Mississauga Downtown Movement Plan

Technical Report

March 2024

MISSISSAUGA

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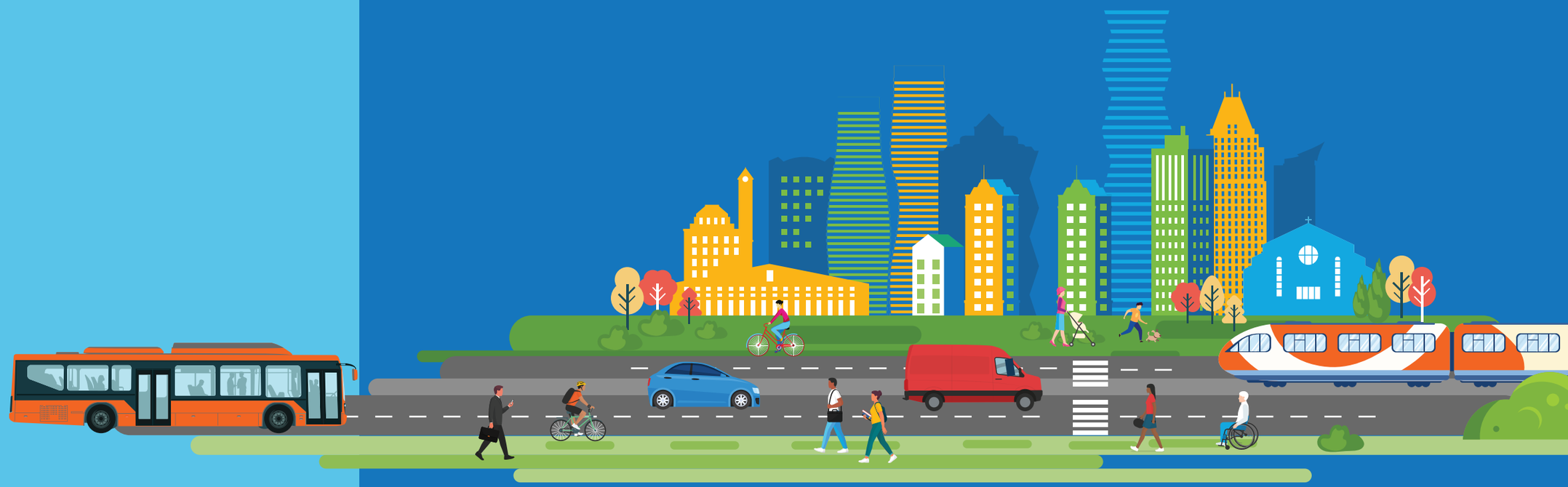


Introduction

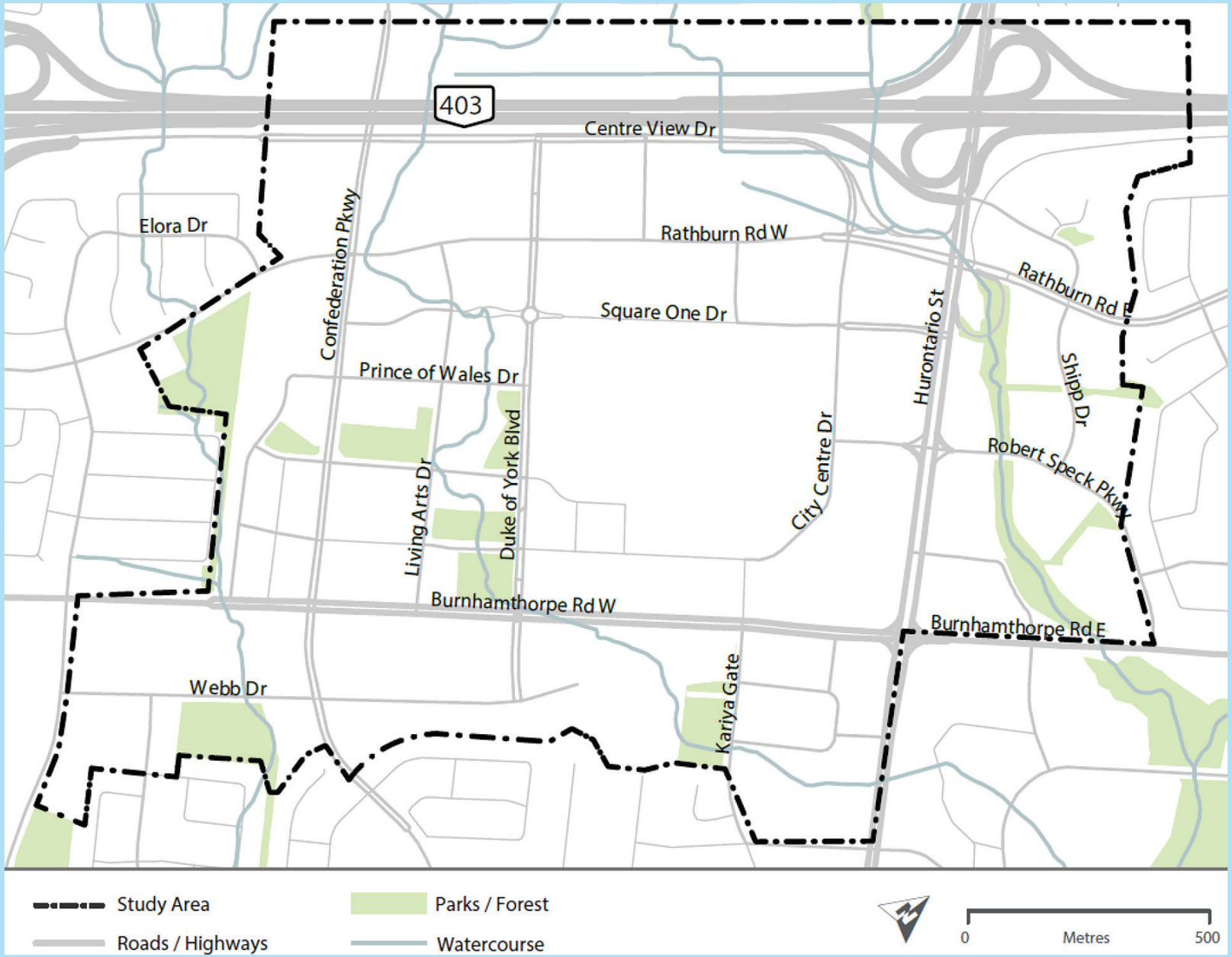
The Downtown Movement Plan (DMP) is a critical study that updates previous plans and identifies the transportation infrastructure and policies required to support the continued development of Mississauga's Downtown Core. The DMP is a robust, multimodal transportation study carried out as a Master Plan that satisfies the requirements of a Master Plan (Approach #1) as described in the Municipal Class Environmental Assessment process (Municipal Engineers Association June 2000, as amended in 2007, 2011 and 2015).

Mississauga's Downtown Core has been the focus of much planning investigation. In 2010, the City released the Downtown 21 Master Plan (DT21), a plan that first outlined a vision to transform Downtown Mississauga from "suburban to urban" and laid the foundation for the current downtown core. In 2014, the City's Transportation Planning Section developed the Downtown Mississauga Movement Plan (DMMP) as a proof-of-concept multi-modal transportation network for the Downtown Core based on DT21 objectives. Also in 2014, City Planning developed the Downtown Core Local Area Plan (DLAP) which presented updated Official Plan policies and a future road network for the Downtown Core.

An amended DLAP, with an updated road network, was approved by the Local Planning Appeal Tribunal (LPAT) in 2020. Most recently, in 2019, the City initiated the Downtown Strategy — a comprehensive study to update the vision for Downtown Mississauga and provide guidance for future development in the Downtown Core. The DMP functions as a technical background study that provides an implementable, multi-modal transportation plan to support the Downtown Strategy.

With the adoption of Mississauga's first Transportation Master Plan (MTMP) in 2019, the City of Mississauga committed to fostering the freedom to move for all travellers. The TMP identified a vision where the Downtown Core is transformed from a local focal point to a regional centre when the Hazel McCallion Light Rail Transit (HMLRT) begins operation, connecting the Downtown Core to the rest of the Hurontario corridor from Port Credit in the south to Brampton in the north. This renewed direction, along with the proposed redevelopment at Square One Shopping Centre, added to the need to revisit the transportation network for Downtown Mississauga.

Figure 1.1 **Study Area**



Study Area

The DMP study area is illustrated in **Figure 1.1**. It includes the City's Downtown Core bounded by the Highway 403 corridor to the north, Chalfield Lane/Shipp Drive/Robert Speck Parkway to the east, Burnhamthorpe Road/Elm Drive to the south, and Grand Park Drive/Wallenberg Crescent/ Rathburn Road to the west. The DMP study area includes additional lands — Zonta Meadows Park and Highway 403 Lands – compared to the Downtown Core area delineated in the Downtown Core Local Area Plan (DLAP).

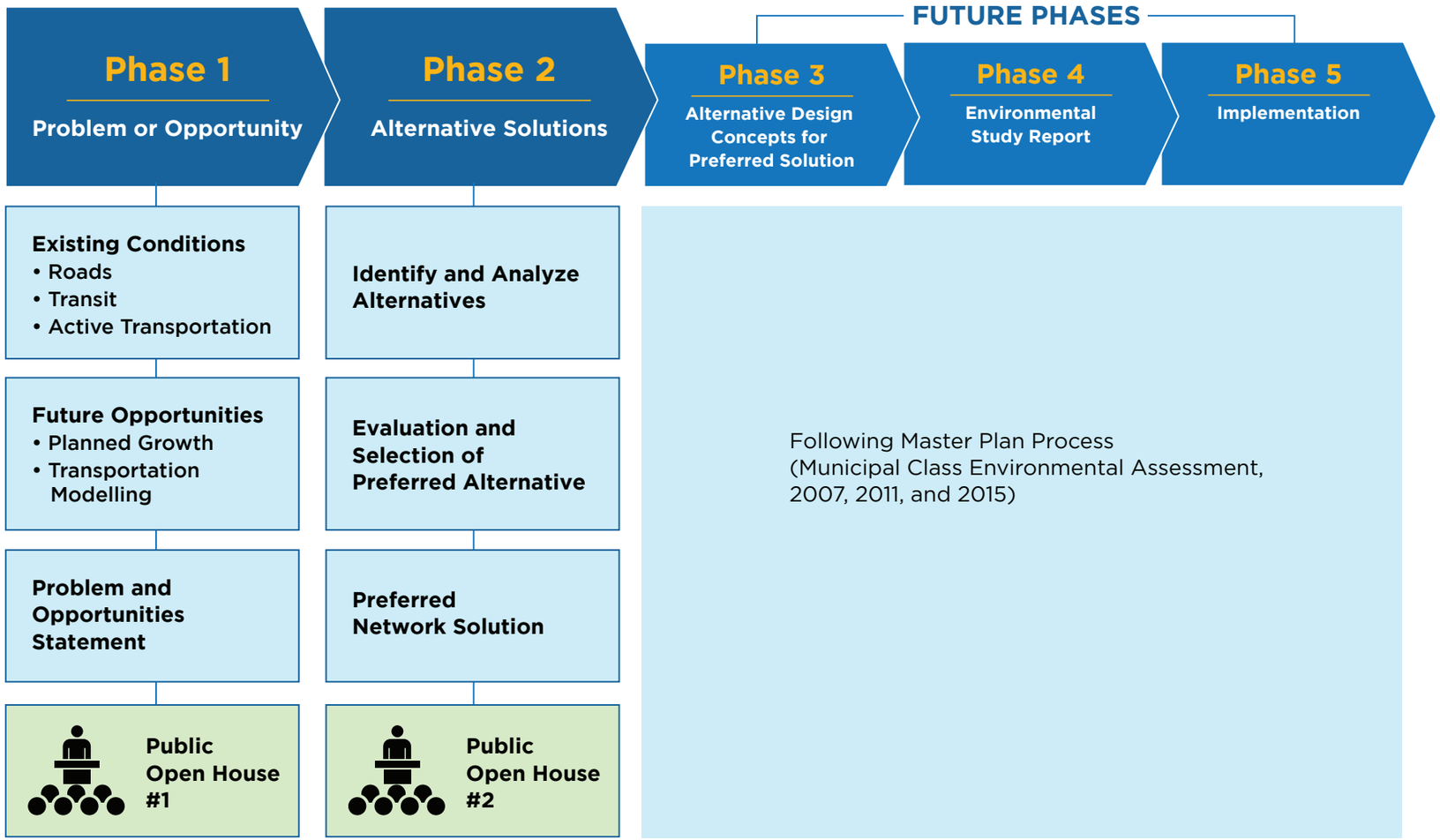
Growth and network changes in the Downtown Core have impacts on the broader transportation network and vice versa. Therefore, two larger study areas (the Micro Model Area and EMME Subarea) were identified for the purpose of traffic modelling. The EMME Subarea, which is the broadest study area, is bounded by Eglinton Avenue to the north, Cawthra Road to the east, Queensway to the south, and Erin Mills Parkway to the west. The modelling study areas are discussed in more detail in **Appendix A**.

TMP Purpose and EA Process

The DMP study was carried out in accordance with Master Plan Approach #1 as described in the Municipal Class Environmental Assessment (EA) Process (October 2000, as amended in 2007, 2011, and 2015) and illustrated in **Figure 1.2**. The DMP study completed Phase 1 and Phase 2 of the five-phase process. Phase 1 defines the problem and/or opportunities and Phase 2 identifies and evaluates alternative planning solutions to select a preferred alternative.

As part of the Municipal Class EA process, consultation with stakeholders and the public was conducted throughout the project.

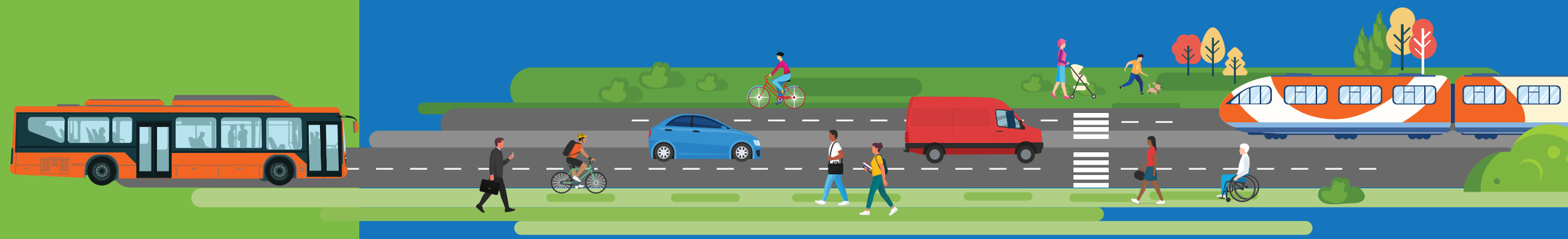
Figure 1.2 Municipal Class EA Process



02

Policy Context and Background Studies

- Provincial Planning Context
- Regional Planning Context
- Municipal Planning Context



Policy Context and Background Studies

This chapter summarizes the policy context and background studies that inform and guide the DMP. Detailed documentation can be found in **Appendix B**.

Provincial Planning Context

Provincial planning policies were reviewed to identify their relevance to the Downtown Core and the findings are summarized in **Table 2.1**.

Table 2.1 Provincial Planning Context

Provincial Planning Document	Description / Relevance
Planning Act 2019	Recently enacted Bill 139 introduced several changes to the Planning Act, specifically the provision of protected Major Transit Station Areas for single-tier and upper-tier municipalities. If the official plan includes such policies, it must also contain policies that: **a.** identify the minimum number of residents and jobs, collectively, per hectare that are planned to be accommodated within the area; **b.** identify the authorized uses of land in the major transit station area and of buildings or structures on lands in the area; and **c.** identify the minimum densities that are authorized with respect to buildings and structures on lands in the area." 2017, c. 23, Sched. 3, s. 5 (2).

Table 2.1 Provincial Planning Context *(continued)*

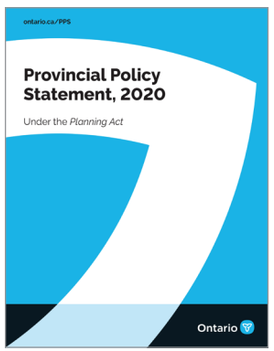
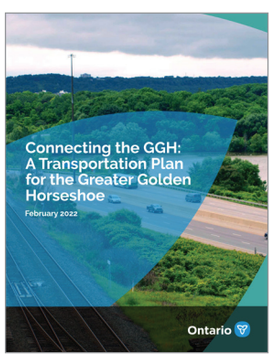
Provincial Planning Document	Description / Relevance
 **Provincial Policy Statement 2020**	Provides direction on land use planning and development as well as the transportation system, including: • Developing safe, energy efficient, transportation systems that move people and goods; • Promoting efficient use of existing and planned infrastructure; • Providing connectivity through a multimodal transportation system ; • Promoting land use pattern, density, and mix of uses to support transportation choices that increase the use of transit and active transportation; • Protection of corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems; • Major goods movement facilities and corridors shall be protected for the long term; • Promoting development that is compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, mitigate, or minimize negative impacts on and from the corridor and transportation facilities; • The co-location of linear infrastructure should be promoted, where appropriate; and, • When planning for corridors and rights-of-way for significant transportation, electricity transmission, and infrastructure facilities, consideration will be given to the significant resources in Section 2: Wise Use and Management of Resources.

Table 2.1 Provincial Planning Context *(continued)*

Provincial Planning Document	Description / Relevance	
 **A Place to Grow: Growth Plan for the Greater Golden Horseshoe 2020**	Originally adopted in 2006, the 2020 update sets forth a framework for implementing the Government of Ontario's 2051 vision for building stronger, prosperous communities by better managing growth in the region. The Growth Plan identifies the Downtown Core as an Urban Growth Centre.	
 **2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area, Metrolinx 2018**	Metrolinx is a provincial agency responsible for planning and implementing a multi-modal transportation system across the GTHA. In 2008, they released the Big Move, which acted as the first **Regional Transportation Plan** (RTP) in the province. They recently updated this plan, now known as the 2041 RTP.	The RTP outlines a number of transit infrastructure projects to be completed across the GTHA such as the service overhaul of GO Transit services through Regional Express Rail (RER), as well as goals such as transit fare integration across different providers.
 **Connecting the GGH: A Transportation Plan for the Greater Golden Horseshoe 2022**	Provides a 30-year vision of a transportation system that provides safe, efficient, and convenient options for people and businesses and supports the well-being and economic prosperity of the region into the future. It builds on the principles of the **Provincial Policy Statement**, providing more specific policies.	The plan's aims include: • Actions to Fight Gridlock • Actions to Improve Transit Connectivity • Actions to Give Users More Choice • Actions for a Safe and Inclusive Transportation System • Actions to Keep Goods Moving

Regional Planning Context

Regional planning policies were reviewed to identify their relevance to Downtown Core and findings are summarized in **Table 2.2**.

Table 2.2 Regional Planning Context

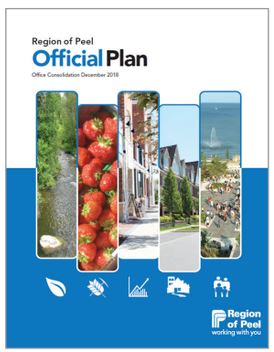
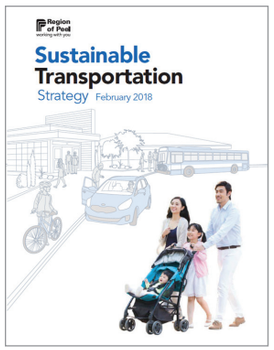
Regional Planning Document	Description / Relevance	
 **Peel Region Official Plan, Office Consolidation 2018**	Provides direction to guide economic, environmental, and community-building decisions to manage growth. The main objectives of the ROP are to recognize the urban and rural nature of Peel Region, protect the natural and cultural environment, manage resources, direct sustainable growth, and set the basis for providing Regional services in an efficient and effective manner.	Under the ROP, the DMP study area is considered to be part of a Conceptual Urban Growth Centre which will serve as a transit hub providing connections to the Regional Intensification Corridor (conceptual).
 **Let's Move Peel Long Range Transportation Plan 2019**	The **Region of Peel's Long Range Transportation Plan** (LRTP) was recently updated to address transportation needs to 2041. The LRTP identifies major transportation challenges that the Region of Peel foresees over the next few decades, as well as the recommended policies,	sustainable transportation strategies and road improvements required to address these challenges. A key targeted strategy is the shift to 50% sustainable mode share by 2041 which includes sustainable options such as transit, active transportation, and carpooling.

Table 2.2 Regional Planning Context *(continued)*

Regional Planning Document	Description / Relevance	
 **Region of Peel Sustainable Transportation Strategy 2018**	In 2018, Peel Regional Council approved the **Sustainable Transportation Strategy** (STS) that set a goal of 50% sustainable mode share by 2041. The strategy builds on the framework established by the **2012 Active Transportation Plan**, existing and ongoing	plans from the area municipalities, neighbouring municipalities, and input from other agencies. The STS outlines implementation plans focusing on active transportation and transportation demand management.
Region of Peel Strategic Goods Movement Network Study 2013	The **Region of Peel Strategic Goods Movement Network Study** (SGMNS) identified potential truck priority routes for goods movement to develop a hierarchical truck route network throughout Peel Region. The goal of the SGMNS is to improve, prioritize, and preserve goods movement corridors through the Region.	The SGMNS identified the DMP study area as being located within Mississauga's major business cluster with a primary and connector truck route running north-south and east-west surrounding the study area.

Municipal Planning Context

Municipal planning policies and other background studies were reviewed to identify their relevance to Downtown Core and findings are summarized in **Table 2.3** and the following sections.

Table 2.3 Municipal Planning Context

Municipal Planning Document	Description / Relevance	
 **City of Mississauga Climate Change Action Plan 2019**	In 2019, the City of Mississauga joined other municipalities across Canada in declaring a climate emergency and approved a **Climate Change Action Plan** (CCAP). In this action, the City has recognized that global and local extreme weather events are a direct effect of increasing greenhouse gas (GHG) emissions, of which the use of gasoline-fueled vehicles are a significant contributor.	The City is committed to reducing its greenhouse gas emissions and has set an ambitious and achievable greenhouse gas reduction target of 80% below 1990 levels by 2050. The Downtown Movement Plan will help encourage sustainable travel in the Downtown Core to achieve the City's climate change goals.

Table 2.3 Municipal Planning Context *(continued)*

Municipal Planning Document	Description / Relevance
Our Future Mississauga Strategic Plan 2009	**Our Future Mississauga**, the City's Strategic Plan, is supported by five Strategic Pillars of Change – Move, Belong, Connect, Prosper, and Green. The following Strategic Plan goals are important considerations for the Downtown Core's future transportation network: • Develop environmental responsibility by reducing private automobile use and developing compact mix-use development; • Connecting the communities within Mississauga and within the Greater Golden Horseshoe to support a 24-hour city; • Build a reliable and convenient system to make transit a faster and more affordable alternative, with a transit stop within walking distance to every home and an intricate web of higher order transit; • Increase capacity to the transportation system through strategic investment in transit, additional links in the street network and active mobility choices; and • Direct growth by supporting transit-oriented development policies and deliberate civic actions.

Table 2.3 Municipal Planning Context *(continued)*

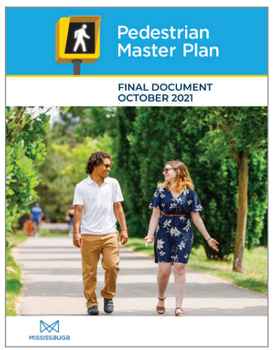
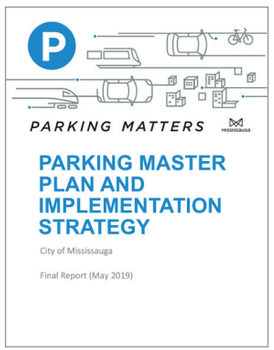
Municipal Planning Document	Description / Relevance	
 **Mississauga Pedestrian Master Plan 2021**	The **Pedestrian Master Plan** shapes how pedestrian connections are designed and implemented across neighbourhoods, helping to enhance and create safe places for people to walk in Mississauga. The plan acts as a go-to reference for pedestrian infrastructure projects to 2041, supporting the City's commitment to a Vision Zero approach.	The **Pedestrian Master Plan** documents the following: • the City's existing pedestrian network, identifying gaps and opportunities for future infrastructure projects • key destinations for pedestrians (e.g., transit stops, schools, local amenities, etc.) • how growth and intensification will impact existing and future pedestrian infrastructure • short, medium, and long-term service delivery and project priorities • best practices of pedestrian infrastructure and network design
City of Mississauga Official Plan Consolidation 2022	The **Mississauga Official Plan** was updated to include Local Planning Appeal Tribunal (LPAT) decisions. The Official Plan identifies the DMP study area as the Downtown Core. The Downtown Core falls within the Intensification Corridor and the Downtown Intensification Area.	Policies pertaining to the Downtown Core are found in the **Downtown Core Local Area Plan**, LPAT approval June 8, 2020, which is discussed in **Section 2.3.1**.

Table 2.3 Municipal Planning Context *(continued)*

Municipal Planning Document	Description / Relevance	
 **Mississauga Transportation Master Plan 2019**	The **Mississauga Transportation Master Plan** (MTMP) directs the City's investment in and stewardship of the transportation system. The MTMP's vision is that "in Mississauga, everyone and everything will have the freedom to move safely, easily, and efficiently to anywhere at any time."	For the Downtown Core, the vision translates to transforming a local focal point to a regional centre. The Hazel McCallion LRT and Mississauga Transitway will connect businesses with employees and customers from across Mississauga and beyond. Square One Shopping Centre will remain a regional attraction, and more people will come and go by transit with convenient connections between modes and service providers.
 **Mississauga Cycling Master Plan 2018**	The **City of Mississauga Cycling Master Plan** (2018) aims to create a place where people choose to cycle for recreation, fitness, and daily transportation needs. The four goals of the Cycling Master Plan are: 1. Improve safety for cycling; 2. Build a connected, convenient, and comfortable cycling network; 3. Increase the number of cycling trips in Mississauga; and 4. Foster a culture of cycling.	The Cycling Master Plan illustrates a number of proposed bike lanes and cycle tracks/ separated bike lanes within the Downtown Core that will provide critical connections to existing bike lanes and multi-use trails, as well as other proposed cycling facilities. A review of existing conditions for cycling is presented in **Section 4.1.5**.

Table 2.3 Municipal Planning Context *(continued)*

Municipal Planning Document	Description / Relevance
 **Parking Master Plan and Implementation Strategy 2019**	The City's **Parking Master Plan and Implementation Strategy** (2019) laid out the vision for parking in the city and outlined the strategies for various parking management measures including parking regulations, parking facilities, governance, finance, technology, implementation, and monitoring. The DMP study area falls within Precinct One of the proposed precinct policy areas. The parking vision for Precinct One is to have the lowest minimum parking requirements, highest level of parking management strategies, and consideration of parking maximums for most land uses. The recommended parking management principle is a price responsive approach that makes maximum use of pricing to build, own, operate, and supply municipal parking. A separate Parking Regulation Study identified parking rates that will implement this plan. A review of existing conditions for the existing parking conditions is presented in **Section 4.1.3**.

DOWNTOWN CORE PLANS

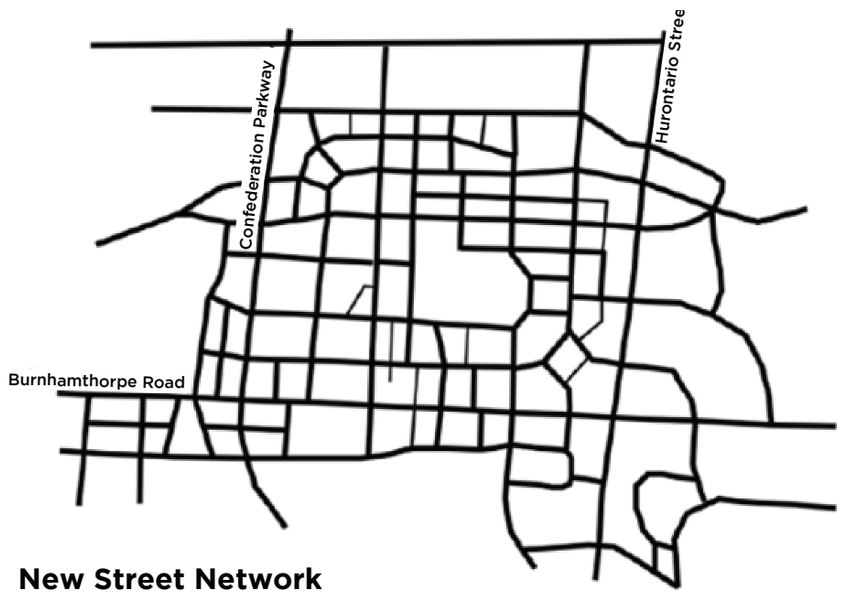
Downtown 21 Master Plan 2010

The **Downtown 21 Master Plan** was prepared in April 2010 as an update to the 1969 Mississauga City Centre Master Plan and builds on the 2009 City Strategic Plan.
The **Downtown 21 Master Plan** proposed a number of new east-west and north-south streets to maximize access in and beyond the Downtown Core. **Figure 2.1** illustrates the proposed street network that provides additional local streets to create a fine grain network of development blocks that are walkable and well-connected.

The proposed future street network would allow these roads to be small in scale, while maximizing accessibility for pedestrians, cyclists, and drivers. The new streets result in urban blocks that provide routing options for shorter-distance trips and provide additional pedestrian and bicycle-friendly routes, all of which help take the load off of other streets. While this finer grid network was proposed in the **Downtown 21 Master Plan**, the road network, as confirmed through Mississauga Official Plan Amendment No. 8 (MOPA #8) known as the **Downtown Core Local Area Pla**n, supersedes the **Downtown 21 Master Plan**.

Figure 2.1 Downtown 21 Proposed Street Network

Existing Street Network



New Street Network

Source: Mississauga Downtown 21 Master Plan (2010)

Downtown Mississauga Movement Plan 2014

The **Downtown Mississauga Movement Plan** (DMMP) aims to use the guiding principles of the Downtown 21 Master Plan to address fundamental issues outlined in the DMMP. The DMMP developed a user hierarchy to prioritize different modes of movement. This hierarchy directs planning, the priority given to different modes, and investment. The user hierarchy proposed for the DMMP was as follows:

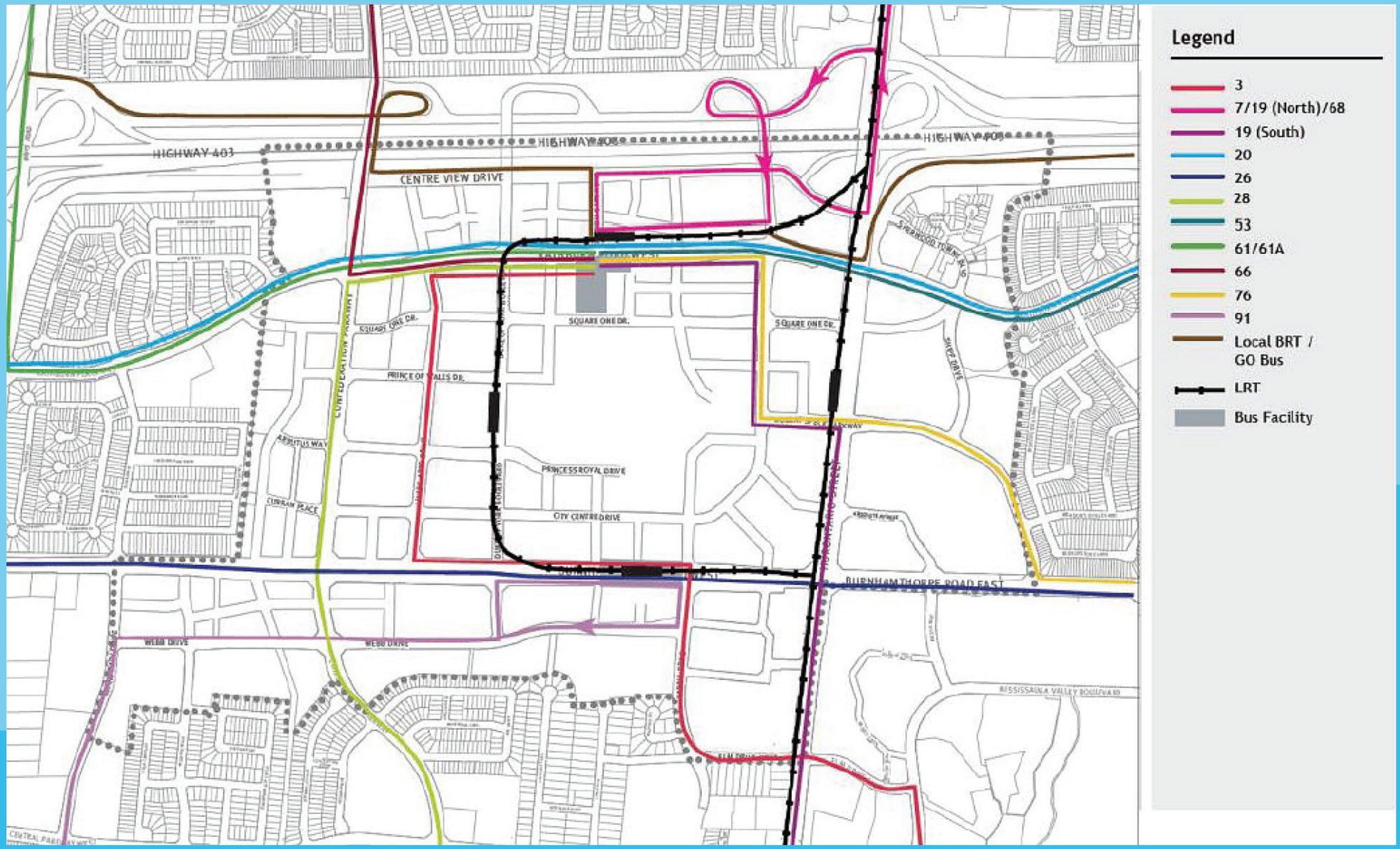
1. Active transportation;
2. Transit;
3. Ride sharing / pooling and taxis;
4. Goods and servicing vehicles; and
5. General auto traffic.

The guiding principles of the DMMP included:

- Minimize the need to travel by supporting mixed use, high density development designed to be easily accessible for pedestrians and cyclists.
- Plan Multi-Modal by recognizing the inter-relationships between modes, and the choices available to users.
- A New User Hierarchy focusing on people, not vehicles.
- New mode split provided by greater transportation choices.
- Active Modes for a vibrant Urban Core where walk and bike modes are the priority (mixed use/high density, finer street grid/smaller block sizes and the creation of a walkable vibrant Downtown Core).
- An Integrated Transit Network designed around Higher Order Transit (Hurontario-Main LRT and Mississauga Transitway) and a supportive local transit network.
- Transit-Oriented Development Opportunities by linking regional Higher Order Transit to regional destinations (Square One, Living Arts Centre, City Hall, Sheridan College, and future office developments).
- A New Approach to Car Parking by managing the supply, ownership, operation, and pricing of off-street and on-street supply.
- Transportation Demand Management (TDM) measures promoting transportation choices, providing incentives, and supporting the efficient use of the finite downtown transportation network.
- The management of goods and servicing vehicles needs to be coordinated with the wider needs of the new urban core (i.e., routes and times of day etc.). Accommodating the Auto as part of a wider, integrated transportation system.

Figure 2.2 illustrates a route concept for local and regional bus networks in the Downtown Core area for the morning peak period. This was developed for the Hazel McCallion LRT (HMLRT) project as a suggested modification to existing bus transit routing to provide a complementary and integrated local transit network to support the introduction of HMLRT and the Main Street Transit Hub. Since the initial proposal, the LRT loop along Duke of York Boulevard and Burnhamthorpe Road has been removed by Metrolinx from the implementation plan.

Figure 2.2 DMMP Proposed Transit Network



Downtown Core Local Area Plan 2020

On June 8, 2020, Local Planning Appeal Tribunal (LPAT) approved the Downtown Core Local Area Plan (DLAP) as part of the Official Plan through MOPA #8. The DLAP aims to support the following key opportunities for the Downtown Core:

a. Strengthen the Core's role as the primary location for major office, highest concentration of retail commercial, mixed use, civic and cultural uses;

b. Accommodate forecasted growth without impacting the natural environment and quality of life;

c. Attract new jobs, particularly in the office sector to balance population and employment;

d. Create a fine-grained, well connected road network that supports multi-modal transportation modes: walking, cycling, transit, servicing and goods movement, and the car;

e. Develop an integrated urban place that achieves design excellence in buildings, the public realm, and a distinctive, memorable character in mixed use districts; and

f. Provide a new development framework and policy regime founded on greater predictability and certainty of outcomes, to better direct growth and support existing and planned services.

The policies in the DLAP were developed with attention to key issues and priorities of the City and outlines specific road system policies to support the future population, employment, and land use designations within the Downtown Core. Future road improvements as proposed in the DLAP included the following:

- The transit system will expand as the Downtown Core is developed.
- As part of the proposed Mississauga Transitway facility, the existing transit terminal may be expanded to serve future development growth and to connect with the transitway facility. In the long term, an additional transitway station is also proposed near Hurontario Street, between Rathburn Road West and Provincial Highway 403.
- The proposed Highway 403 North Collector (Northern Distribution Road), located north of the Downtown Core, is intended to provide access to and from the Downtown Core road network. The Centre View Drive extension is intended to provide access to eastbound Highway 403 via a link east of City Centre Drive. Future functional feasibility studies are required to review those improvements which may impact Highway 403.
- The proposed City Centre Drive viaduct over the Northern Distribution Road and Highway 403 provides a grade separated crossing to the north.

Figure 2.3 and **Figure 2.4** illustrate the proposed road and transit networks, respectively.

