In addition to these actions, the Town has also recently developed safety performance functions (SPFs), which will assist in proactively identifying safety problem areas. The Town is also examining the use of Automated Speed Enforcement.

5.3.2.2 *Opportunities*

Milton's safety actions were compared against best practices in a Vision Zero framework / Safe System Approach to identify gaps and opportunities. In general, Milton's existing safety actions are mostly in line with those of the most forward-thinking municipalities.

Many best practice frameworks set out quantitative safety goals (for example, reducing the total number of injuries resulting from collisions by 25% in five years), and often publicly communicate these goals to ensure accountability and transparency. Such goals assist in developing safety initiatives and are crucial in monitoring progress. Milton's safety initiatives currently do not set such goals. Collision reduction goals could therefore be created, taking into account the Town's local context. These could be created through the development of a comprehensive road safety strategy.

A second opportunity for enhancing road safety lies in the creation of an overarching safety strategy: some current safety actions are grouped under the Milton Moves Together moniker, but other actions the Town completes that have substantial safety benefits have not been embedded in that framework. This could facilitate future evaluation and monitoring.

Another opportunity can be found in the full adoption of a Safe System Approach. Milton's current actions focus mostly on the safe speeds, safe road users, and safe road design facets of the Safe System Approach. Safety could be embedded more explicitly in land use planning, for example by strengthening existing Official Plan policies and including additional requirements for development applications (for example, requiring traffic calming measures in certain circumstances). This will ensure Milton's actions address all elements of the Safe System Approach.

A final opportunity lies in incorporating the Town's SPFs into a comprehensive, pre-defined road safety management approach or a systemic road safety process. This will ensure the results of the functions directly feed into Milton's other road safety processes and initiatives.

Within a road safety management approach, the Town would:

- Utilize the SPF to identify high priority locations in the Town, while ensuring the SPFs are updated every three to five years with the most recent safety data.
- Review the high priority locations more in-depth, for example by conducting a site visit, analyzing collision data, and creating a collision diagram.
- Identify countermeasures at each high priority location.

Within a systemic road safety process, the Town would:

- Select which collision types the Town wishes to focus on (for example, distracted driving, collisions at intersections, or aggressive driving). These should be the collision types with the highest potential to result in fatalities and severe injuries.
- Select focus facility types (for example, 4-leg signalized intersections or rural two-lane roads).
- Identify risk factors that may lead to collisions (annual average daily traffic, presence of lighting, posted speed limit, shoulder width and type, presence of sidewalks and bicycle facilities, and so forth).
- Conduct a systemic safety risk assessment to identify and prioritize locations for potential safety improvements. For example, the Town could calculate a risk index for each focus facility based on how many risk factors exist and how likely those factors are to lead to injuries.
- Identify countermeasures for each location. SPFs can be leveraged in this step to calculate what the expected impact of each countermeasure could be.

5.3.3 Traffic Safety Recommendations

Milton's safety initiatives should continue to be rolled out and expanded where feasible. Proactive analysis and identification of safety issues through the Town's safety performance functions can form a core component of these initiatives.

Recommendation	Key TMP Principles Addressed
Develop an overarching road safety strategy to strengthen existing safety actions. Development of the strategy could include: • Setting clear safety goals and targets that ensure accountability and transparency. • Analyzing and expanding the toolkit Milton has at its disposal to alleviate traffic safety issues, including by identifying how Milton's current safety actions contribute to achieving the new goals. • Examining whether a road safety management or	• Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation

Recommendation	Key TMP Principles Addressed
systemic road safety process best suits Milton's needs and best leverages the Town's existing SPFs. • Reviewing and updating Official Plan policies, and associated procedures such as development application processes, to embed safety in land use planning. • Exploring the feasibility of mapping tools, dashboards, and reports to communicate results to the public. • Exploring the feasibility and desirability of a dedicated centre of excellence to manage and oversee the Strategy.	

5.4 Roadway Classification & Right-of-Way

Roadway classification is the orderly grouping of roads into systems according to the type of service each road provides to the public. Its purpose is to establish a hierarchy of roads that provides for a gradation in function from access (providing for access to residences, businesses, and so forth) to mobility (providing for efficient travel). Road classification assists in establishing the geometric design and features for each group of roads, consistent with the short and long-term operational needs of that particular group.

Right-of-way (ROW) is the area of land acquired for, or designated to, the provision of a highway or roadway (MTO Roadside Design Manual 2020). Its purpose is to create an orderly and safe environment for multi-modal transportation to coexist and move effectively and efficiently through a roadway network. Within the context of transportation and road design, the ROW delineates the area available for road infrastructure such as lanes on the road, sidewalks, medians, utilities, multi-use trails or paths, and any other necessary infrastructure components. The ROW allows road designers to allocate space effectively and plan for safety features.

Periodically updating its standardized right-of-way classification system to reflect current best practices can offer several benefits for the Town, including the following:

- Improved Planning and Development: A standardized system helps in better planning and development of infrastructure projects. It ensures that all stakeholders have a clear understanding of the requirements and constraints, leading to more efficient project execution.
- Enhanced Safety: Standardized classifications can improve safety by ensuring that roads, sidewalks, and utilities are designed and maintained according to consistent standards. This can help in reducing collisions and improving overall public safety.
- Efficient Maintenance: With a clear classification system, the maintenance of roads and other public infrastructure becomes more systematic and efficient. It allows for

better allocation of resources and timely interventions to address issues like flooding, ice, and obstructions.
- Regulatory Compliance: Adopting a standardized system can help the Town of Milton comply with Provincial guidelines and regulations, which can be crucial for securing funding and avoiding legal issues.
- Public Transparency: A clear and standardized system can enhance transparency and communication with the public. Residents, consultants and Town staff can better understand the Town's infrastructure plans and maintenance schedules, leading to increased trust and cooperation.

5.4.1 Existing Roadway Classification

The Town of Milton's Official Plan and 2018 TMP currently identify the following functional road classifications:

- Provincial Freeway
- Provincial Highway
- Major Arterial
- Multi-purpose Arterial
- Minor Arterial
- Higher Order Transit Corridor
- Collector Road
- Local Road
- Lane

The design standards for each roadway classification are outlined in the Town of Milton's 2024 Engineering and Parks Standards Manual, with the existing ROW design criteria for the various road classifications summarized in **Table 21**.

Table 21. Existing Functional Classification and ROW

Category	ROW (m)	Standard Drawing Number	Parking Allowed
Laneway	11	01-11.01	Not Allowed
Local	20	01-20.01, 01-20.02, 01-20.03	1 Side
Minor Collector	24	01-24.01	1 Side
Major Collector	26	01-26.01	Site Specific
Arterial	30	01-30.01	Not Allowed
Arterial with Median	35	01-35.02	Not Allowed
Industrial Arterial	35	01-35.01	Not Allowed

5.4.2 Canada-wide and Region ROW Practices

5.4.2.1 *Transportation Association of Canada*

The Transportation Association of Canada (TAC) provides comprehensive guidelines on roadway classification and cross-section standardization in its Geometric Design Guide for Canadian Roads (2017, 2020). The following summarizes roadway classification and right-of-way design guidelines relevant to local municipal roads:

Roadway Classification

- **Functional Classification**: Roads should be classified based on their function, such as arterial, collector, and local roads. Local roads primarily provide access to properties and connect to higher-order roads.
- **Design Controls**: The classification system should include design controls and consistency to ensure that roads meet the needs of users while maintaining safety and efficiency.

Cross-Section Elements

- **Standardization**: It is important to standardize cross-section elements, such as lane widths, shoulder widths, cycling and sidewalk provisions, to ensure uniformity and safety.
- **Context-Sensitive Design**: Consider the local context, including urban or rural settings, to tailor cross-section designs appropriately.
- **Considerations to Traffic Volumes**: Traffic volumes must be taken into account in the design, and all available information should be considered. Seasonal variations may be relevant, particularly on roads likely to have a high proportion of recreational traffic.
- **Assessment of Land Availability**: Land availability is an important consideration in urban areas where land for right-of-way may not be readily available for a number of reasons including conflict with existing major buildings, high cost of acquisition, and other protected land uses. However, it is often advantageous to explore the benefits of acquiring additional right-of-way to improve traffic operations, capacity, pedestrian and bicycle provisions and safety by incorporating elements such as auxiliary lanes, channelization, wider pedestrian areas, bike lanes, and boulevards. ROW acquisition may also be desirable for other purposes such as utility alignment, streetscaping, and maintenance considerations.

Safety and Accessibility

- **Pedestrian and Bicycle Facilities Integration**: Include provisions for integrating pedestrian and bicycle facilities into the roadway design to enhance safety and accessibility.
- **Roadside Design**: Recommend roadway design to minimize hazards and to improve safety for all road users.

These guidelines help municipalities like Milton ensure that its roadways are classified and are consistent with high standards, promoting safety, efficiency, and consistency across the network.

5.4.2.2 *Halton Region*

Halton Region's Transportation Master Plan to 2031 - The Road to Change (2011) includes roadway classification of each of its Regional Roads, including those that travel through the Town of Milton; these classifications are derived from the Regional Right-of-Way Guidelines, which are included in its respective Appendix E.

Standard Cross-Sections are provided for the following roadway classification types: R1 Rural, R2 Rural, C1 Urban, C2 Urban, C3 Urban C4 Urban, C5 Urban, N1 Urban and

N2 Urban. For more information, refer to the Transportation Master Plan to 2031 - The Road to Change (2011). Although all Regional Roads have been categorized, in some instances this represents an ultimate condition (beyond 2031). The ultimate designation is identified for purposes of right-of-way protection. The classifications are limited to Regional Roads and does not include roads governed by lower-tier municipalities, such as the Town of Milton.

Halton Region is currently updating its 2011 TMP as part of the Water, Wastewater and Transportation Integrated Master Plan.