Figure 2.3 DLAP Schedule 2 – Long Term Road Network and Classification

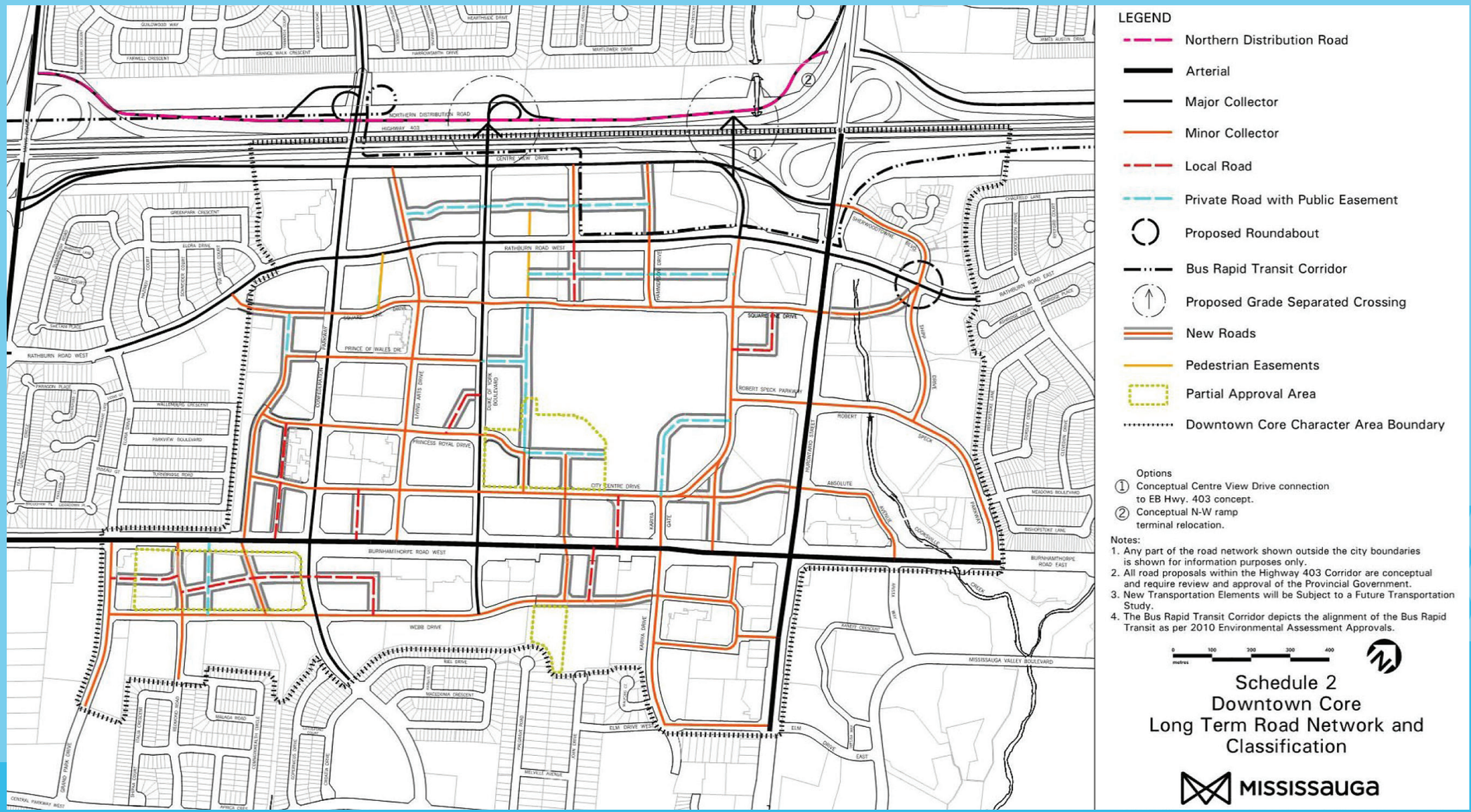
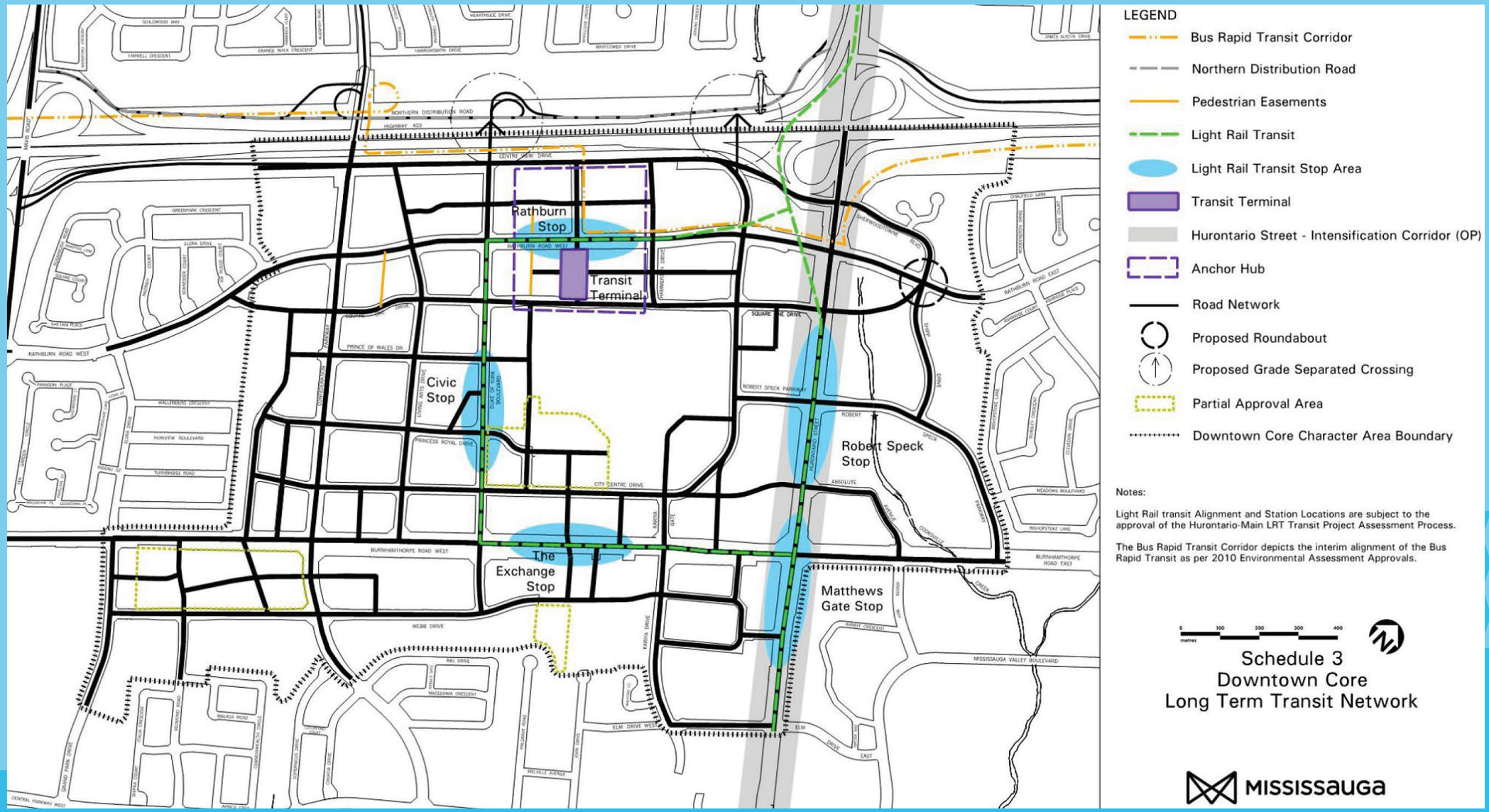


Figure 2.4 DLAP Schedule 3 – Long Term Transit Networks



03

Public and Agency Consultation

- Public Consultation
- Public Notices
- Public Engagement
- First Nations Community Engagement
- Technical Advisory Committee Engagement

Public and Agency Consultation

The City of Mississauga engaged with the general public, agencies, First Nations communities, and key stakeholders throughout the study process to provide those who may be affected by the study with sufficient opportunity to review consultation materials and provide input.

Public Consultation

An extensive public engagement process was identified for this study that exceeded the requirements of the Municipal Class EA (MCEA) process. In addition to public meetings, the consultation process included correspondence with First Nations communities and meetings with technical agencies and other stakeholders, including affected property owners.

The public engagement process included two (2) Public Information Centres (PICs), two (2) Technical Advisory Committee (TAC) meetings, and numerous meetings with key stakeholders such as the Ministry of Transportation (MTO) and Metrolinx. In addition, a project webpage (https://yoursay.mississauga.ca/downtown) that included all pertinent information related to the study was updated on a regular basis.

A summary of all public consultation activities is provided in **Appendix C**.

Public Notices

To satisfy the requirements of the Master Plan process, a series of public communication approaches were used to promote awareness of the DMP Phases 1 and 2 engagement process to the general public.

Public notices were issued to the general public at key points throughout the study, including a Notice of Study Commencement, Notice of Community Consultation Meetings, and a Notice of Study Completion. The Public Notices and dates of issue are summarized in **Table 3.1**.

Table 3.1 Public Notices

Public Notice	Date of Issue
Notice of Study Commencement	July 27, 2020
Notice of Phase 1 Public Engagement	July 31 and August 7, 2020
Notice of Phase 2 Public Engagement	May 26 and June 2, 2022
Notice of Study Completion	To be issued

Public Engagement

PHASE 1 PUBLIC ENGAGEMENT

A Virtual On-Demand meeting was held between August 17 and September 21, 2020, to educate the public on the project and to present the preliminary findings of the study. Key findings of the Phase 1 study highlighted issues and challenges facing Downtown Mississauga, including:

- Gaps in the pedestrian and cycling network;
- Intersections where transit routes are often delayed;
- Competition between cars and transit; and
- Reliance on cars as the first choice for travel.

The virtual On-Demand meeting was launched on August 17, 2020, and held open for a 35-day commenting period. During this consultation period, there were 326 unique site visitors.

Participants were asked to identify, from a list of possibilities, their top three (3) concerns and top three (3) improvements for walking, cycling, transit and driving. **Table 3.2** below summarizes the responses from this exercise.

Table 3.2 Top 3 Concerns and Improvements

Theme	Top 3 Concerns	Top 3 Improvements
Walking 	• Vehicle speeds • Safety at crossings • Large blocks with few pathways	• Sidewalks • Green infrastructure • Advanced pedestrian signal timing
Cycling 	• Conflict with drivers • Lack of cycling paths • Safety	• Buffered bike lane • Protected cycle tracks • Multi-use pathways
Driving 	• Congestion • Safety • Difficulty making left turns	• Reduced lane width • Reduce number of lanes • Roundabouts
Transit 	• Long wait times • Bus stop locations or hard-to reach stops • Transfers between buses difficult	• Improved Bus Shelters • Bus-only lanes • More bus service

PHASE 2 PUBLIC ENGAGEMENT

A Virtual On-Demand meeting was held between May 31 and June 21, 2022, and a Virtual Live Meeting was held on June 9, 2022, to seek feedback and to give participants the opportunity to provide comments or ask questions. Materials presented included the evaluation framework used to evaluate the alternative solutions, the Draft Preferred Alternative, and key findings of the Phase 2 work.

Key findings of Phase 2 highlighted issues and challenges facing Downtown Mississauga, including:

- Competition between cars and cycling.
- Reliance on cars as the first choice for travel.
- Mixed views on cycling infrastructure – whether it is needed or a waste of funding.
- Cyclists want protected bike lanes for safety.
- Need for more green space, parks, recreation, or social space for gathering and streetscaping such as trees.
- Concerns on user experience and streetscaping along pedestrian realm.
- High satisfaction and support for the transit infrastructure preferred alternative.

The virtual On-Demand meeting was launched on May 31, 2022, and held open for a 22-day commenting period. During this consultation period, there were 161 unique site visitors. During the Virtual Live Meeting, 20 questions or comments were received and answered.

Participants were asked to rank their satisfaction on each of the draft preferred alternatives (Fine Grained Street Network, Transit Infrastructure and Cycling Network) and to add their rationale for their rankings and any other recommendations. More than 60% of the participants are satisfied or somewhat satisfied with the recommended alternatives. Detailed public feedback is provided in **Appendix C**.

First Nations Community Engagement

Four (4) First Nations Communities were contacted and engaged to ensure that those who may be affected by the study had sufficient opportunity to review materials and provide input. Formal correspondence with First Nations Communities is documented in **Appendix C**.

Of the four (4) First Nations Communities that were contacted, the Haudenosaunee Confederacy indicated that the project would impact established Haudenosaunee rights and interests. Further engagement and communication were sought by the City; however, no response or further clarification of their concern was received.

Technical Advisory Committee Meetings

Throughout the study, agency stakeholders were contacted and kept informed of study findings. Two (2) Technical Advisory Committee (TAC) meetings were held at key points during the study to seek input on background conditions, alternative solutions, and preliminary recommendations (before these were presented to the public). Detailed meeting summaries are provided in **Appendix C**.

Three (3) separate technical meetings were also held with the Ministry of Transportation (MTO) over the course of the study to obtain feedback and input on the transportation analysis, alternatives, and the preferred networks. Detailed meeting summaries are also provided in **Appendix C**.

04

Existing and Future Base Conditions

- Exisiting Conditions
- Future Base Conditions

Existing and Future Base Conditions

Existing Conditions

This chapter summarizes the analysis that helped identify the problems and opportunities. Detailed analysis of the existing conditions is documented in **Appendix A**.

LAND USE AND DEMOGRAPHICS

Land Use

Existing land uses within the study area are shown in **Figure 4.1**. The largest land use within the study area is Transportation Right-of-Way (ROW) including Highway 403 and its interchanges, which occupies 34% of all land. Excluding the land occupied by ROW, the eight most prevalent land uses in the study area (as illustrated in **Figure 4.1**), are detailed in **Appendix A.**

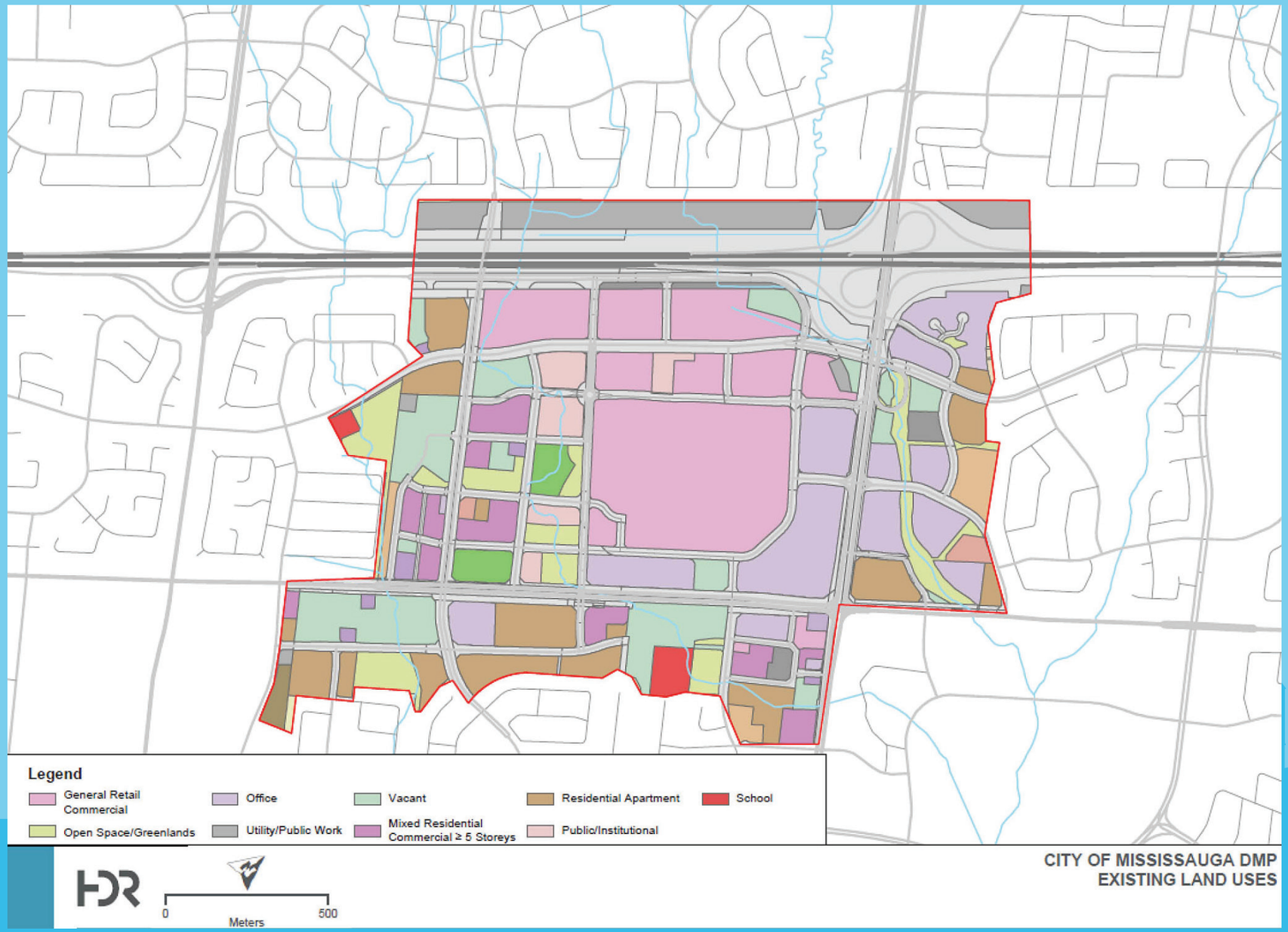
The **City of Mississauga's Official Plan** outlines land use designations across the City, including a specific plan for the Downtown Core as shown in **Figure 4.2**. The major difference compared to the existing land uses is the Downtown Mixed Use which covers most of the lands in the Downtown Core surrounding the Square One, while the Square One Mall and its parking lots is the Downtown Core Mixed Use bounded by Duke of York Boulevard, City Centre Drive, and Rathburn Road West. The lands north of Rathburn Road West to Highway 403 are Office designation. In addition, there are lands south of Webb Drive and west of Kariya Drive designated as Residential High Density.

The largest land use within the study are is Transportation Right-of-Way (ROW) which occupies

34%

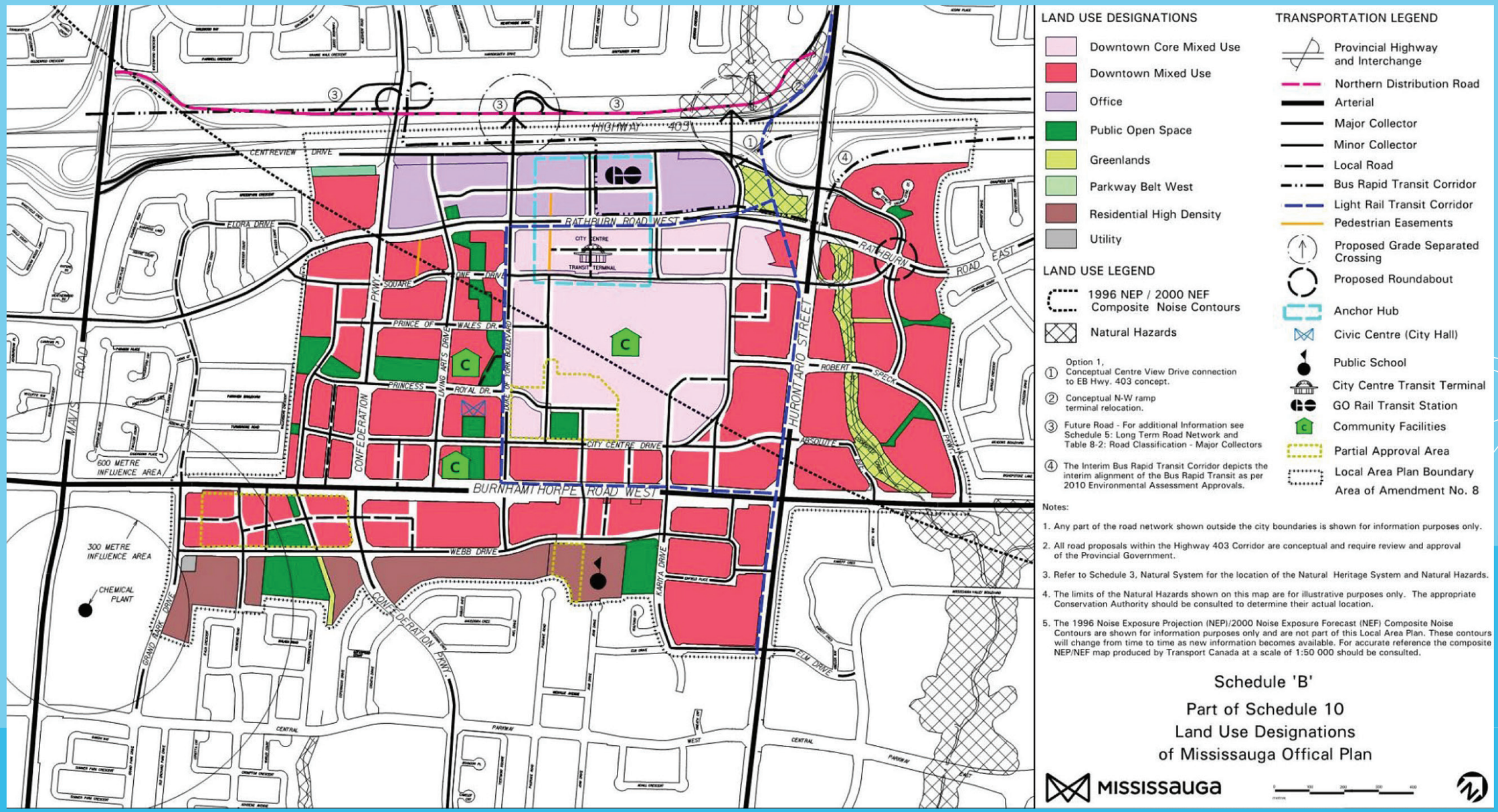
of all land.

Figure 4.1 Existing Land Uses within the Study Area



Source: 2019 Mississauga Existing Land Use Survey

Figure 4.2 Downtown Core Land Use Designations



Source: Amendment No. 8 to Mississauga Official Plan (June 8, 2020)

Population and Employment

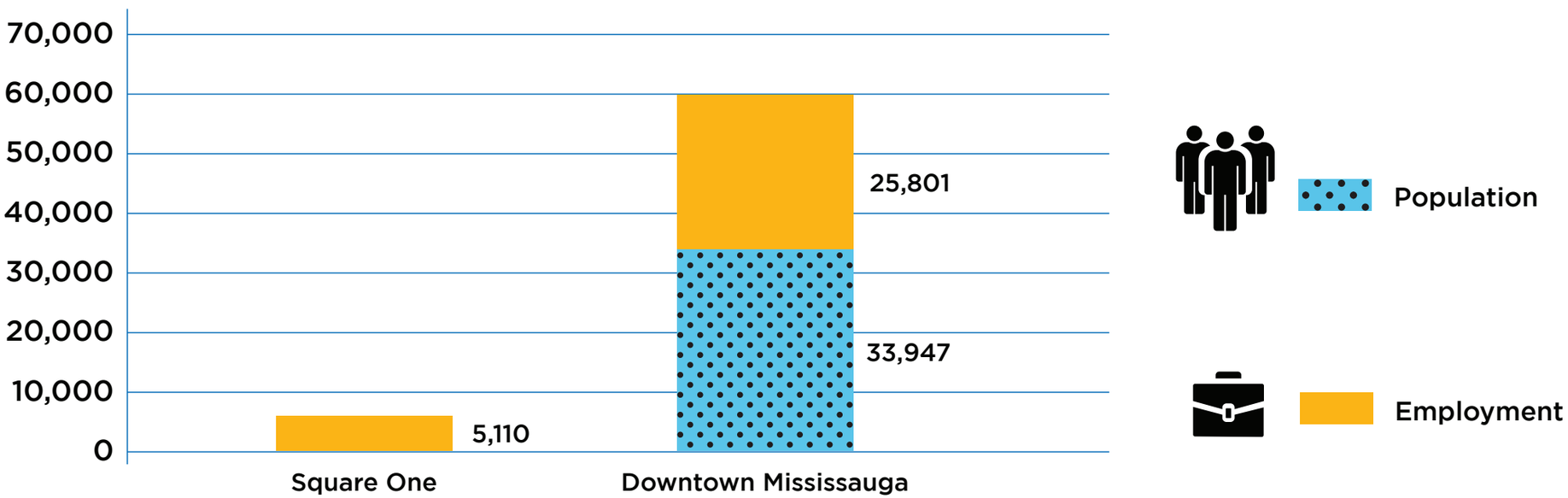
The proportion of existing people and jobs in the Downtown Core (study area) is around 57% population (33,947 people) and 43% employment (25,801 jobs). Note that these are pre-COVID-19 estimates from 2019 and represent a "normal" existing condition. Surveys in 2020 may find different results but cannot be deemed as "normal" existing condition at this time. Approximately 20% of the employment is from Square One alone (5,110 jobs), as shown in **Figure 4.3**.

Parking Facilities

The study area is auto oriented, with approximately 51 ha of municipal and private parking facilities, as shown in **Figure 4.4**, to serve Square One and other uses. The footprint of these parking facilities totals 29% of the Downtown Core land area, not including road rights-of-way. Easy access to parking encourages automobile travel to the area and large parking lots present challenges to pedestrians trying to safely navigate across these large expanses.

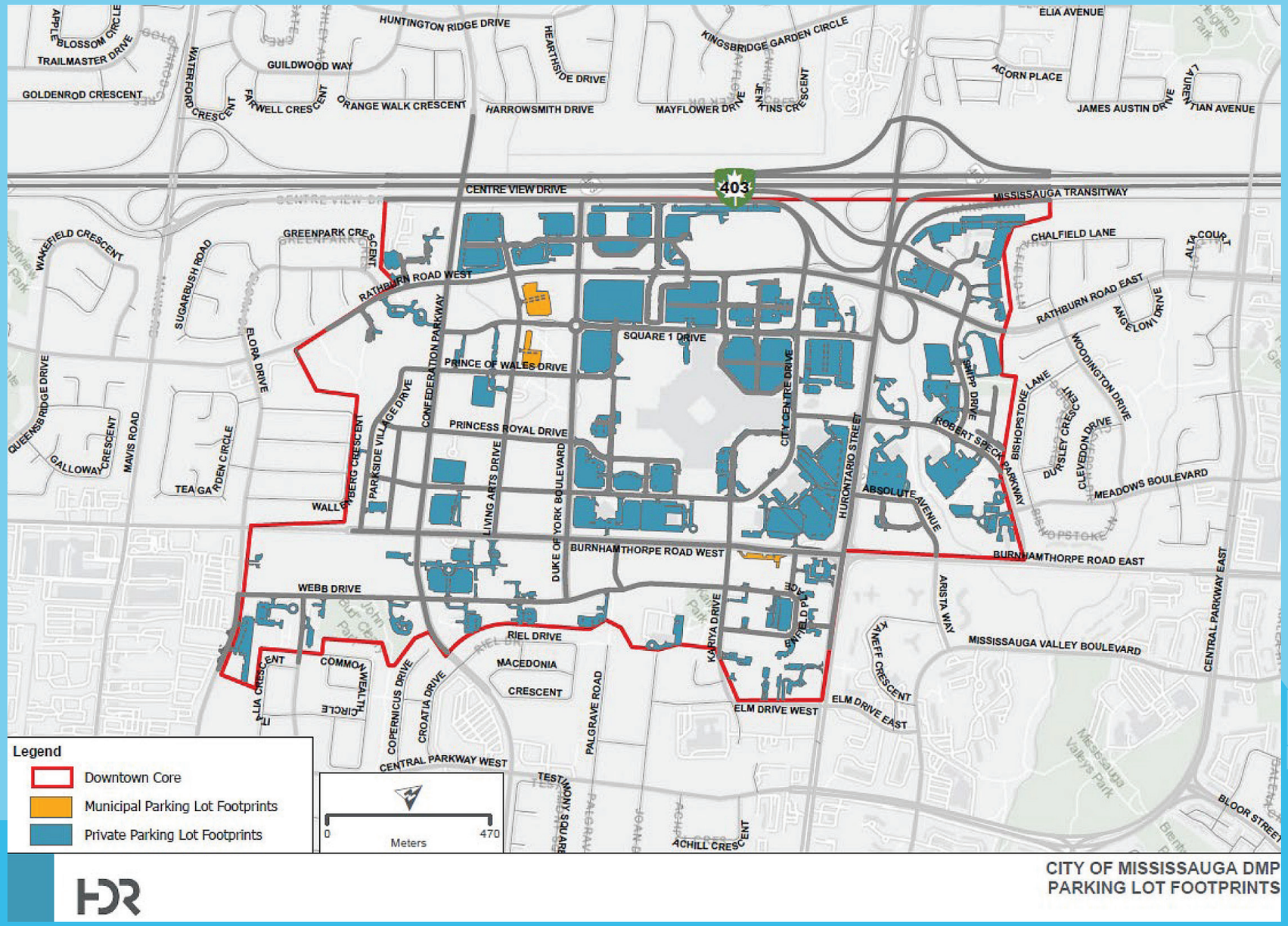
Figure 4.4 represents the existing conditions as of 2020, when this analysis was conducted. It is recognized that there are on-going developments in the area that will change the parking landscape in the future. New surface parking is not permitted within the Downtown Core (existing surface parking can remain) such that any new developments are required to provide parking in either underground or above ground parking structures.

Figure 4.3 2019 Population and Employment Numbers



Source: City of Mississauga

Figure 4.4 Parking Lot Footprint in Study Area



Note: the footprint includes both surface parking lots and parking structures.

TRAVEL TRENDS

The **Transportation Tomorrow Survey** (TTS) is a household travel survey that is conducted every 5 years, coinciding with Census years. Data from the 2006, 2011, and 2016 TTS surveys have been analyzed to establish existing travel trends to/from the study area and, particularly, to the Square One Shopping Centre (2006 Traffic Zone 3851).

Given the presence of a significant retail centre (Square One Shopping Centre) in the Downtown Core, travel demand reported in a household survey such as the TTS is likely lower than what is typically experienced on a weekday at the shopping centre. Additionally, TTS does not collect information on weekend travel demand, so alternative data sources must be consulted. One such source is StreetLight Data that can capture more retail-related travel pattern data for both weekdays and weekends.

Vehicle Travel Demand

Most of the daily trips to Square One are made from within Mississauga. **Figure 4.5** shows the number of daily trips from Mississauga and other areas across the GTA. There has been a fluctuation in the number of trips to Square One over the years with a significant drop when comparing trips from 2011 to 2016. However, TTS has a known issue of under-reporting discretionary trips (including shopping trips), which may explain the drop in expected volumes. Note that, for comparison, the customer data from Oxford Properties (owners of Square One) showed an increase in customer volumes of 22% between 2000 and 2016. Trips to Square One are mostly auto-based.

Figure 4.6 shows the daily number of trips to the Downtown Core, which reveals similar travel patterns to Square One. Auto mode share to the Downtown has generally been decreasing from all areas except from Brampton and Caledon (2% increase between 2006 and 2016).

Both figures also show that the majority of trips destined to Downtown Core originate from within Mississauga.

Figure 4.5 Historical Origins of Daily Trips Destined to Square One (2006 to 2016)

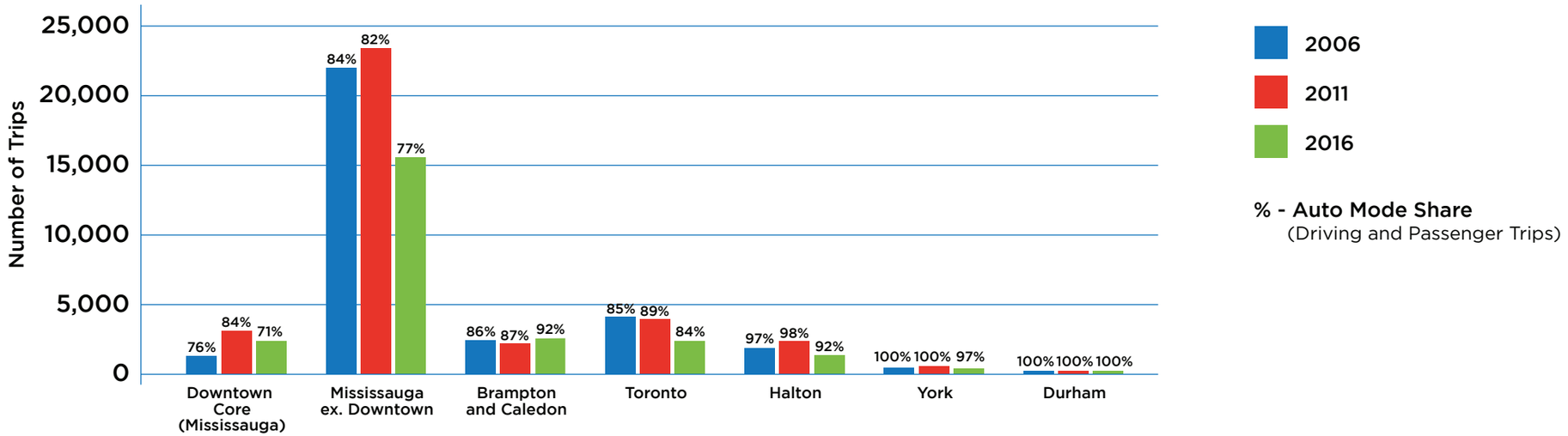
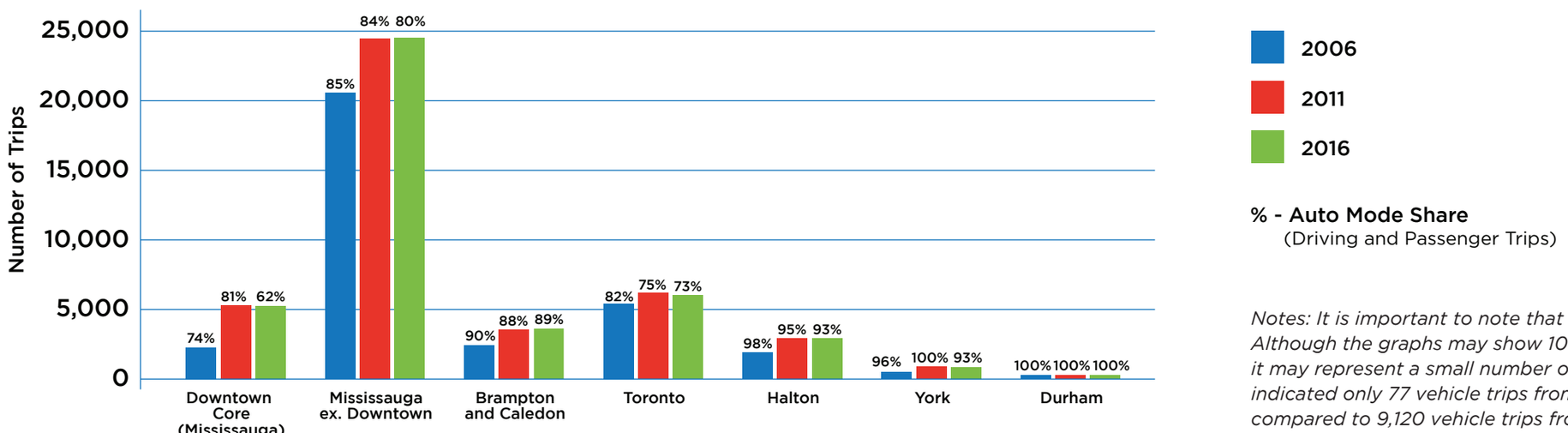


Figure 4.6 Historical Origins of Daily Trips Destined to Downtown Core (2006 to 2016)



Source: TTS

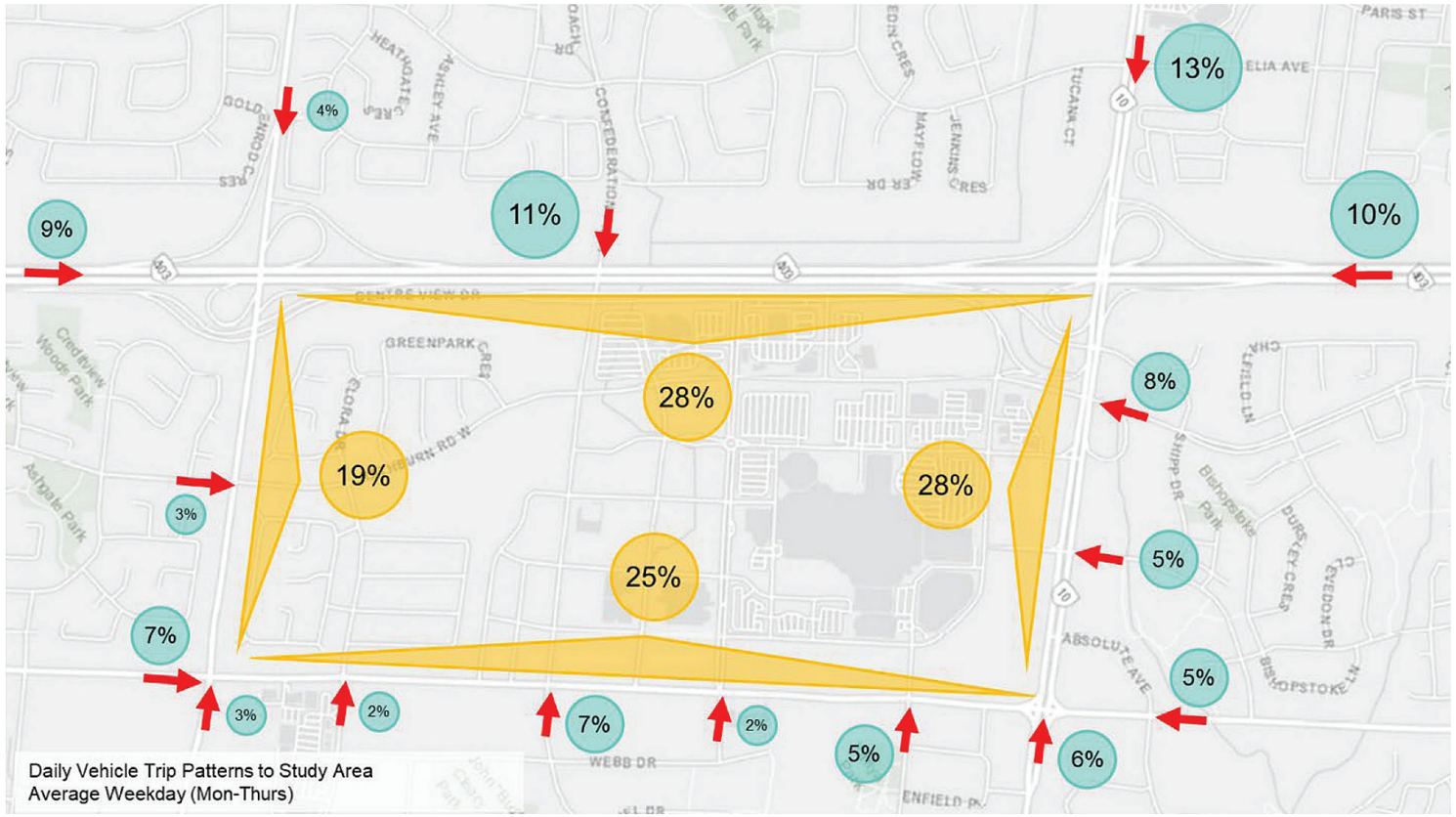
Notes: It is important to note that the TTS is based on a 5% sample size. Although the graphs may show 100% auto travel from certain regions, it may represent a small number of trips. For example, the 2016 survey indicated only 77 vehicle trips from Durham Region to Square One, compared to 9,120 vehicle trips from Mississauga (excluding Downtown). Ultimately, TTS data should be used to help guide judgement on travel patterns but should not be taken as absolute fact.

Vehicle Travel Patterns

To supplement TTS data, a detailed analysis was conducted using StreetLight data that uses location-based data to anonymously capture approximately 20% of all trips. The StreetLight InSight platform is a tool that allows analyses of local traffic patterns for key access corridors to the Downtown Core. While this data provides similar insights to TTS data, the key benefit is that it can better identify commercial/leisure trip patterns that are under-represented in TTS.

Figure 4.7 illustrates the average daily weekday (2019) vehicle travel patterns to the Downtown Core. The majority of the trips are coming from the east (28%) and from the north (28%) of the study area. The primary corridors being used are Highway 403 from the east (10%), Confederation Parkway from the north (11%), and Hurontario Street from the north (13%).

Figure 4.7 Daily Vehicle Travel Patterns to Study Area - Average Weekday (2019)

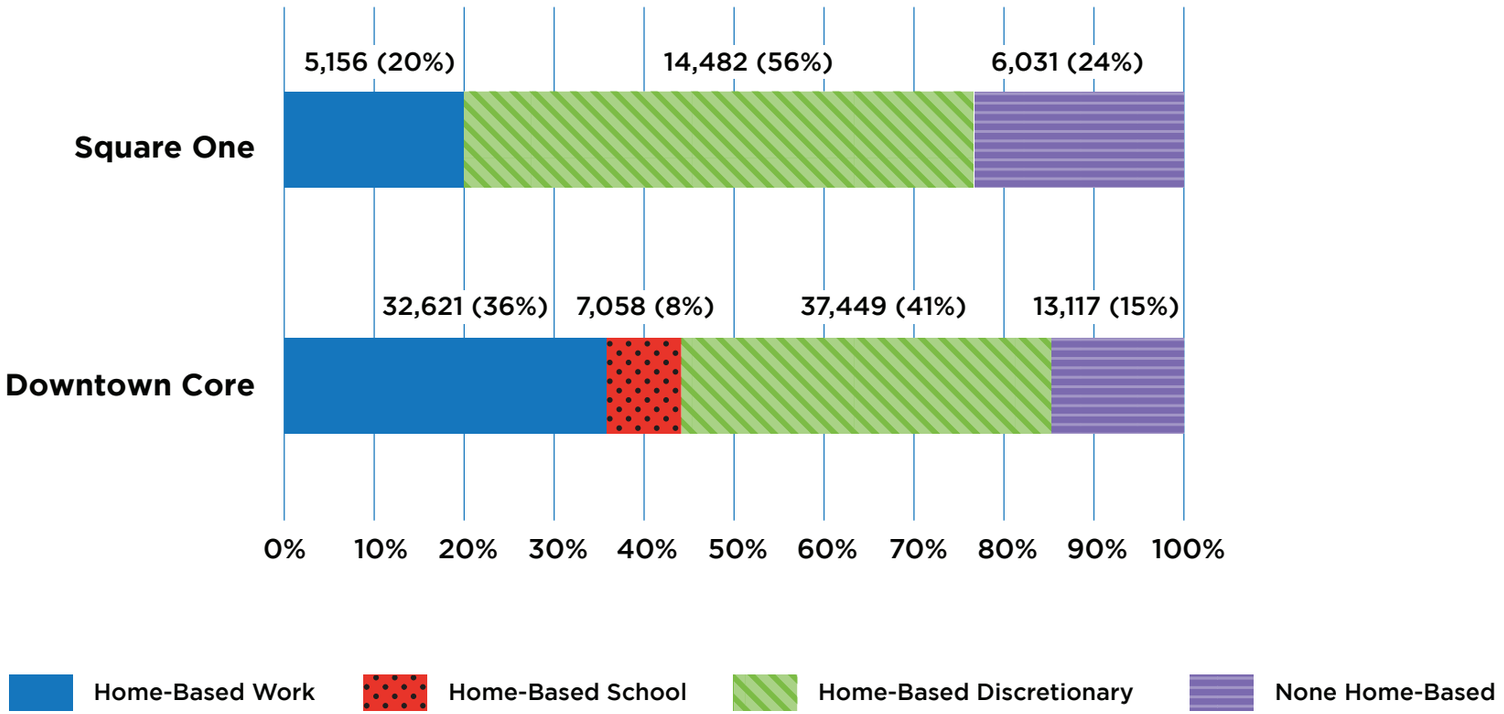


Source: StreetLight Data (2019)

Trip Purpose

Figure 4.8 shows the trip purposes for daily trips destined to the Downtown Core and to Square One. The majority of trips to the Downtown Core are home-based work trips (i.e., home-to-work or work-to-home) and home-based discretionary trips (i.e., trips between uses other than work or school and home). Square One trips are mostly home-based discretionary trips, reflecting primarily shopping trips as expected.

Figure 4.8 Distribution of Daily Trips by Trip Purpose for Trips Destined to Square One and Downtown Core (2016)



Source: TTS (Note that 2016 TTS reported home-based school trips destined to Square One. Through discussion with the Data Management Group, these trips were found to be destined to Sheridan College and TriOS College, thus removed from the chart for Square one.

Mode Share

Trips to the Downtown Core were primarily made by automobile. Between 2006 and 2016, there were small decreases to driving and passenger mode shares with small increases to transit and active modes as shown in

Travel to Square One was also made primarily by automobile, with very slight changes in driving mode share over time while transit mode share increased, as shown in **Figure 4.9** and **Figure 4.10**.

Figure 4.9 Historical Daily Mode Share for Trips Destined to Downtown Core (2006-2016)

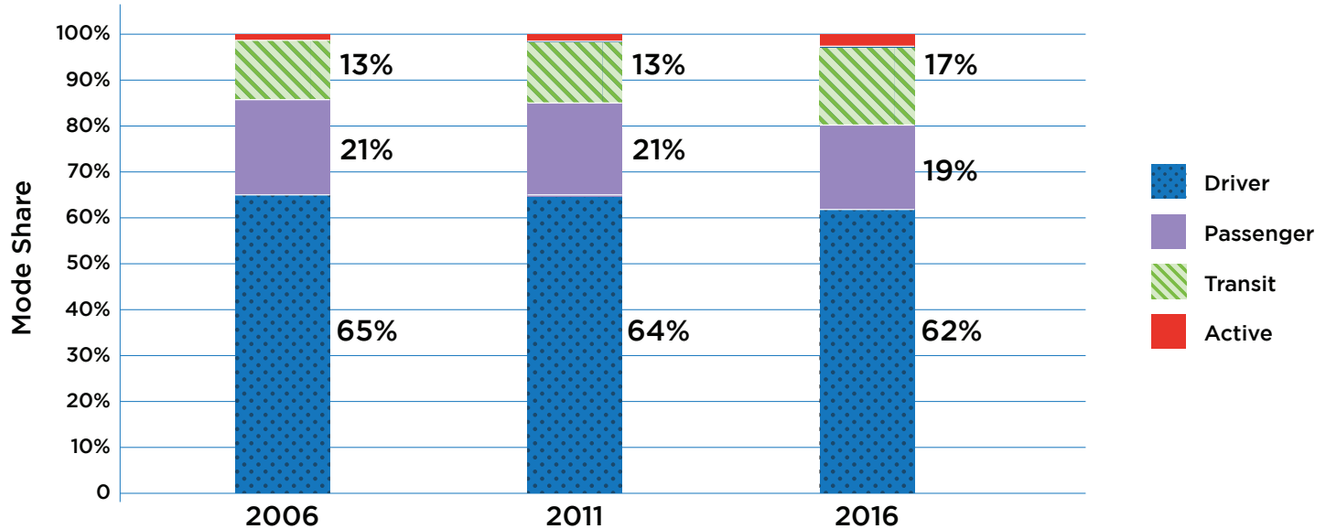
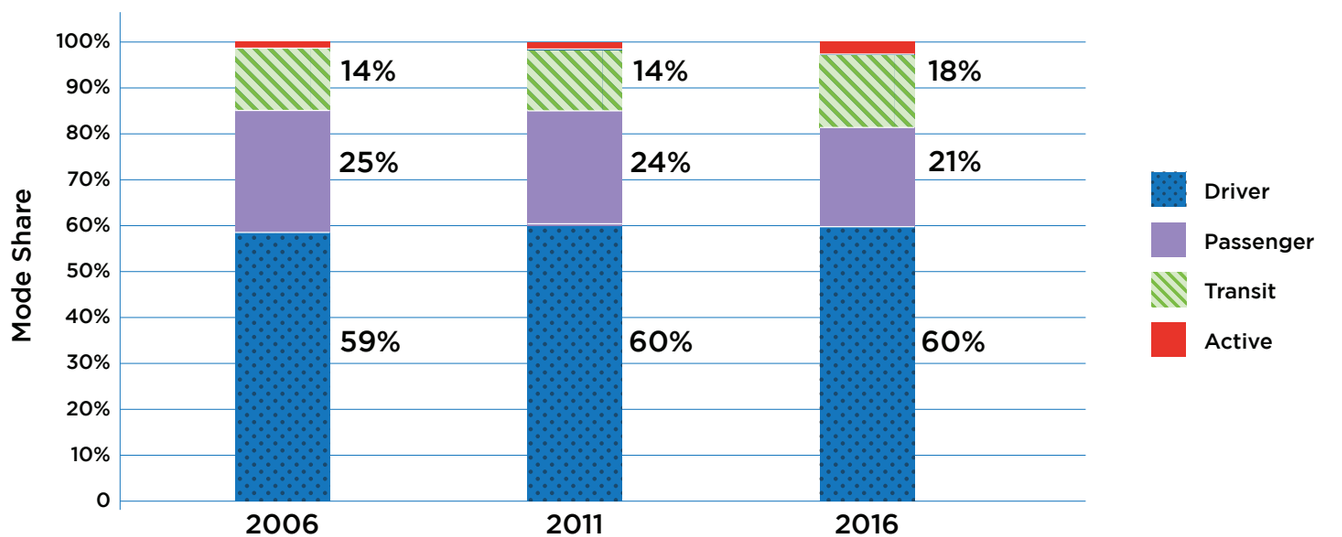


Figure 4.10 Historical Daily Mode Share for Trips Destined to Square One (2006-2016)



Source: TTS

Peaking Characteristics

The distribution of trips to the Downtown Core by start time and trip purpose on an average weekday is shown in **Figure 4.11**. As expected, there are two distinct peaks, the morning peak and afternoon peak, when home-based work (commuting) trips dominate. A wider distribution of trips is observed during the PM period as a result of home-based discretionary trips. For trips to Square One, trips are more evenly spread out over the afternoon and evening as shown in **Figure 4.12**. This reflects the high proportion of home-based discretionary trips to this zone, and the increase in shopping trips from the mid-afternoon through to the evening hours.

Figure 4.11 Trips Destined to Downtown Core by Number of Trips by Start Time and Trip Purpose (2016)

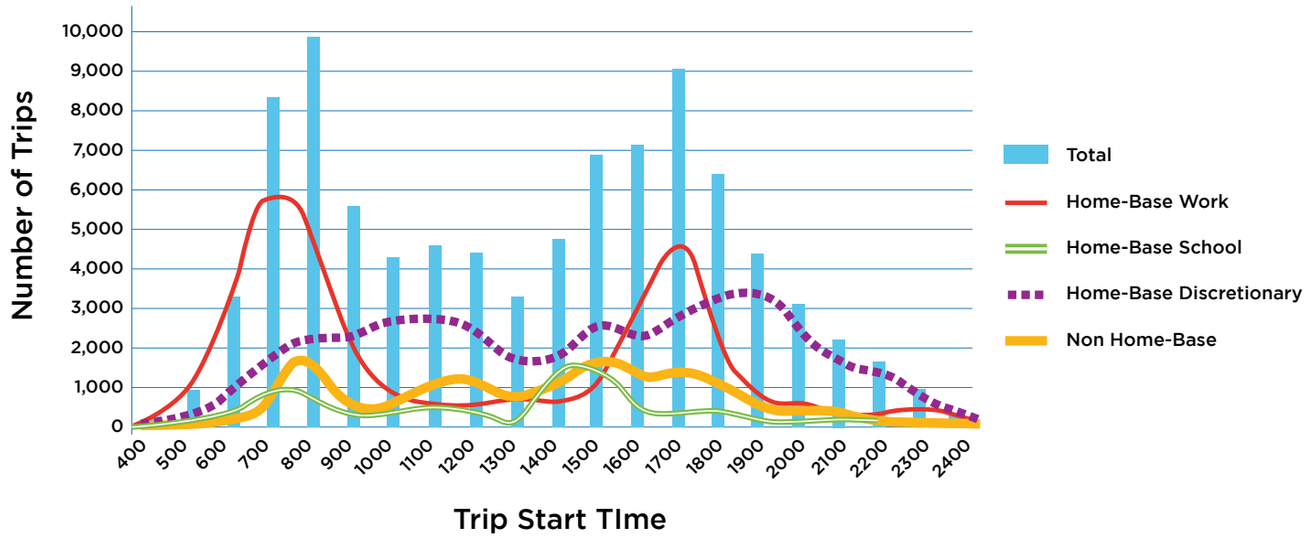
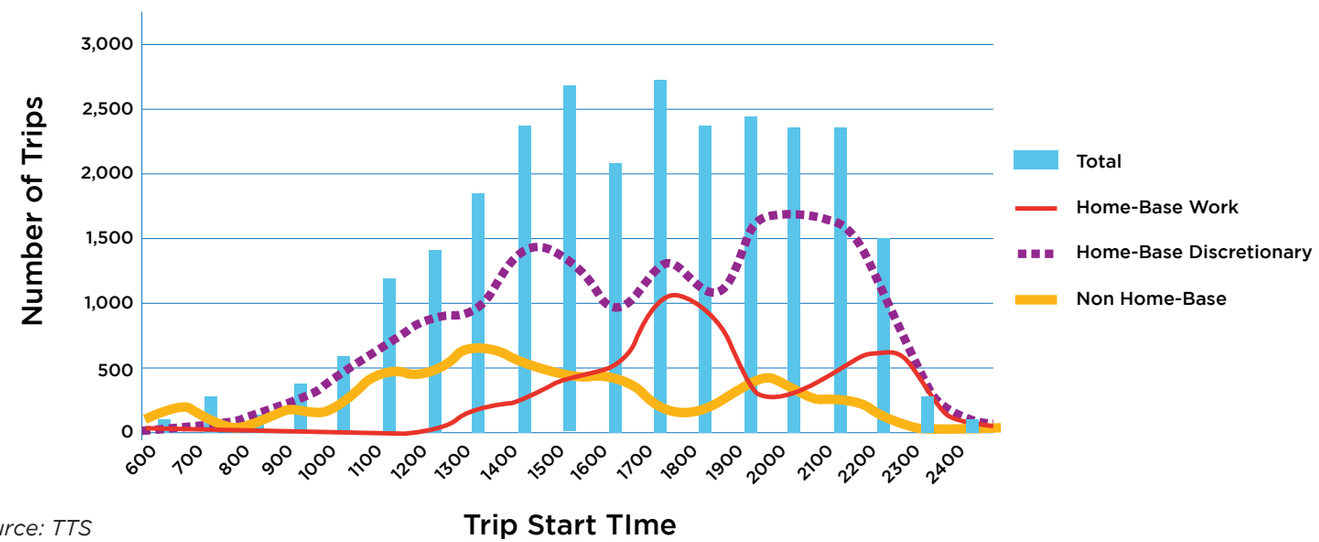


Figure 4.12 Number of Trips by Start Time and Trip Purpose to Square One (2016)



Source: TTS

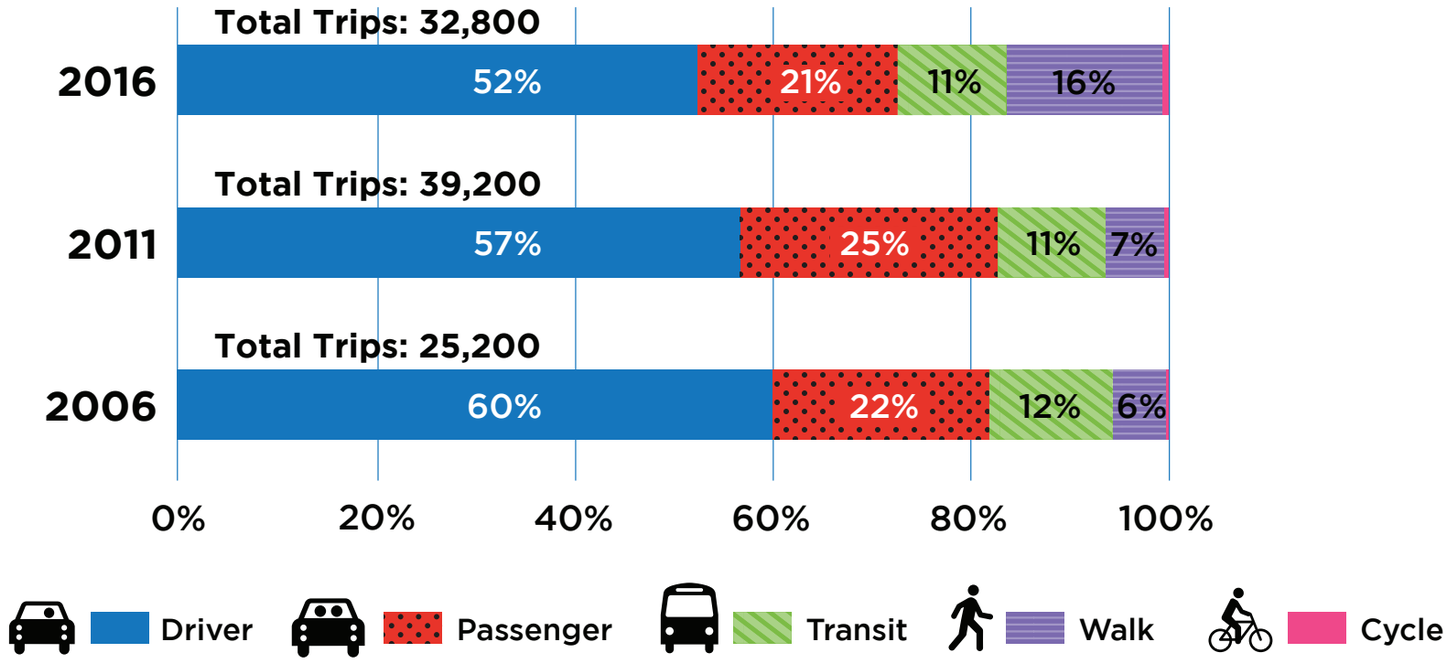
Active Trips

Figure 4.13 illustrates the mode share for daily trips destined to the Downtown Core that are less than 5 km in length. Trips less than 5 km are considered to be candidates for active travel (walking or cycling). The majority of trips to the Downtown Core are auto-based but there has been an increase in active trips between 2006 and 2016, with noticeable increase in walking from 6% to 16%. For trips less than 2 km in length, the walking mode split increases from 14% in 2006 and 2011 to 28% in 2016.

It should be noted that the number of short trips (less than 5 km) in 2016 (32,800 trips representing 36% of all trips) was lower compared to 2011 (39,200 trips representing 42% of all trips).

StreetLight data was also reviewed to identify travel patterns for active trips destined to the Downtown Core.

Figure 4.13 Historical Daily Trips Destined to Downtown Core for Trips <5 km (2006 to 2016)

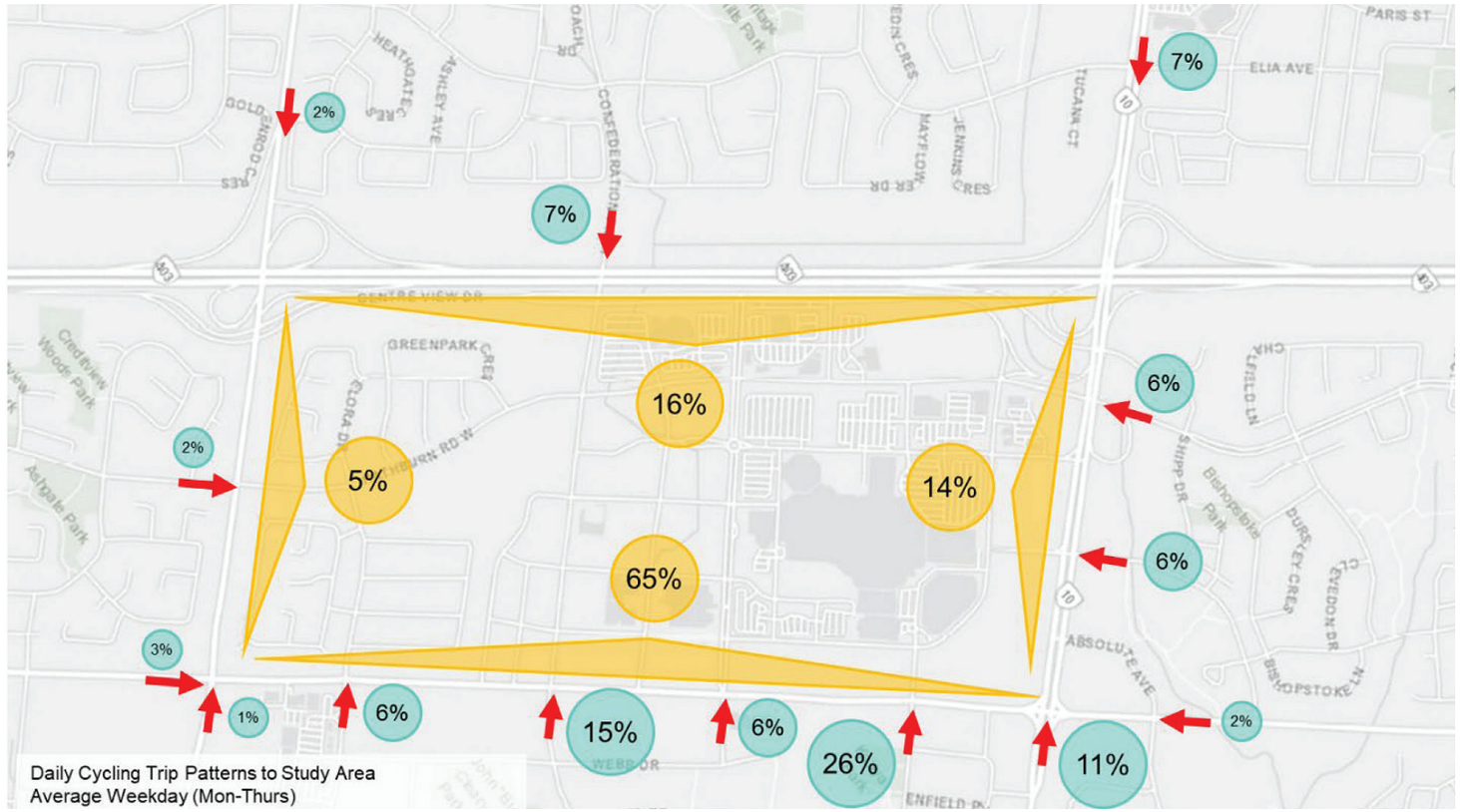


Source: TTS

Figure 4.14 illustrates the average weekday cycling travel patterns to the Downtown Core. Although the same metrics for pedestrian trips are not available on StreetLight, cycling patterns can help identify corridors that currently better support active trips and corridors that can be improved.

The majority of cycling trips to the Downtown Core are coming from the south along Kariya Drive (26%), Confederation Parkway (15%) and Hurontario Street (11%). The distribution of cycling trips is similar to that of vehicle trips when Highway 403 trips are excluded from the vehicle distribution (shown in **Figure 4.7**). Highway 403 forms a barrier to active travel along the north side of the study area. Limited crossing opportunities and the need to cross free-flow freeway ramps are barriers for active trips to/from the north. Additionally, Square One Shopping Centre forms a barrier to vehicular and cycling trips, while allowing pedestrians to pass through.

Figure 4.14 Daily Cycling Travel Patterns to Downtown Core - Average Weekday (2018)



Source: Streetlight Data (2018)

EXISTING TRANSPORTATION NETWORK

This section summarizes the existing road, transit, cycling and pedestrian networks.

Road Network Configuration and Constraints

The Downtown Core is supported by a network of arterial, collector, and local streets. Hurontario Street is the primary north-south arterial and Burnhamthorpe Road and Rathburn Road are the primary east-west routes that serve the study area. Highway 403 is a major freeway corridor along the north boundary of the study area. It plays a significant role in bringing trips to and from the downtown area with access to the freeway provided at the interchanges at Mavis Road and at Hurontario Street. **Figure 4.15** shows lane configuration and intersection control for the study area road network.

The road network has a number of discontinuous roads as illustrated in **Figure 4.16**. These discontinuities limit connections and access to/from the broader area exacerbating congestion at major intersections. For pedestrians and cyclists, Highway 403, the large expanse of surface parking, and distances between buildings also act as barriers to connectivity. The Square One Shopping Centre itself is another barrier to the movement of vehicles and cyclists but can be used by pedestrians to travel through the downtown.

Figure 4.17 illustrates the network constraints and challenges within the study area. The highway interchange at Hurontario Street creates congestion at Square One Drive, the primary access to the shopping centre from Highway 403. The Hurontario Street bridge over Rathburn Road is a physical barrier for active transportation, as there is only limited sidewalk access between Hurontario Street and Rathburn Road. Highway 403 also is a constraint as it limits access to/from the residential area to the north, with only two crossing points at Hurontario Street and at Confederation Parkway.

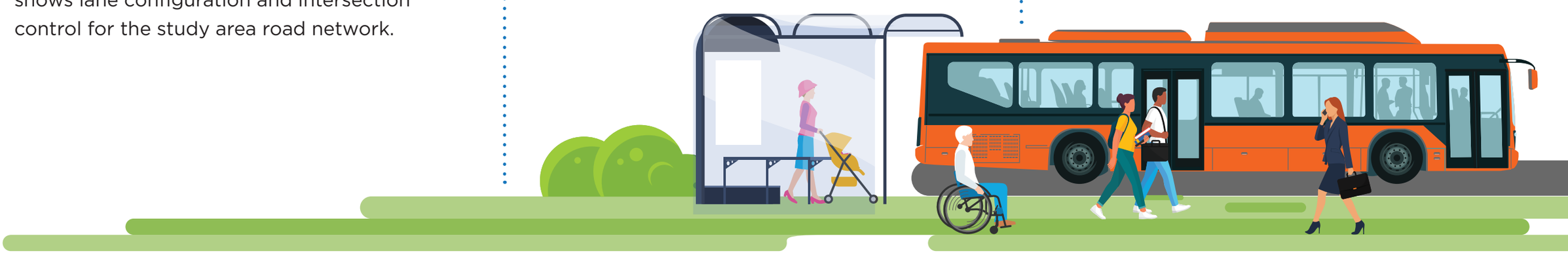


Figure 4.15 Lane Configuration and Intersection Control Type

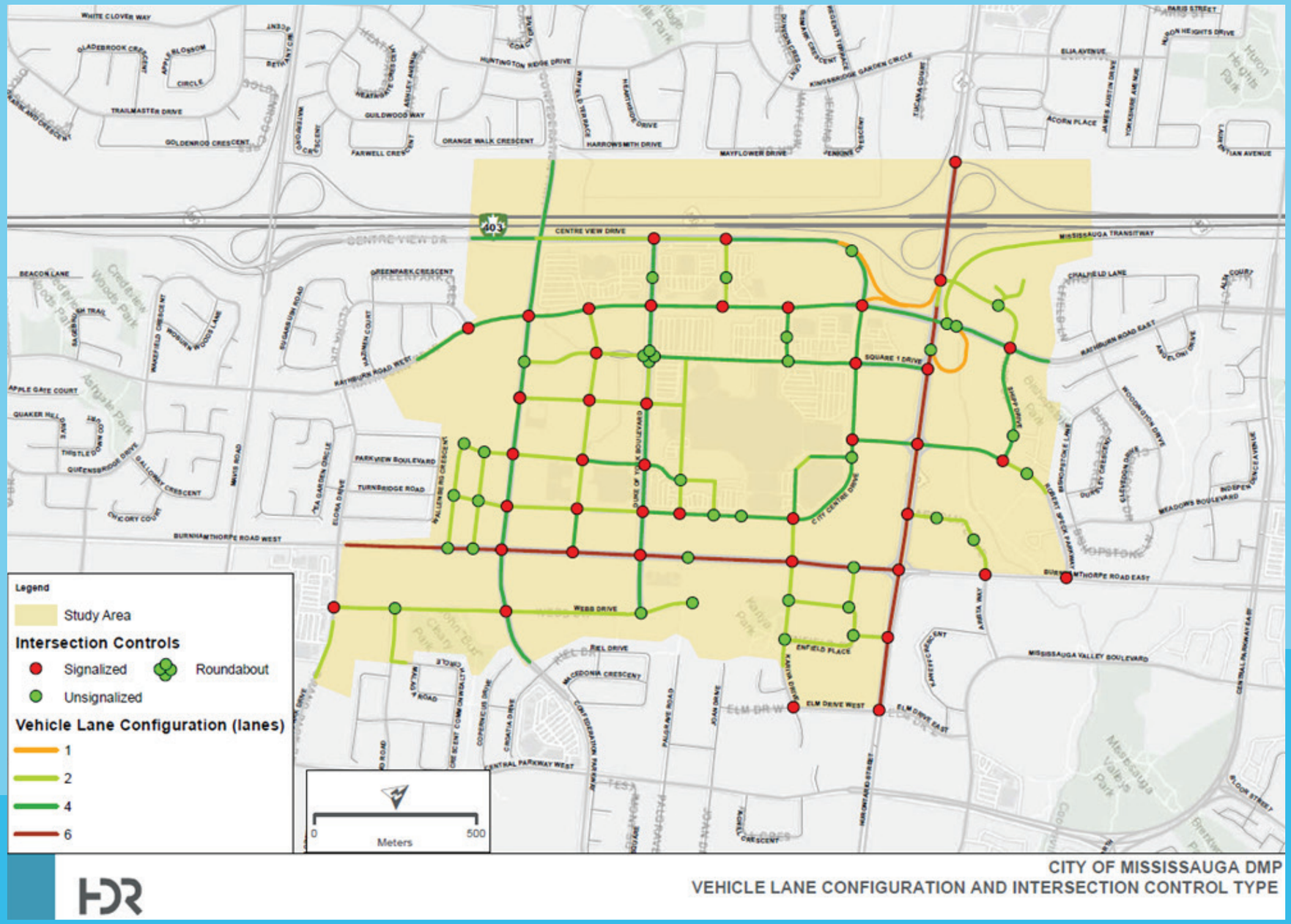


Figure 4.16 Network Continuity

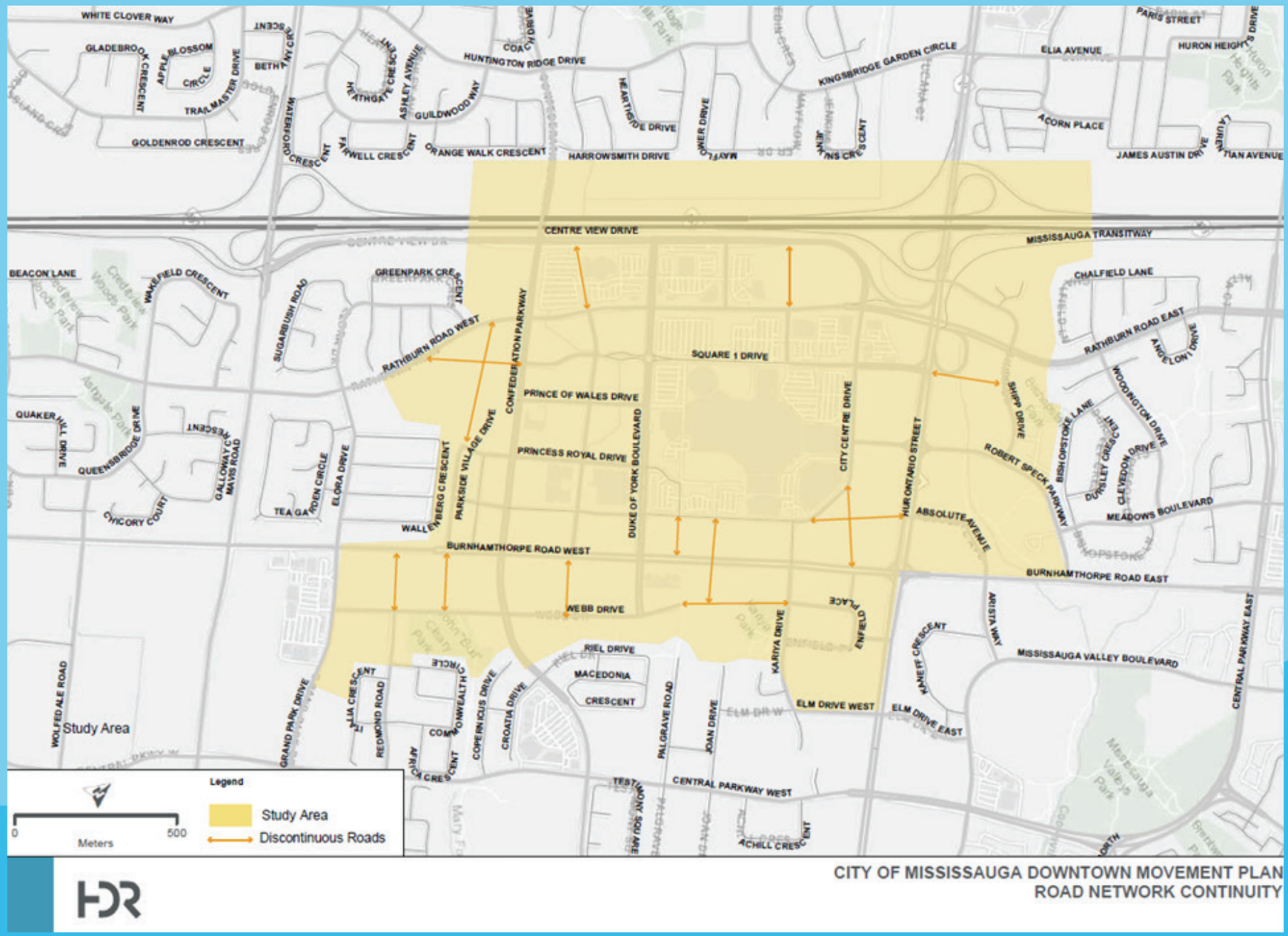
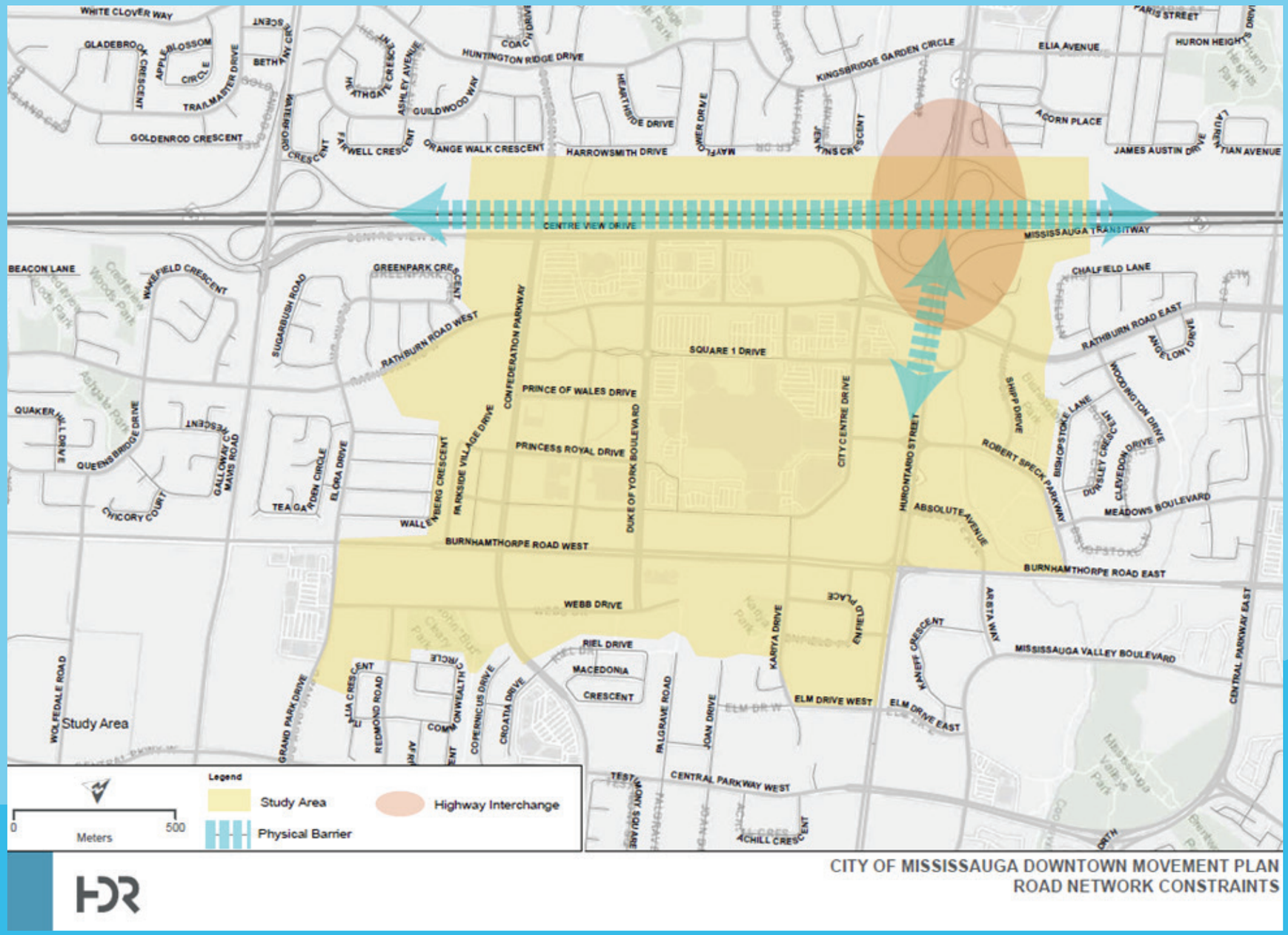


Figure 4.17 Road Network Constraints



CITY OF MISSISSAUGA DOWNTOWN MOVEMENT PLAN
ROAD NETWORK CONSTRAINTS

Intersection Density

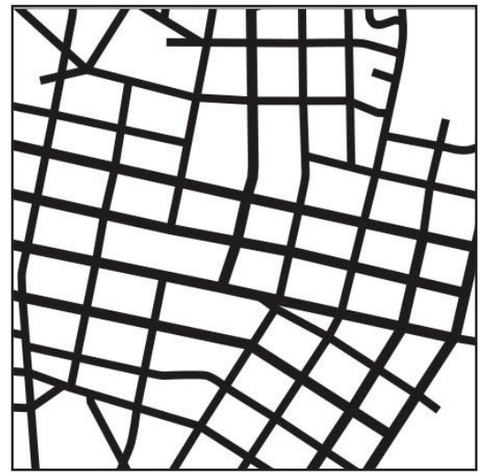
Intersection density is used to evaluate the connectivity of the street network. A higher density score (more intersections per hectare) indicates a grid network that maximizes connectivity while lower scores indicate larger block sizes and poor connectivity. Based on the Ministry of Transportation's (MTO's) **Transit Supportive Guidelines** (2012), mixed-use nodes and corridors should achieve an intersection density of 0.6 intersections per hectare (iph) or more. **Figure 4.18** provides examples of street networks and their associated intersection density score.

The study area has 76 intersections over approximately 292 hectares as shown in **Figure 4.19** which highlight the number of road connections per intersection (e.g., 3-leg, or 4-leg intersections). Although the shopping centre and its surrounding parking area are a significant portion of the study area, the resulting intersection density of 0.26 iph is still low.