5.4.3 Recommendations

This TMP Update recommends the following:

Recommendation	Key TMP Principles Addressed
Update the Town's standard classifications for Rights-of-Way to ensure that existing and planned roadway infrastructure can appropriately accommodate growth in the Town of Milton and that the ROWs reflect best practices in roadway design for multi-modal travel. Updated standards are shown in **Table 22**. Minimum widths for cross section elements are provided in **Table 23**. Renderings of these revised ROW classification and standards are shown in **Figure 52** through **Figure 57**. Laneway and rural roadway classifications were not revised as they remain appropriate at this time.	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability
Take the following next steps to identify how each road in the Town should be classified and supported: 1 Assessment and Research • Current State Analysis: Inventory and classify the existing ROWs and identify inconsistencies or gaps. • Benchmarking: Research best practices from other comparable municipalities that have successfully implemented standardized systems. 2 Developing the Classification System • Criteria Definition Through Workshops: Establish clear criteria for classifying ROWs based on factors like usage, network connection, traffic volume, and safety requirements. • Drafting Guidelines: Create detailed guidelines and standards for each classification, including design, maintenance, and usage parameters.	

Recommendation	Key TMP Principles Addressed
• Classification Matrix: Develop a matrix to identify when and where each ROW classification should be applied based on the criteria and guidelines. 3 Regulatory Framework • Policy Development: Develop policies and regulations to support the implementation of the classification system, including road networks planned as part of development applications, such as draft plans of subdivision. • Legal Review: Ensure that the new system complies with Provincial regulations. 4 Implementation Plan • Phased Rollout: Plan a phased implementation to allow for adjustments and refinements based on initial feedback. • Training and Resources: Provide training for Town staff. 5 Monitoring and Evaluation • Performance Metrics: Establish metrics to evaluate the effectiveness of the new classification system. • Continuous Improvement: Regularly review and update the system based on performance data and stakeholder feedback.	

Table 22. Recommended Functional Classification and ROW

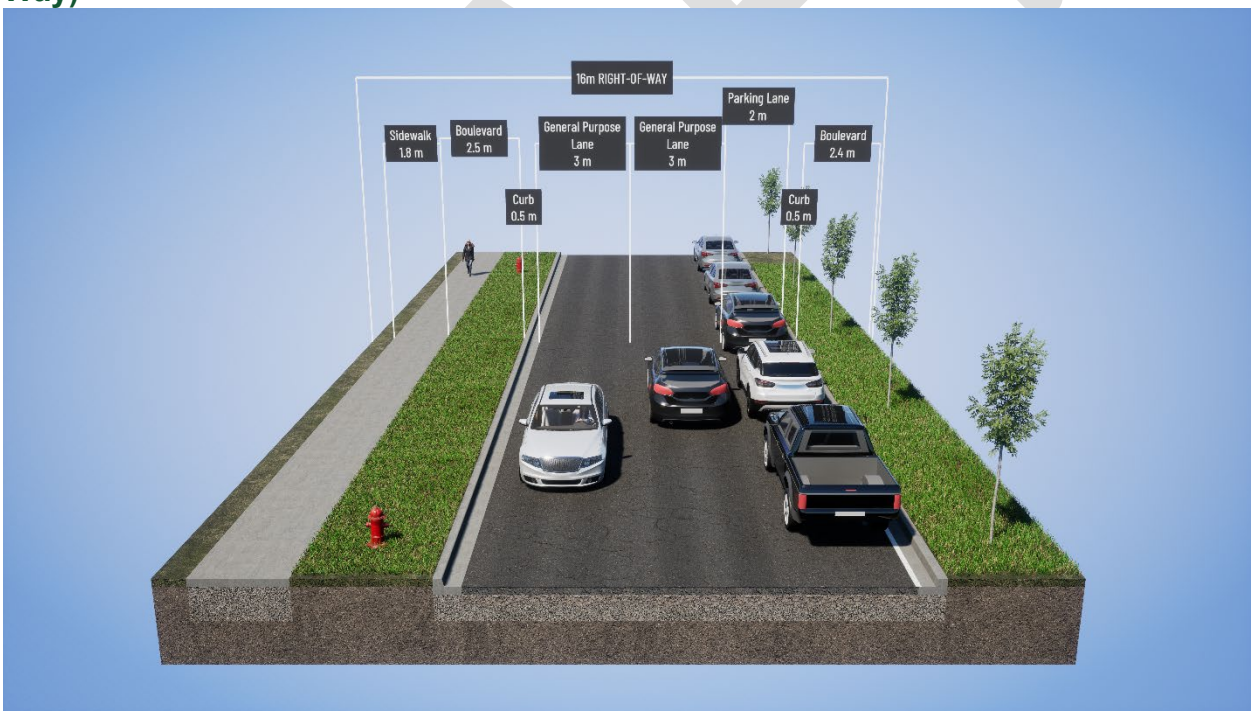
Category	ROW (m)*	Parking Allowed
Minor Local	16	1 Side
Major Local	18	1 Side
Minor Collector	22	1 Side
Major Collector	26	1 Side
Arterial without Median	35	Not Allowed
Arterial with Median	35	Not Allowed

* Alternate right of way widths may be considered through specific development plans, if supported by the context of the plan and by plan-specific traffic and transportation studies, to the satisfaction of the Town. In addition, individual Municipal Class Environmental Assessments for transportation projects may result in a recommended right of way width that differs from those identified above.

Table 23. Minimum Widths for Cross Section Elements

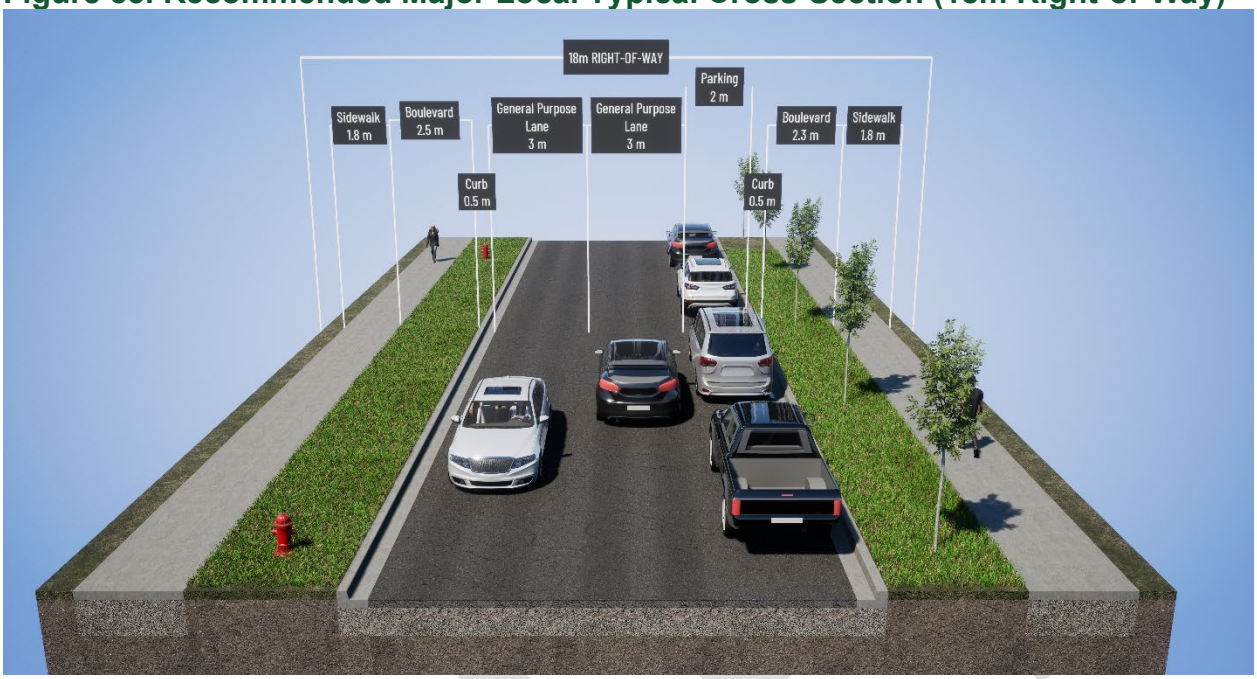
Element	Minimum Width (m)
Setback	0.3
Sidewalk	1.8
Boulevard (with Canada Post mail box stations)	2.5
Boulevard (no Canada Post mail box stations)	2.0
Cycle track	1.5
Buffer between cycle track and sidewalk	0.25
Curb and gutter	0.5
General purpose lane (no transit operating in lane)	3.0
General purpose lane (with transit operating in lane)	3.3
On-street parking	2.0

Figure 52. Recommended Minor Local Road Typical Cross-Section (16m Right-of-Way)



Source: Created by WSP on Beyond Typicals

Figure 53. Recommended Major Local Typical Cross-Section (18m Right-of-Way)



Source: Created by WSP on Beyond Typicals

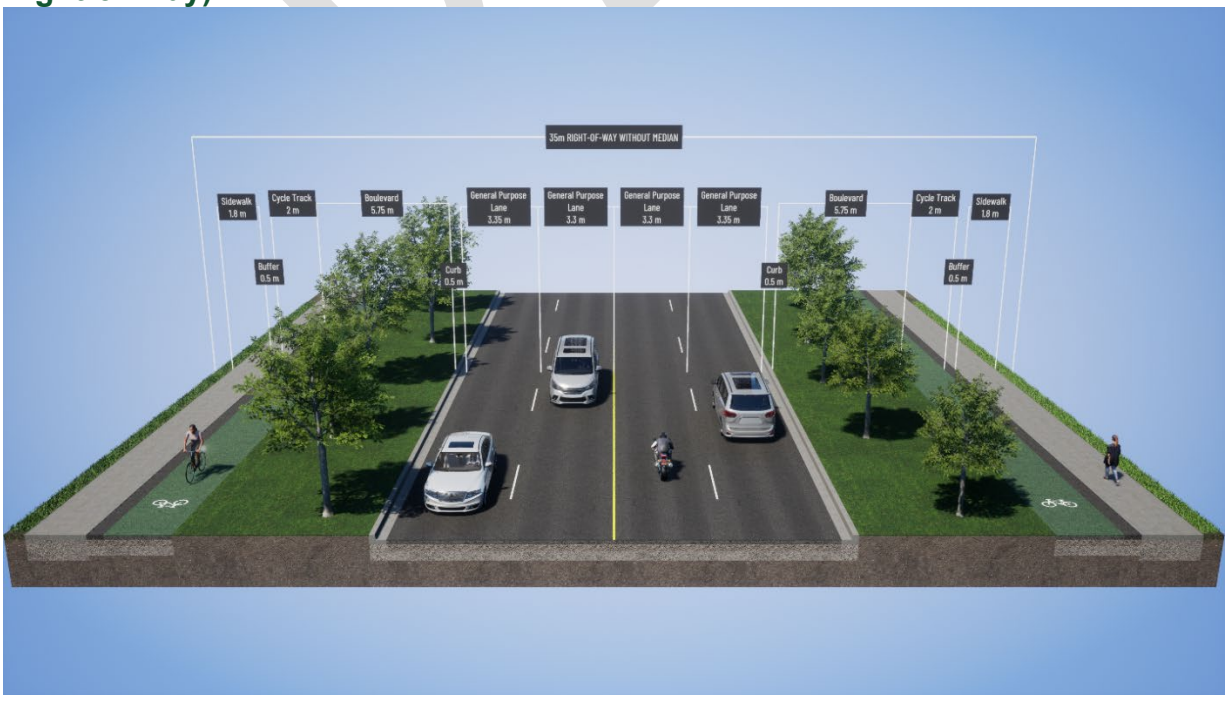
Figure 54. Recommended Minor Collector Typical Cross-Section (22m Right-of-Way)