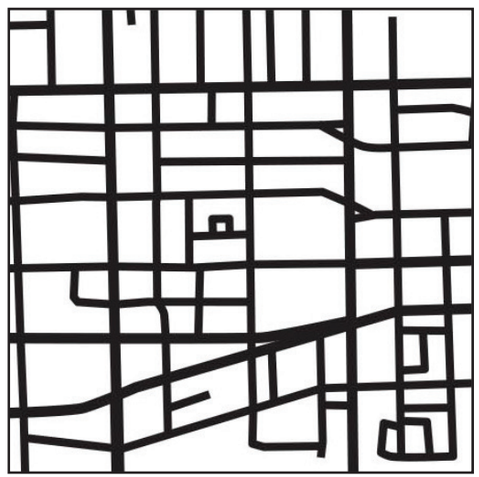
Figure 4.18 Examples of Street Network and Intersection Density Score

Downtown Belleville ON — 0.47 iph

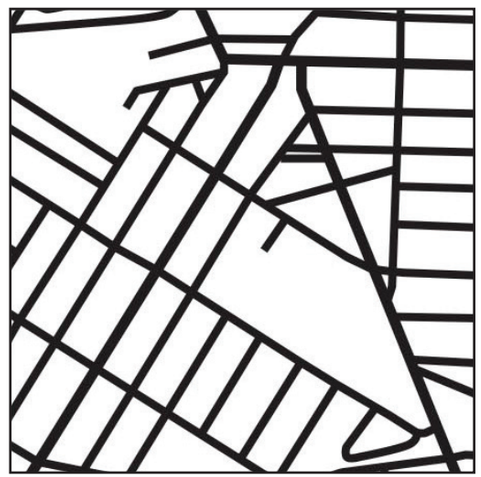
Cornell: Markham ON — 0.91 iph



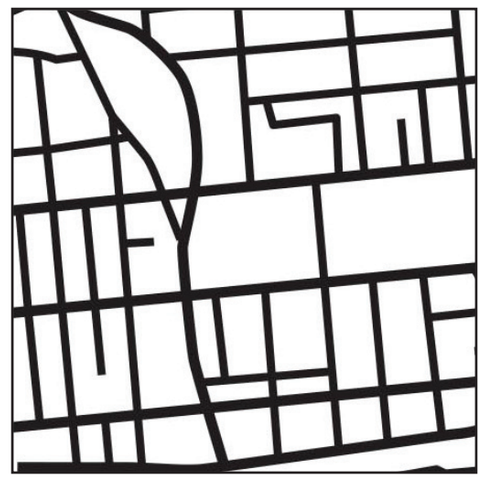
Downtown Kingston ON — 0.79 iph



St Lawrence: Toronto ON — 0.88 iph



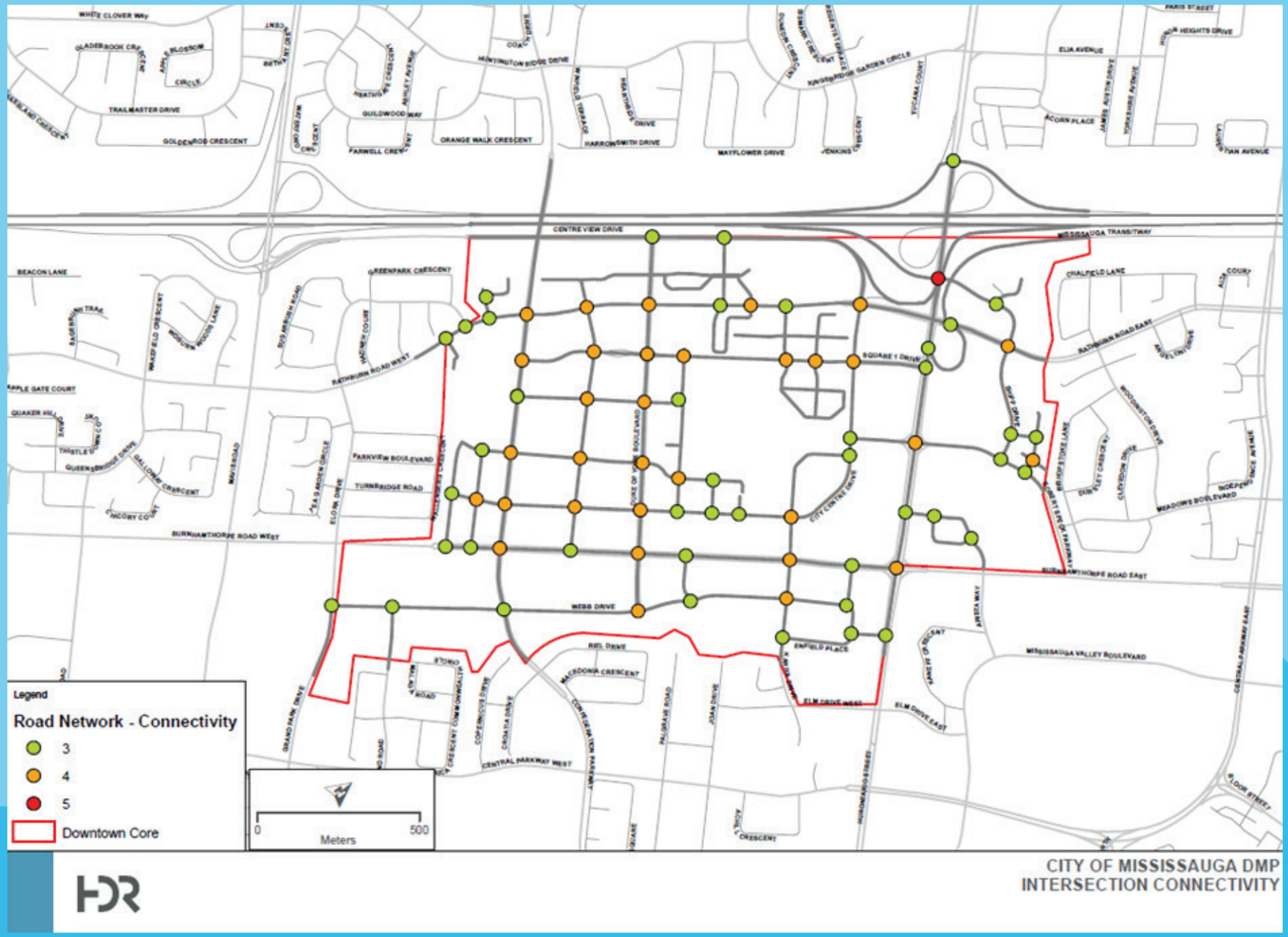
Downtown Stratford ON — 0.63 iph



Downtown Thunder Bay ON — 0.58 iph

Source: Transit Supportive Guidelines, 2012 (http://www.mto.gov.on.ca/english/transit/supportive-guideline/layout-local-streets.shtml)

Figure 4.19 Intersection Connectivity and Density



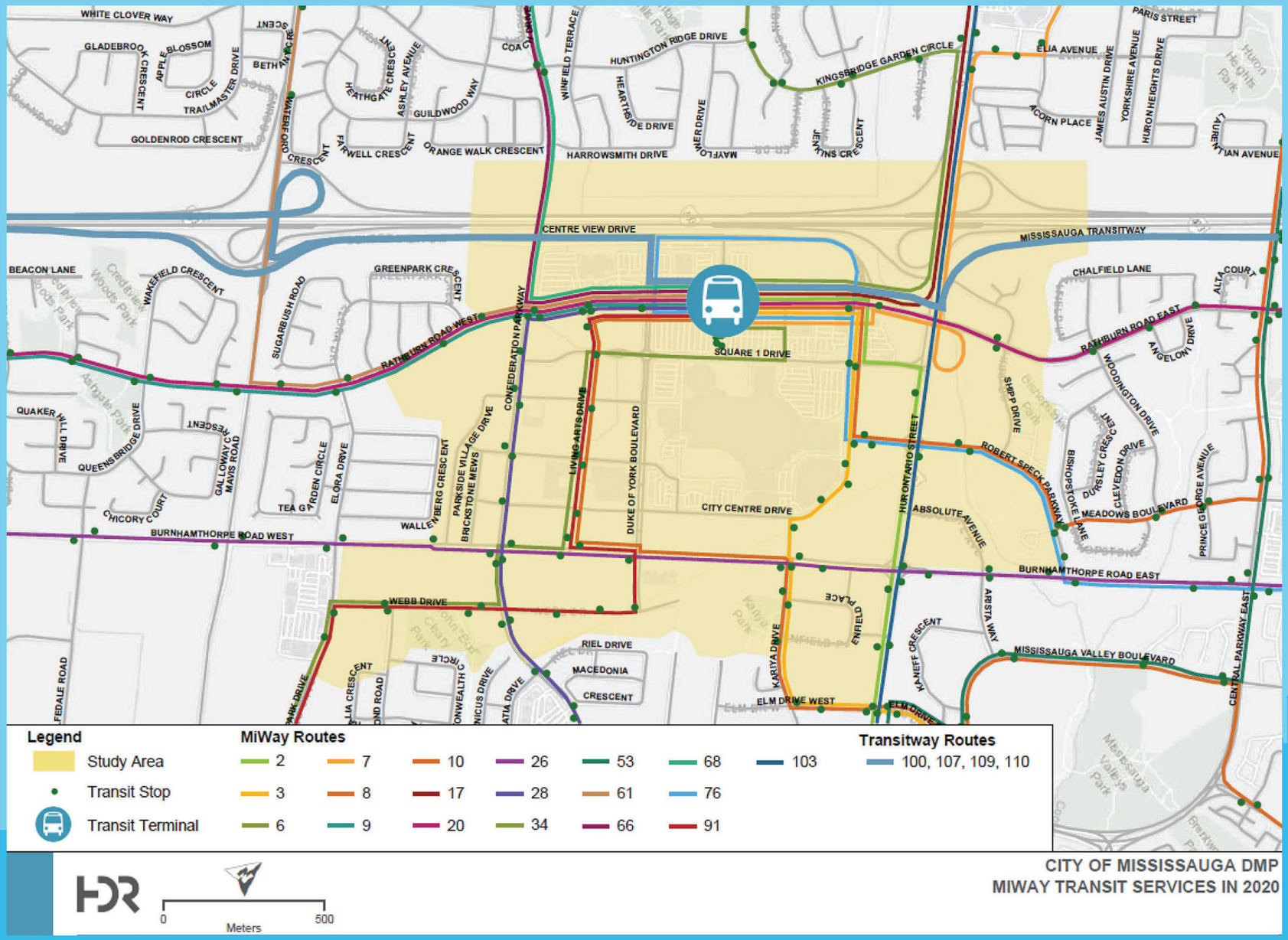
Transit Network

Three (3) transit systems serve the study area: MiWay (Mississauga Transit), Brampton Transit (Züm), and GO Transit. These transit systems provide connections for local residents and businesses to other routes in Peel Region and Toronto. The existing MiWay, Züm, and GO routes (2020, prior to COVID-19 service and route changes) are illustrated in **Figure 4.20** and **Figure 4.21**.

The City Centre Transit Terminal (CCTT) is Mississauga's main transit hub and bus station. The station is located north of Square One Shopping Centre on the south side of Rathburn Road and across the street from the Square One GO Bus Terminal platforms. The CCTT provides 13 platforms and services 14 MiLocal routes, four (4) MiExpress routes that use the Mississauga Transitway, and one (1) Brampton Transit (Züm) bus route.

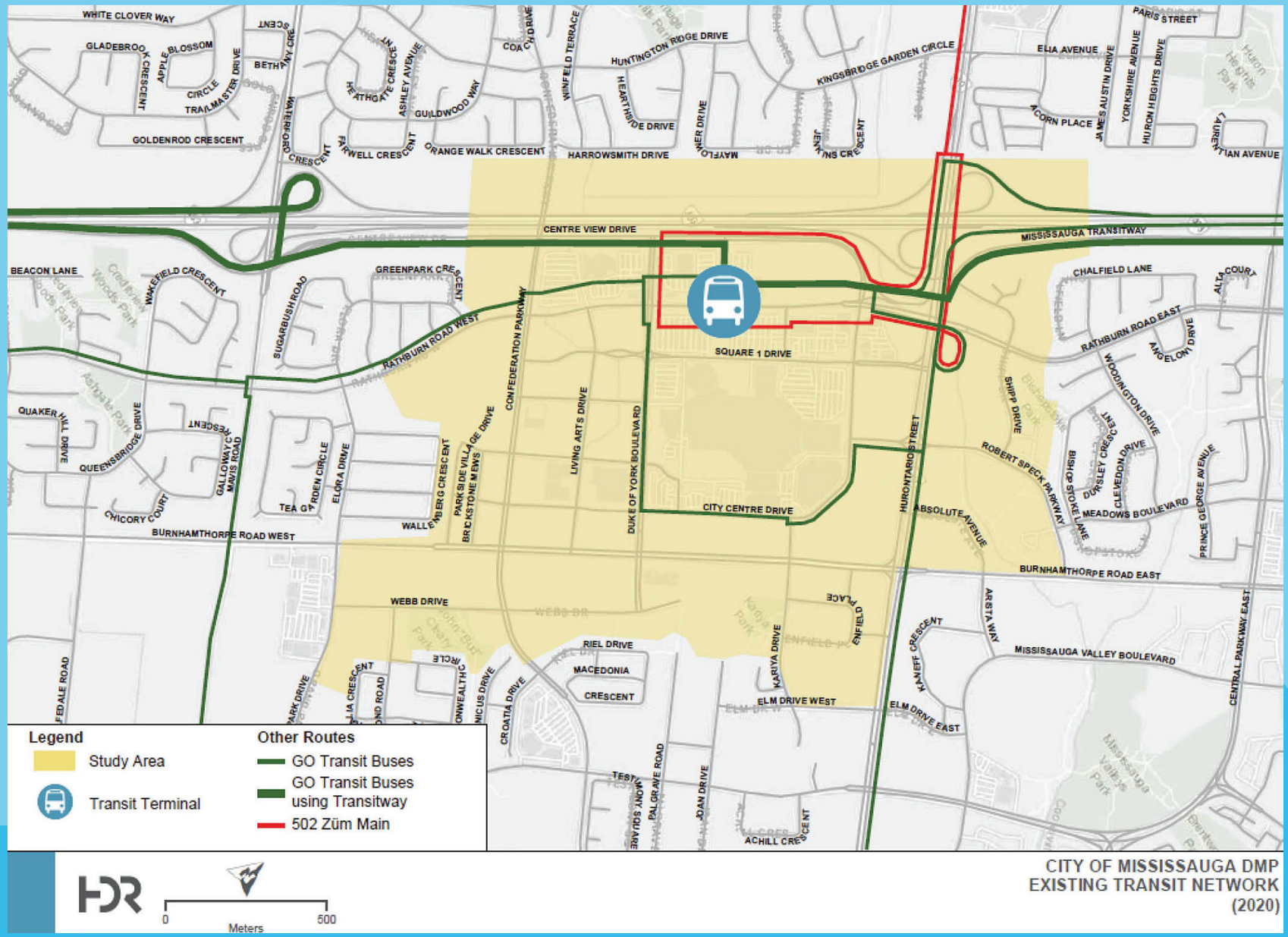
The Square One GO Bus Terminal is Mississauga's main inter-regional transit hub and bus station. The station is located north of Square One Shopping Centre, generally along Station Gate Road north of Rathburn Road, and services eight (8) GO transit routes.

Figure 4.20 MiWay Transit Services in 2020



Source: City of Mississauga (2020)

Figure 4.21 Existing GO Transit and Brampton Transit (Züm) Services



Note: Cooksville GO Station is approximately 1.5 km south of the study area.

Pedestrian Network

Figure 4.22 illustrates the pedestrian network for the study area. Overall, the study area is well-served by pedestrian infrastructure with collector roads, major arterials and even local streets generally having sidewalks on both sides. Notably, the parking lots surrounding Square One Shopping Centre consistently incorporate sidewalks, which improves access to the mall for those on foot. However, it is noted that the size of the parking lot poses as a barrier to pedestrians as it is faster to walk through the parking lot, rather than around.

Where the available right-of-way permits, sidewalks are offset from the roadway often by grass boulevards. In other areas, paving, planters, trees, and street furniture are used to buffer the pedestrian environment from adjacent vehicular traffic. Square One Drive west of Duke of York Boulevard has mountable sidewalks on both sides with a large median (that deflects the roadway to slow vehicular traffic) that can serve as a pedestrian refuge. Elsewhere, under less ideal conditions, no separation is provided between the travel modes.

Gaps in the study area's sidewalk network were also identified, including:

- The west side of Living Arts Drive, from Rathburn Road to Square One Drive and from Prince of Wales Drive to mid-block to Princess Royal Drive
- Both sides of Duke of York Boulevard, from Centre View Drive to Mid-Block Access
- The east side of Parkside Village Drive, from Burnhamthorpe Road to Confederation Parkway
- The west side of City Centre Drive, from Square One Drive south to Robert Speck Parkway
- The south side of Prince of Wales Drive, from 100 m east of Confederation Parkway to Living Arts Drive and east of Duke of York Boulevard
- The north side of Centre View Drive, from west of Confederation Parkway to east of Station Gate Road

The missing sidewalks in the study area are generally due to large undeveloped or greenfield lots as well as surface parking.

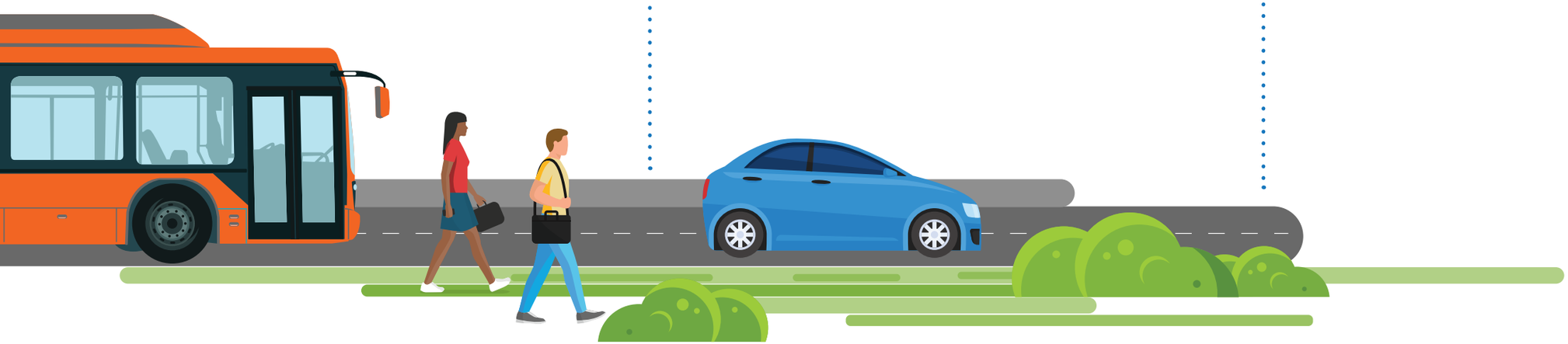
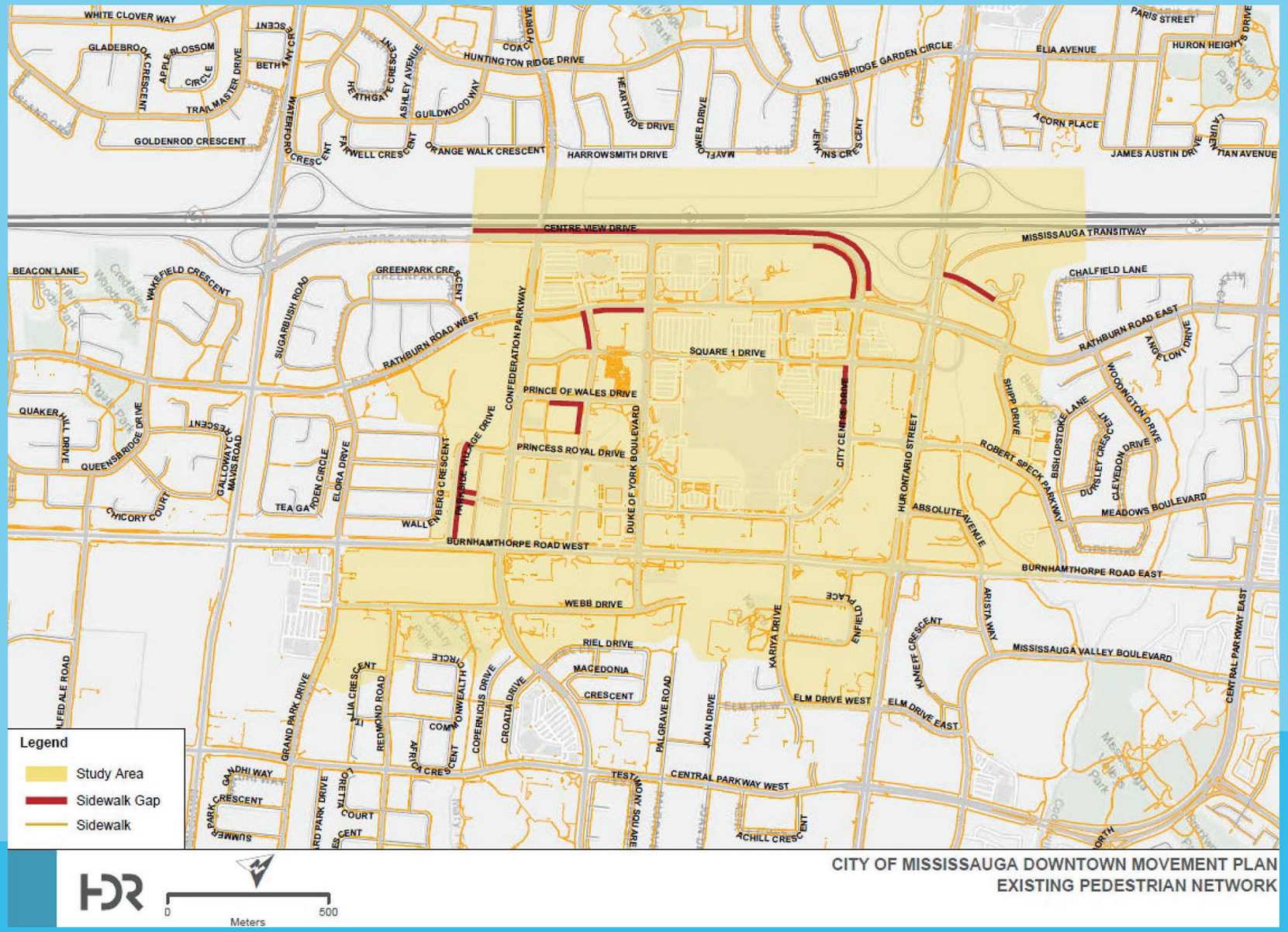


Figure 4.22 Existing Sidewalk Network and Sidewalk Gaps



Note: This figure represents the existing conditions as of 2020, when this analysis was conducted. It is recognized that there have been improvements made to the sidewalk network since the analysis was undertaken.

At intersections, it was observed that different crosswalk markings, presumably to instill a sense of character or specific identity to different locations, are used throughout the study area as shown in **Figure 4.23**. From a pedestrian perspective, some treatments are more desirable than others due to the higher visibility they provide to pedestrians crossing the intersections. Coloured and textured markings are preferred as well as those that are more easily discernible for drivers.

Median islands are also commonly featured in the study area. Median islands are located along stretches of Confederation Parkway, Duke of York Boulevard, and Hurontario Street. Commonly intended for pedestrian refuge, the wider medians in the study area do not appear to have been designed with that particular purpose in mind as seen in **Figure 4.23**. Opportunities to facilitate pedestrian refuge should be considered where crossing distances are large to improve walkability for people of all ages and abilities.

Figure 4.23 Crosswalk Markings at Intersections

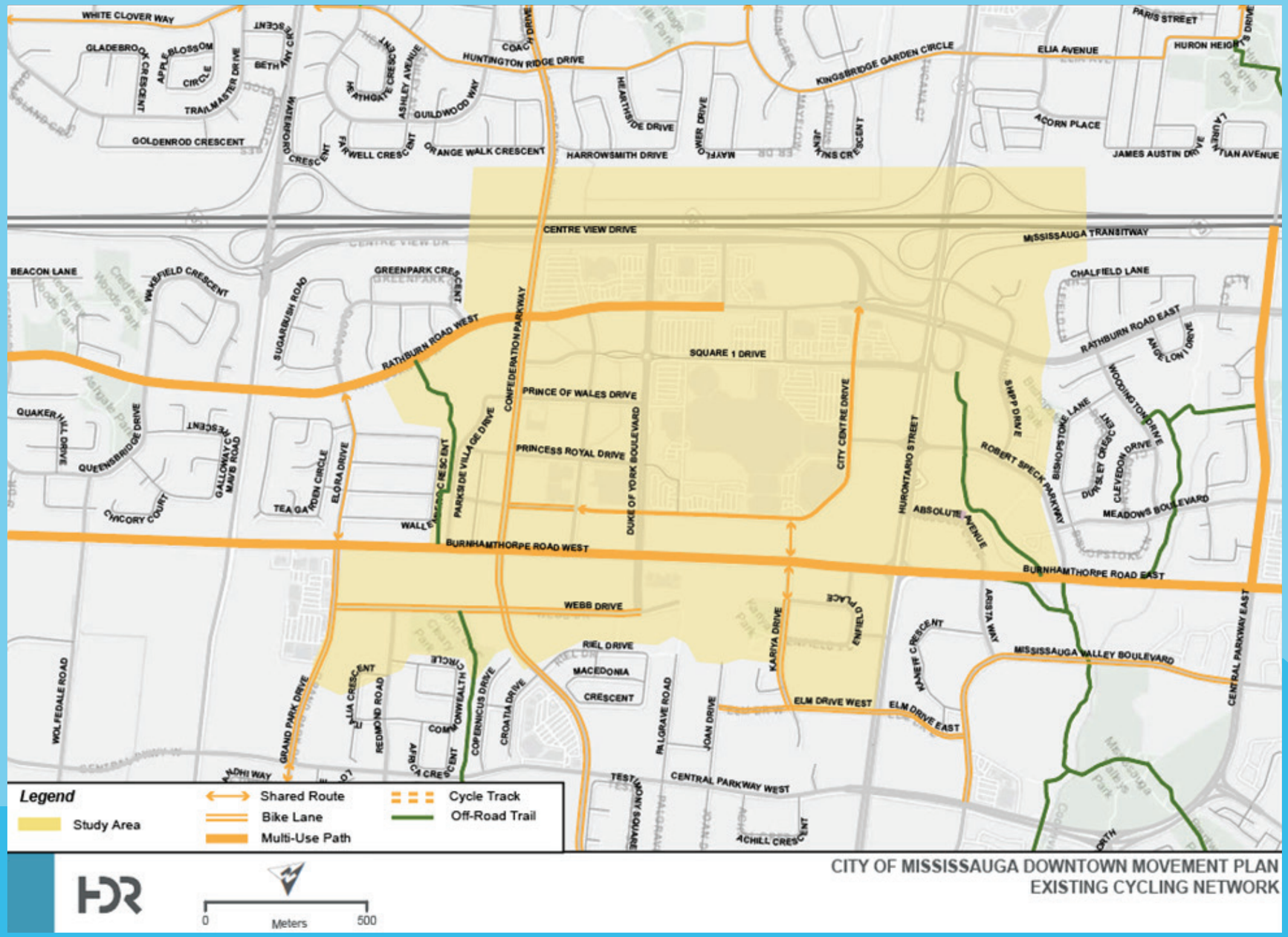
Source: Google Streetview 2020

Cycling Network

The study area has a variety of cycling facilities as illustrated in **Figure 4.24**. Multi-use paths run east-west along the south side of Rathburn Road and along the north side of Burnhamthorpe Road, connecting to the greater trail network at Zonta Meadows Park and at Absolute Avenue / Arista Way. On-road bike lanes are provided along Confederation Parkway, Webb Drive, Grand Park Drive, Elm Drive, Kariya Drive and the western portion of City Centre Drive.

There are no existing physically separated cycling facilities that provide direct access to the Square One Shopping Centre. However, signed bike routes circle the south and east side of the mall along City Centre Drive and Kariya Gate.

Figure 4.24 Existing Cycling Network



MULTI-MODAL ANALYSIS

Intersection Operations Analysis

Synchro software was used to assess existing intersection operations for the weekday AM and PM peak hours. The purpose of the existing Synchro analysis was to confirm that the PM peak hour is more critical than the AM and to identify any potential capacity constraints under existing conditions.

The Synchro model includes 11 key signalized intersections as shown in **Figure 4.25**. These intersections include:

1. Highway 403 westbound off-ramp at Mavis Road.
2. Highway 403 eastbound off-ramp at Mavis Road and Centre View Drive;
3. Burnhamthorpe Road West at Mavis Road;
4. Mavis Road at Rathburn Road West;
5. Confederation Parkway at Rathburn Road West;
6. Burnhamthorpe Road West at Confederation Parkway;
7. Highway 403 westbound off-ramp at Hurontario Street;
8. Highway 403 eastbound off-ramp at Hurontario Street and Sherwoodtowne Boulevard;
9. Hurontario Street at Square One Drive;
10. Hurontario Street at Robert Speck Parkway; and
11. Hurontario Street at Burnhamthorpe Road.

Figure 4.25 Synchro Study Intersections

Methodology

Existing intersection operations were assessed for the signalized intersections along the corridor, based on methodology consistent with **Peel Regional Guidelines for Using Synchro** dated December 2010[1]. The impact of transit on traffic was considered in Synchro using MiWay's Generic Transit Feed Specification (GTFS) data from 2019 to include bus blockages into the models. The balanced volumes are provided in **Appendix A**.

The volume to capacity (v/c) ratio is a measure of the degree of capacity utilized at an intersection. Level of Service (LOS) is based on the average control delay per vehicle for a given movement at the intersection. Delay is an indicator of how long a vehicle must wait to complete a movement and is represented by a letter between 'A' and 'F', with 'F' being the longest delay. Delays and corresponding letter grades derived from Highway Capacity Manual (HCM) are shown below in **Table 4.1**.

Table 4.1 Signalized Intersection level of Service Definitions

Level of Service (LOS)	Control Delay per Vehicle (s)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Lost time adjustments were applied to tuning movement with v/c ratio greater than 1.0 for more reasonable/realistic results.

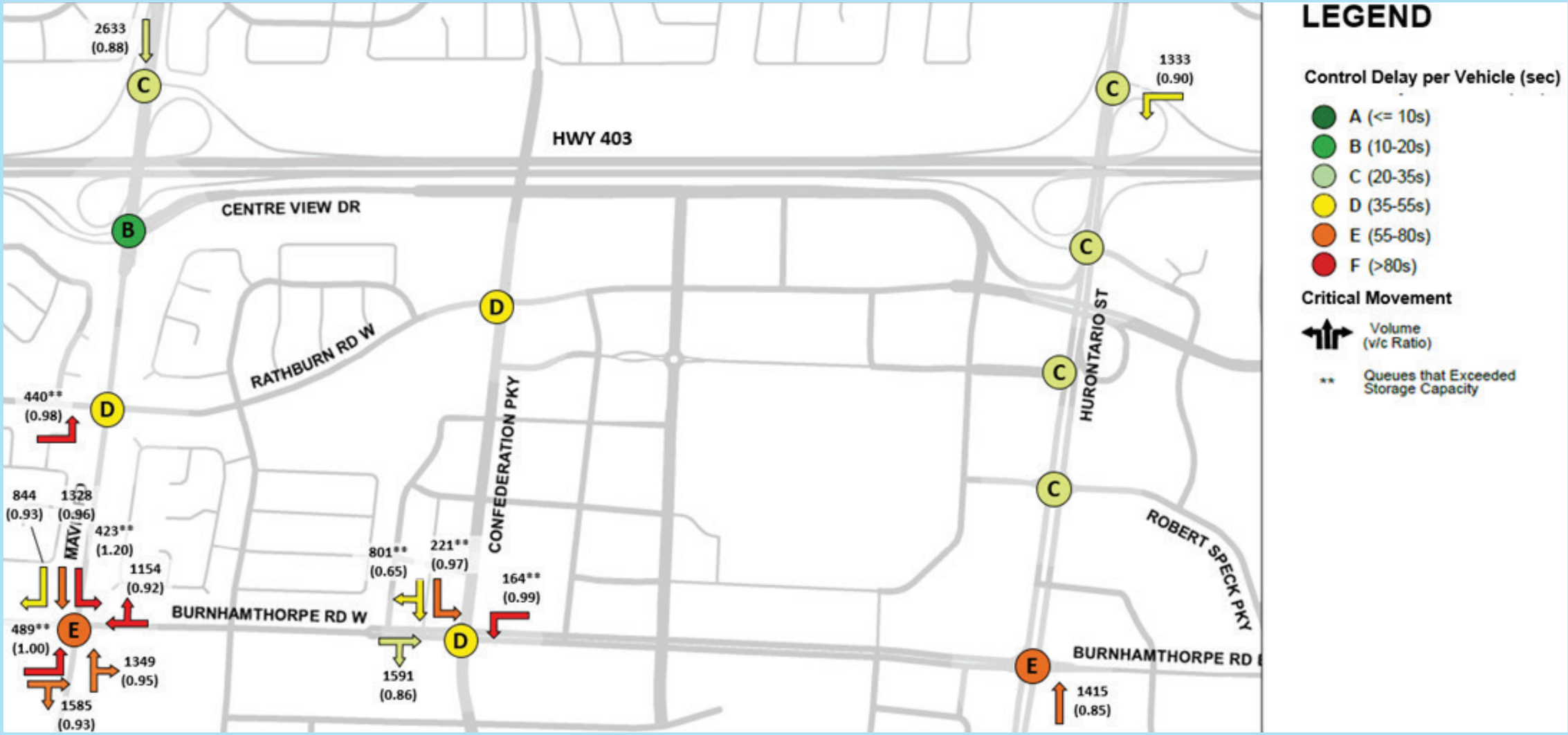
Figure 4.26 and **Figure 4.27** illustrate the intersection LOS as well as critical movements at the study intersections. A turning movement is considered a critical movement if any of the following criteria is met:

- Shared through-right and through-left movements exceed a v/c of 0.85;
- Exclusive left or right turn lanes exceed v/c of 0.90; and/or
- Any movement whose 95th percentile queue exceeds its storage length.

Detailed Synchro parameters and results are provided in **Appendix A**.

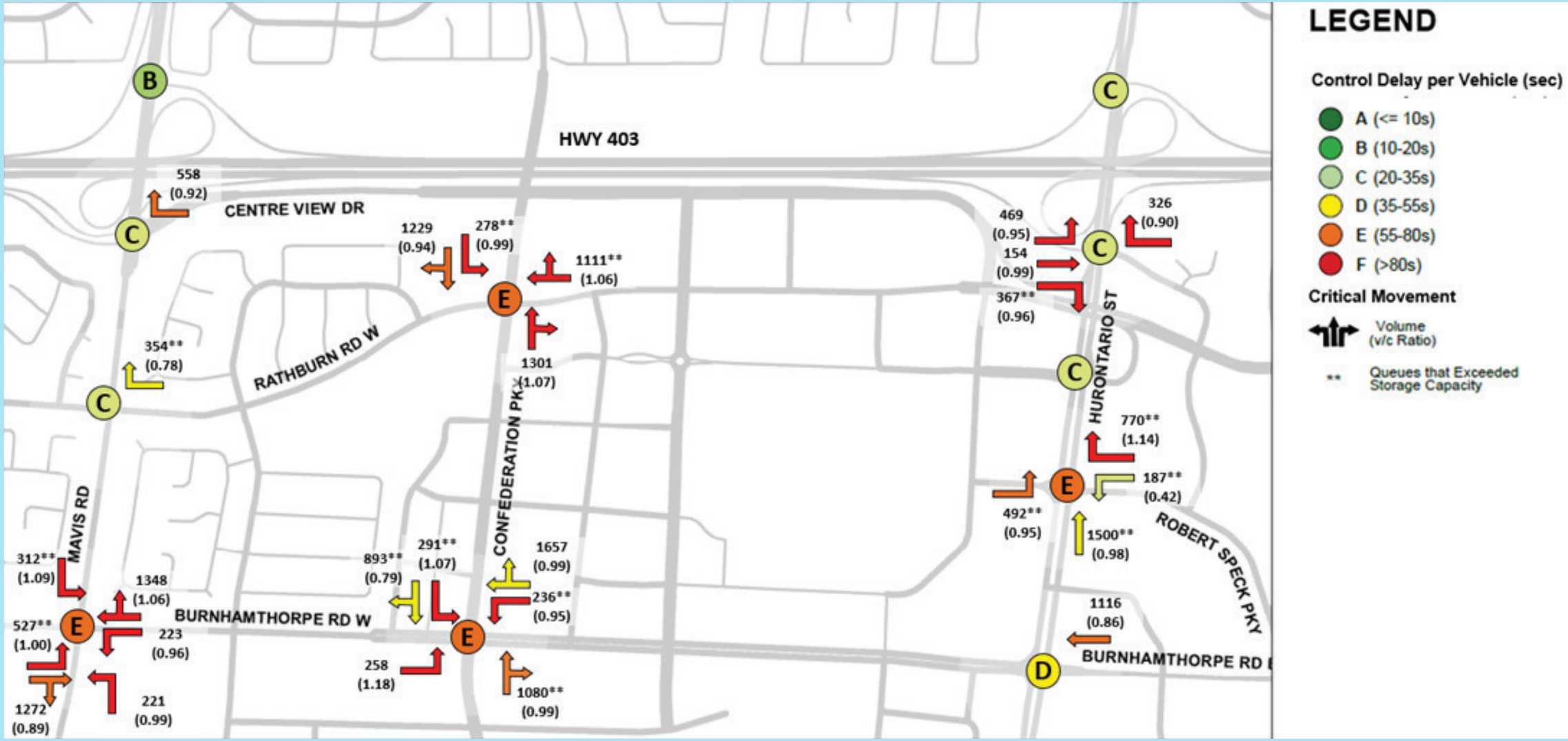
1 *https://www.peelregion.ca/pw/transportation/_media/synchro-guidelines.pdf*

Figure 4.26 Critical Movements – Synchro Study Area – Weekday AM Peak Hour



Note: Storage length for through movements were measured from stop bar to the upstream signalized intersection.

Figure 4.27 Critical Movements – Synchro Study Area – Weekday PM Peak Hour



Note: Storage length for through movements were measured from stop bar to the upstream signalized intersection.

It is notable that during the AM peak, intersections along Burnhamthorpe Road West are approaching or at capacity, particularly at the Burnhamthorpe Road West / Mavis Road intersection where critical movements were flagged for all approaches. During the PM peak, in addition to the intersections along Burnhamthorpe Road West, most of the signalized intersections surrounding the Square One Shopping Centre are also approaching or at capacity due to high traffic demands.

The 95th percentile — or top 5% — queue exceeds the available spacing between signalized intersections for the following through movements, indicating spill-back queues will most likely reach the upstream intersection:

- Southbound at Burnhamthorpe Road West / Mavis Road intersection;
- Westbound at Rathburn Road West / Confederation Parkway intersection; and
- Northbound at Burnhamthorpe Road / Hurontario Street intersection.

For highway off-ramp intersections, a few notable critical movements were flagged in the Synchro analysis. However, all off-ramp intersections are operating with residual capacities at LOS 'C' or better. This indicates that there are opportunities to improve critical movements by optimizing the current signal timing.

In the morning peak period, Hurontario Street and Mavis Road both serve high volumes of southbound traffic travelling inbound toward Downtown from Highway 403. Capacity deficiencies and congestion are more apparent along Mavis Road than along Hurontario Street. Hurontario Street has a number of routing options for traffic originating from Highway 403 to bypass red-light delays and access the Downtown area, including an unsignalized ramp connecting directly onto Centre View Drive, as well as a number of right-turn channels. Conversely, inbound traffic from Highway 403 via southbound Mavis Road must execute southbound left-turns at Rathburn Road West or Burnhamthorpe Road West. Having to turn left at these signalized intersections increase delays.

In the afternoon peak period, outbound traffic volumes from Downtown destined to Highway 403 and to the north substantially increases. This is evident by the considerably higher eastbound left-turn volumes on to northbound Hurontario Street, as well as higher westbound right-turn volumes onto northbound Mavis Road. While the egressing traffic onto Mavis Road have the advantage of executing right-turns-on-red, the increase of eastbound left-turn volumes onto Hurontario Street places additional strain on movements that are already capacity-constrained. Compared to the morning peak period where capacity deficiencies tend to be limited toward the western half of the downtown area, capacity deficiencies prevail along both Mavis Road and Hurontario Street during the afternoon peak period.

Overall, the Synchro traffic analysis confirmed that the afternoon peak hour is the more critical time of day, due to the higher number of critical movements as well as lower levels of service as shown in **Figure 4.26** to **Figure 4.27**. The micro-simulation modelling in VISSIM focused on the afternoon peak hour and examined traffic conditions and queuing in more detail. Detailed documentation of traffic operations and modelling results can be found in **Appendix A**.

Bicycle Level of Service

The City of Ottawa Multi-Modal Level of Service (MMLOS) Guidelines (2015) was used to evaluate the cycling conditions in the study area. The MMLOS approach considers multi-modal users of the roadway, including a cyclist's comfort, safety, and convenience, which are subjective measures.

Bicycle Level of Service (BLOS) is calculated at intersection and mid-block locations recognizing that a cyclist's experience is determined by conditions between crossings and at the crossing itself.

The cycling conditions vary widely within the study area due to the differing nature and characteristics of the streets in the Downtown Core and depending on the available cycling infrastructure. The BLOS results are illustrated in **Figure 4.28**.

Generally speaking, streets with physically separated facilities performed best. Where City Centre Drive crosses Mississauga Celebration Square, the segment achieves a BLOS "A" as the threat of vehicles is eliminated. Streets with multi-use paths such as sections of Burnhamthorpe Road and Rathburn Road achieved high scores only on the side where the facility is present. Though multi-use paths are bi-directional, for the purposes of the analysis, it was assumed that cyclists will cycle in the same direction as vehicular traffic. This assumption helps to emphasize the gaps in available infrastructure, showcase potential for improvement and set a higher standard for the provision of facilities on both sides of a street. During the existing conditions review, construction along the north side Burnhamthorpe Road was noted blocking the cycling route and impacting the overall cycling experience.

Cycling conditions were also observed to be favourable on streets where dedicated bike lanes are provided, including:

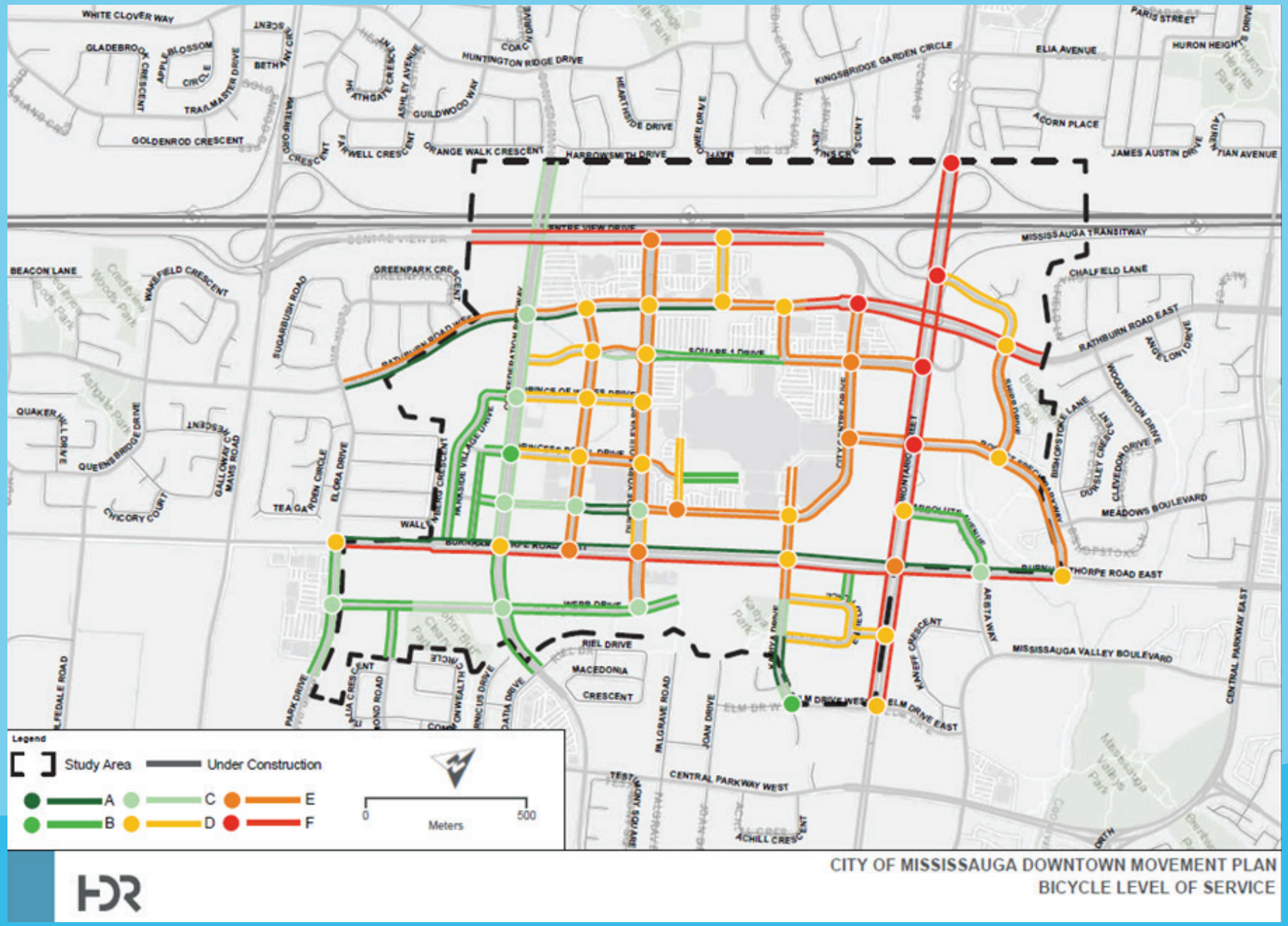
- Grand Park Drive
- Confederation Parkway
- Kariya Drive
- Webb Drive
- Elm Drive
- City Centre Drive (Confederation Parkway to Duke of York Boulevard)

Bike lanes in the study area are typically located along residential collectors and offer a comfortable cycling environment due to their width, moderate adjacent vehicle speeds (50km/h), low bike lane blockage from driveways and the modest cross-sectional width of those roads. In situations where bike lanes are located next to parking lanes, the total available space between the bike lane and curb was considered to determine the BLOS score, per the Ottawa MMLOS methodology.

Local residential streets lacking cycling facilities also performed well due to lower vehicular speeds and fewer vehicular lanes despite being mixed traffic routes. These include:

- Parkside Village Drive
- Redmond Road
- Brickstone Mews
- Sussex Gate
- Absolute Avenue
- Webb Drive
- Curran Place
- Arbutus Way

Figure 4.28 Bicycle Level of Service



Note: Burnhamthorpe Road between Duke of York Boulevard and Hurontario Street is currently under construction, but it is assumed the existing multi-use trail will be restored at these segments.

Where cyclists had to share the road, the wider and busier the street and the higher the vehicular speeds, the worse the cycling experience. Suboptimal cycling conditions along the following streets indicate the opportunity for infrastructure improvements to address these deficiencies:

- Living Arts Drive
- Duke of York Boulevard
- Mercer Street
- Station Gate Road
- Hammerson Drive
- Kariya Gate / Drive (Square One entrance to Enfield Place)
- Hurontario Street
- Shipp Drive
- Robert Speck Parkway
- City Centre Drive (Duke of York Boulevard to Rathburn Drive)
- Enfield Place
- Princess Royal Drive
- Prince of Wales Drive
- Square One Drive
- Rathburn Road
- Centre View Drive
- Sherwoodtowne Boulevard

At the intersection level, BLOS scores are observed to be similar where cross-sectional characteristics are consistent and cycling facilities are alike. As the study area includes different road typologies and different accommodations for cyclists, intersection BLOS result diverge depending on the intersection in question. The intersection BLOS results are shown in **Figure 4.28**.

Overall, intersections where bike lanes or multi-use paths are present along most approaches perform better than others because the effect of right-turning vehicles is minimized since cyclists have their own dedicated space at the intersection approach. Moreover, smaller intersections typically also perform better than larger ones because fewer lanes are required to be crossed by cyclists aiming to complete a left-turn. Intersections along Hurontario Street tend to perform poorly in particular, due to the lack of cycling accommodation at intersections, large turning radii (the amount of space required to safely make a turn), higher posted speed along the street and a wide cross-section configuration exacerbated by channelized turning lanes and construction activities (namely at Burnhamthorpe Road and Hurontario Street).

Roundabouts require special consideration for cyclists. Where Square One Drive and Duke of York Boulevard intersect, cyclists have two options to cross the roundabout safely: they may dismount and cross each street as a pedestrian, or they can take the centre of their lane and behave as a motor vehicle (the latter requiring the cyclist to have a degree of experience and confidence). Because the roundabout in the study area has only one circling lane, there appears to be little chance for confusion between cyclists and drivers. A low risk of conflict is anticipated at this location and the roundabout effectively accommodates both modes.

Pedestrian Level of Service

Similar to the BLOS methodology, the City of Ottawa MMLOS includes a methodology to evaluate the Pedestrian Level of Service (PLOS). PLOS is also calculated at the intersections and at mid-block segments, acknowledging that a pedestrian's experience is determined by the conditions between crossings and at the crossing itself. The PLOS results are illustrated in **Figure 4.29**.

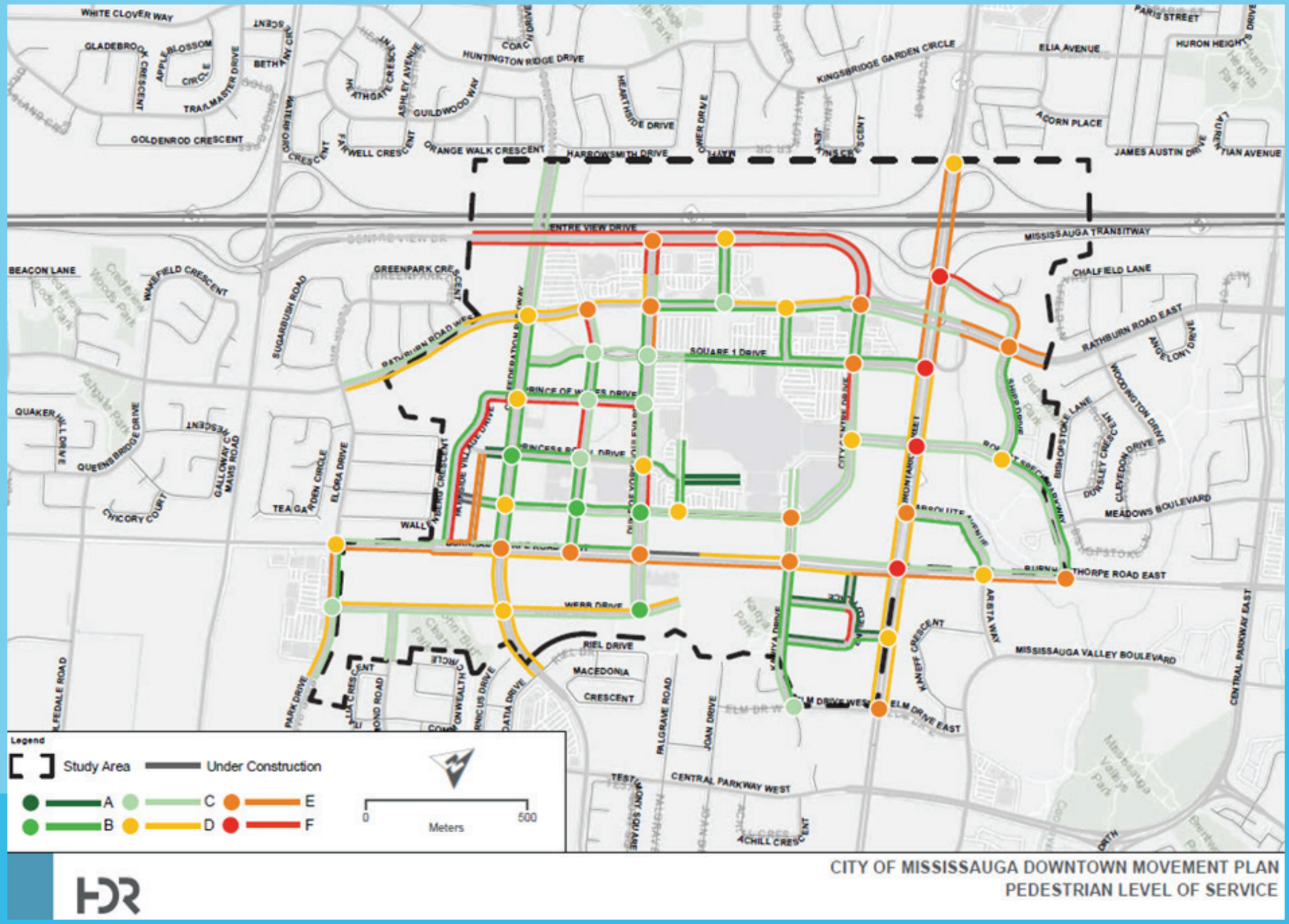
At the segment level, pedestrian conditions are generally acceptable in the study area. Sidewalks were often observed to be wider than 2m while boulevards and on-street parking further helped buffer pedestrians from adjacent vehicular traffic. Streets with PLOS scores of 'D', 'E' and 'F' indicate a need for improvements to the pedestrian environment such as wider facilities, larger buffers, or lower speeds.

Intersections in the study area present opportunities for improvement, with the majority of intersections scoring a PLOS 'D' or lower. Because intersection PLOS in the Ottawa MMLOS methodology relies heavily on the crossing distance of each approach, smaller intersections tend to perform better while major intersections, such as those along Hurontario Street and Burnhamthorpe Road, experience lower scores.

Eliminating vehicular lanes to reduce crossing distances has the largest potential to enhance the pedestrian experience. Examples of minor modifications that could be considered for incremental improvements in intersection PLOS are:

- The provision of wider medians offering pedestrian refuge,
- Tightening of curb radii,
- Incorporating protected turning movements, and
- Raised crosswalks and coloured / textured paving at intersections, among others.

Figure 4.29 Pedestrian Level of Service Results



SAFETY ASSESSMENT

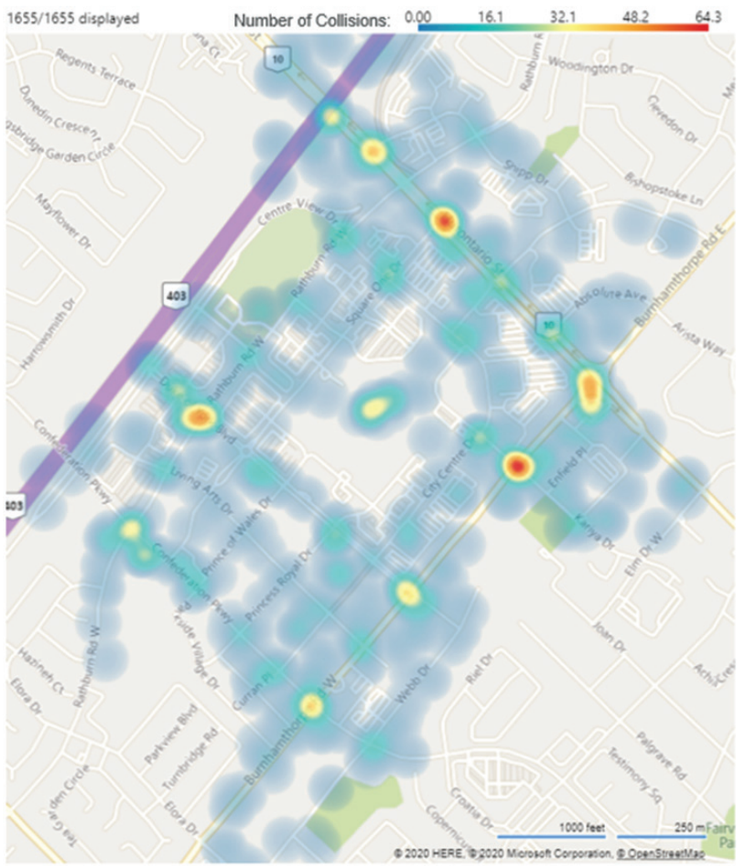
A safety assessment and collision review was completed for the study area. The analysis is based on intersection-related and segment-related collision records from the City of Mississauga for the 5-year period between January 2014 and December 2018. It is noted that Highway 403 collision data was not included in the analysis as the highway is not within the City's jurisdiction.

Over the 5-year period, a total of 1,729 collisions were reported within the study area. **Figure 4.30** shows a heat map of collisions in the study area, where the orange and red colours highlight locations where collisions were most prominent. During the analysis period, most collisions were observed to occur at the major intersections of arterial and collector roads, including Burnhamthorpe Road, Hurontario Street, Confederation Parkway, and Rathburn Road.

Figure 4.31 provides an overview of key collision statistics for the study area. There has been a slight downward trend in the number of collisions observed each year. There were two fatal collisions in the study area over the five years. Approximately 6% of all collisions involved vulnerable road users such as pedestrians and cyclists. On a daily basis, collisions were mostly occurring during the PM peak period (4:00pm to 7:00pm) when traffic volumes and pedestrian activities are high, resulting in more potential for conflicts.

The most common type of collision by impact observed in the study area are turning movement collisions (32%). Rear end collisions accounted for 30% of all intersection collisions, with 64% of these collisions being a result of vehicles following too closely.

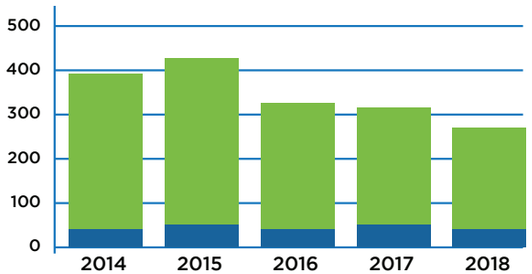
Figure 4.30 Collision Heat Map of Study Area (2014 – 2018)



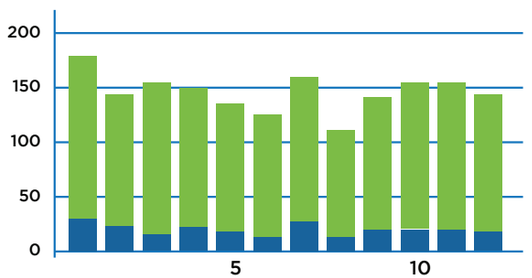
*Note: There are 74 collisions not shown in the heat map due to unspecified coordinates. Other statistics from these collisions were still included in the analysis. Details provided in **Appendix A**.*

Figure 4.31 Key Collision Statistics for the Study Area (2014 – 2018)

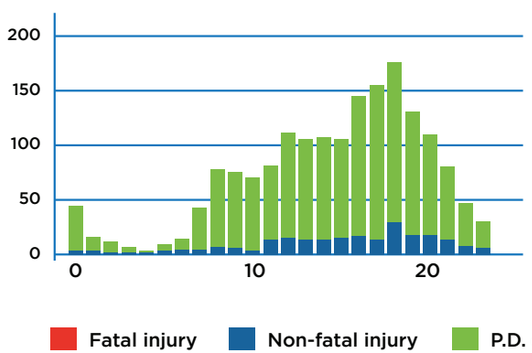
Collisions by Year and Type



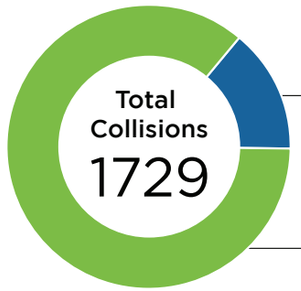
Collisions by Month of Year



Collisions by Hour and Type



Collisions by Type



Non-fatal injury 14%

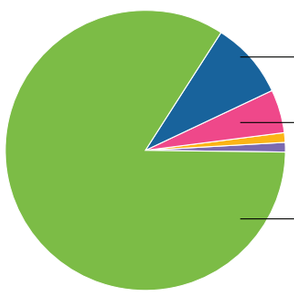
P.D. only 86%

89 Pedestrian Collisions

29 Cyclist Collisions

6% Vulnerable Road User Collisions

Collisions by Environment Conditions

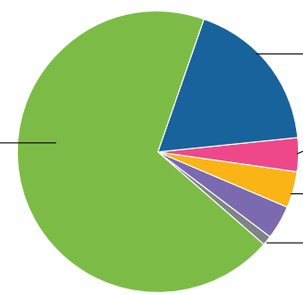


Rain 9%

Snow 5%

Clear 84%

Collisions by Light Conditions



Daylight 69%

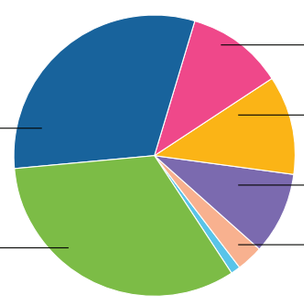
Dark 18%

Dark, artificial 4%

Dusk 4%

Dawn 1%

Collisions by Initial Impact



Rear end 520 (30%)

Turning movement 558 (32%)

Angle 196 (11%)

Sideswipe 183 (11%)

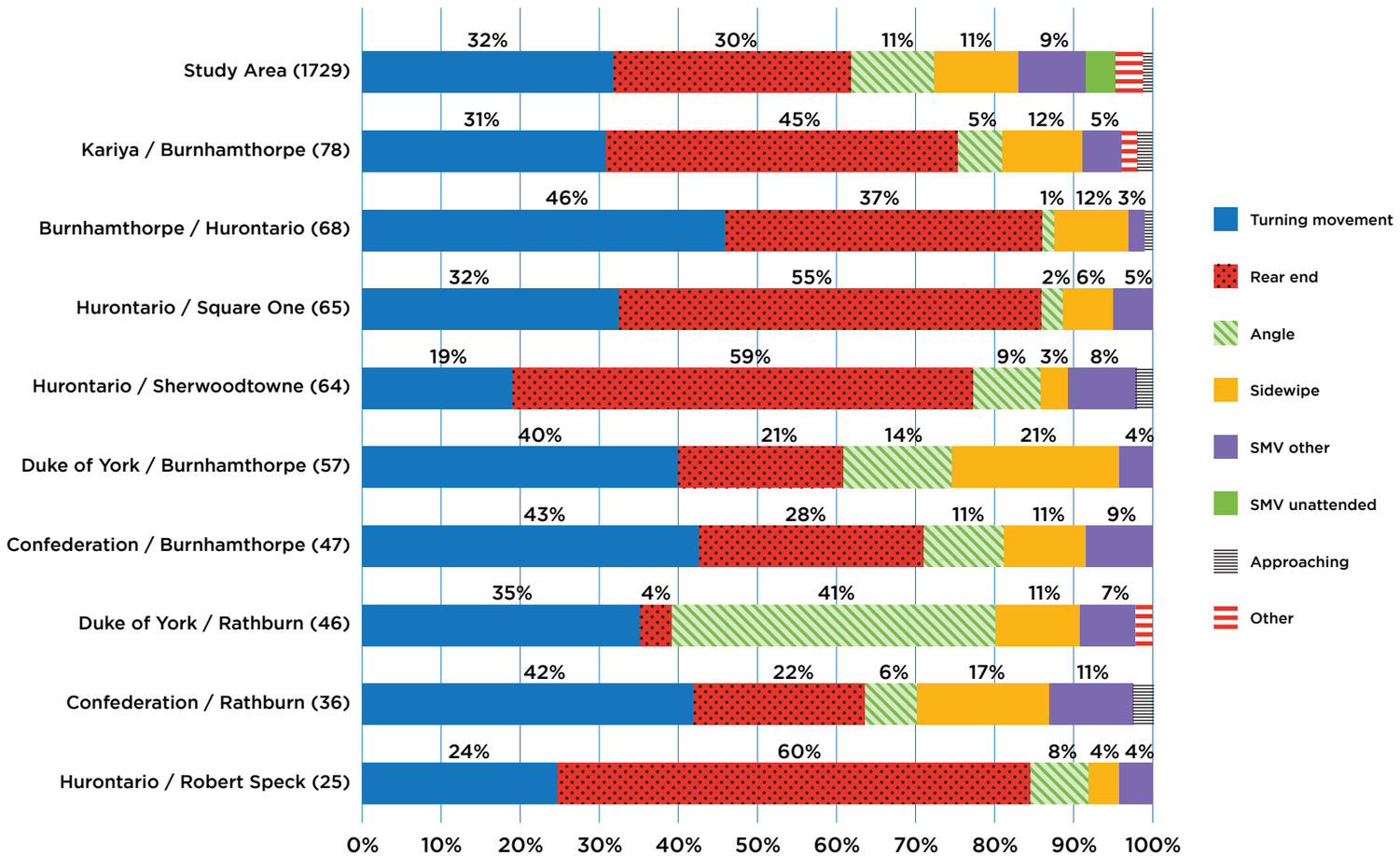
SMV other 156 (9%)

SMV unattended vehicle 64 (4%)

Note: "SMV" refers to Single Motor Vehicle; "P.D. only" refers to collisions resulting in Property Damage only.

A summary of collisions by impact type at intersections is shown in **Figure 4.32**. In general, the trends observed overall within the study area are similar to those at each intersection. Detailed descriptions of the various impact types and collisions at each intersection are included in **Appendix A**.

Figure 4.32 Summary of Collisions by Impact Type at Intersections (2014 – 2018)



Note: The number of collisions between 2014 and 2018 is shown in () for each intersection. SMV refers to Single Motor Vehicle collisions.

Collisions with vulnerable road users

Further analysis to focus on the 118 collisions that involve vulnerable road users such as pedestrians and cyclists was conducted. Pedestrians and cyclists are highly vulnerable in collisions. As shown in the data, 96% of collisions involving pedestrians resulted in injuries and 48% of the cyclist collisions resulted in injury. These rates are significantly higher than the 9% observed involving vehicle-vehicle collisions. Two fatal collisions occurred between 2014 to 2018. The first one occurred in April 2016 at the intersection of Duke of York Boulevard and Rathburn Road, and the second one occurred in September 2017 with the location unspecified.

Pedestrian collisions observed in the study area for the five years showed similar hotspots as the overall collision patterns, including major intersections of arterial roads and collector roads. There were additional hotspots located by the City Centre Transit Terminal and around Mississauga Celebration Square where there are high pedestrian volumes.

EXISTING NATURAL, CULTURAL HERITAGE AND ARCHAEOLOGICAL ENVIRONMENT

Natural Heritage Characterization

A natural heritage characterization study was completed, which summarized background information of natural heritage features within the study area to characterize the existing natural heritage features. The detailed characterization was used to inform an analysis of the significance and sensitivity of natural features and the identification of any natural feature constraints in association with land use policy designations.

The majority of the study area consists of highly anthropogenic and urban land uses. Lands are dominated by commercial, recreational, and mixed-use buildings, as well as impermeable road and parking infrastructure as is located in a highly dense urban area, with few natural areas remaining. Several unevaluated wetlands are located in the northern portion of the study area. Cooksville Creek is the primary and sole watercourse feature located in the study area. Habitat for eight (8) Species of Conservation Concern (SCC) and seven (7) regulated Species at Risk (SAR) is potentially present within the study area. The majority of suitable habitat for these species is present, or potentially present, in close or direct proximity to natural areas adjacent to Cooksville Creek and the remaining woodland areas in the study area.

Regard for the remaining natural areas should be a priority for the City of Mississauga and the Downtown Movement Plan, going forward.

Cultural Heritage Resource Assessment

A Phase 1 Desktop Cultural Heritage Resource Assessment (CHRA) was conducted by Archaeological Services Inc. (ASI), which presented an inventory of known built heritage resources and cultural heritage landscapes.

The results of background historical research and a review of secondary source material, including historical mapping, revealed a study area with a rural land use history dating back to the nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are five previously identified features of potential cultural heritage value within DMP study area.

Key Findings:

- A total of five (5) cultural heritage resources were identified within the study area; and,
- Two (2) cultural heritage resources are built heritage resources listed by the City of Mississauga in the Heritage Register for Mississauga (City of Mississauga 2018), two are cultural heritage landscapes identified in the Mississauga Cultural Heritage Landscapes Inventory (City of Mississauga 2005), and one cultural heritage resource was identified during a previous assessment (ASI 2015a).

Archaeological Assessment

The existing conditions for archaeological resources were reviewed by ASI.

Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the Ministry of Heritage, Sport, Tourism and Culture Industries through “Ontario’s Past Portal”; published and unpublished documentary sources; and the files of ASI.

The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites;
- Water sources: primary, secondary, or past water source (Cooksville Creek);
- Early historic transportation routes (Hurontario Street, Burnhamthrope Road); and
- Well-drained soils (Brockport clay loam, Oneida clay loam).

Future Base Conditions

FUTURE ROAD IMPROVEMENTS

Based on the City of Mississauga's plans and background studies, the planned and proposed future road network improvements are summarized in this section. The planned and proposed future road improvements have been categorized based by the timing of improvement (2031, 2041, or other proposed) and by status. The categories are as follows:

1. EA approved and in 2019 DC
2. EA expired/pending and in 2019 DC
3. EA not approved or no EA, but in 2019 DC
4. No EA, not in 2019 DC, but identified in other planning work

Appendix B provides the full list of planned and proposed future road improvements within the study area, categorized as described above. Each improvement has also been given an index number for reference on subsequent figures.

The future base and other proposed future road improvements are illustrated by category in **Figure 4.33**.

The road network improvements included in the 2031 base case are primarily those road works have been listed in the 2019 Development Charges and with EA status of approved, expired, or pending. These improvements correspond to Categories 1 and 2, with the exception of the Webb Drive reconstruction that is planned for 2021 and would not need an EA to be implemented. Some of the improvements do not have an identified timeline in the current DC report. Through discussion with the City, it is noted that those improvements will be implemented by 2031.

The 2031 "base network" also includes some local roads identified in the DLAP. Those local roads have been included in active or approved applications for a Planning Act approval. The 2031 base network, including road work types, is shown in **Figure 4.34**. It should be noted that 2031 "base network" includes all the identified base case improvements, i.e., no additional road improvements are identified for the 2041 base case road network.

The road network improvements not included in the base network are those designated as proposed, which correspond to Categories 3 and 4, with no approved EA status or active application for a Planning Act approval to support it. These proposed road improvements, including road work types, are shown alongside the base network in **Figure 4.35**.

Figure 4.33 All Proposed Future Road Improvements by Improvement Category

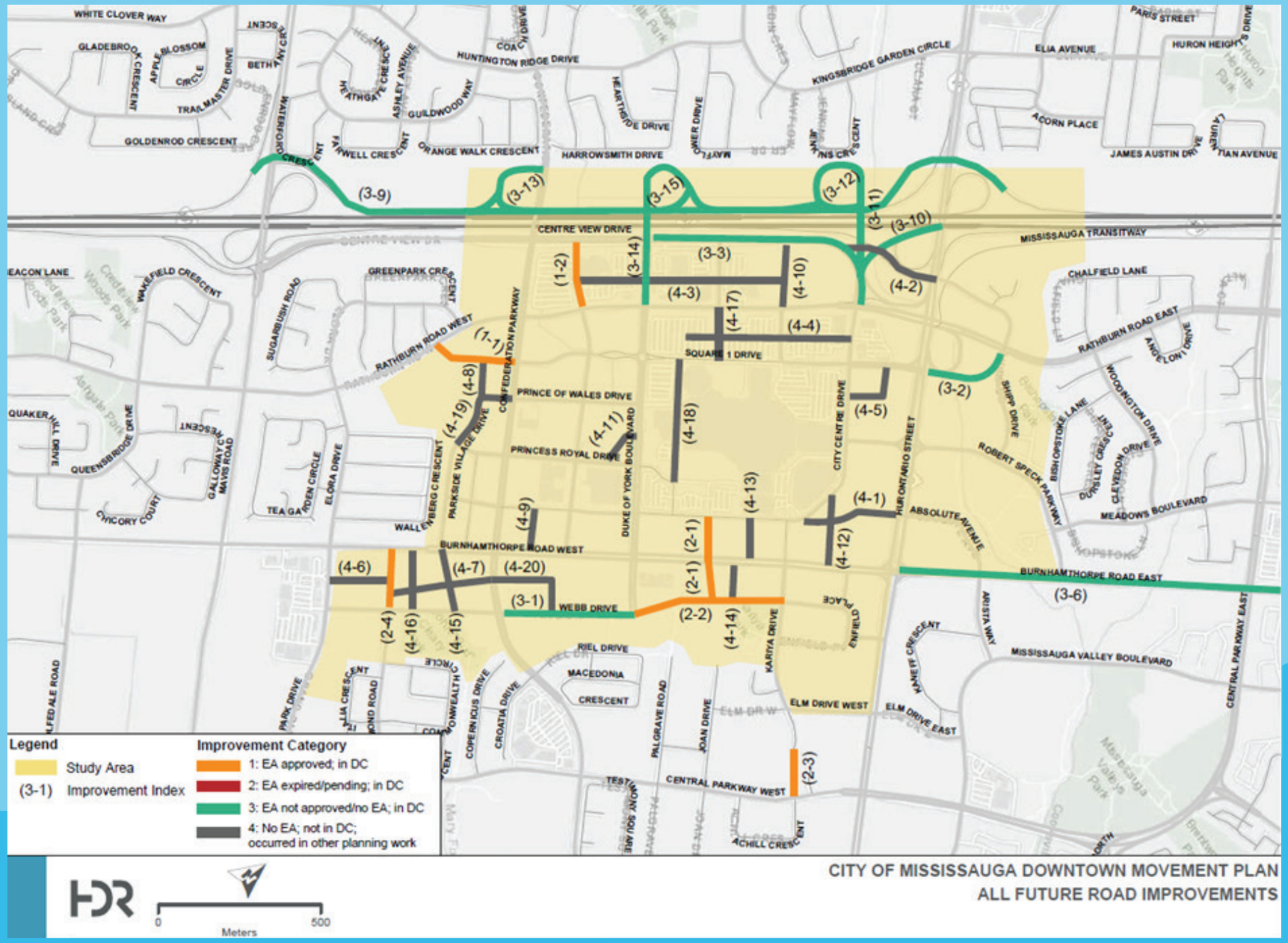


Figure 4.34 2031 Base Future Road Network by Road Improvement Type

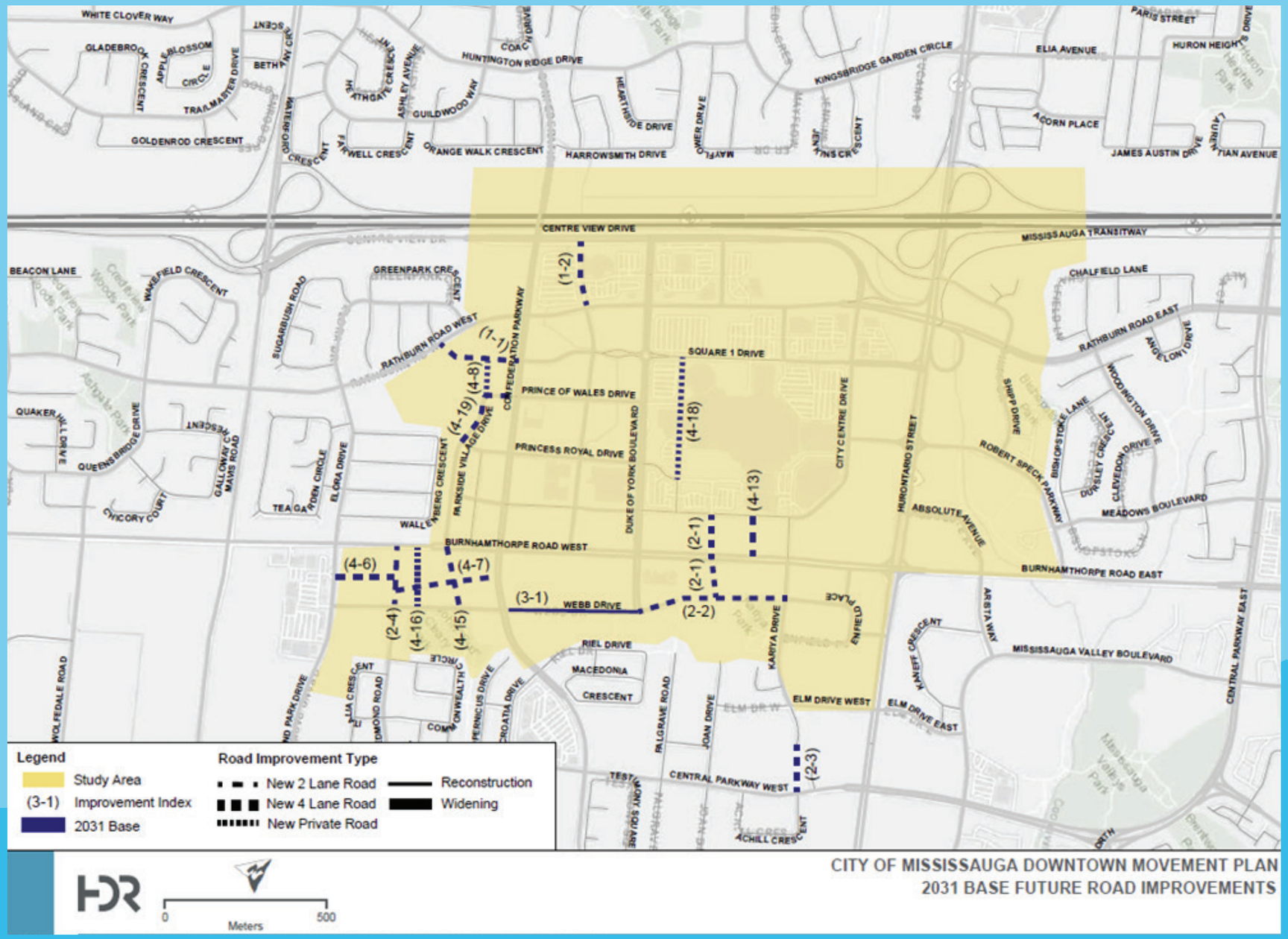
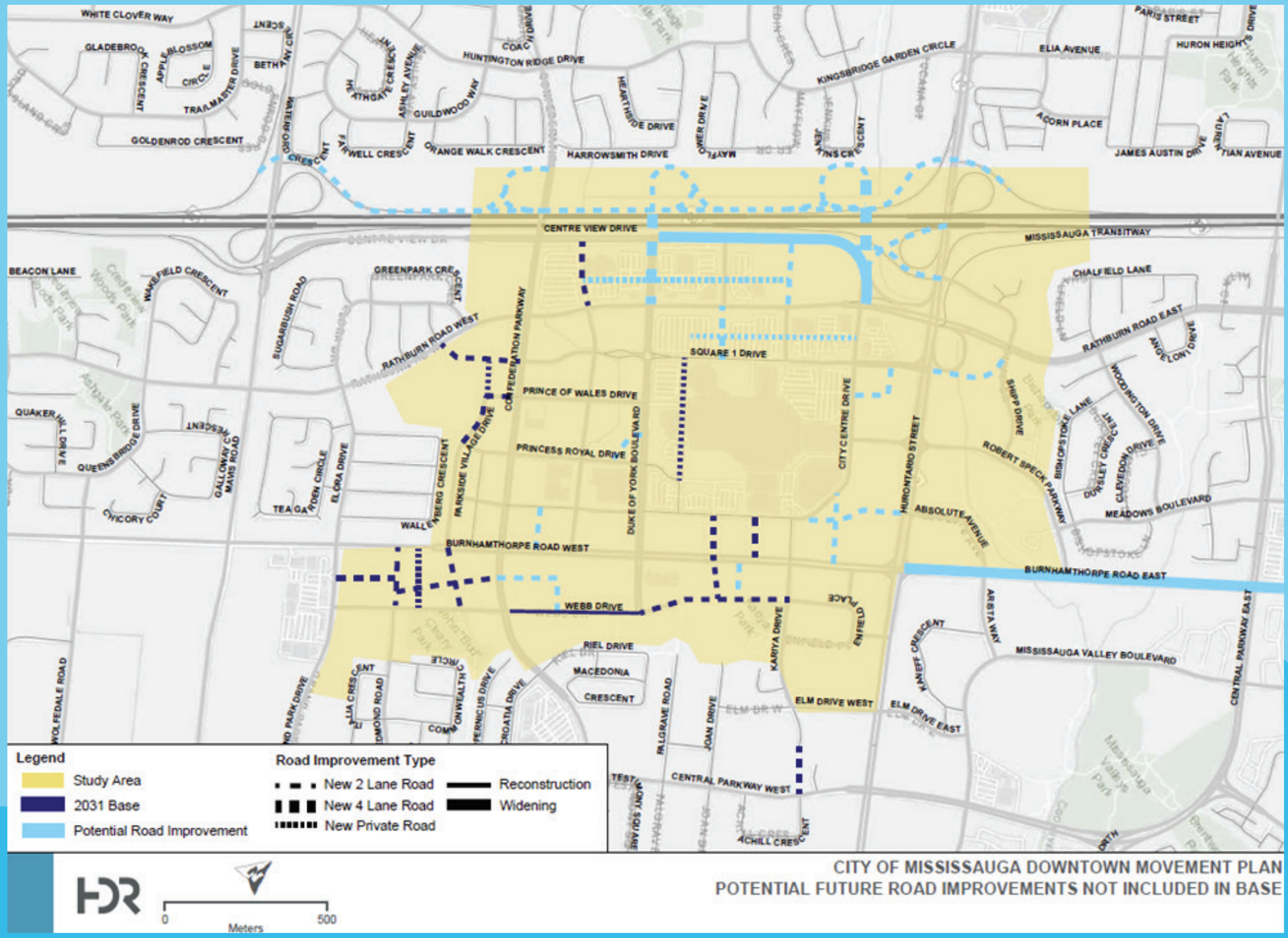


Figure 4.35 All Future Road Improvements by Road Improvement Type



FUTURE TRANSIT NETWORK IMPROVEMENTS

The Hazel McCallion Light Rail Transit (HMLRT) as shown in **Figure 4.36** is under construction with an anticipated completion date of Fall 2024. The HMLRT will have three stops in Downtown Mississauga. From north to south, they are City Centre Terminal, Robert Speck stop, and Burnhamthorpe stop.