Source: Created by WSP on Beyond Typicals

Figure 55. Recommended Major Collector Typical Cross-Section (26m Right-of-Way)

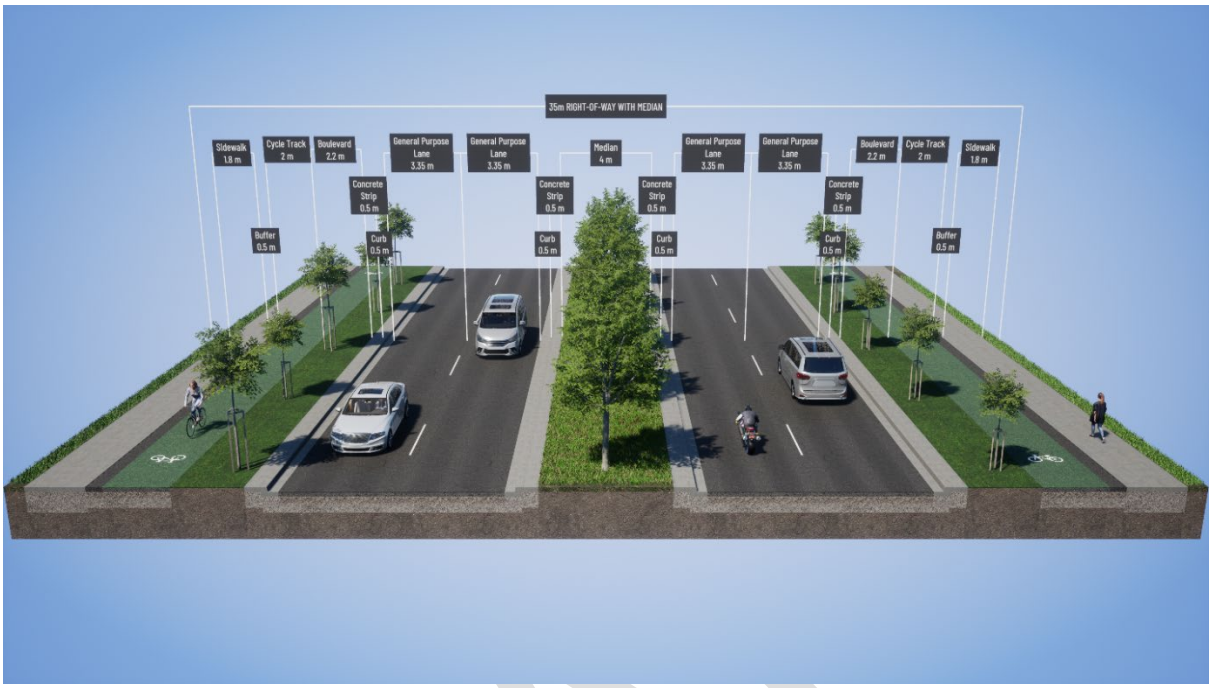
Source: Created by WSP on Beyond Typicals

Figure 56. Recommended Arterial Without Median Typical Cross-Section (35m Right-of-Way)



Source: Created by WSP on Beyond Typicals

Figure 57. Recommended Arterial With Median Typical Cross-Section (35m Right-of-Way)



Source: Created by WSP on Beyond Typicals

5.5 Parking

Parking is an essential component of Milton's transportation system: parking spaces throughout the Town accommodate the approximately 93% of residents who drive as their primary form of transportation. The efficient management of these assets is therefore necessary to ensure appropriate access and mobility for Miltonians.

Through its new Official Plan, Milton intends to set out a vision for residents to have access to a wider array of mobility choices. To support these choices, the role of parking in the transportation system will need to be carefully evaluated, including through consideration of parking strategies as part of a Transportation Demand Management framework. A re-evaluation of parking strategies to align with changing policy direction focused on incenting more affordable housing, for example through Bill 185, is also in order.

This section examines Milton's current parking policies and by-laws, identifies the impacts of recent changes introduced through Bill 23, highlights the potential impacts of Bill 185 and federal direction related to eliminating parking minimums near transit stations, and provides recommendations for a comprehensive parking study to guide parking supply in the Town to ensure alignment with Milton's vision.

5.5.1 Milton's Existing Parking Policies

Several By-laws govern parking in the Town, as identified below.

5.5.1.1 *Off-Street Parking: Zoning By-law 016-2014*

Milton's zoning By-law 016-2014 Section 5 sets out parking and loading provisions for Milton's urban areas. This section identifies parking space dimensions as well as the required number of parking spaces for different developments.

Milton uses a zone-based system for its parking rates, with a lower number of parking spaces required within its Urban Growth Centre around the Milton GO station. New developments in this area are also allowed to take advantage of a cash-in-lieu parking scheme.

In general, 2 parking spaces are required for most residential buildings (for example, detached dwellings, semi-detached dwellings, townhomes, and so forth). For apartments, 1.5 spaces plus 0.25 visitor parking spaces per unit are required (1 plus 0.20 within the Urban Growth Centre – Mix Use (UGC-MU) zoning area).

The By-law also sets out accessible parking requirements, where a minimum number of accessible spaces must be provided based on the total number of required parking spaces (for example, a development with between 13 to 100 parking spaces is required to designate 4% as accessible). Bicycle parking requirements are also provided, with 3% of the required parking spaces for a commercial, employment, or institutional use to be a bicycle parking space. For apartment buildings outside of the UGC-MU, this is 0.5 long term bicycle parking spaces plus 0.05 short-term spaces per unit (1 plus 0.05 for the UGC-MU).

Zoning By-law 016-2014 further specifies requirements related to electric vehicle charging stations in the UGC-MU and UGC-MU2. In the former, for residential buildings with a common parking structure where more than 100 spaces are required, 25% are required to have a roughed-in electric vehicle charging station. For non-residential uses with more than 100 parking spaces, 20% of spaces are required to have a roughed-in electric vehicle charging station and 1% an electric vehicle charging station. Similar requirements apply in the Milton Education Village Secondary Plan Area.

5.5.1.2 *Off-Street Parking: Zoning By-law 144-2003*

Milton's zoning By-law 144-2003 Section 5 sets out parking and loading provisions for Milton's rural areas. Parking dimension requirements and the number of required spaces per unit are similar as those set out in the urban zoning By-law.

5.5.1.3 *On-Street Parking Regulations and Policy*

Milton's on-street parking requirements are set out in By-Law 1984-1, as well as Milton's on-street parking policy. As it relates to parking, Section 5 of the By-law identifies where parking is prohibited (for example, in front of a driveway, fire hydrant, or where a parking prohibited sign is posted). In general, it restricts parking to a maximum of five hours in Milton unless otherwise signed. Overnight parking is also prohibited between 2 am and 6 am.

Residents/Visitors can currently apply to the Town to obtain extended parking for up to 15 hours on their street. They are also able to obtain up to 25 exceptions each year to the overnight parking prohibition and the 5-hour limit.

To provide residents with more choice for overnight parking, Milton is moving forward, through a pilot project supported by the Transitional Parking Strategy presented to Council in October 2024, with paid overnight permit parking at select Town parks.

To ensure the parking regulations in By-law 1984-1 are implemented in a way that supports the Town's land use and transportation vision, Milton has developed an on-street parking policy. The policy highlights that, in the Town's residential areas, streets are generally not intended to provide long-term parking. It sets out that parking is generally only permitted if safety (including emergency access) and vehicular capacity can be maintained, and street maintenance can be carried out in an efficient manner.

5.5.2 Emerging Policy Direction

Both the provincial and federal government have provided recent policy direction related to parking, mainly with the intent of improving housing affordability and allowing more housing to be constructed. This direction includes the Province's Bill 23 and 185, as well as federal requirements to access funding from the recently announced Canada Public Transit Fund.

5.5.2.1 *Bill 23*

Bill 23, the More Homes, Built Faster Act, received Royal Assent in November 2022 and brought significant changes to the Planning Act. Alongside changes to the Official Plan process and other key components, there are significant impacts on low-density residential development and parking. A residential parcel located within urban land can now provide a principal unit plus up to two additional units. Municipalities may not require more than one parking spot per additional residential unit (ARU), nor may they prescribe a minimum size per unit.

In response to Bill 23, Milton has amended its Official Plan and Urban Zoning By-law to expand permissions for additional residential units (ARU). As of June 25, 2024, up to three ARUs are permitted on single-detached, semi-detached and townhouse lots that have municipal water and wastewater services (for a total of up to 4 units on a lot, including the primary residential unit). For lots with ARU(s), the current Urban Zoning By-law requires a minimum of 1 off-street parking space for the primary residential unit and additionally a minimum of 1 off-street parking space for each ARU.