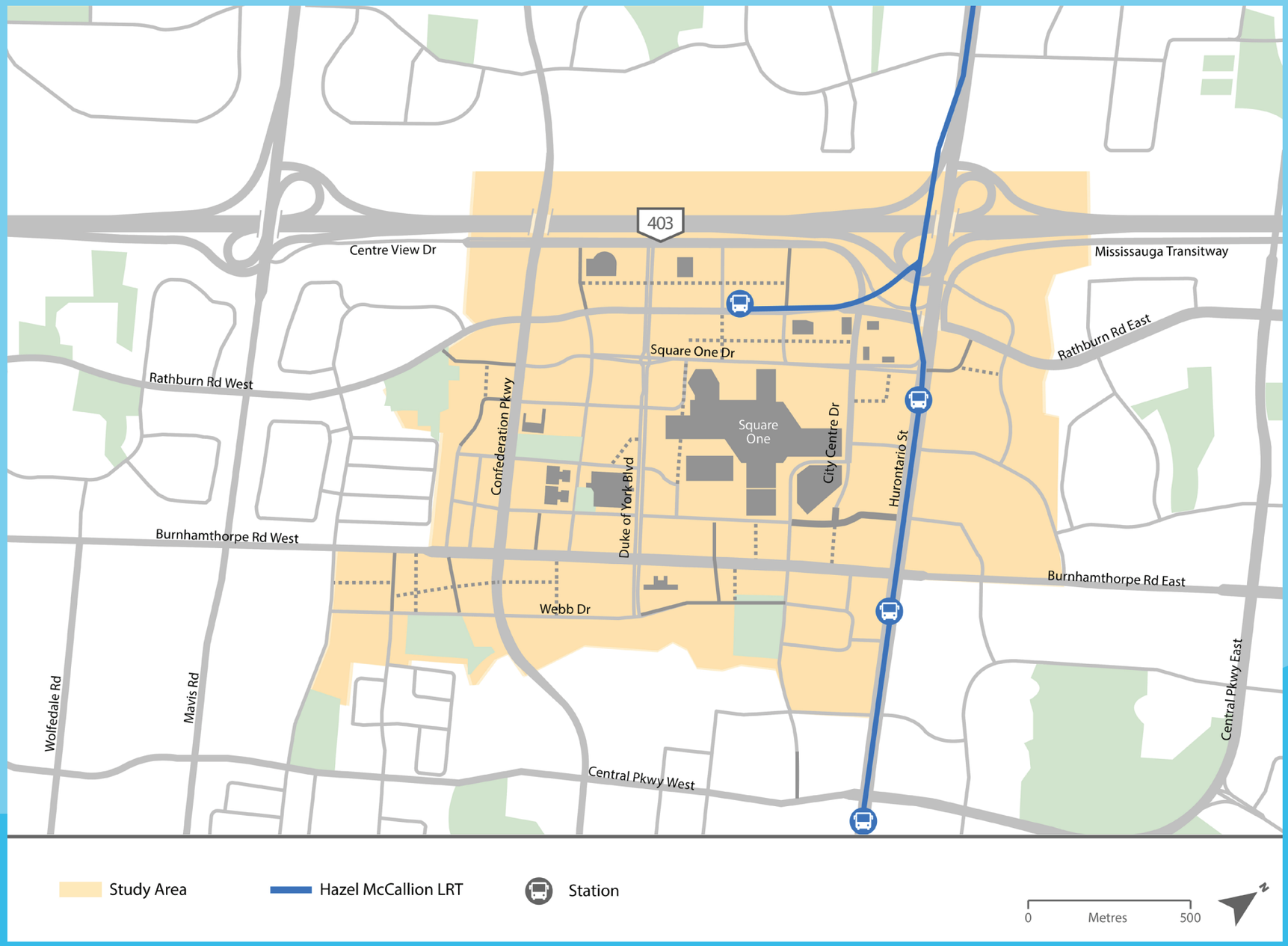
The HMLRT will significantly increase the capacity of moving people north-south through the Downtown; however, two key travel needs will remain unaddressed without additional improvements:

- Higher-order transit is not provided to support circulation within Downtown, especially towards the densest growth area in the southwest part near Confederation Parkway and Burnhamthorpe Road. Currently, this area is more than 1 km away from the closest HMLRT stop.
- There is no higher-order transit that can move people east-west to and from Downtown. The north-south HMLRT plus an east-west higher order transit can create a transit hub within Downtown Mississauga to support the growth.

The proposed alternatives documented in Section 6 will focus on those needs.

In addition to the HMLRT, Burnhamthorpe bus bays at The Exchange and improvements to local transit routes are assumed in the future base network assessment.

Figure 4.36 Hazel McCallion LRT



FUTURE PEDESTRIAN NETWORK IMPROVEMENTS

The DLAP provides a set of policies for the development of boulevards and sidewalks to support pedestrian movement, connectivity within and to adjacent communities, and promote street life. The design of boulevards in the Downtown Core will:

1. incorporate coordinated design themes, high quality materials, street trees and landscaping;
2. be designed as active, animated public spaces that seamlessly integrate with buildings and other components of the public realm to define the street space;
3. maximize opportunities to incorporate places to meet, sit and socialize; and
4. achieve pedestrian comfort, weather protection and safety, particularly at transit stops.

The proposed road network improvements identified in Section 4.3 of the DLAP report followed a hierarchy of street frontages to distinguish the function and attributes of streets in the Downtown Core. Two categories — 'A' Streets and 'B' Streets – were defined to differentiate streets by their role and function, character, built form treatments, and overall design. This hierarchy supports the implementation of the urban design and public realm objectives of the Downtown 21 Master Plan.

'A' Streets have a critical role and function in the Downtown Core. They are the most important for securing animation and character, a comfortable pedestrian environment with access to sunlight and sky views, street activity and vibrancy. Development fronting onto 'A' Streets will ensure a cohesive built form and streetscape treatment to achieve the highest standard in the public realm.

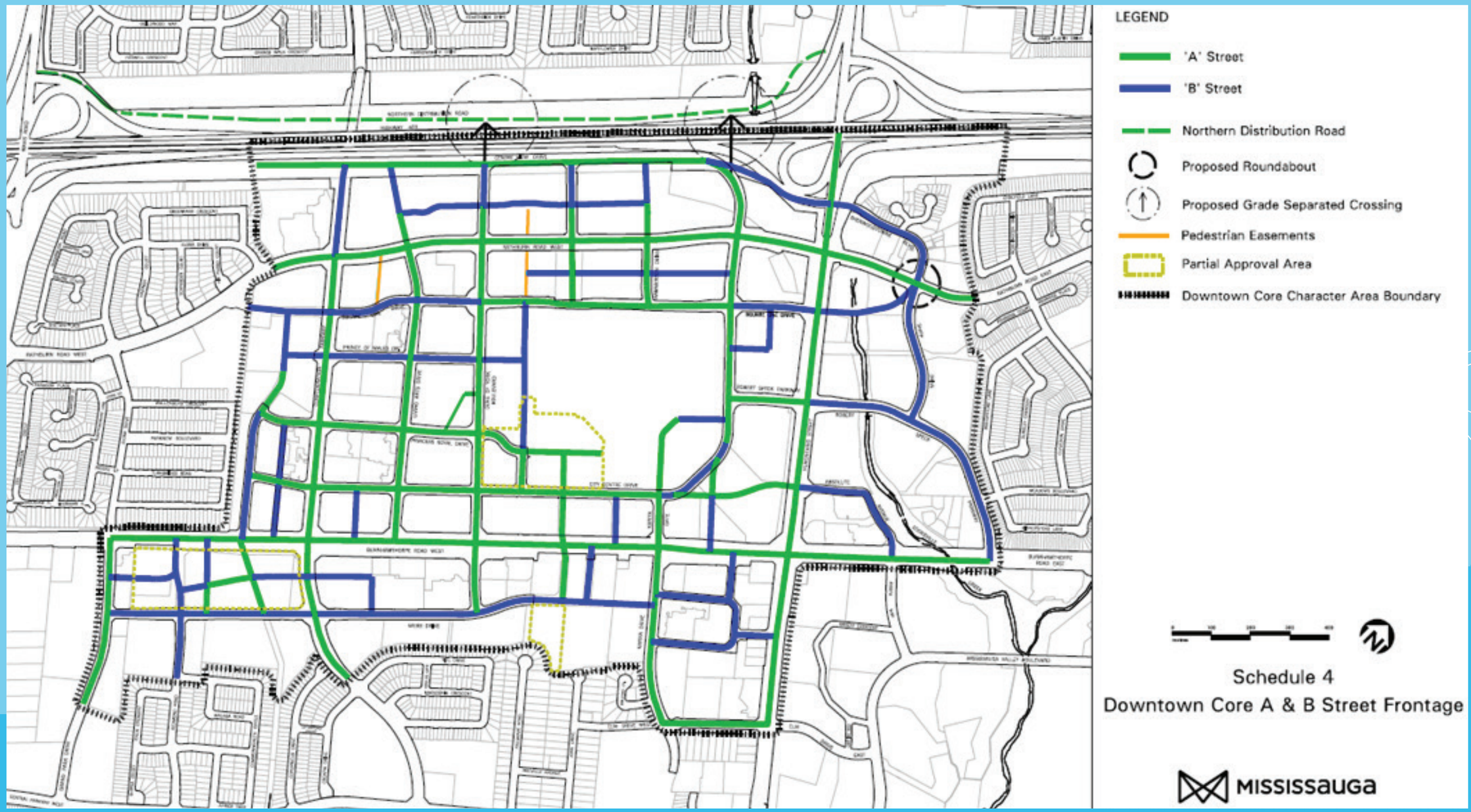
'B' Streets allow for site servicing and access, but also act to support street activity. 'B' Streets provide a pedestrian-friendly environment and a high-quality built form and streetscape treatment.

Figure 4.37 illustrates the proposed street frontage network. Sidewalks and streetscape corridor/street trees will be constructed in tandem with the future road network improvements and also be added as part of abutting development applications, in accordance with the minimum requirements of the Council approved City Centre 5.75 m Boulevard Treatment.

The pedestrian network improvements, i.e., sidewalks, street tree corridor, etc. will be part of the planned and proposed future road network improvements discussed in Section 4.2.1. The existing sidewalk gaps in the network will also be considered for future improvements.

In addition to public road improvements, the pedestrian network can also be improved through connections on private roads and pedestrian easements as identified in DLAP.

Figure 4.37 DLAP Schedule 4 – Downtown Core A & B Street Frontage



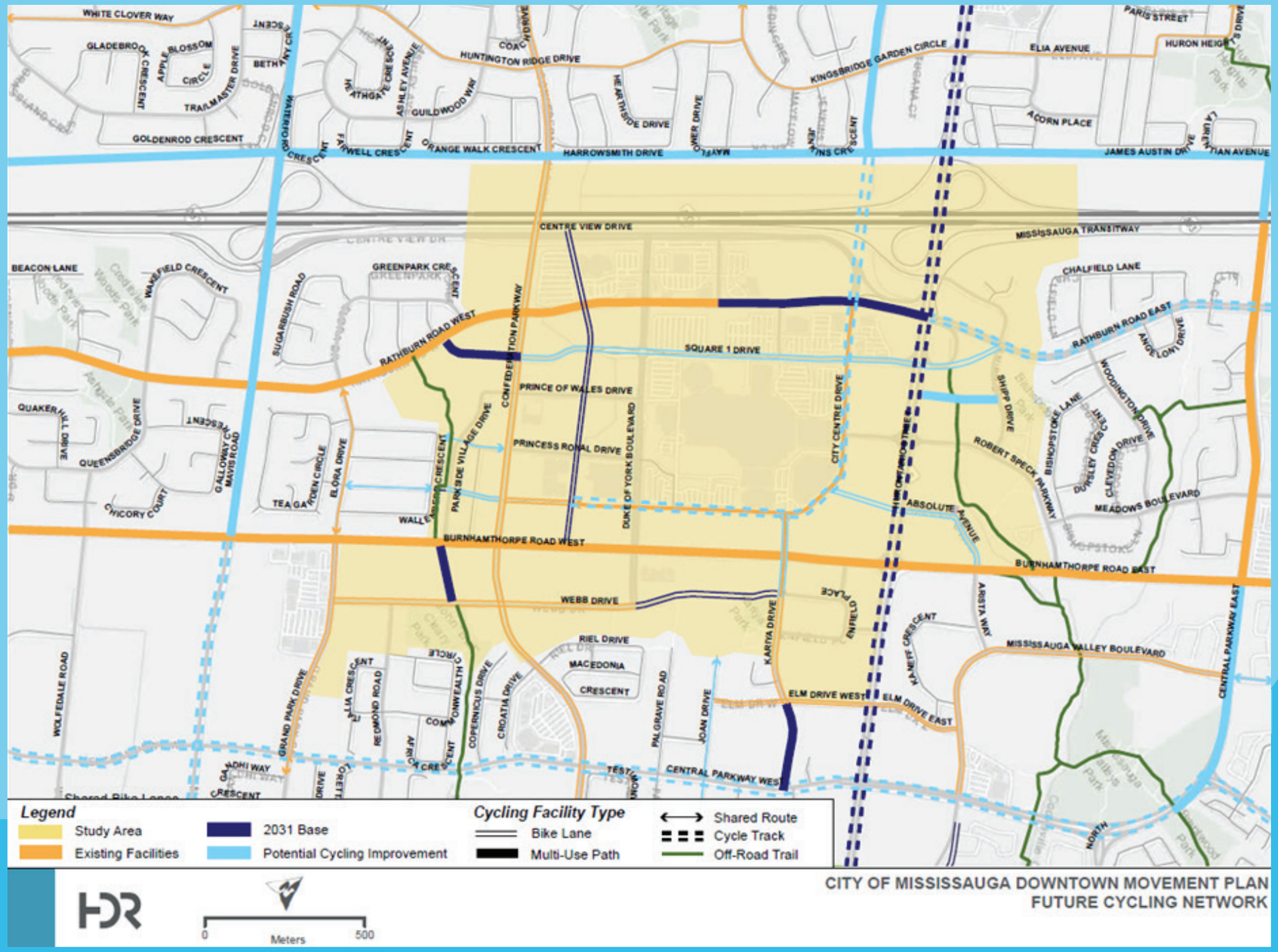
FUTURE CYCLING NETWORK IMPROVEMENTS

Based on the City of Mississauga Cycling Master Plan, 2019 DC, and other EA studies, the future cycling network improvements have been identified as either part of the 2031 base network or potential improvements with undefined timelines. The 2031 base cycling facilities were selected based on the status and timing of future roads in the 2019 DC or relevant EA study. Although there are a number of proposed cycling facilities that are identified in the Cycling Master Plan 5-Year Implementation Plan, these facilities have no status and were categorized under Other Improvements.

Note that the Active Transportation COVID-19 Recovery Framework has also identified a few cycling network improvements within the Downtown Core. Among those improvements, only Living Arts Drive bike lanes from Rathburn Road to Burnhamthorpe Road have been approved by the Council and thus included in the 2031 base network.

Figure 4.38 illustrates the existing cycling facilities within and surrounding the Downtown Core, and the base cycling network improvements under the 2031 horizon year, along with potential "Other Improvements". Note that the off-road trails reflect the existing conditions.

Figure 4.38 Planned Future Cycling Network Improvements



05

Problems and Opportunities

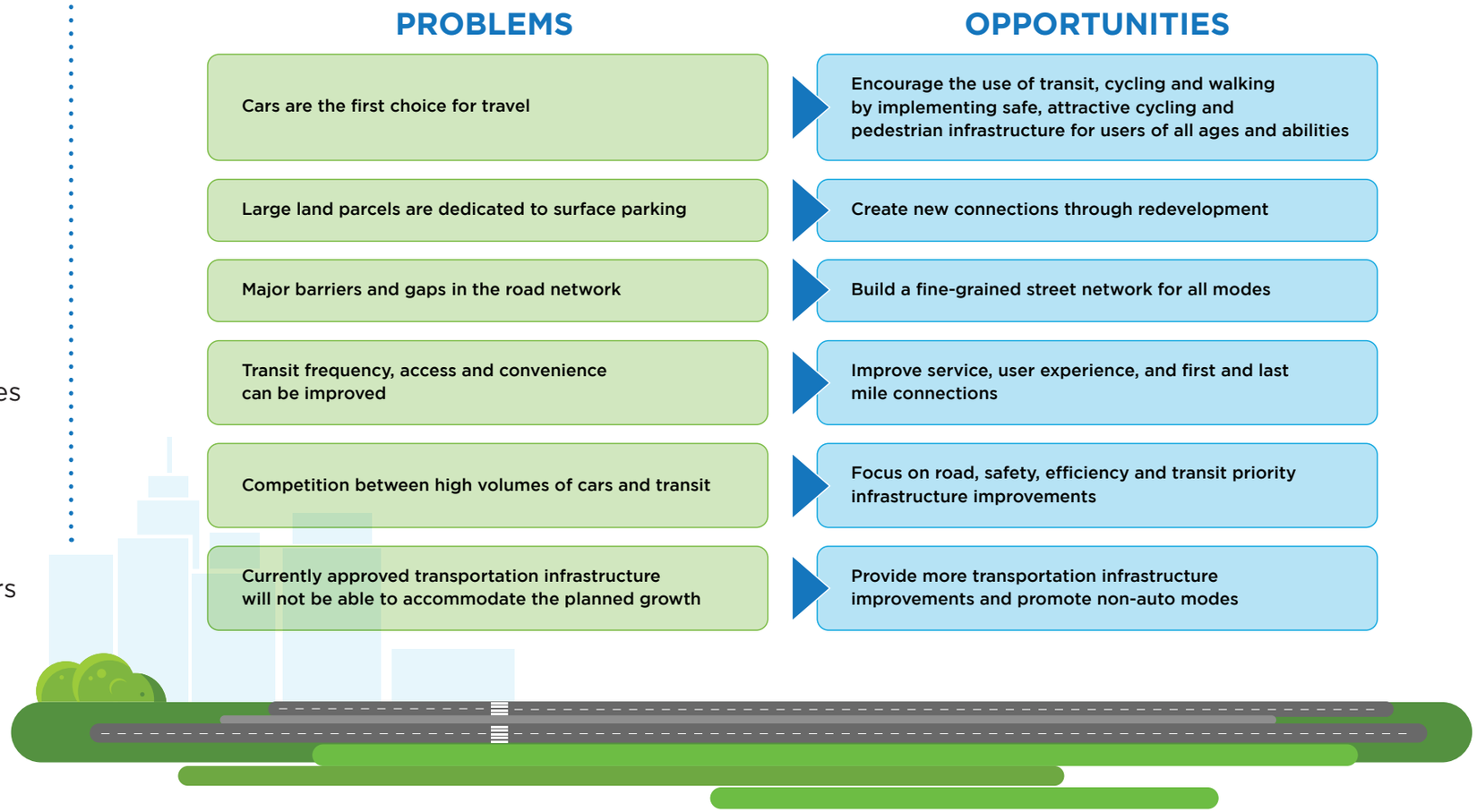
Problems and Opportunities

Based on the Mississauga TMP, the vision for the Downtown Core is to transform from a local focal point to a regional centre with the Hazel McCallion LRT providing higher-order transit connectivity north-south and the Mississauga Transitway connecting people east-west. These significant investments in transit improvements combined with development in the downtown and eventual intensification at Square One creates an important opportunity to continue the evolution of Mississauga's Downtown transportation network.

Building on the concepts of providing all travellers with the 'freedom to move' and prioritizing active transportation and transit, the Downtown Movement Plan capitalizes on these transit investments and ultimately creates a vibrant place to live, work, learn, be entertained, raise a family and most of all, choose to be. A crucial aspect of the DMP is to establish Complete Streets that facilitate secure usage and enhance mobility for all users while enhancing road connectivity within the Downtown Core and with the adjacent road network. These measures are essential to support a well-structured network and future growth.

Figure 5.1 provides a summary of the problems and opportunities identified for the study area, based on existing and future base scenario analyses, and public and stakeholder feedback. The problems and opportunities guided the assessment of alternatives in the second phase of this study.

Figure 5.1 Problem and Opportunity Statement



06

Transportation Infrastructure Alternatives, Evaluation, and Recommendations

- Modal Split Assumptions
- Evaluation Criteria, Process, and Transportation Infrastructure Alternatives
- Fine-grained Street Network Improvements
- Higher-order Transit Alternatives and Evaluation
- Road Capacity Alternatives and Pre-screening
- Draft Preferred Networks
- Lane Use Sensitivity Analysis

Transportation Infrastructure Alternatives, Evaluation, and Recommendations

Modal Split Assumptions

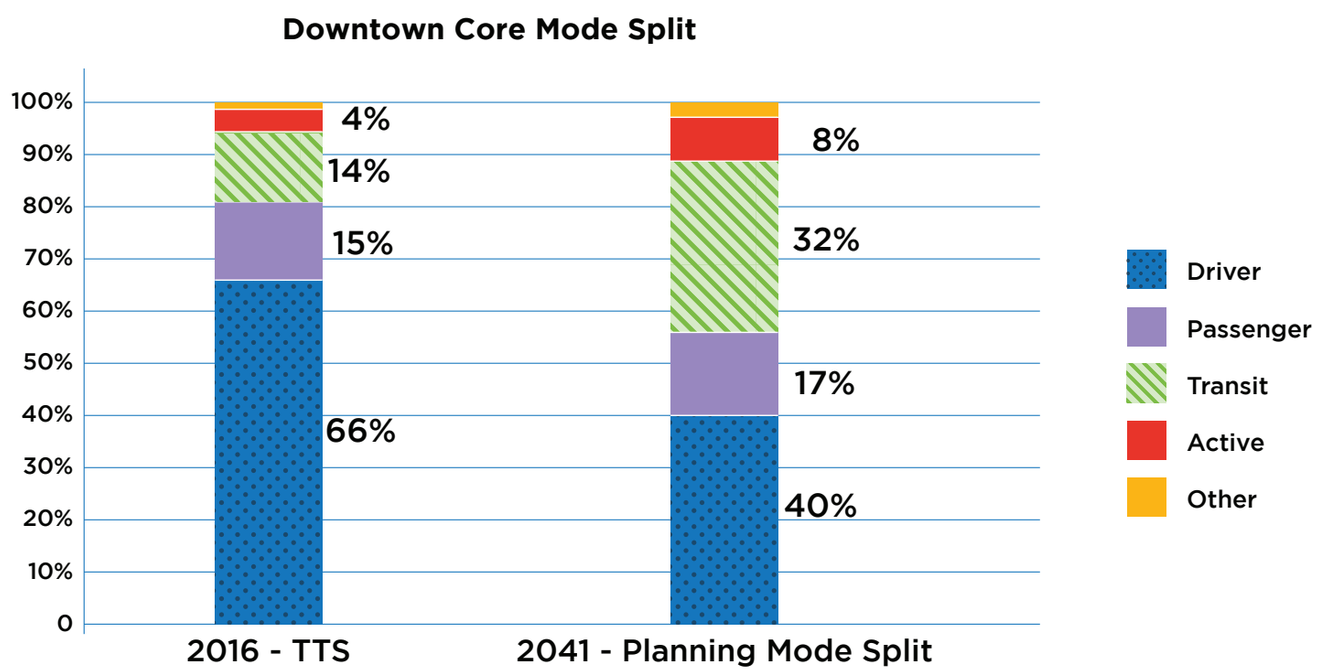
Population and employment within the Downtown Mississauga study area are projected to grow significantly between 2016 and 2041. The total population and jobs is expected to grow 102% (from 49,400 to 99,600), with population growing by 135% (from 29,200 to 68,700) and employment growing by 53% (from 20,200 to 30,900).

The current City Centre Transit Terminal located near Rathburn Road and Station Gate Road is approximately 1 km from high population and employment density areas within the study area. The overall multi-modal transportation network should consider expected high growth areas and aim to provide convenient and accessible transportation solutions throughout the entire study area.

To account for major transit infrastructure improvements, densification, and overall growth in the study area, a 40% driver mode share was assumed for the study area under the preferred transportation network. Note that higher than 40% driver mode shares might be assumed for other alternative evaluation scenarios where transit improvements are not fully built.

A comparison of the existing (2016) and future (2041) target mode share is shown in **Figure 6.1**. Total trips to and from the study area for the PM peak period between 2016 and 2041 are expected to increase from 60,000 and 100,000 trips based on TTS data and City's travel demand model, respectively. Further details on the methodology used to arrive at the 2041 mode split is provided in **Appendix D**.

Figure 6.1 2016 and target 2041 mode share for DMP study area (trips to, from, and within DMP study area)



Evaluation Criteria, Process, and Transportation Infrastructure Alternatives

Transportation infrastructure alternatives were evaluated using five categories of criteria as summarized in **Figure 6.2.**

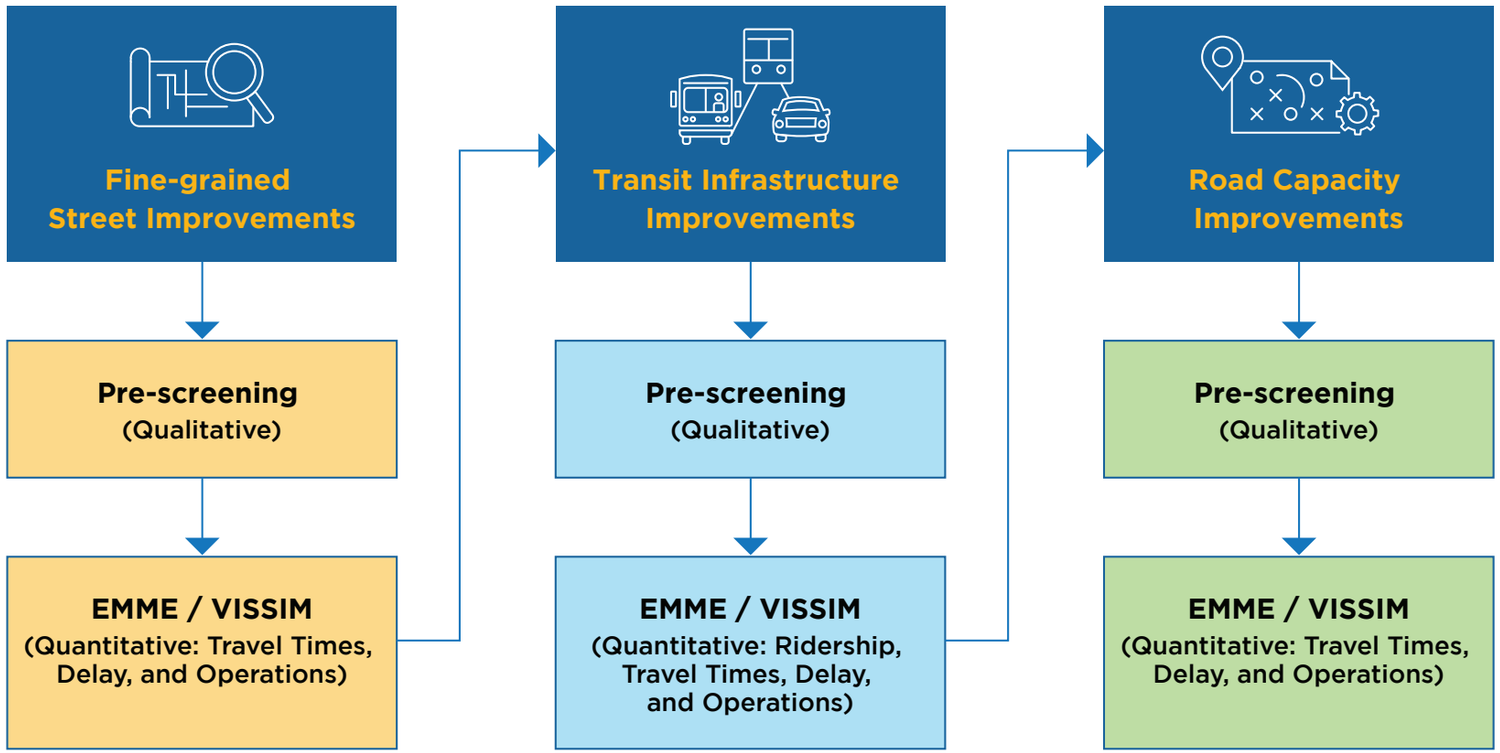
Figure 6.2 Evaluation Criteria

	Roadway Improvements	Transit Infrastructure Improvements
Strategic / City Building	Build a Fine-grained Street Network for all modes	Transit Network Connectivity
	Create new connections	Attract people to Downtown
	Encourage the use of transit, cycling and walking	Encourage the use of transit, cycling and walking
	Improve service, user experience, and first and last mile connections	Potential to upgrade to LRT
Economic	Capital cost	Capital cost
	Travel times and delays	Transit travel times
	Support future growth	Transit Reliability
		Ridership
	Goods movement	Goods movement
Operations	Travel operations	Impacts to traffic operations
	Local access (Driveways)	Local access (Driveways)
Constructability	Property and right-of-way constraints	Property and right-of-way constraints
	Ease of implementation	Ease of implementation
	Tree conservation	Tree conservation
Safety / Vision Zero	Local pedestrian/cyclist convenience and safety	Local pedestrian/cyclist convenience and safety
	Traffic safety and conflicts	Traffic safety and conflicts

Transportation infrastructure recommendations were grouped into three packages: Fine-Grained Street Network Improvements, Higher-Order Transit Improvements, and Road Capacity Improvements. A layered approach was taken to assess the three packages, starting with the Fine-Grained Street Network, then with added Higher-Order Transit Improvements, and lastly, with Road Capacity Improvements added on top of the other two packages.

Within each package, alternatives are first assessed against the evaluation criteria qualitatively (pre-screening). If no clear preferred alternative was identified, further modelling assessment was conducted to assess the alternatives quantitatively. The evaluation process is illustrated in **Figure 6.3**.

Figure 6.3 Evaluation Process



EMME and VISSIM are macro and micro transportation modelling software, respectively
Future information is provided in the Microsimulation Report

Fine-grained Street Network Improvements

FINE-GRAINED STREET NETWORK ALTERNATIVES

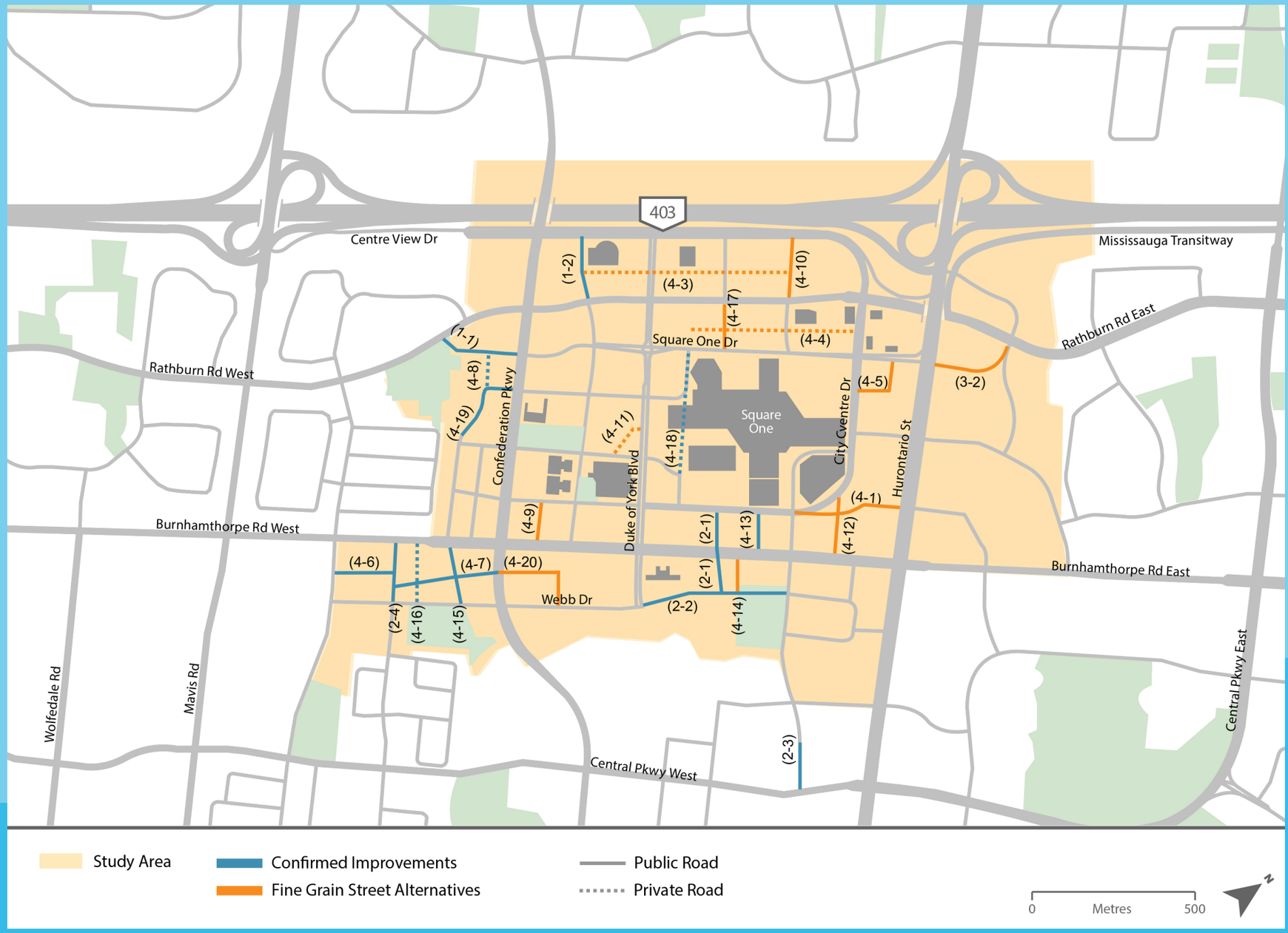
Fine-grained street network alternatives were developed based on planned and proposed future road network improvements from City of Mississauga's Downtown Core Local Area Plan and other background studies as documented in Section 2 of this report. The alternatives also considered future base transit network assumptions as documented in **Appendix D**, which included improvements such as bus bays on Burnhamthorpe Road between The Exchange and Kariya Drive.

There are fine-grained streets that are already approved by environmental assessments (EA) or that are part of ongoing developments such as MCity or Parkside Village. These approved improvements — shown as blue lines in **Figure 6.4** — were treated as part of the base network. Other alternatives that were considered and evaluated in the fine-grained street alternatives package are shown as orange lines in **Figure 6.4**, with road names and detailed descriptions shown in **Table 6.1**. Due to network improvements, the increase in intersections creates more connections within the Downtown Core for pedestrians.

Table 6.1 Road Improvements in Fine-grained Street Alternatives

Index #	Road Name	To	From	Improvement Type
3-2	Square One Drive E	Hurontario St	Rathburn Rd E	Road extension (2 lanes)
4-1	City Centre Dr (Street C)	Kariya Dr / City Centre Dr	Hurontario St	Road extension (Minor collector — 2 lanes)
4-3	Street E	Living Arts Dr	East of Station Gate	New road (private road with public easement)
4-4	Street F	West of Station Gate	City Centre Dr	New road (private road with public easement)
4-5	Street I	City Centre Dr	Square One Dr	New road (Local road — 2 lanes)
4-9	Street H	City Centre Dr	Burnhamthorpe Rd W	New road (Local road — 2 lanes)
4-10	Hammerson Dr (Street A)	City View Dr	Rathburn Rd W	Road extension (Minor collector — 2 lanes)
4-11	Street B	Princess Royal Dr	Duke of York Blvd	New road (Local road — 2 lanes)
4-12	City Centre Dr (Street D)	City Centre Dr	Burnhamthorpe Rd W	New road (Minor collector — 2 lanes)
4-14	Street L	Burnhamthorpe Rd W	Webb Dr Extension	New road (Local road — 2 lanes)
4-17	Station Gate Road	Rathburn Rd	Square One Dr	Road extension (Local road — 2 lanes)
4-20	Street P	Confederation Pkwy	Webb Dr / Burnhamthorpe Rd	New road (Local road — 2 lanes)

Figure 6.4 Fine-grained Street Road Alternatives



FINE-GRAINED STREET NETWORK EVALUATION

Table 6.2 summarizes the evaluation of the fine-grained street alternatives package. Detailed evaluation for each alternative is provided in **Appendix D**. While there are location-specific constraints that may impact constructability, all fine-grained alternatives were carried forward due to the positive impacts based on strategic, economic, operations, and safety criteria.