5.5.2.2 *Bill 185*

On June 6, 2024, Bill 185, the Cutting Red Tape to Build More Homes Act, received Royal Assent. The Bill prohibits municipalities from setting minimum parking requirements within Major Transit Station Areas (or other areas delineated in an Official Plan near transit where population and employment targets were identified). As Milton currently does not differentiate between minimum parking requirements in areas near transit or further away from transit, a zoning by-law amendment would be required to exclude MTSAs from parking requirements. Milton has one MTSA – the area around the Milton GO train station.

5.5.2.3 *Canada Public Transit Fund*

Announced in 2024, the Canada Public Transit Fund will provide $3 billion per year for public transit and active transportation infrastructure, beginning in 2026-27. The fund will provide stable and predictable funding to address long-term transit goals.

To access this upcoming funding, communities with a population of more than 150,000 (which Milton is expected to reach soon) will be required to eliminate mandatory minimum off-street parking requirements within 800 metres of high-frequency or higher-order transit, excluding accessibility requirements. The inclusion of high-frequency in addition to higher-order transit likely means that the area in which parking boundaries are required to be eliminated are different than the established MTSA boundaries, and thus are different from the requirements introduced through Bill 185.

5.5.3 Recommendations

Opportunities exist to better align Milton's parking requirements and standards with its goals of promoting and supporting transit and active transportation as well as changing provincial (and federal) direction related to parking.

Milton can take a measured approach to such an alignment by initiating a parking study to identify and address parking challenges and opportunities.

Recommendation	Key TMP Principles Addressed
Initiate a parking study to identify and address parking challenges and opportunities. This study could: • Highlight the policy context governing parking in the Town, including Provincial, Regional and Town legislation, regulations, policies, plans, and By-laws. • Conduct a data-driven analysis of the Town's parking supply and utilization. This would examine how and where the Town's parking is utilized, and how and where By-law contraventions occur. • Benchmark the Town's parking requirements and policies against both similar and aspirational jurisdictions. This would cover elements such as minimum and maximum parking requirements, parking zones, parking duration limits, dedicated car-share or carpool spaces, EV-readiness requirements, and overnight parking. • Conduct public engagement to identify how residents and visitors use and value parking and how they see it contributing to the Town's future transportation system. This would also involve examining minor variance and Zoning By-law amendment requests related to parking, as well as examining ways in which residents have expanded the off-street parking supply in contravention of the Town's	• Accommodate future growth and associated travel demands • Promote equitable and accessible travel for all ages and abilities • Support mobility for all modes of transportation • Promote sustainability

Recommendation	Key TMP Principles Addressed

By-laws (for example, through paving front yards and widening driveways).
• Explore and assess parking best practices and opportunities, including, but not limited to:
  • Updating Milton's parking supply requirements, for example through transit-supportive requirements that would remove parking minimums near transit (in conformity with Bill 185), and set maximums. This could also involve implementing shared parking policies.
  • Ensuring Milton's parking is future-ready, for example by extending its electric vehicle charging requirements and requiring designated spaces for car-sharing and carpooling.
  • Managing Milton's parking supply and demand, for example through implementing residential permit parking or paid parking in certain areas.
  • Separating By-law 1984-1 into a separate Parking and Traffic By-Law.
• Recommend updates to the Town's Zoning By-law and parking regulations, policies, and programs based on the data analysis, benchmarking, public engagement, and best practices review.	

6 Building Milton

A clear, comprehensive, and structured implementation plan is a key component of any TMP. Such a plan is a roadmap detailing the steps necessary to achieve the TMP's long-term vision. It sets out when different elements of the recommended transportation network should be constructed, highlights the financial resources required to achieve this, and provides an overview of how the improvements can be funded.

This chapter provides the implementation plan for this TMP Update, including a phasing plan and high-level costing for the recommended network elements. The plan is meant to serve as a guide for the Town when constructing future transportation projects.

6.1 Phasing and Resourcing

6.1.1 Phasing Plan

Phasing plans have been developed for the road and active transportation networks recommended in this TMP Update, detailing when suggested improvements should ideally be completed. The timeline of the proposed projects is not intended to be prescriptive, but rather serves as a guide for the Town, with the timeline to be confirmed closer to the time of implementation based on priorities and available resources.

Projects were classified into three phases representing roughly ten years each: short-term (by 2031), aligning with the 2018 TMP horizon year; medium-term (by 2041); and long-term (by 2051).

6.1.1.1 *Roads*

Road improvements set out in this TMP are recommended to be prioritized based on the phasing criteria listed in **Table 24**, where possible. This ensures the road network is in place in advance of introducing the increased projected population and employment throughout the Town.

Table 24. Road Network Project Phasing Criteria

Horizon	Criteria
Short-term (by 2031)	• Projects recommended in the 2018 TMP as projects to be completed by 2031 • Alignments with planned capital projects • Improvements that provide strong connections between communities and key destinations (such as schools and transit hubs)
Medium-term (by 2041)	• Responses to growth in the medium-term per the OP Review • Improvements that provide strong connections between communities and key destinations (such as schools and transit hubs)
Long-term (by 2051)	• Projects that rely on long-term growth based on the OP Review • Requires reconstruction beyond the current capital plan

A list of all road projects included in the recommended road network and their proposed timeline for implementation is provided in **Table 25**. Regional road network improvements are excluded as they are being addressed through studies by the Region.

Table 25. Phasing of Recommended Road Improvements

No.	Road	From	To	Recommended Improvement	Phasing
1	Ontario Street South	Derry Road	Main Street East	Converting 2 lanes to HOV lanes	Short-term
2	Main Street East	Fifth Line	Trafalgar Road	4-lane extension	Short-term
3	Louis St. Laurent Avenue	Fifth Line	Sixth Line	4-lane extension	Short-term
4	Sixth Line	Highway 401	Britannia Road	Widening from 2 to 4 lanes	Short-term
5	Britannia Road	Tremaine Road	Milton Education Village west boundary	Widening from 2 to 4 lanes	Medium-term
6	Lower Base Line	Fourth Line	Fifth Line	2-lane extension	Medium-term
7	Louis St. Laurent Avenue	Sixth Line	Trafalgar Road	4-lane extension	Long-term
8	Lower Base Line	Fifth Line	Town east boundary	Widening from 2 to 4 lanes	Long-term
9	Sixth Line	Brittania Road	Lower Base Line	Widening from 2 to 4 lanes	Long-term
10	NS Street (MTSA)*	EW Street	Main Street E.	New 2-lane roadway	Short-term
11	EW Street (MTSA)	Wilson Drive	Thompson Rd	New 2-lane roadway	Short-term
12	Nipissing Road Extension (MTSA)*	Nipissing Road	Ontario Street S.	New 2-lane roadway	Short-term

* Developer responsibility, as per the Town's Local Service Policy

Additional road or related improvements may also be needed to support the identified transit priority corridors. Phasing for these corridors is identified in **Table 26**.

Table 26. Phasing of Recommended Transit Priority Corridors

No.	Road	From	To	Recommended Improvement	Phasing
1	Thompson Road	Main Street East	Derry Road	Transit priority corridor	Short-term
2	Bronte Street	Main Street East / West	Derry Road	Transit priority corridor	Long-term
3	Main Street East	Ontario Street	Thompson Road	Transit priority corridor	Long-term

6.1.1.2 *Active Transportation*

Phasing plans for active transportation improvements have been developed to be consistent with the phasing approach for roads to capture efficiencies in construction and cost. Phasing for routes that are tied to development are estimated based on the estimated timeline for development. The phasing criteria are listed in **Table 27**.

Table 27. Active Transportation and Trails Network Project Phasing Criteria

Horizon	Criteria
Short-term (by 2031)	• Phased alongside short-term road projects as part of the TMP Update • Projects in new development areas • Routes that align with Capital Plan and/or Development Charges Background Study • Quick wins (no reconstruction required, pavement marking and signage only) • Routes that provide strong connections between communities and key destinations (such as schools and transit hubs) • Town-owned or publicly owned lands • Council direction
Medium-term (by 2041)	• Phased alongside medium-term road projects as part of the TMP Update • Responses to growth in the medium-term • Routes that provide strong connections between communities and key destinations (such as schools and transit hubs)
Long-term (by 2051)	• Phased alongside long-term road projects as part of the TMP Update • Projects that rely on long-term growth • Requires reconstruction beyond the current capital plan

A breakdown of the proposed lengths of active transportation routes and estimated costs for implementation are shown in **Table 28**. The phasing plan for each route is shown on the maps in **Figure 58** and **Figure 59**. A detailed breakdown is included in **Appendix G**.