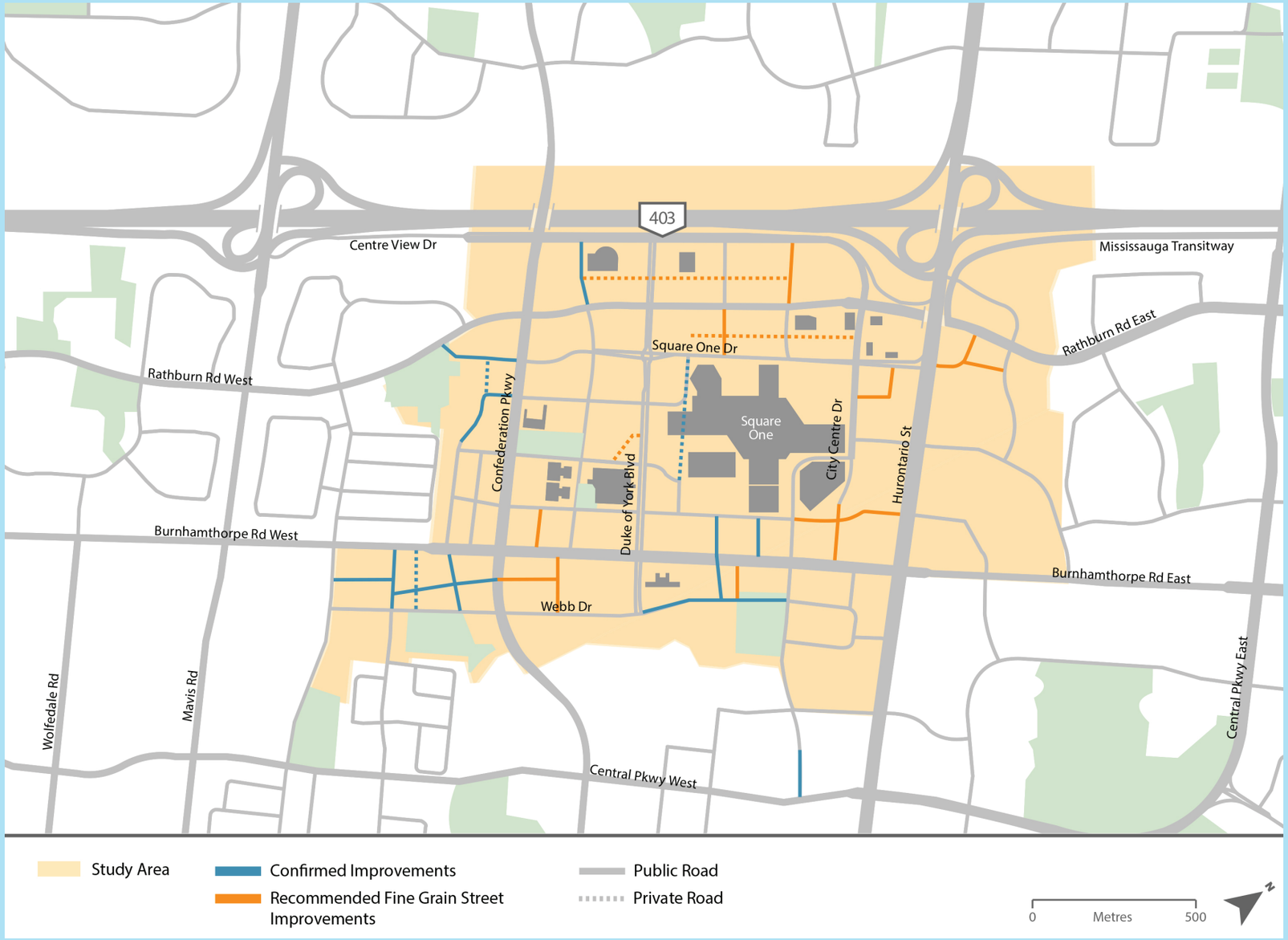
Furthermore, during the evaluation process, refinements to alternatives in **Table 6.1** were proposed and considered to enhance connectivity, safety, and the land use potential. For detailed information, please refer to **Appendix D**. The three recommended refinements are as follows:

- Alternative 3-2: Square One Drive Extension
- Alternative 4-20: Street P
- Alternative 4-1 and 4-12: City Centre Drive Extension

Table 6.2 Fine-grained Street Alternative Evaluation Summary

Criteria	General Evaluation	Notes
Strategic / City Building	✓ Highly Positive	Additional connections in a fine-grained network encourages use of sustainable modes.
Economic	● Positive	Supports future growth, improves travel times, and supports goods movement (loading/unloading opportunities and more routing options)
Operations	● Positive	More routing and turning options. Need further investigation on the control type and operations for closed spaced intersections.
Constructability	Mixed	Location specific: results dependent on property, right-of-way constraints, environmental crossings, grade differences, and tree conservation.
Safety / Vision Zero	✓ Highly Positive	Local connections provide safer public realm for sustainable modes, function as traffic calming, and has potential to reduce safety conflicts.

Figure 6.5 Recommended Fine-grained Street Network



FINE-GRAINED STREET NETWORK RECOMMENDATIONS

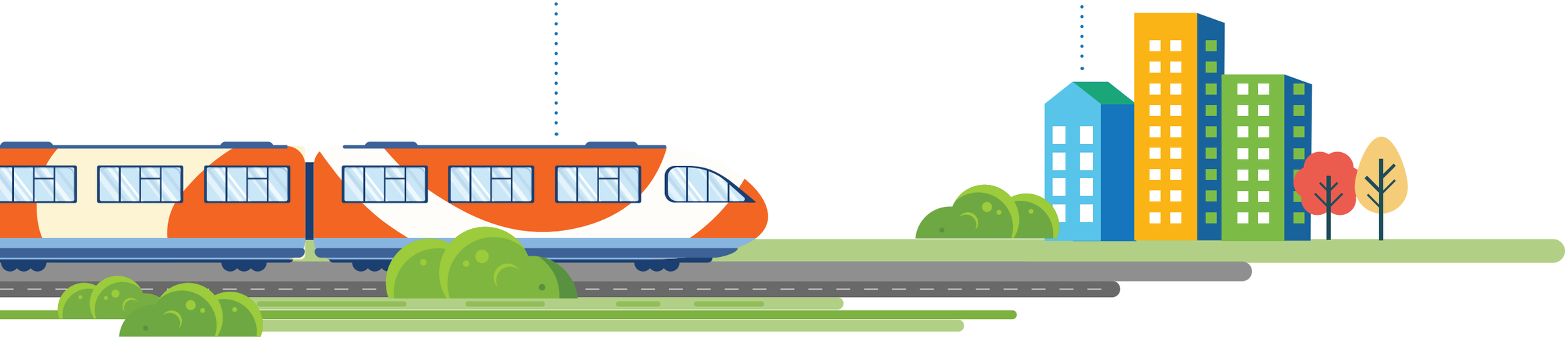
The recommended fine-grained street network including refinements (noted in **Appendix D**) is presented in **Figure 6.5**. The network consists of road projects that are confirmed improvements from approved EA studies (shown in blue) and additional road projects recommended from the evaluation (shown in orange).

Higher-order Transit Alternatives and Evaluation

Higher-order transit infrastructure will be needed to support the anticipated growth to 2041 and will play a significant role in increasing people-moving capacity within and to/from Downtown Mississauga. The currently under construction HMLRT will increase the capacity of moving people north-south through the Downtown; however, there are still two key travel needs that will remain unaddressed without additional improvements. The two needs are:

- Higher-order transit to support circulation within Downtown, especially towards the densest growth area in the southwest part near Confederation Parkway and Burnhamthorpe Road. Currently, this area is more than 1 km away from the closest HMLRT stop.
- Continuous higher-order transit to move people east-west to and from Downtown Mississauga. The existing Mississauga Transitway features dedicated lanes immediately outside the study area; however, there is a gap in Downtown Mississauga that currently features buses in mixed traffic. The north-south HMLRT plus an east-west higher-order transit connection provides an opportunity to create a transit hub to support anticipated growth within Downtown Mississauga.

The higher-order transit alternatives in this study were aimed to address these two needs.



DOWNTOWN LOOP ALTERNATIVES AND EVALUATION

In the 2014 environmental assessment for Hazel McCallion LRT, the preferred track alignment for the Mississauga Downtown Core included a LRT loop along Rathburn Road West, Duke of York Boulevard, and Burnhamthorpe Road West as shown in **Figure 6.6**. This LRT loop alternative was further explored as it can improve circulation within Downtown and bring the higher-order transit service closer to the dense development areas along Burnhamthorpe Road and Confederation Parkway corridors.

Different operating technologies were considered for the loop, ranging from the original conceived LRT loop to mixed traffic bus operations.

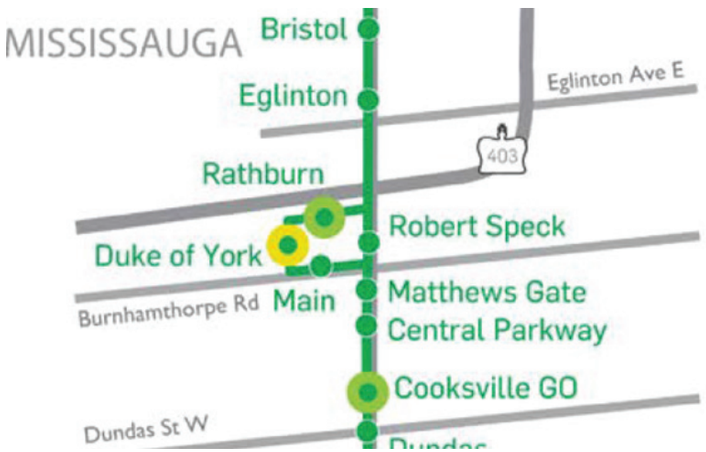
A pre-screening was conducted along both Burnhamthorpe Road and Duke of York Boulevard to identify reasonable operating conditions for the loop. Three options were considered for Burnhamthorpe Road: centre median BRT, curbside bus lanes, and curbside shared transit HOV lanes. Five options were considered for Duke of York Boulevard: centre median BRT, eastside BRT, curbside bus lanes, curbside HOV lanes, and a transit mall.

The preferred recommendation for both Burnhamthorpe Road and Duke of York Boulevard is a centre median BRT, primarily due to highly positive benefits for strategic/city building and economics of providing a high-quality transit option to serve Downtown Mississauga.

The centre median BRT was further compared and evaluated against the LRT loop. The comparison of having BRT on Burnhamthorpe and Duke of York Boulevard and the LRT Loop shows the LRT Loop option is preferred due to increased number of transit trips, improved Downtown transit ridership distribution across all loop stations, and protection for 5 minute service frequencies on the LRT.

Full details are provided in **Appendix D**.

Figure 6.6 Hazel McCallion LRT Preferred Track Alignment



DOWNTOWN MISSISSAUGA TERMINAL AND TRANSITWAY CONNECTION

The second need to address is a direct east-west higher-order transit in the Downtown. The proposed Downtown Mississauga Terminal and Transitway Connection (DMTTC) serves that need. It relocates the City Centre Transit Terminal to the north side of Rathburn Road between Station Gate Road and Hammerson Drive and extends the existing transitway (using dedicated lanes) further west along the north side of Rathburn Road through an underground connection to the relocated transit terminal and along the north side of Centre View Drive. The configuration illustrated in **Figure 6.7** is similar to the concept plan proposed in the Downtown Mississauga Terminal and Transitway Connection Initial Business Case, January 2020.

Modelling results indicate the new terminal reduces travel times for all modes, especially for buses using the transitway. In addition, the new terminal increases capacity for buses and improves the transfer experience for passengers between different modes. The DMTTC is recommended as a result of these described benefits.

Figure 6.7 Downtown Mississauga Terminal and Transitway Extension

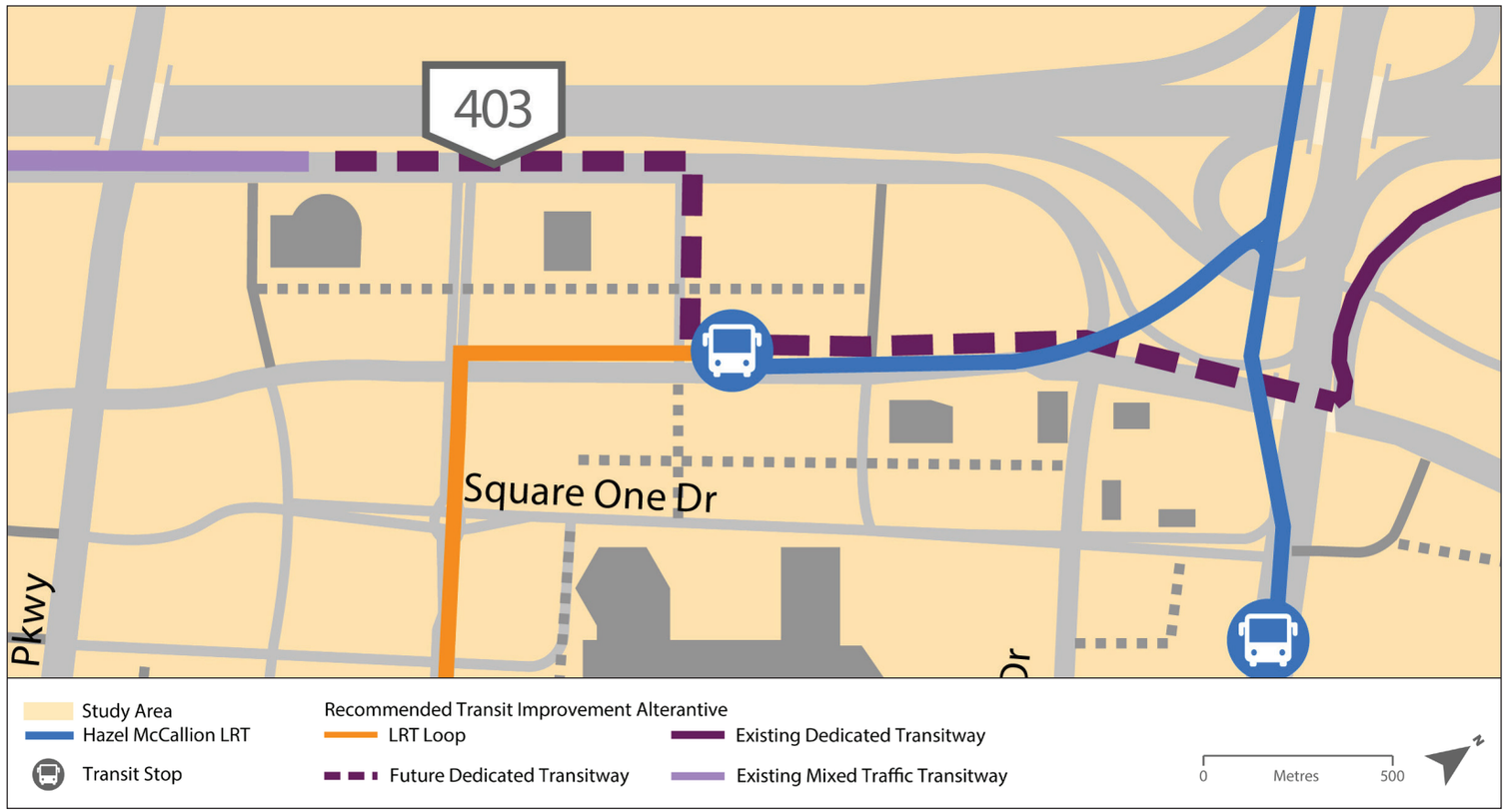
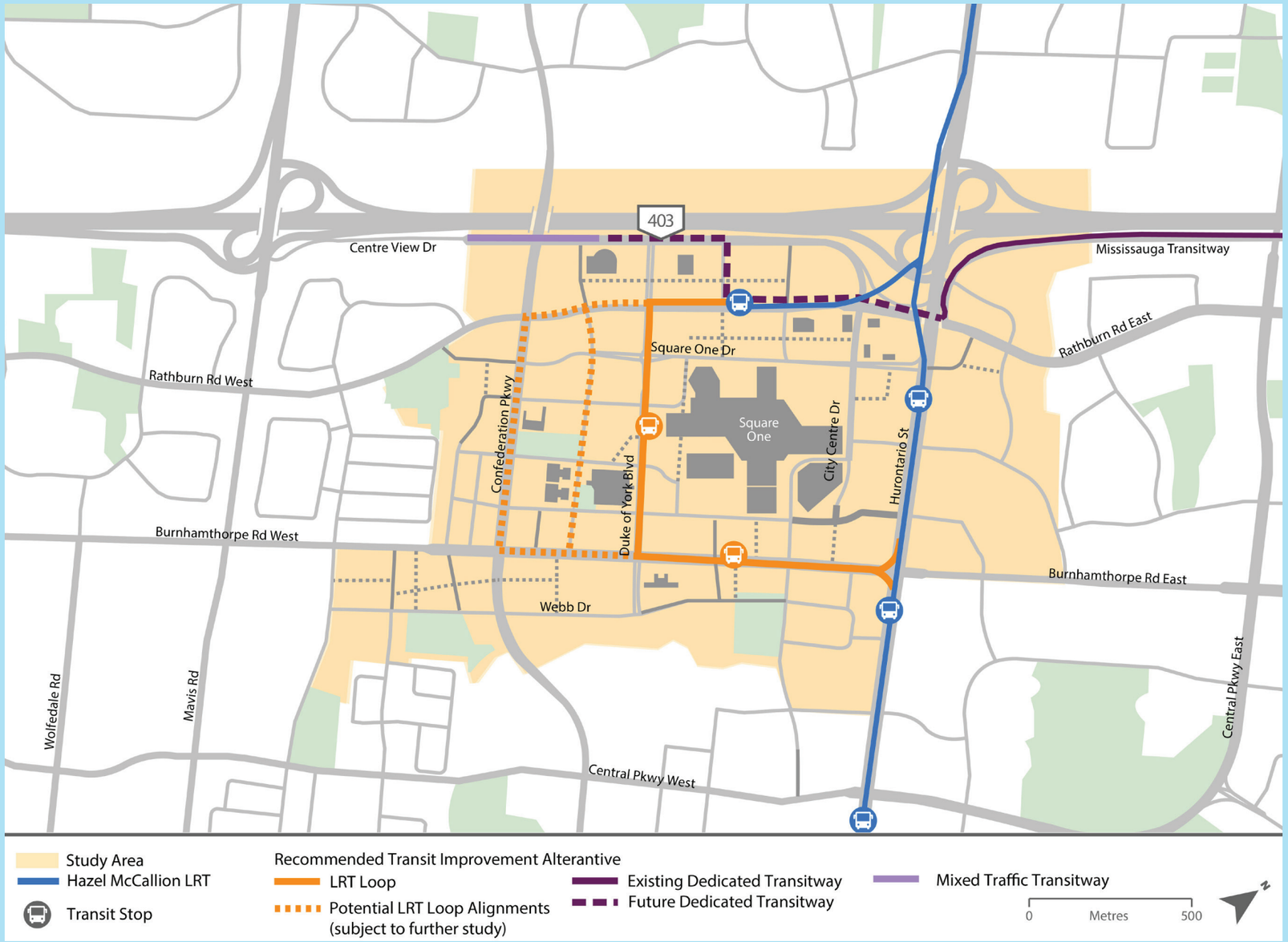


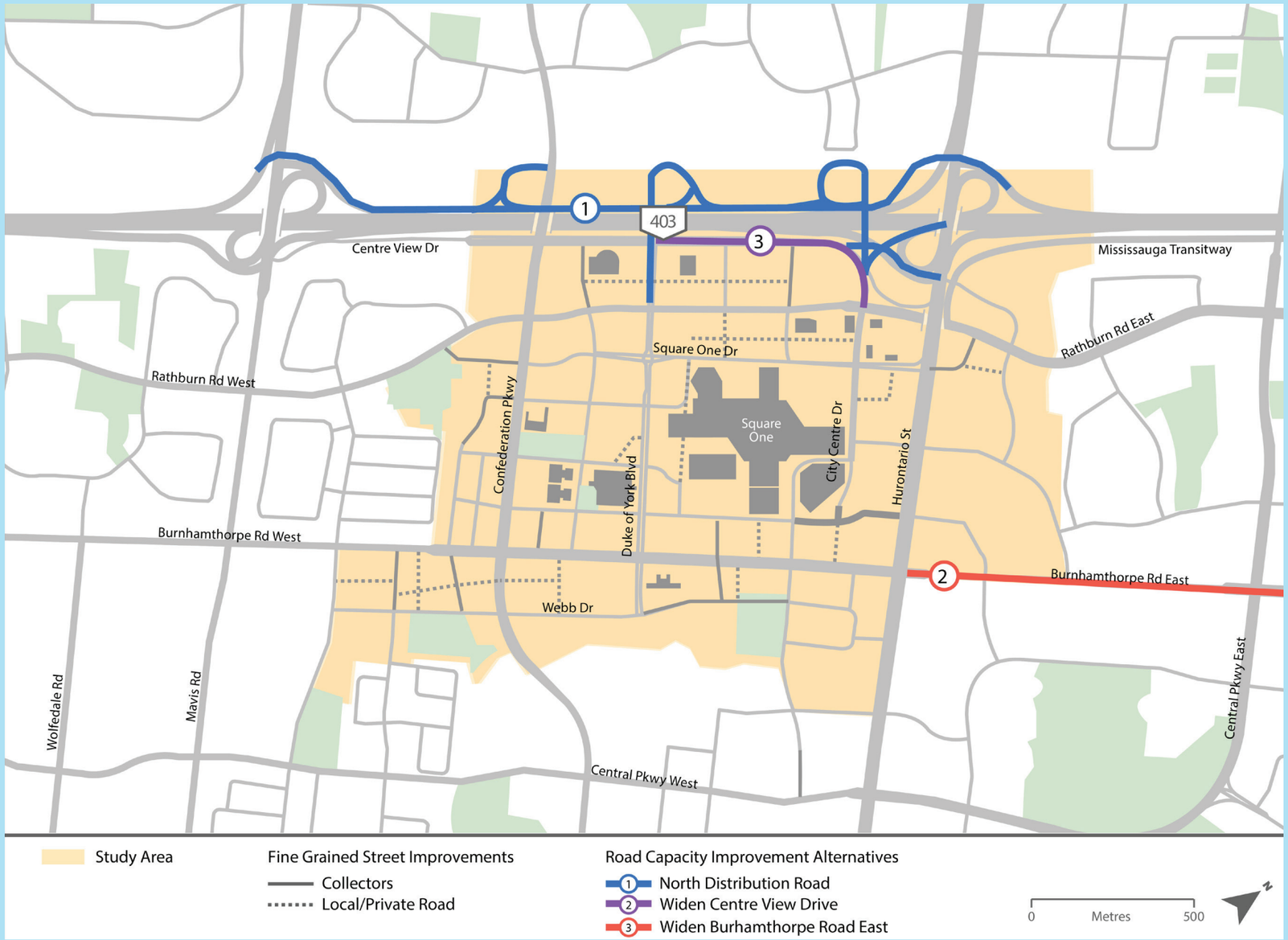
Figure 6.8 **Recommended Higher Order Transit Network**



HIGHER-ORDER TRANSIT RECOMMENDATIONS

The LRT Loop and DMTTC are recommended to provide convenient transit service within Downtown, bring higher-order transit closer to the dense southwest area, and fill the gap in the Mississauga transitway system. Together with the HMLRT in delivery, the two recommended higher-order transit services will help increase the transit usage and accommodate future growth within and beyond Downtown and help establish a regional transit hub at the Rathburn District. The recommended higher order transit network is shown in **Figure 6.8**. Note that the recommended LRT loop may travel along Duke of York Boulevard, Living Arts Drive, or Confederation Parkway, subject to further study.

Figure 6.9 **Road Capacity Improvement Options**



Road Capacity Alternatives and Pre-screening

Three road projects with the potential to provide more capacity to the road network were evaluated as shown in **Figure 6.9** and listed below:

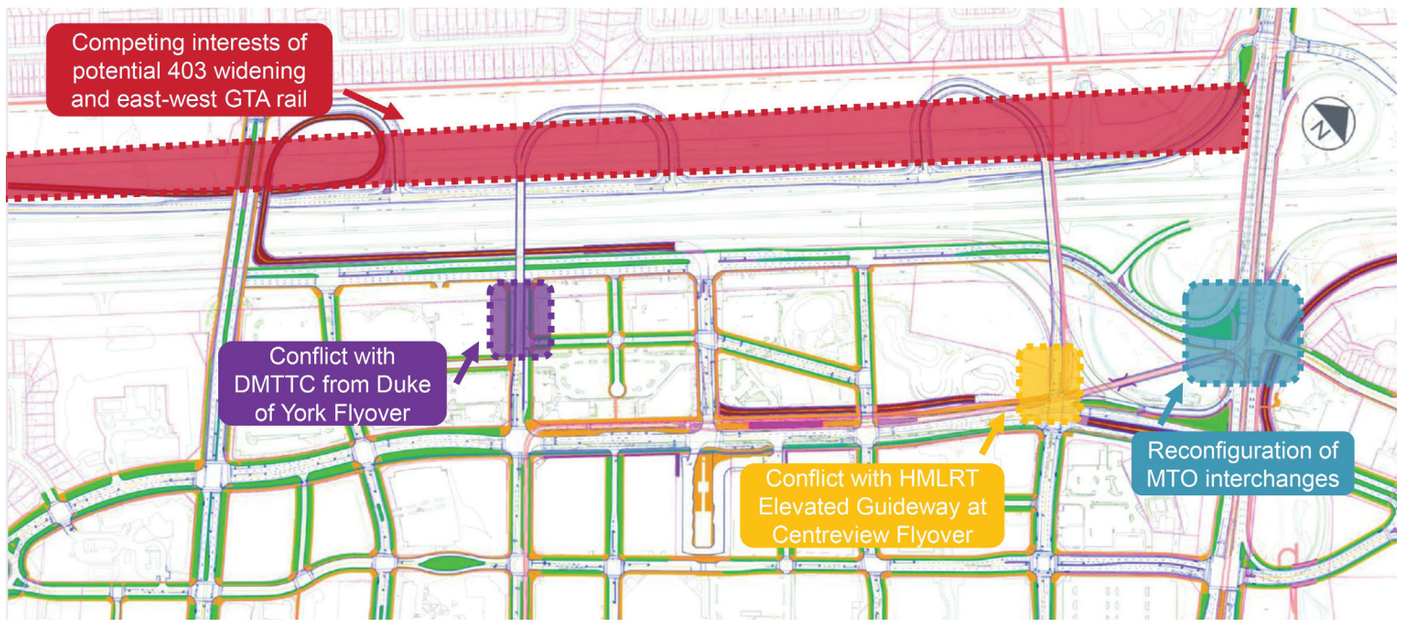
1. Northern Distribution Road (NDR) and associated flyover/ ramps;
2. Widening of Burnhamthorpe Road (from 4 to 6 lanes); and
3. Widening of Centre View Drive (from 4 to 5 lanes).

NORTHERN DISTRIBUTION ROAD

The Northern Distribution Road (NDR) consists of a two-lane east-west road on the north side of Highway 403 that spans between Hurontario Street to Mavis Road, with a connection at Confederation Parkway. The new link would connect to the existing Downtown Mississauga network through two flyovers over Highway 403 that intersect with Rathburn Road – one at Duke of York Boulevard and one at Centre View Drive. Additional network changes as part of the proposed NDR include dedicated transit lanes from the DMTTC to Mavis Road and removal of the Highway 403 eastbound off-ramp at Hurontario Street to allow Centre View Drive to connect to Hurontario Street instead.

Modelling of transportation demand suggests the NDR would carry relatively low volumes (<700 vehicles per hour) and would have limited impacts on the DMP study area. The right-of-way required to support the NDR would conflict with several other competing interests shown in **Figure 6.10**, including bus access to DMTTC due to the Duke of York Boulevard flyover, HMLRT elevated guideway due to the Centre View Drive flyover, MTO interchange reconfiguration at the Hurontario Street and Highway 403 eastbound off-ramp, and potential widening of Highway 403 or the future East-West Cross-Regional Connection. As a result, **the NDR is not recommended**.

Figure 6.10 NDR Conflicts and Challenges



BURNHAMTHORPE ROAD WIDENING

The proposed Burnhamthorpe Road widening is a four (4) to six (6) lane widening between Hurontario Street and Etobicoke Creek.

The widening provides additional vehicle capacity but occurs in a primarily established area. The widening does not further build a fine-grained street network nor provide new connections. Widening would also require new bridge structures at Etobicoke Creek and Cooksville Creek due to the limited widths of the existing structures. The widening may also encourage higher vehicular speeds along Burnhamthorpe Road.

Since only a short extent of the proposed widening is within the study area, **it is recommended that the widening of Burnhamthorpe Road be determined through other studies** that examine broader travel needs beyond the downtown. There may be opportunities to explore widening of Burnhamthorpe Road to support higher-order transit.

CENTRE VIEW DRIVE WIDENING

The proposed Centre View Drive widening is a four to five lane widening between Duke of York Boulevard and Rathburn Road.
The additional lane is an eastbound lane.

Similar to the Burnhamthorpe Road improvement, the Centre View Drive widening does not help build a fine-grained street network nor provide new connections. Centre View Drive is expected to operate at acceptable levels of service without the widening. While there are no major implementation issues, the cost of construction does not justify the limited benefits it will bring to Downtown Mississauga.

As a result, **the Centre View Drive widening is not recommended.**

SUMMARY OF ROAD CAPACITY IMPROVEMENTS EVALUATION

A summary of the road capacity improvements evaluation is provided in **Table 6.3**, with full details of each project evaluation in **Appendix E**.

Table 6.3 Road Capacity Improvements Evaluation

Project	3-9	3-6	3-3
Road Name	Northern Distribution Road	Burnhamthorpe Road	Centre View Drive
Road Improvement	New road (2 lanes) + ramps / flyovers	Road widening (4 - 6 lanes)	Road widening (4 - 5 lanes)
Criteria			
Strategic / City Building	○ Neutral	⊗ Negative	⊗ Negative
Economic	⊗ Negative	○ Neutral	● Positive
Operations	● Positive	◉ Highly Positive	● Positive
Constructability	⊗ Highly Negative	⊗ Negative	○ Neutral
Safety / Vision Zero	⊗ Negative	⊗ Negative	⊗ Negative
Action	● Not Recommended	⊖ TBD by other studies*	● Not Recommended

**Note: City's Transit and Road Infrastructure Plan (TRIP) further investigates this alternative. If the recommendation is road widening only, it would need a subsequent EA study to follow up. If the recommendation is high-order transit improvement, it may require a business case study or a Transit Project Assessment Process (TPAP) to follow up and confirm.*

Draft Preferred Networks

The draft preferred street network, cycling network, and higher order transit network are shown through **Figure 6.11** to **Figure 6.13**. The draft street network is consistent with the recommended fine-grained street network; additional road capacity improvements such as NDR were screened out. The future street network should also provide high quality pedestrian facilities that address existing gaps and develop connected and continuous pedestrian facilities throughout the study area.

A final road classification map with consideration of the DLAP is shown in **Figure 6.14**. It should be noted that the new connection just east of Kariya Gate between City Centre Drive and Burnhamthorpe Road is designated as a local road. This new connection needs to be a right-in right-out (RIRO) at Burnhamthorpe Road West due to 1) its proximity to the intersection of Hurontario Street and Burnhamthorpe Road West and 2) the future Downtown Loop along Burnhamthorpe Road West. The design of this new extension should take into account these limitations. Details about road classification changes compared to DLAP can be found in **Appendix E** (Section 2.2).

The preferred cycling network of dedicated cycling facilities builds upon the City's 2018 Cycling Master Plan and DMP's draft street network with new and refined road connections. The dedicated cycling facilities along Hurontario Street and along Rathburn Road between Hurontario Street and Station Gate Road are to be delivered as part of the on-going HMLRT project. Cyclists will be able to travel north-south on Hurontario Street and Confederation Parkway and travel east-west on Rathburn Road and Burnhamthorpe Road. Within the Downtown Core area, dedicated cycling routes along Square One Drive, Living Arts Drive, and City Centre Drive provide connections to all major destinations and places of interests. Bike lanes on Living Arts Drive between Burnhamthorpe Road and Rathburn Road have been advanced and implemented as part of the City's Active Transportation COVID-19 Recovery Framework.

There will also be cycling routes just outside of Downtown Mississauga along Central Parkway, Mavis Road, and the proposed multi-use path to the north of the Hydro Corridor. Cyclists can use these to pass through Downtown if they prefer a less busy route. Trails along Mary Fix Creek (west of Confederation Parkway) and Cooksville Creek (east of Hurontario Street) provide opportunities for recreational trips and alternatives to parallel busy streets.

With the relocation of the Downtown Transit Terminal to the parcel between Station Gate Road and Hammerson Drive extension north of Rathburn Road and the proposed East-West Cross-Regional Connection (conceptually shown along the Hydro Corridor in the GGH Transportation Master Plan), there is an opportunity to connect the two transit corridors with an active transportation bridge over Highway 403. This potential connection is identified as a purple arrow on the Draft Cycling Network shown in **Figure 6.12**.

Together with the under construction HMLRT, the LRT Loop and DMTTC are recommended to form a complete higher-order transit network to serve Downtown Mississauga and help establish the transit hub at the Rathburn District. The LRT Loop alignment and DMTTC alignment can be further investigated and confirmed in follow-up studies.