Table 28. Phasing of Recommended Active Transportation Network

Facility Type	Short-term Length (km)	Short-term Cost	Medium-term Length (km)	Medium-term Cost	Long-term Length (km)	Long-term Cost
Bicycle Lane	14.6	$423,000	6.7	$195,000	5.1	$148,000
Paved Shoulder	11.0	$1,260,000	19.8	$2,280,000	39.6	$4,550,000
Separated Bicycle Lanes	16.4	$7,429,000	4.0	$779,000	21.8	$9,875,000
Cycle Tracks	11.8	$5,900,000	8.2	$4,100,000	14.8	$7,384,000
Signed	35.0	$42,000	12.3	$15,000	12.7	$15,000
Multi-use Trail (in-boulevard)	10.6	$3,975,000	1.6	$601,000	10.6	$3,975,000
Multi-use Trail (outside of ROW)	6.0	$2,250,000	3.8	$1,417,000	4.0	$1.500,000
Total	105.4	$21,284,000	56.4	$10,423,000	108.6	$27,468,000

Figure 58. Active Transportation Phasing Plan (Town-Wide)

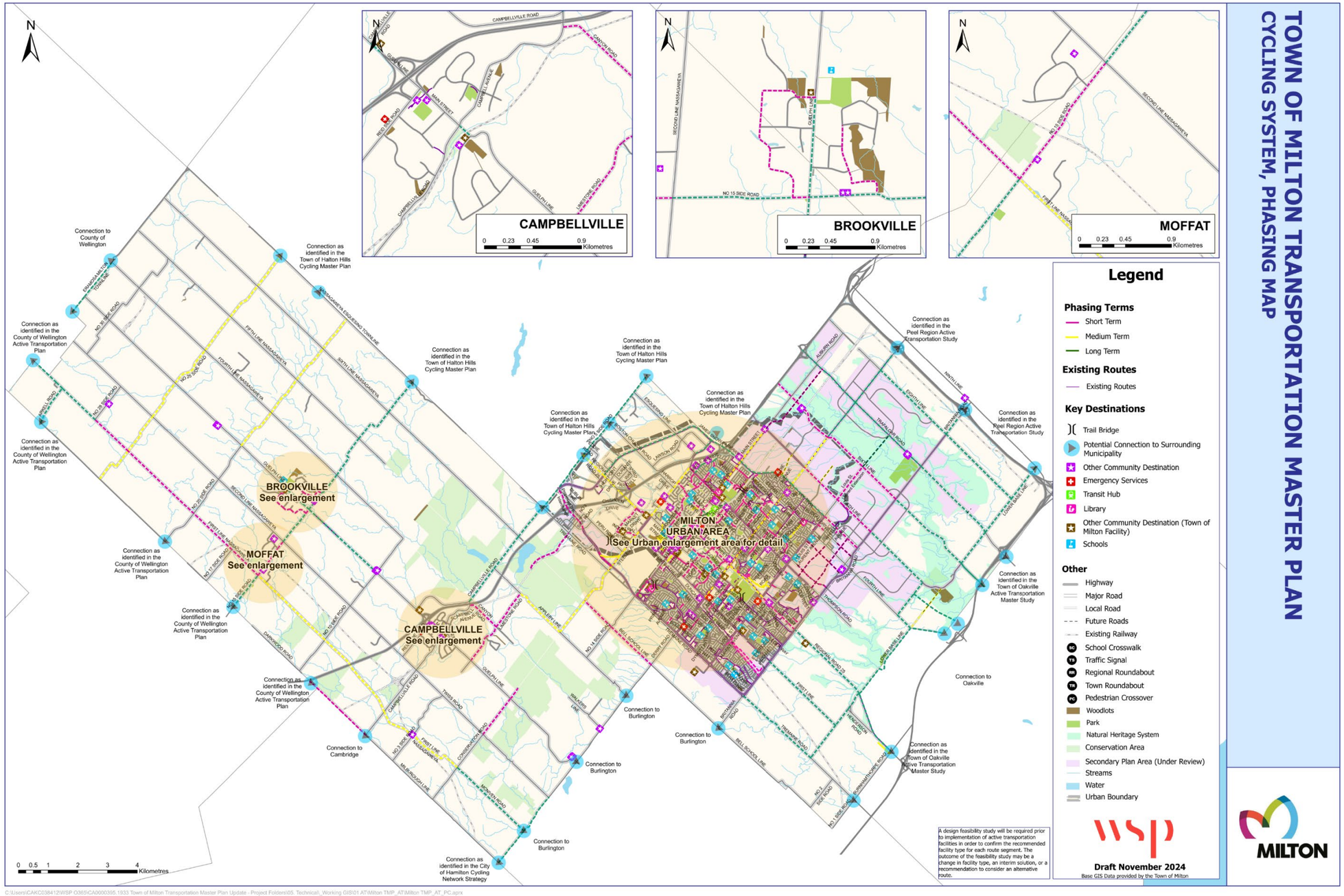
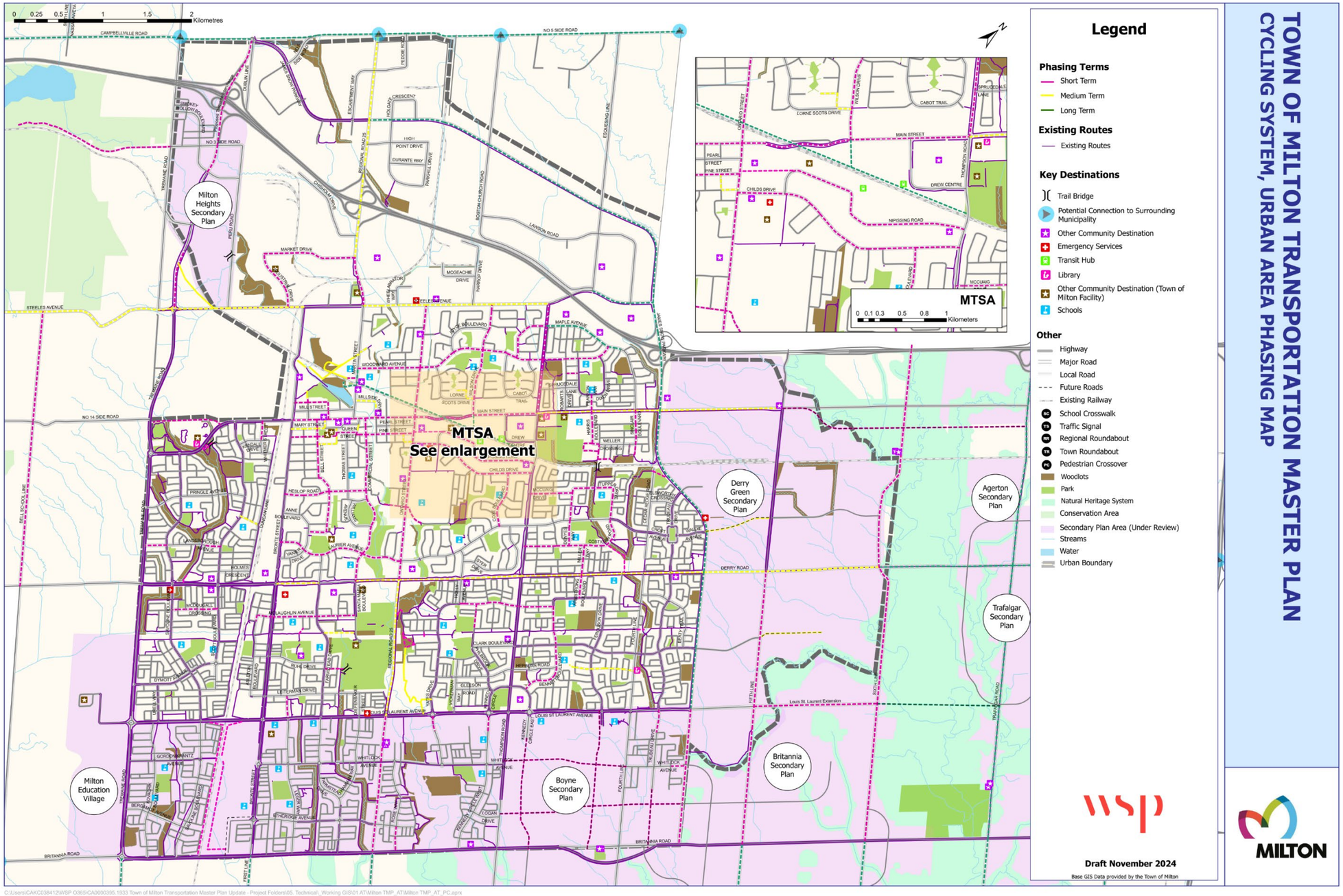


Figure 59. Active Transportation Phasing Plan (Urban Area)



6.1.2 Resource Management

To support implementation of the TMP Update, it is recommended that the Town create a resource management plan to:

- Inventory existing and planned resources (staff, equipment, and materials);
- Identify the resources necessary to efficiently implement the recommendations of the TMP Update based on planned implementation dates:
    - Develop a detailed Project Plan that outlines the scopes, timeline, and required resources;
    - Designate staff resources as TMP champions who understand the methodology and can lead the implementation process;
- Assess existing and planned resources against the identified required resources for the implementation of the TMP Update to identify deficiencies;
- Create a funding plan for the resources required for the implementation of the TMP Update; and
- Regularly review the progress of the implementation of the TMP Update to refine the Resource Management Plan.

It is also recommended that the Town explore hiring a Sustainable Mobility Coordinator to complement the Town's existing staff dedicated to transit and roads. The coordinator role could be a new full-time position at the Town and would be responsible for:

- Championing and coordinating plans, policies, and actions related to walking, cycling, transportation demand management (TDM), and micro-mobility;
- Overseeing implementation of the Town's active transportation network;
- Responding to public inquiries on active transportation, TDM, and micro-mobility related projects; and
- Promoting active transportation, TDM, and micro-mobility related projects, special events, and activities.

Additional resource management, in terms of operations and maintenance of new transportation infrastructure, is discussed in **Section 6.4**.

6.2 Costing and Funding

High level costs have been estimated for implementation of the roads and active transportation infrastructure recommended in this TMP Update. These represent initial costs that will require updating as the projects approach implementation through assessment and detailed design, including costs related to any road, rail, or creek crossings or site-specific considerations.

Costing is only provided for projects identified in the recommended transportation networks. Requirements related to growth and the renewal of existing transportation infrastructure and services are not costed. Such growth-related costs include the infrastructure forecasted by the Town within its Secondary Plan Areas, potential parking facilities, as well as the costs associated with the Town assuming local and collector roads that will be initially constructed by developers.

6.2.1 Cost Estimates

6.2.1.1 *Roads*

High level cost estimates for the road network improvements identified in the preferred alternative are provided in **Table 29**. This includes costing for the roads that will be constructed by the Town, as well as costs for proposed roads within the MTSA. Additional roads may be constructed and funded by the development community as new greenfield sites are developed; however, these are not costed in this TMP Update.

The representative costs presented below are based on the following unit costs per centre line kilometre for different projects:

- 2 lane road widening (from 2 to 4 lanes): $7.25 million
- 2 lane road extension: $3.50 million
- 4 lane road extension: $9.00 million

Costs estimates are based on recent tenders for road projects within the Town of Milton as well as developer cost estimates. Costs represent expenses related to road works within the right-of-way, including excavation and preparation, construction, construction management, storm servicing, traffic signals, lighting, landscaping, and active transportation facilities. Land and property acquisition costs are excluded, as are crossings and bridges, and any site/project-specific requirements. Town staff project management of construction is also excluded. Costs will require confirmation as the projects approach their implementation dates as well as to address any site/project-specific requirements.

Where cost estimates already exist in the Town's capital budget, those costs were used instead of the unit costs shown above.

The recommended road network improvements will also result in increases in annual operating costs. These costs include asphalt maintenance and preventative maintenance activities, line painting, winter maintenance activities such as snow clearing, as well as the annual capital contributions required to ensure that sufficient financial capacity is available for the future rehabilitation and replacement of the road. These operating impacts are described in **Section 6.4**.

Based on the identified costs, the likely MCEA Schedule was identified for each project.

Table 29. Road Improvements and Associated Capital Costs

No.	Road	From	To	Recommended Improvement	Dist. (km)	Indicative Cost	Design/Permits (15%)	Contingency (20%)	Total Cost	Likely Schedule
1	Ontario Street South	Derry Road	Main Street East	Converting 2 lanes to HOV lanes	1.84	n/a	n/a	n/a	n/a	B
2	Main Street East*	Fifth Line	Trafalgar Road	4-lane extension	2.76	$35,550,000	$5,333,000	$7,110,000	$47,993,000	C
3	Louis St. Laurent Avenue*	Fifth Line	Sixth Line	4-lane extension	1.41	$15,250,000	$2,288,000	$3,050,000	$20,588,000	C
4	Sixth Line*	Highway 401	Britannia Road	Widening from 2 to 4 lanes	5.61	$48,500,000	$7,275,000	$9,700,000	$65,475,000	C
5	Britannia Road	Tremaine Road	Milton Education Village west boundary	Widening from 2 to 4 lanes	0.42	$3,045,000	$457,000	$609,000	$4,111,000	C
6	Lower Base Line	Fourth Line	Fifth Line	2-lane extension	1.96	$6,860,000	$1,029,000	$1,372,000	$9,261,000	C
7	Louis St. Laurent Avenue*	Sixth Line	Trafalgar Road	4-lane extension	1.35	$15,250,000	$2,288,000	$3,050,000	$20,588,000	C
8	Lower Base Line	Fifth Line	Town east boundary	Widening from 2 to 4 lanes	4.93	$35,743,000	$5,362,000	$7,149,000	$48,254,000	C
9	Sixth Line	Britannia Road	Lower Base Line	Widening from 2 to 4 lanes	3.14	$22,765,000	$3,415,000	$4,553,000	$30,733,000	C
10	NS Street (MTSA)**	EW Street	Main Street E	New 2-lane roadway	0.12	$420,000	$63,000	$84,000	$567,000	B
11	EW Street (MTSA)	Wilson Drive	Thompson Rd	New 2-lane roadway	0.73	$2,555,000	$384,000	$511,000	$3,450,000	C

No.	Road	From	To	Recommended Improvement	Dist. (km)	Indicative Cost	Design/Permits (15%)	Contingency (20%)	Total Cost	Likely Schedule
12	Nipissing Road Extension (MTSA)**	Nipissing Road	Ontario Street S	New 2-lane roadway	0.35	$1,225,000	$184,000	$245,000	$1,654,000	B

* Costs identified within Milton's capital budget and not estimated through unit costs.

** Developer responsibility, as per the Town's Local Service Policy

Note that land and property acquisition costs are excluded, as are crossings and bridges, any site/project-specific requirements, and Town staff project management of construction. Costs will require confirmation as the projects approach their implementation dates as well as to address any site/project-specific requirements.

Table 30. Intersection Improvement Costs

No.	Intersection	Recommended Improvement	Indicative cost	Design/ permits (15%)	Contingency (20%)	Total cost	Likely Schedule
1	Main Street E and Ontario Street N	30m Westbound Right Turn Lane	$175,000	$27,000	$35,000	$237,000	B
2	Main Street E and Thompson Road	30m Eastbound & Southbound Right Turn Lanes	$350,000	$53,000	$70,000	$473,000	B
3	Ontario Street S and Childs Drive	30m Northbound Right Turn Lane	$175,000	$27,000	$35,000	$237,000	B
4	Ontario Street S and Laurier Avenue	30m Northbound & Southbound Right Turn Lanes	$350,000	$53,000	$70,000	$473,000	B
5	Thompson Road N and Maple Avenue	30m Westbound Right Turn Lane and repurposing existing through-left to left turn lane	$175,000	$27,000	$35,000	$237,000	B
6	Thompson Road S and Laurier Avenue	20m Eastbound & Westbound Right Turn Lanes	$350,000	$53,000	$70,000	$473,000	B

6.2.1.2 *Active Transportation*

High level cost estimates for the cycling facilities identified in the preferred alternative are provided in **Table 31**. The costs provided do not include land and property acquisition costs, signal modifications, utility relocations, major roadside bridges, railway crossings, retaining walls, and stairways, unless otherwise noted. Costs further assume typical environmental conditions and topography and no design has been undertaken to better assess constructability. The costs do not include applicable taxes and permit fees. Unit prices for active transportation facilities are based on typical averages seen in recent construction projects. A detailed breakdown of active transportation routes, lengths, and unit costs are included in **Appendix G**.

In addition to the initial capital costs presented below, there will be annual operating costs associated with maintenance and operations; these are not costed in this table but are presented in **Section 6.4**.

Table 31. Cycling Improvements and Associated Capital Costs

Facility	Length (km)	Unit Price	Cost
Bicycle Lane[1]	26.5	$29,000	$767,000
Paved Shoulder	70.4	$115,000	$8,090,000
Separated Bicycle Lanes	42.2	$453,000	$19,117,000
Cycle Tracks	34.8	$500,000	$17,400,000
Signed	59.9	$1,200	$72,000
MUT (in boulevard)	22.8	$375,000	$8,550,000
MUT (outside of ROW)	13.8	$375,000	$5,175,000
Total	270.4		$59,175,000

6.2.2 Funding Opportunities

The recommendations provided in this TMP Update will require a substantial amount of ongoing investment from the Town. Identifying external funding sources beyond the capital budget process to support the implementation of recommended transportation projects can help offset some of these costs. By closely monitoring and capitalizing on available funding at the Regional, Provincial, and Federal levels, the Town may minimize costs and facilitate future funding opportunities.

To assess the need and timing for securing funding to plan for and to carry out works related to the recommendations of the TMP Update, the Town should:

- Determine available funding sources and allocate resources accordingly.
- Identify deficiencies in funding allocations.
- Explore available grants and funding programs at the Federal, Provincial and Regional levels, including their eligibility criteria, deadlines, and application processes. Apply for relevant grants to support TMP Update recommended projects.
- Evaluate the feasibility of Public-Private Partnerships for larger-scale, complex projects that require higher funding.
- Establish a monitoring framework to track progress and financial performance to regularly review funding allocations, and to develop contingencies and adjust the capital projects as needed.

The following subsections outline potential internal funding sources, as well as external funding opportunities from the Federal and Provincial governments that may help the Town of Milton fund projects related to the implementation of the TMP Update.

6.2.2.1 *Federal Funding and Resources*

Investing in Canada Infrastructure Program

The Investing in Canada Infrastructure Program is administered through a bilateral agreement with Ontario. Projects are cost-shared with the provincial government, municipalities, Indigenous Communities, and other partners. This program provides potential funding for:

- Public Transit Infrastructure
- Green Infrastructure
- Community, culture, and recreation infrastructure

The Canada Community-Building Fund

The Canada Community-Building Fund (CCBF) is a permanent source of funding provided up front, twice-a-year, to provinces and territories, who in turn flow this funding to their municipalities to support local infrastructure priorities. Municipalities can pool, bank, and borrow against this funding, providing significant financial flexibility. This fund can be used for 19 different project categories, including:

- Public transit
- Local roads and bridges
- Highways
- Short-line rail

National Trade Corridors Fund

The $4.6 billion National Trade Corridors Fund (NTCF) helps fund infrastructure projects in Canada. Infrastructure projects could include work to airports, ports, railways, transportation facilities, and access roads.

The Green Municipal Fund

The Green Municipal Fund (GMF) is accelerating a transformation to resilient, net-zero communities. The mix of funding and capacity building helps deliver environmental, economic, and social impact—creating better lives for people in Canada. GMF is a $1.65 billion program funded by the Government of Canada.

Municipal Asset Management Program

The Federation of Canadian Municipalities' Municipal Asset Management Program offers funding, training, and resources to help strengthen municipalities' asset management practices. The program focuses on four areas:

- Getting municipalities to use good asset management practices.
- Supporting training and workshops in the community.
- Helping plan for and conduct data collection and analysis.
- Gathering and sharing knowledge and lessons learned.

Canada Public Transit Fund

Announced in 2024, the Canada Public Transit Fund will provide $3 billion per year for public transit and active transportation infrastructure, beginning in 2026-27. The fund will provide funding to address long-term transit goals and focuses on:

- Increasing the use of public transit and active transportation relative to car travel.
- Increasing the housing supply and affordability as part of complete, transit-oriented communities.
- Helping to mitigate climate change and improving climate resilience.
- Improving public transit and active transportation options for all, especially Indigenous People and equity-deserving groups.

6.2.2.2 *Provincial Funding Resources*

Connecting Links Program

Through the Connecting Links Program, the Province of Ontario sought to invest $30 million in 2024 - 2025 for the construction and repair of roads and bridges on connecting links. Connecting links are municipal roads designated under the Public Transportation and Highway Improvement Act.

Gas Tax Program

The Provincial Gas Tax Funding offers over $300 million to municipalities across Ontario to support local transit services. The funding is determined by gasoline sales in the previous year and can be used to extend transit service hours, purchase new vehicles, add new routes, improve accessibility, or upgrade transit infrastructure.

Infrastructure Ontario Loan Program

The Infrastructure Ontario (IO) Loan Program offers long-term funds to public sector partners including municipalities to finance public infrastructure with affordable interest rates and flexible terms up to 30 years.

6.2.2.3 *Municipal Funding*

Municipal funding for recommendations in this TMP Update can come from:

- Local taxes: Taxes collected from property taxes (annual fees based on the assessed value of properties located within the Town of Milton)
- User fees (recreational programs and parking fees)
- Non-tax revenue (fines, such as parking fines and municipal by-law infraction fines)
- Development charges: Fees imposed on new development to recover capital costs related to growth.

6.2.2.4 *Private Funding Resources*

Canadian Infrastructure Bank (CIB)

CIB's purpose is to invest in revenue-generating infrastructure which benefits Canadians and attracts private capital thought private investment in projects that support economic growth. Their priority sectors for investment are green infrastructure, clean power, public transit, trade and transportation and broadband infrastructure.

Public-Private Partnerships (P3s)

P3s are long-term agreements between a government and private companies to deliver large-scale infrastructure projects.

6.3 Future Study Recommendations

To support the transportation network and policies set out in the TMP update, it is recommended that Milton conduct the future studies identified in **Table 32**.

Table 32. Future Study Recommendations

Recommendation	Rationale	Phase	Representative cost
1. **Transportation Related GHG Reduction Strategy** • Adopt a strategy to reduce community-wide greenhouse gas emissions in the Town by a specific year.	Recommended in **Section 2.5** to support future Official Plan policy directions and ensure the TMP's vision can be achieved. Supports Moving in Milton policy consideration 5.2	Short-Term	$25,000
2. **Transit Supportive Communities Guidelines** • Create guidelines to provide design guidance on the development of transit-supportive housing in Milton, in both greenfield and brownfield/infill locations, by establishing a set of guidelines for planning and design.	Recommended in **Section 2.5** to support future Official Plan policy directions and ensure the TMP's vision can be achieved. Supports Moving in Milton policy considerations 1.1, 2.4, and 5.1.	Medium-Term	$150,000
3. **Complete Streets Design Manual** • Develop a manual that provides a set of consistent guidelines and tools to inform the design, implementation, and maintenance and monitoring of streets across the Town.	Recommended in **Section 4.2** to support implementation of the recommended active transportation network, particularly by ensuring a	Short-Term	$150,000

Recommendation	Rationale	Phase	Representative cost
	consistent process to implement appropriate, safe facilities. Supports Moving in Milton policy considerations 1.1, 1.2, and 2.2.		
4. **A data collection program to ensure accurate counts of cyclists and pedestrians in the Town.** • Gather active transportation data to identify high-demand areas, allowing transportation professionals to make informed decisions based on accurate data collected.	Recommended in **Section 4.2** to support implementation of the recommended active transportation network. Supports Moving in Milton policy considerations 1.1 and 2.2.	Short-Term	$25,000
5. **Transportation Demand Management (TDM) Strategy** • Create a Milton-specific Transportation Demand Management policy document to outline the goals and strategies/actions for reducing single occupancy vehicles.	Recommended in **Section 5.2** to support the TMP's vision by reducing overall travel demand and incenting sustainable modes of transportation. Supports Moving in Milton policy considerations 1.1 and 3.1.	Short-Term	$75,000

Recommendation	Rationale	Phase	Representative cost
6. Road Safety Strategy • Develop an overarching safety strategy that sets clear safety goals and targets, analyzes and expands the toolkit Milton has at its disposal to alleviate traffic safety issues, and seeks to embed safety in land use planning.	Recommended in **Section 5.3** to enhance the Town's existing road safety practices and reduce the number of injuries and fatalities on the transportation network. Supports Moving in Milton policy consideration 3.3.	Short-Term	$100,000
7. Update the Town's Engineering Standards or Design Guidelines to review the decision-making matrix for the right-of-way widths of Town streets • Update to the Town's standard classifications for Rights-of-Way on an ongoing basis to ensure that existing and planned roadway infrastructure can appropriately accommodate growth in the Town of Milton and that the ROWs reflect best practices in roadway design for multi-modal travel. Updates should be based on the ROW strategy provided in this TMP report.	Recommended in **Section 5.4** to ensure the recommended road classifications, ROWs, and typical cross-sections are reflected in the Town's procedures. Supports Moving in Milton policy considerations 1.1, 1.2, 3.4, and 6.3.	Short-Term	$0 - internal staff resources
8. Parking Strategy • Initiate a parking study to identify parking challenges and opportunities, and provide recommendations. The study would include a data-driven analysis of parking supply and	Recommended in **Section 5.5** to ensure an appropriate parking supply given demand	Short-Term	$200,000

Recommendation	Rationale	Phase	Representative cost
utilization, benchmarking of the Town's parking requirements and policies, public engagement, an assessment of parking best practices and opportunities and recommended updates to the Town's Zoning By-law and parking regulations.	and the TMP's vision. Supports Moving in Milton policy considerations 1.1 and 3.2.		

6.4 Maintenance Strategy

The recommended infrastructure improvements made in this TMP will need to be maintained after construction. This section forecasts indicative maintenance costs for the preferred alternative's for recommended active transportation infrastructure and road infrastructure.

6.4.1 Active Transportation Maintenance

Constructing an active transportation network with physically separated cycling facilities requires investment in maintenance and operations activities to allow for year-round use of the network. Typical maintenance activities and frequencies are included in **Table 33**.

Table 33. Typical Maintenance and Replacement Frequencies

Maintenance Activity	Maintenance/Replacement Frequency
Repaint Line Markings	Assume that painted line markings are fully replaced / renewed on an annual basis.
Reapply Cold Plastic Line Markings	Assume that plastic line markings are replaced every 5 years (or 20% annually).
Repaint Stencils	Assume 30% of painted stencils will need to be replaced / renewed on an annual basis.
Reapply Cold Plastic Stencils	Assume 30% of painted stencils will need to be replaced / renewed on an annual basis.
Replace Route Signs	Assume 5% of all signs will need to be replaced annually.
Sweeping	Typical sweeping frequency of 6 times a year.
Snow Clearing	Snow clearing as required based on recommended winter levels of service.

Maintenance Activity	Maintenance/Replacement Frequency
Trail Patching and Grading	Provided for granular surface trails once every 2 years, including 25 – 50 mm top up of screening, infill of pot holes, light compaction.
Apply and Compact Skim Coat	Applied to granular surface trails once every 5 years, includes 50 mm skim coat of stone dust screening.

Minimum Maintenance Standards for active transportation facilities may be developed from the Ontario Minimum Maintenance Standards (MMS) for Municipal Highways. On-road facilities, including bike lanes and on-road signed routes, have standards defined in the MMS. In-boulevard separated facilities, including cycle tracks and in-boulevard multi-use trails, and multi-use trails outside of the right-of-way do not have defined standards. To fill the gap in maintenance standards for in-boulevard cycling facilities and trails, the levels of service outlined in **Table 34** and **Table 35** based on typical best practices may be considered.

Table 34. Levels of Service for Non-Winter Maintenance Activities

Activity	Service Level Criteria
Patrol	3 times every 7 days to once every 30 days
Sweeping	Scheduled sweeping particularly in Spring and Fall or during major construction activities; deploy resources outside of scheduled sweeping as soon as practicable after becoming aware of debris
Surface Discontinuities	Greater than 2 cm height within 2 to 21 days after acquiring knowledge of the discontinuity
Signage and Pavement Markings	Refreshed as needed
Cracking	Greater than 2 cm wide and 2 cm deep
Potholes	600 cm^2 by 8 cm deep within 4 days after acquiring knowledge of the pothole
Surface Drop-off at Shoulders	Deeper than 8 cm
Vegetation Management	Routine mowing including daylight triangles at intersections; annual trimming of bike path trees

Table 35. Recommended Winter Maintenance Service Levels for In-boulevard Active Transportation Facilities and Multi-use Trails (Outside of Road ROWs)

Activity	Arterial Road	Collector Road and Multi-use Trail (Outside of ROW)
Snow Clearing	Maintain to 2.5 cm within 8 hours	Maintain to 2.5 cm within 24 hours
Ice Treatment	Treat within 3 hours by 7 am and by 3pm on a weekday	Treat within 8 hours
Ice Prevention	Proactive anti-icing approach applied within 8 hours prior to a storm event	Proactive anti-icing approach applied within 24 hours prior to a storm event

Typical annual maintenance costs for in-boulevard active transportation facilities and multi-use trails can range from $2,700 to $5,000 per lane kilometre. The maintenance for on-road bike lanes and signed routes are included in the typical costs of road maintenance activities, discussed in **Section 6.4.2**. Based on the ranges of costs, the annual costs for each phase of implementation are summarized in **Table 36**. The costs presented exclude the annual funding required to support capital investments in the state of good repair.

Table 36. Operating and Maintenance Costs for the Active Transportation Recommendations

Phase	Lane Kilometres of Implemented Separated Facilities*	Typical Maintenance Costs (annual per lane km)	Maintenance Costs per year
Short	47.6	$2,700 - $5,000	$128,000 - $237,000
Medium	16.5	$2,700 - $5,000	$45,000 - $83,000
Long	58.5	$2,700 - $5,000	$159,000 - $293,000
Total	**122.6**	**$2,700 - $5,000**	**$332,000 - $613,000**

* Separated facilities include multi-use paths and cycle tracks

6.4.2 Road Maintenance

The Town of Milton indicated that its existing annual road maintenance costs are approximately $6,551.37 per lane kilometre. The same indicative cost was assumed for the proposed road improvements, as shown in **Table 37**. Costs were rounded up to the nearest thousand. The costs presented exclude the annual funding required to support capital investments in the state of good repair.

Table 37. Indicative Annual Maintenance Costs for Proposed Road Improvements

#	Road	From	To	Recommended Improvement	Center Line Dist. (km)	Additional Annual Maintenance Cost
1	Ontario Street South	Derry Road	Main Street East	Converting 2 lanes to HOV lanes	1.84	$0
2	Main Street East	Fifth Line	Trafalgar Road	4-lane extension	2.76	$73,000
3	Louis St. Laurent Avenue	Fifth Line	Sixth Line	4-lane extension	1.41	$37,000
4	Sixth Line	Highway 401	Britannia Road	Widening from 2 to 4 lanes	5.61	$74,000
5	Britannia Road	Tremaine Road	Milton Education Village west boundary	Widening from 2 to 4 lanes	0.42	$6,000
6	Lower Base Line	Fourth Line	Fifth Line	2-lane extension	1.96	$26,000
7	Louis St. Laurent Avenue	Sixth Line	Trafalgar Road	4-lane extension	1.35	$36,000
8	Lower Base Line	Fifth Line	Town east boundary	Widening from 2 to 4 lanes	4.93	$65,000
9	Sixth Line	Britannia Road	Lower Base Line	Widening from 2 to 4 lanes	3.14	$42,000
10	NS Street (MTSA)	EW Street	Main Street E	New 2-lane roadway	0.12	$2,000

#	Road	From	To	Recommended Improvement	Center Line Dist. (km)	Additional Annual Maintenance Cost
11	EW Street (MTSA)	Wilson Drive	Thompson Road	New 2-lane roadway	0.73	$10,000
12	Nipissing Road Extension (MTSA)	Nipissing Road	Ontario Street	New 2-lane roadway	0.35	$5,000

6.5 Monitoring Strategy

It is recommended that the Town adapts existing monitoring frameworks, through collaboration with the Region's existing monitoring framework, to implement short-term and long-term monitoring of the TMP Update. This will include monitoring the implementation of recommended improvements and transportation projects, as well as their impacts on the TMP Update's vision, on an ongoing basis.

Monitoring the performance of the TMP Update will help confirm the transportation projects included in the TMP Update and will also help identify where modifications or updates are needed. The monitoring framework should consist of:

- A list of key performance indicators (KPIs) that track the TMP Update's vision.
- For each KPI, the data sources that will be used to calculate it as well as the frequency of this calculation, and an identification of which office within the Town will be responsible for data collection and analysis.
- A target for each KPI that sets out Milton's aspirations.
- A plan of the actions Milton intends to take when a target is met or not met.
- The regular creation of status update and progress reports.

Initial KPIs for this TMP are shown in **Table 38**, building on the indicators identified in the 2018 TMP. KPIs consist of both outputs (what the Town has done) and outcome measures (how what the Town has done impacts transportation system users).

Table 38. Key Performance Indicators to Measure Implementation Success

TMP Key Principle	KPI	Data Source	Frequency
Accommodate future growth and associated	Volume to capacity ratios on north-south and east-west screenlines during the PM peak period	Regional and Town automated traffic counts	Every three years

TMP Key Principle	KPI	Data Source	Frequency
travel demands			
Promote equitable and accessible travel for all ages and abilities	Total kilometres of complete streets constructed	Town of Milton	Yearly
Support mobility for all modes of transportation	Transit hours of service offered per year per capita	Milton Transit	Yearly
	Transit ridership	Milton Transit	Yearly
	Modal share of transit trips	Transportation Tomorrow Survey	Every five years
	Total kilometres of cycling infrastructure constructed	Town of Milton	Yearly
	Modal share of cycling and walking trips	Transportation Tomorrow Survey	Every five years
Promote sustainability	Modal share of car trips	Transportation Tomorrow Survey	Every five years
	Vehicle ownership per household	Transportation Tomorrow Survey	Every five years
	Percent of Milton Transit's fleet that is electric	Milton Transit	Yearly

7 Summary of TMP Recommendations

Active Transportation Network

- Implement the active transportation network improvements highlighted in **Figure 40** and **Figure 41** in accordance with the phasing schedule shown in **Figure 58** and **Figure 59**.
- Apply a Complete Streets approach and the facility selection processes in OTM Book 18 when considering additional active transportation facilities, including future road reconstructions and new roads in Secondary Plan areas.
- Develop consistent guidance for active transportation through the development of a Complete Streets Design Manual for Milton for linear active transportation facilities and intersection treatments, including protected intersections.
- Coordinate with Halton Region for the planning and implementation of active transportation facilities on Regional roads.
- Provide sidewalks on roadways consistent with the Right-of-Way Strategies discussed in **Section 5.4**.
- Collect data to ensure accurate counts of cyclists and pedestrians in Milton.
- Ensure the new Official Plan refers to the recommended active transportation network and the recommended Complete Streets Design Manual.

Transit Network

- Implement the transit priority corridors highlighted in **Figure 44** in accordance with the phasing schedule shown in **Table 26**.
- Work alongside Metrolinx and Halton Region to support the development of transit priority infrastructure that would be desirable to implement the Priority Bus network identified in the 2041 Regional Transportation Plan.
- Examine the benefits of transit priority treatments in relation to access/egress to planned future transit hubs at Milton Education Village and Kennedy Circle.
- Continue implementing the Five-Year Service Plan and Master Plan Update.
- Continue to provide services for persons with disabilities under a theme of universal accessibility.
- Continue to invest in bus stop infrastructure.
- Identify and implement the following key transit node locations:
  - Redevelopment of Milton GO Station (to accommodate additional bus capacity)
  - New Trafalgar/Agerton GO Station
  - Milton Education Village Transit Hub (as noted in the Transit Five-Year Plan)
  - Bristol Park/Kennedy Circle Transfer Point (as noted in the Transit Five-Year Plan)
- Increase multi-jurisdictional trips where advantageous by continuing to support the advancement of two-way, all-day GO rail service between Milton GO and Union Station in Downtown Toronto.
- Continue to encourage enhancing the connection between land-use and transit.
- Expand services alongside development.

- Build supporting active transportation along transit corridors.
- Develop partnerships with rideshare and bike-share services to provide connectivity to transit hubs.
- Improve and maintain active transportation infrastructure to ensure safe and accessible pathways that will encourage walking to and from transit stops.
- Implement transit hubs that integrate various modes of transportation (buses, bikes, rideshare) to create easy transfers and improve connectivity.

Road Network

- Implement the recommended road network improvements highlighted in **Figure 46** and **Figure 47** in accordance with the phasing schedule shown in **Table 25**.
- Implement the recommended intersection improvements noted in **Section 1.3.3.2**.

Rural Milton

- Continue upgrading two-way stop-controlled intersections to be double signed.
- Continue to review and address the areas of concern noted by residents as shown in **Section 3**.
- Implement the recommendations related to the active transportation network, road network, goods movement, and traffic safety.

Goods Movement

- Retain the goods movement network shown in the 2018 TMP, with the exception of the link along Louis St. Laurent Avenue from Tremaine Road to James Snow Parkway, which should be removed from the network.
- Reflect the updated goods movement network in the new Official Plan, and ensure the Official Plan contains policies that ensure the network does not conflict with existing or new sensitive land uses or major transit routes.
- Continue to designate and monitor designated goods movement corridors.
- Collaborate with Halton Region and adjacent lower-tier municipalities to better understand their goods movement needs to, from, and through the Town.
- Continue to evaluate how best to manage and communicate truck route details. This will form part of the work required to separate the Traffic and Parking By-laws, and will require cross-divisional input within the Town.

Transportation Demand Management

- Create a Transportation Demand Management Strategy in accordance with the scope set out in **Section 5.2.2**.
- Establish a TDM checklist for evaluating TDM-related items that need fulfillment within existing development projects and enforce a minimum scoring requirement or green development standard for TDM items during site planning and approvals.
- Enact policies that support TDM initiatives and zoning regulations that promote mixed land-use development.
- Utilize smart parking management strategies, including pricing, location-based permits, and efficient use of parking spaces.
- Enhance the partnership with SmartCommute Halton Region to further encourage carpooling.

- Provide discounted transit passes to qualifying residents of Milton to enhance transit ridership.
- Enhance partnerships and collaboration by supporting workplace TDM champions, preferably through allocated full-time staff.
- Seek grant opportunities to undertake TDM initiatives and provide more financial incentives to the public to enhance the uptake of sustainable modes of transportation.
- Understand the challenges associated with transit and ways to deliver excellent transit service to encourage mode shift.
- Provide education through potential public engagement opportunities to increase community awareness of alternative transportation modes and their various benefits, such as health, financial savings, and addressing environmental issues.
- Encourage businesses to implement telecommuting and flexible work arrangements to reduce the need for daily commuting.
- Provide real-time travel information through apps and websites, helping commuters make informed choices about their travel routes and modes.
- Hold public engagement sessions to engage with the community and understand their needs through conversational prompts. The feedback can be used to inform TDM programs and policies to best address the needs of the community.
- Support active transportation by providing end-of-trip facilities such as bike rooms, lockers, and bike repair stations to enhance the user comfort and experience.
- Increase connectivity to existing and future transit and active transportation facilities as a requirement within the site planning approval process.

Traffic Safety

- Develop a road safety strategy in accordance with the scope set out in **Section 5.3.3**. Policies should be included in the new Official Plan that align with this strategy.

Roadway Classification & Right-of-Way

- Adopt the right of way widths and standard cross-sections identified in **Section 5.4.3** and undertake the next steps identified in that section.
- Update the Town's Engineering Standards or Design Guidelines to review the decision-making matrix for the right-of-way widths of Town streets.

Parking

- Initiate a parking study to identify and address parking challenges and opportunities in accordance with the scope set out in **Section 5.5.3**.

Other Recommendations & Future Studies

- Create a transportation related GHG reduction strategy, and ensure policies within the Town's new Official Plan support this strategy, including policies that require the installation of electric vehicle infrastructure into new development and construction projects.
- Create Transit Supportive Communities Guidelines.

- Explore a Sustainable Mobility Coordinator role within the Town to champion and coordinate plans, policies, and actions related to walking, cycling, Transportation Demand Management, and micro-mobility.
- Create a resource management plan to support implementation of the TMP recommendations, as set out in **Section 6.1.2**.
- Collect and analyze data to measure progress towards the TMP Update's vision, in accordance with the key performance indicators set out in **Section 6.5**.

A DETAILED COUNTS AND SIGNAL TIMING PLANS

B LOS DEFINITION

C INTERSECTION CAPACITY ANALYSIS RESULTS

D DETAILED SYNCHRO OUTPUT SHEETS

E EXISTING LANE CONFIGURATION & TRAFFIC DATA

F CONSULTATION MATERIALS

G PROPOSED ACTIVE TRANSPORTATION FACILITIES SUMMARY