Figure 6.11 Draft Preferred Street Network

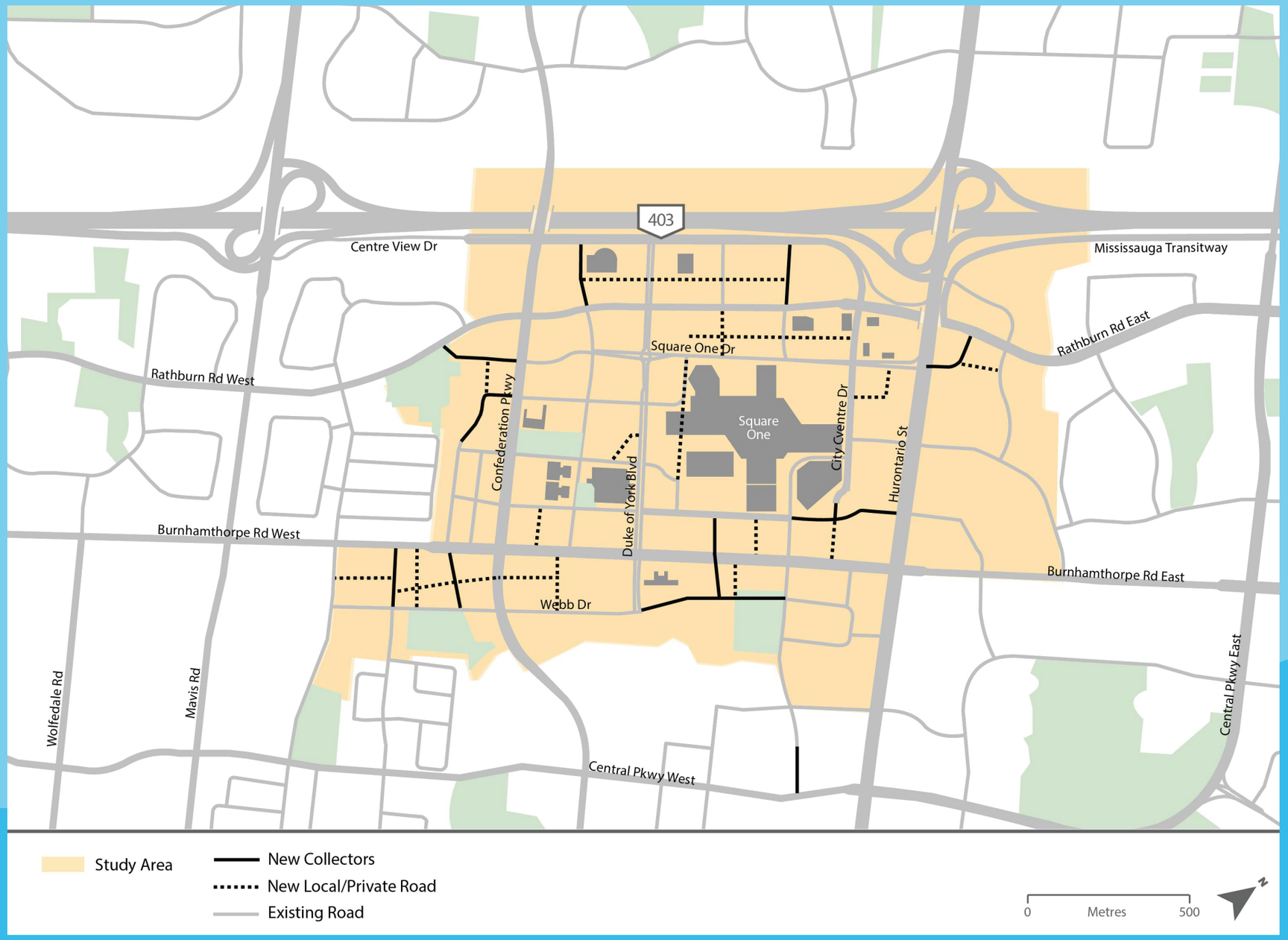


Figure 6.12 Draft Cycling Network - Dedicated Cycling Facility

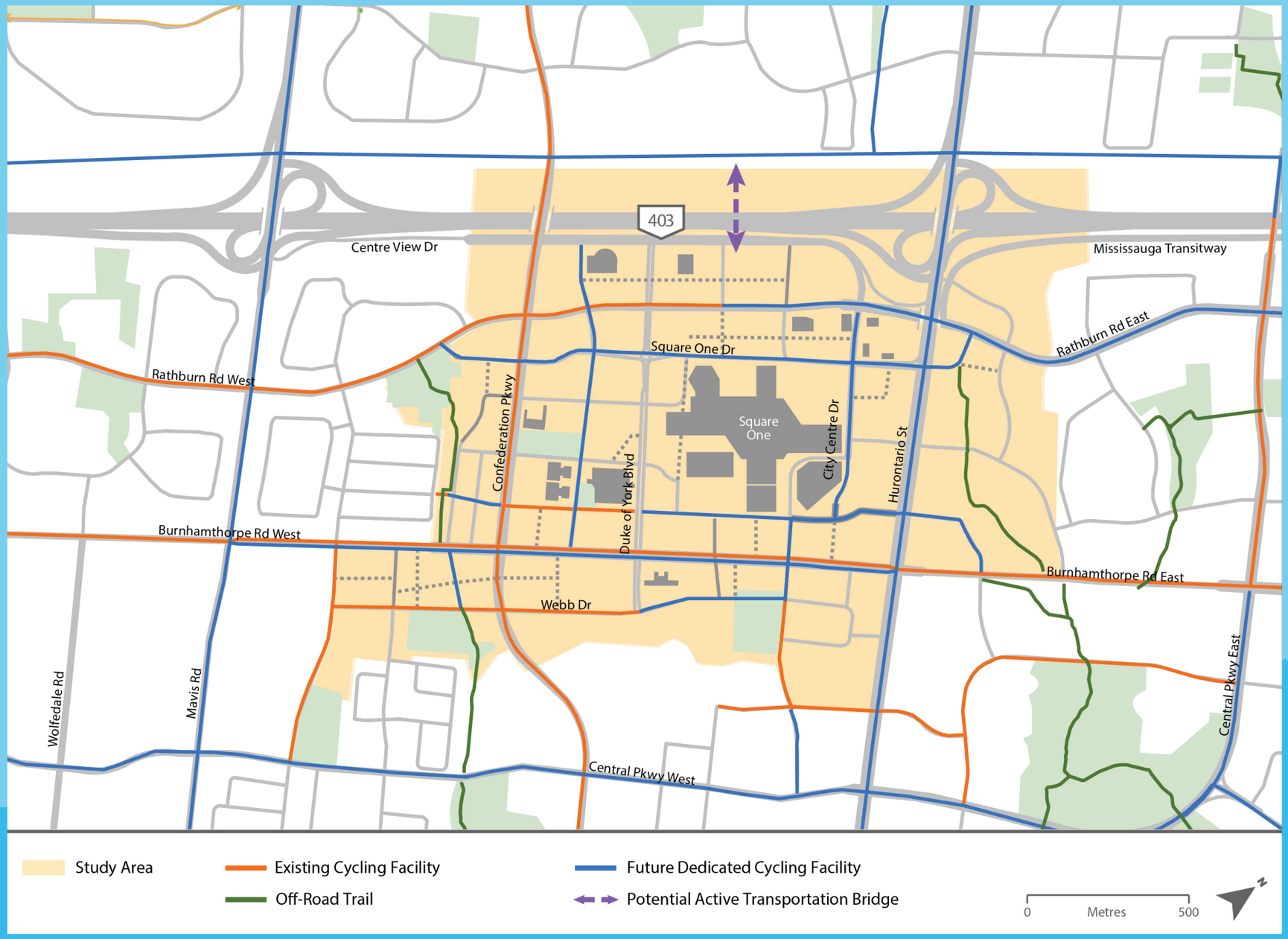


Figure 6.13 Draft Higher Order Transit Network

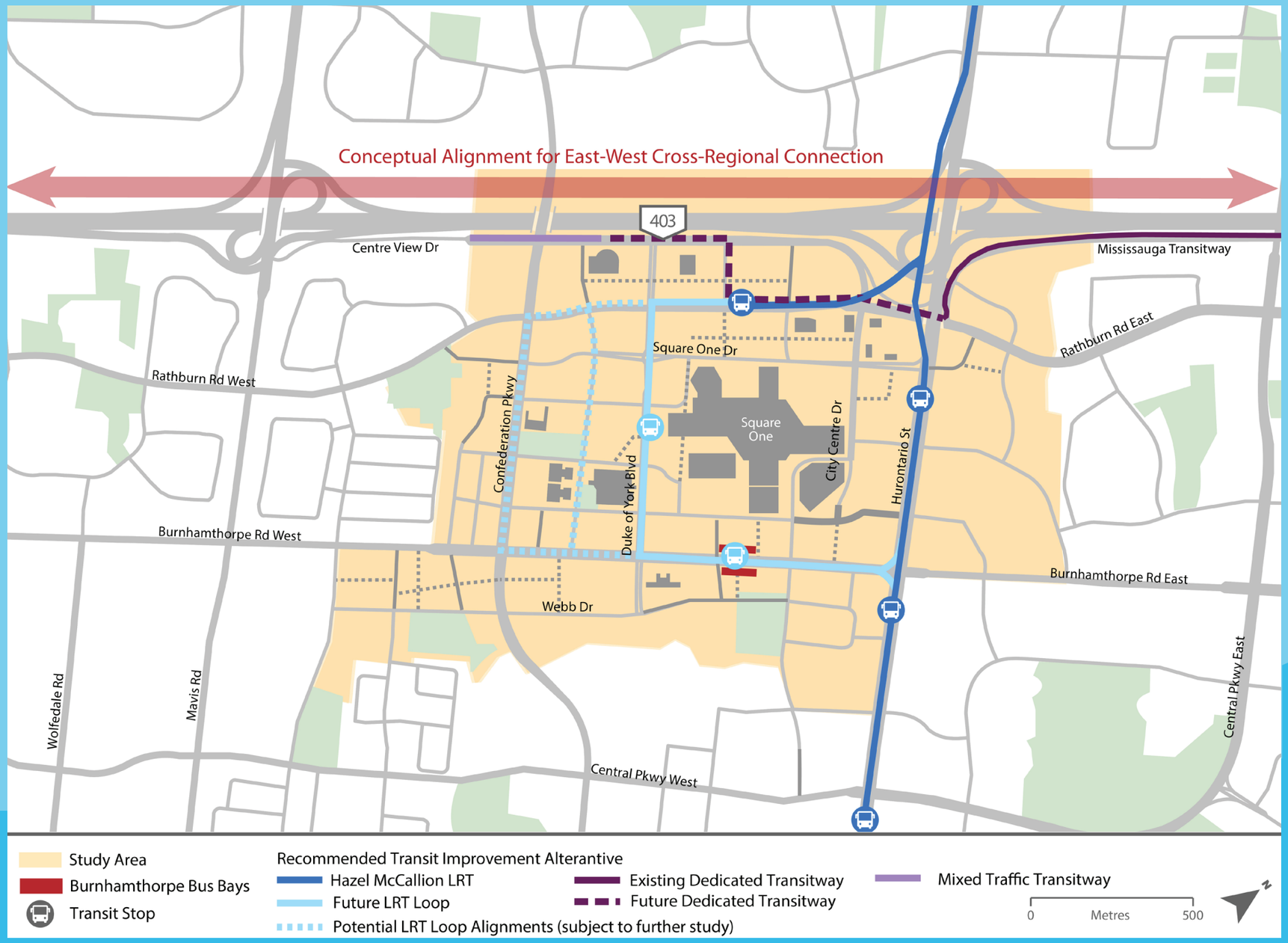
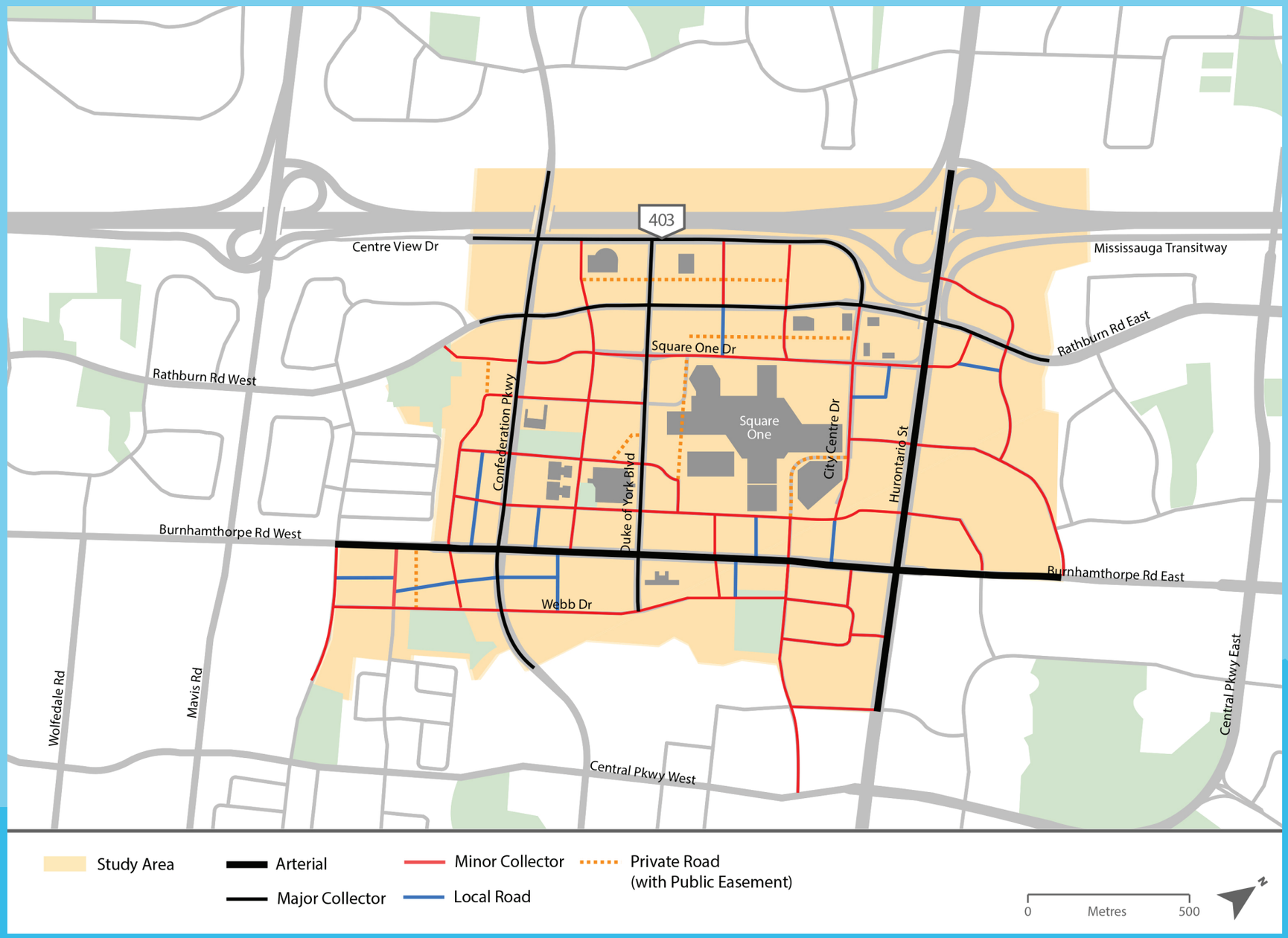


Figure 6.14 Road Classification Map



Land Use Sensitivity Analysis

LAND USE ASSUMPTIONS

Additional land use scenarios for Downtown Mississauga were investigated to identify impacts of higher projections for population and employment for the 2041 horizon on the recommended networks. Two forecast scenarios with higher population and employment are described below and shown in **Figure 6.15**.

- Scenario A (2041 A, base case): 2041 base land use forecast for alternative evaluation analysis documented in the previous sections;
- Scenario B (2041 B): High residential growth, similar employment as Scenario A; and
- Scenario C (2041 C): Full build out of Downtown Mississauga.

Figure 6.15 Land Use Sensitivity Scenarios – Population and Employment Forecasts in Downtown Mississauga

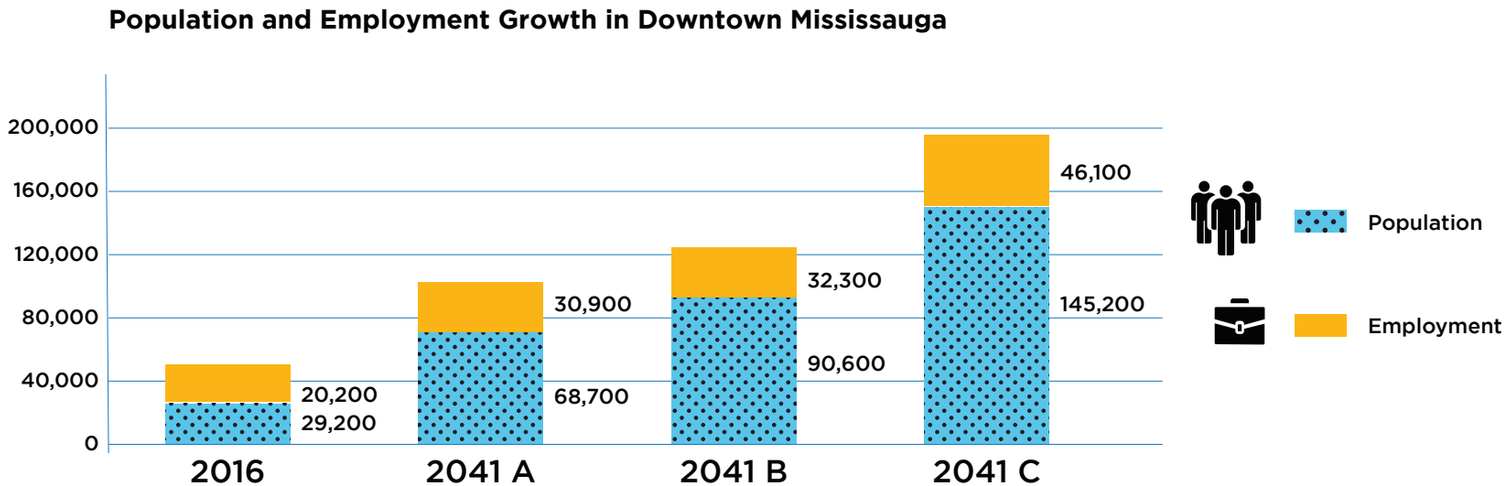


Table 6.4 Percentage Growth in Population and Employment (compared to Scenario A - Base)

Land Use	2041 B	2041 C
Population	+32%	+116%
Employment	+5%	+49%
Total	**+23%**	**+95%**

The two new scenarios (Scenarios B and C) represent a significant increase in population and employment forecasts compared to the base (Scenario A) as shown in **Table 6.4**. Most of the difference is from population, at 32% and 116% more residents compared to Scenario A for Scenarios B and C, respectively. Employment has smaller increases at 5% for Scenario B and 49% for Scenario C. Combined, population and employment increases by 23% and 95% in Scenarios B and C, respectively.

TRANSIT CAPACITY ANALYSIS

A transit capacity analysis was conducted to test if the recommended transit network and services can accommodate higher growth projections per the two land use sensitivity scenarios and to identify the busiest transit routes serving Downtown Mississauga. The transit volume-to-capacity (v/c) ratio for the afternoon peak hour was calculated based on the highest ridership and total capacity (combined seated and standing) per route. Further details are provided in **Appendix D**.

The transit capacity analysis indicated there are no significant capacity issues (where v/c ratio >1) in either scenario. The proposed transit system has the potential to accommodate the higher demand in both Scenario B and Scenario C.

ROAD CAPACITY ANALYSIS

Land use Scenario B was further tested in the Vissim microsimulation model to evaluate road network capacity and identify critical points in the network should higher population and employment growth occur. Due to the significant increase in population and employment in Scenario C, the Vissim model would not be able to process the forecast auto demand to generate valuable results due to the gridlock congestion; therefore, a Vissim sensitivity analysis was not conducted for Scenario C.

The analysis of Scenario B identified that the network conditions would not be significantly exacerbated as a result of the increased travel demand, and the recommended road network can accommodate the higher growth under Scenario B. Details of the modelled scenario and operational conditions can be found in the DMP Microsimulation Report in **Appendix D**. A summary of the network-wide conditions for Scenario A and Scenario B is provided in **Table 6.5**.

Table 6.5 Scenario A and Scenario B Network Conditions

Scenario	Average Delay (min)	Average Speed (km/h)	Total Travel Time (h)	Total Delay (h)
Scenario A with the recommended road network	3.1	35.5	6,022	3,157
Scenario B with the recommended road network	3.4	33.5	6,465	3,560

07

Implementation Plan

- Infrastructure Implementation
- Parking and New Mobility
- Implementation Plan Summary
- Costing

Infrastructure Implementation

STREET NETWORK

Mississauga's Changing Lanes (Complete Streets Guide) study classified all streets within Downtown Mississauga as 'Strategic Growth' for all functional classes (arterial, major collector, minor collector, and local). Strategic Growth streets are intended to be vibrant, mixed-use destination streets that support high-density transit-supportive development. Regardless of the street's functional class (arterial, collector or local), Strategic Growth streets include enhanced facilities for multi-modal transportation. In general, the design of Downtown streets should follow the Council approved City Centre 5.75 m Boulevard Treatment and the City's Complete Streets Guide.

ROAD IMPROVEMENTS

Road improvements include boulevard items such as landscaping, streetlights, sidewalks, and active transportation facilities. Proposed road infrastructure projects are categorized into four implementation categories.

- **Category 1**: New Public Roads through Municipal Class Environmental Assessment (EA): These road projects are within lands currently owned by multiple developers and/or have significant importance in supporting growth in Downtown Mississauga. Projects will be driven by the City in accordance with the EA or TPAP process and coordinated with developers. . The future road will be maintained by the City. It should be noted that due to the importance of the future Downtown Transit Terminal relocation, Project A3 will be further investigated as part of the DMTTC study and/or other relevant studies in discussion with the landowner. It is the City's intention to protect for connections to the future Downtown Transit Terminal but not limited to the form and alignment of the proposed road A3.
- **Category 2**: New Public Roads through Planning Act process: Generally, these road projects can be built within land a single developer owns. Construction can be developer-driven, but the completed road should be owned and maintained by the City. Note that the alignments of the new roads are conceptual at this stage.
- **Category 3**: New Private Roads through Planning Act process: These road projects will be developer driven and maintained but allow public easement.
- **Category 4**: New Public Roads with Completed EA: These roads have completed EAs and should proceed to next steps of detailed design for construction. Completed road will be owned and maintained by the City.

A list of proposed road projects and their implementation category is shown in **Table 7.1** and illustrated in **Figure 7.1**.

Implementation A: Proceed with next steps required for construction of road projects.

Table 7.1 Road Projects Implementation / EA Requirements

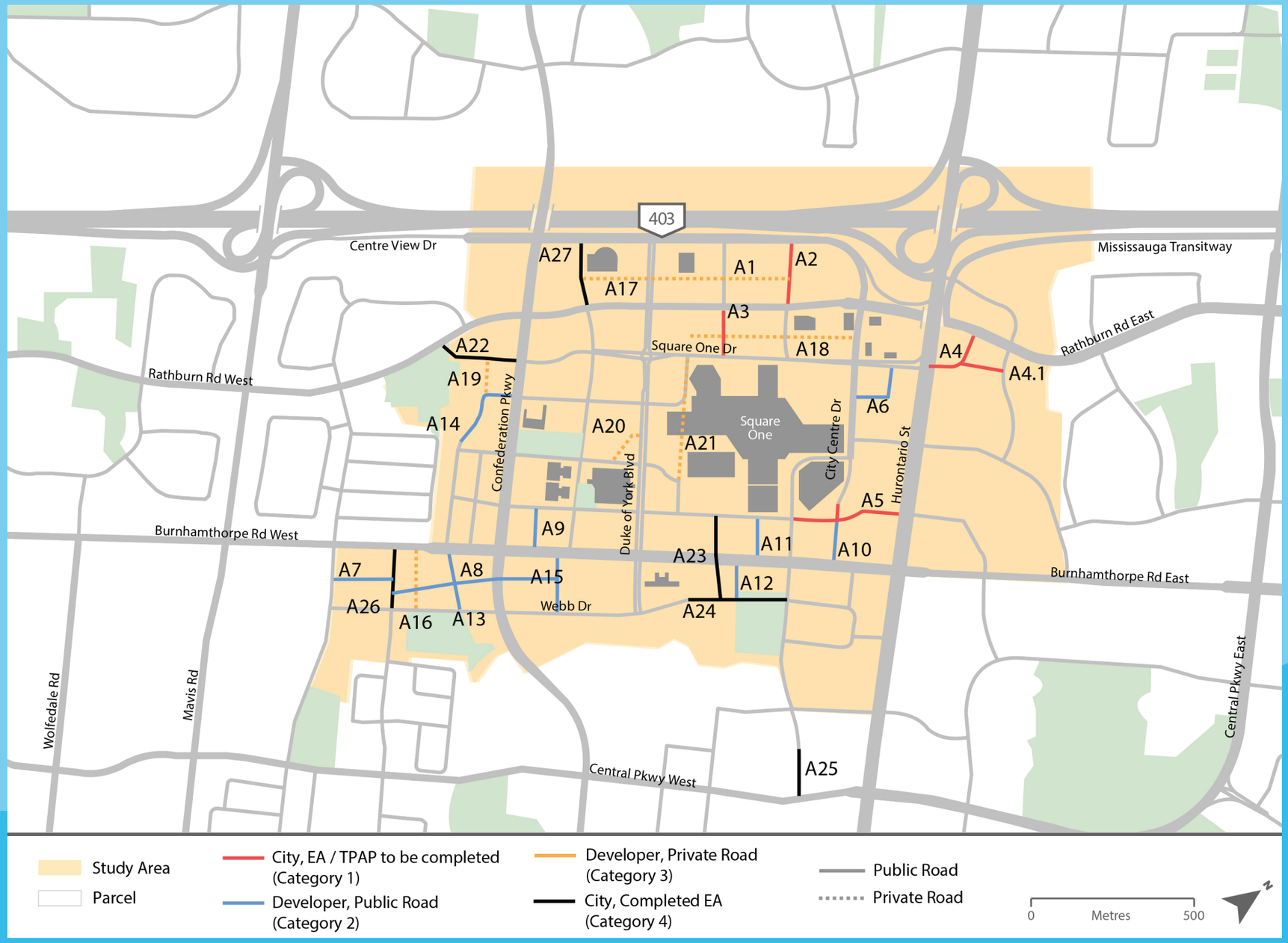
#	Road Name	From	To	Improvement Type	Implementation (Category)
A1	Street E	Station Gate Road	Hammerson Drive Extension (A2)	New Private Road (with public easement)	Developer Private Road (3)
A2	Hammerson Drive (Street A)	Centre View Drive	Rathburn Road West	Road Extension (Minor Collector)	City, TPAP (1)
A3	Station Gate Road	Rathburn Road West	Square One Drive	Road Extension (Local Road)	City, TPAP (1)
A4	Square One Drive E	Hurontario Street	Rathburn Road E	Road Extension (Minor Collector)	City, Class C EA (1)
A4.1	Square One Drive E	Square One Drive E (A4)	Shipp Drive	Road Extension (Local Road)	City, Class C EA (1)
A5	City Centre Drive (Street C)	Kariya Drive / City Centre Drive	Hurontario Street	Road Extension (Minor Collector)	City, Class C EA (1)
A6	Street I	City Centre Drive	Square One Drive	New Road (Local Road)	Developer Public Road (2)
A7	Street O	Grand Park Drive	Redmond Road Extension	New Road (Local Road)	Developer Public Road (2)
A8	Sohu Avenue (Street P)	Redmond Road Extension	Confederation Parkway	New Road (Local Road)	Developer Public Road (2)
A9	Street H	City Centre Drive	Burnhamthorpe Road West	New Road (Local Road)	Developer Public Road (2)
A10	City Centre Drive (Street D)	City Centre Drive	Burnhamthorpe Road West	New Road (Local Road)	Developer Public Road (2)
A11	Street K	City Centre Drive	Burnhamthorpe Road West	New Road (Local Road)	Developer Public Road (2)
A12	Street L	Burnhamthorpe Road West	Webb Drive Extension	New Road (Local Road)	Developer Public Road (2)
A13	Quartz Road (Street M)	Burnhamthorpe Road West	Webb Drive	Road Extension (Minor Collector)	Developer Public Road (2)
A14	Parkside Village Drive	Arbutus Way	Confederation Parkway	Road Extension (Minor Collector)	Developer Public Road (2)

(continued)

#	Road Name	From	To	Improvement Type	Implementation (Category)
A15	Street P Extension	Confederation Parkway	Webb Drive / Burnhamthorpe Road	New Road (Local Road)	Developer Public Road (2)
A16	Fitzroy Road (Street N)	Burnhamthorpe Road West	Webb Drive	New Private Road (with public easement)	Developer Private Road (3)
A17	Street E	Living Arts Drive	Station Gate Road	New Private Road (with public easement)	Developer Private Road (3)
A18	Street F	West of Station Gate Road	City Centre Drive	New Private Road (with public easement)	Developer Private Road (3)
A19	Parkside Village Drive (Street G)	Parkside Village Drive	Square One Drive Extension	New Private Road (with public easement)	Developer Private Road (3)
A20	Street B	Princess Royal Drive	Duke of York Blvd	New Private Road (with public easement)	Developer Private Road (3)
A21	Mercer Street	Princess Royal Drive	Square One Drive	New Private Road (with public easement)	Developer Private Road (3)
A22	Square One Drive West	Confederation Parkway	Rathburn Road West	Road Extension (Minor Collector)	EA Completed (4)
A23	The Exchange	City Centre Drive	Webb Drive	Road Extension (Minor Collector)	EA Completed (4)
A24	Webb Drive	125m east of Duke of York Blvd	Kariya Drive	Road Extension (Minor Collector)	EA Completed (4)
A25	Kariya Gate	110m South of Elm Drive	Central Parkway West	Road Extension (Minor Collector)	EA Completed (4)
A26	Redmond Road	Burnhamthorpe Road West	Webb Drive	Road Extension (Minor Collector)	EA Completed (4)
A27	Living Arts Drive	Centre View Drive	Rathburn Road West	Road Extension (Minor Collector)	EA Completed (4)

- *All road projects are 2 lanes, except A1: Street E for the future Downtown Transit Terminal, A2: Hammerson Drive extension, and A5: City Centre Drive Extension where 4 lanes cross-section were assumed in the DMP analysis. The number of lanes should be further investigated and confirmed in the follow-up studies.*
- *Timing for Projects A3 and A18 will be subject to completion of the Downtown Mississauga Terminal and Transitway Connection described in Section 6.4.2. The updated Mississauga Official Plan has identified Project A3 as "Subject to Further Study".*
- *An evaluation of on-street parking should be considered during the EA/ design phase for new roads to determine the appropriateness of on-street parking. The need for on-street parking should consider the planned new developments and their relative parking demands.*

Figure 7.1 Map of Road Projects Implementation



Dedicated Bike Facilities and Sidewalk

The implementation of most active transportation projects (sidewalks or cycling facilities) are included as part of road projects outlined in Section 7.1.2. Additional active transportation projects required for the DMP study area include addressing existing gaps in the network or existing substandard facilities that require upgrade. These projects will either be developer driven or will be completed as part of other projects (HMLRT).

A list of additional active transportation projects on existing roads is provided in **Table 7.2** and **Table 7.3** and illustrated in **Figure 7.2** and **Figure 7.3**, for sidewalks and cycling facilities, respectively. It is noted that facilities related to the HMLRT are not shown on these maps.

Implementation B: Proceed with next steps required for construction of sidewalk projects.

Implementation C: Proceed with next steps required for construction of cycling projects.

To encourage modal shift to active modes, the DMP recommends the Highway 403 active transportation flyover that will connect Downtown Mississauga to the proposed east-west multi-use path north of Highway 403 between Ridgeway Drive and Central Parkway East. This active transportation flyover can also potentially connect the new Downtown Transit Terminal (per Section 7.1.3) and the proposed East-West Cross-Regional Connection (Project 29 in the GGH Plan[2]) to provide a new barrier-free option for active travellers to safely cross Highway 403. A further study on this AT flyover should be aligned with the progress of the Downtown Mississauga Transit Terminal and the East-West Cross-Regional Connection which will be the primary trigger of the AT flyover. A feasibility study is required to confirm the alignment of the flyover due to the following challenges:

- South of Highway 403:
  Detailed road design requirements to support the DMTTC
- North of and adjacent to Highway 403:
  Conflicting property interests from widening of Highway 403 and future East-West Cross-Regional Connection

Implementation D: Proceed with next steps required for construction of AT crossing.

2 https://www.ontario.ca/page/connecting-ggh-transportation-plan-greater-golden-horseshoe

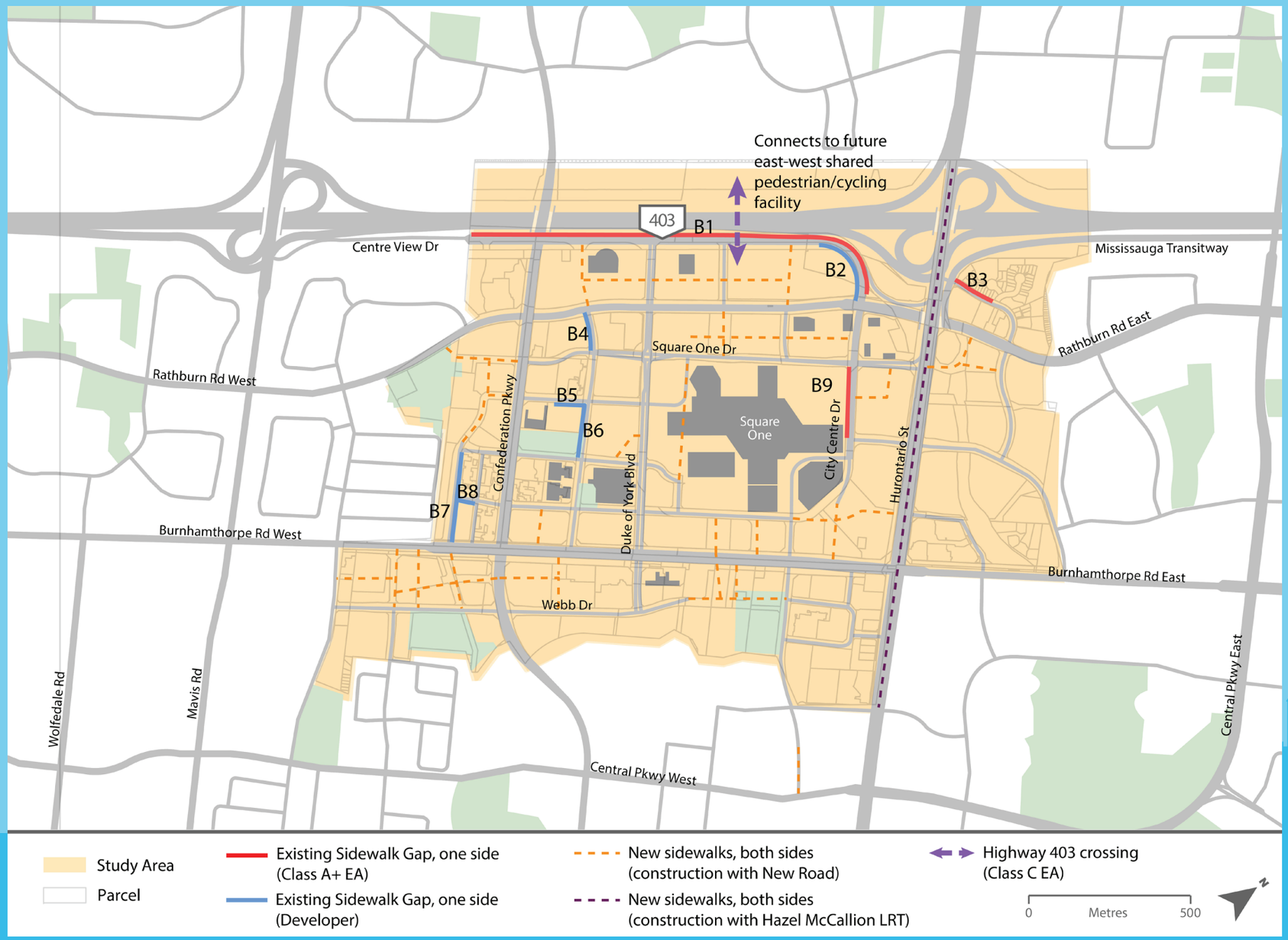
Table 7.2 Sidewalk Projects Implementation / EA Requirements

#	Road Name	From	To	Implementation
B1	Centre View Drive (north side gap)	Rathburn Road	Western study area boundary	City
B2	Centre View Drive (south side)	Rathburn Road	700m west of Rathburn Road	Developer
B3	Sherwoodtowne Boulevard (north side)	75m east of Hurontario Street	175m east of Hurontario Street	City
B4	Living Arts Drive (west side)	Rathburn Road	Square One Drive	Developer
B5	Prince of Wales Drive (south side)	Pedestrian Mew (90m east of Confederation Parkway)	Living Arts Drive	Developer
B6	Living Arts Drive (west side)	Prince of Wales Drive	100m south of Prince of Wales Drive	Developer
B7	Parkside Village Drive (east side)	Burnhamthorpe Road	Curran Place	Developer
B8	Curran Place (south side)	Parkside Village Drive	Brickstone Mews	Developer
B9	City Centre Drive (west side)	Square One Drive	Robert Speck Parkway	City

Table 7.3 **Cycling Projects Implementation / EA Requirements**

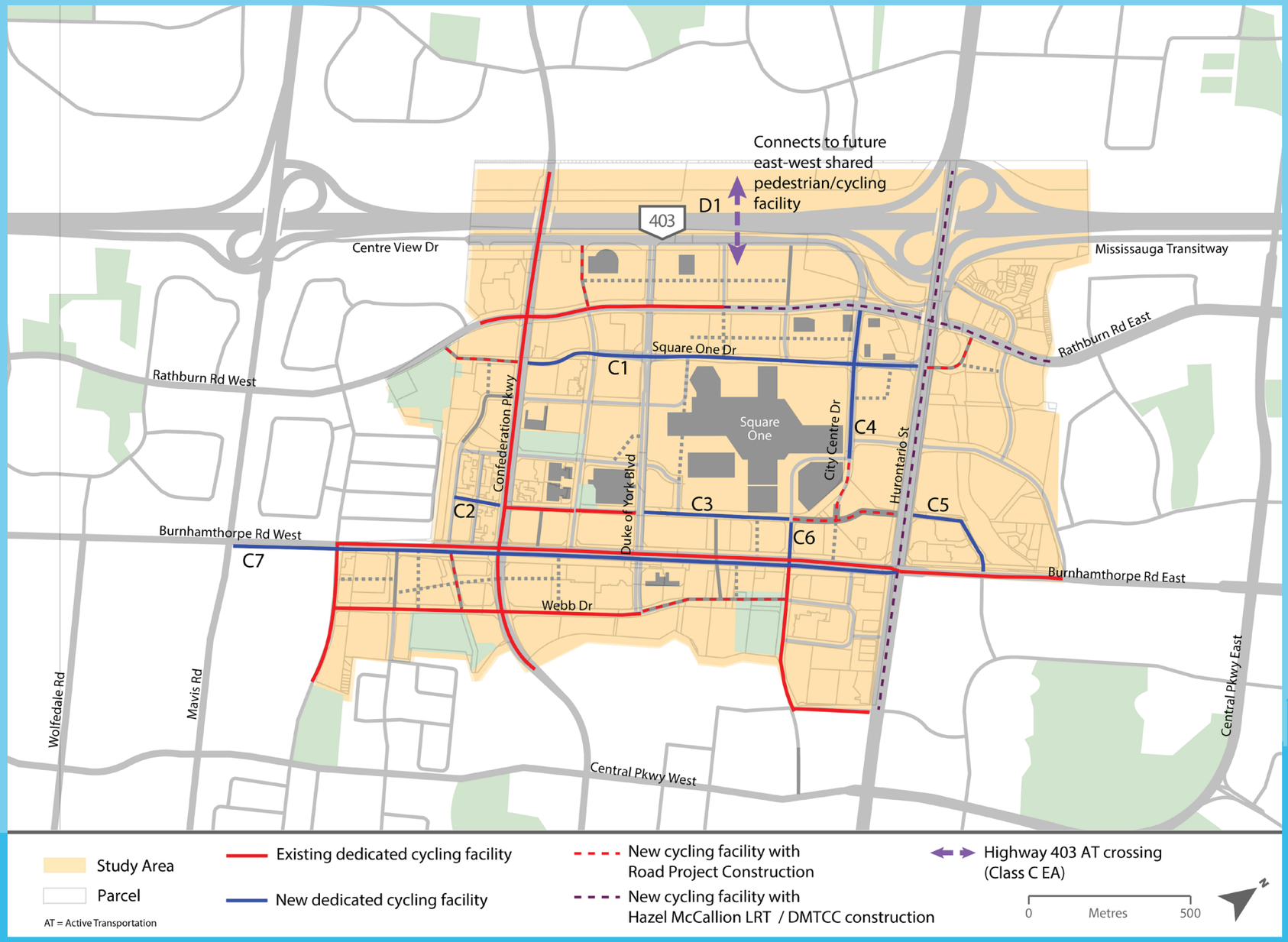
#	Road Name	From	To	Implementation
C1	Square One Drive	Confederation Parkway	Hurontario Street	City
C2	Curran Place (E-W)	Parkside Village Drive	Confederation Parkway	City
C3	City Centre Drive (E-W)	Duke of York Boulevard	Kariya Gate	City
C4	City Centre Drive (N-S)	South of Robert Speck Parkway	Rathburn Road	City
C5	Absolute Avenue	Hurontario Street	Burnhamthorpe Road	City
C6	Kariya Gate / Kariya Drive	City Centre Drive (E-W)	Webb Drive	City
C7	Burnhamthorpe Road	Mavis Road	Hurontario Street	City
D1	Highway 403 Crossing	Centre View Drive	Proposed east-west multi-use trail	—

Figure 7.2 Map of Sidewalk Projects Implementation



Note: This figure represents implementation as of 2022. It is recognized that some improvements have already been built or under construction since that time.

Figure 7.3 Map of Cycling Projects Implementation



Note: This figure represents implementation as of 2022. It is recognized that some improvements have already been built or under construction since that time.

HIGHER-ORDER TRANSIT

Higher-order transit will be the backbone of the transportation system moving people to/from Downtown Mississauga. The main components of the higher-order transit network proposed for the 2041 horizon include the expansion of HMLRT with a loop within Downtown Mississauga (Downtown Loop), the Downtown Mississauga Terminal and Transitway Connection (DMTTC), and a short-term Downtown Mississauga Transit Study.

While the DMP study has modelled the Downtown Loop running on dedicated centre lanes along the Duke of York Boulevard and Burnhamthorpe Road to justify the needs, further work is required to finalize the Downtown Loop alignment for the western north-south alignment. Alternatives may include options such as Living Arts Drive or Confederation Parkway to provide higher-order transit closer to the areas with the highest density in Downtown - near the intersection of Confederation Parkway and Burnhamthorpe Road. The Downtown Loop alignment study will need to balance the needs of servicing these high density areas and the operational efficiency of running the Downtown Loop.

Implementation E: Collaborate with Metrolinx to move forward with the Downtown Loop recommendation and commission a Transit Project Assessment Process (TPAP) study for the Downtown Loop alignment.

Implementation F: Work with MiWay, Metrolinx, and Oxford Properties to complete the TPAP study for DMTTC.

Implementation G: MiWay to identify and implement short-term transit infrastructure improvements.

Parking and New Mobility

The DMP study aims to promote a shift to sustainable modes of travel; however, as the total amount of trips is expected to increase by 2041, on-street parking will continue to be necessary and should be offered in strategic locations to facilitate the development of a vibrant Downtown Mississauga. In addition to helping reduce the total amount of carbon emissions and serve as a tool to increase pedestrian and cyclist safety, on-street parking can help expedite the shift from auto to other modes of transportation through price adjustments.

As suggested through the City's Parking Master Plan and Implementation Strategy (PMPIS), parking demand and supply in Downtown Mississauga will need to be further investigated to build an understanding of parking issues and opportunities in the area. Presently, the City owns less than 7% of all surface parking available in downtown Mississauga – the rest parking lots are owned by private parking providers.

The City is currently embarking on Parking Matters 2.0, a study aimed to implement the recommendations identified in the PMPIS. Key components of the study that will inform parking in Downtown Mississauga are parking fees and dynamic pricing.

The Changing Lanes study indicates on-street parking only on strategic minor collector roads within the DMP study area; however, appropriate parking locations should be evaluated on an individual basis.

Sensor technology should be investigated for implementation at all City-owned parking facilities as an introductory step to regulate parking demand. The information acquired can be used to dynamically price parking services. This can be progressively implemented with new developments and inform the City on the response to changes in parking supply in Downtown Mississauga to successfully achieve the desired modal split in the future horizon.

Future mobility or "**New Mobility**" refers to a service, mode, transportation infrastructure, or a combination of these that leverages new digital communication platforms and data to connect travellers to mobility options to move, share or use transportation infrastructure[3]. New Mobility may also refer to solutions that leverage Autonomous, Connected, Electrified, and Shared (ACES) technologies and the data collected and generated to enable effective services. These include new modes, services, and infrastructure that hold both potential benefits and risks for the transportation network.

The purpose of new mobility solutions is to explore additional non-traditional options of travelling that encourage sustainable modes within Downtown Mississauga. The City should continue to explore new mobility options for Downtown Mississauga. Currently a shared micro-mobility study has been initiated that features an interim e-scooter strategy. Other new mobility options for consideration include establishing mobility hubs, investigating curbside management, and exploring Mobility-as-a-Service (MaaS). Further details on new mobility are provided in **Appendix E**.

Implementation H: Investigate opportunities to use smart sensor technology to regulate parking demand.

Implementation I: Continue to monitor response from e-scooter strategy and explore next steps.

Implementation J: Identify appropriate EcoMobility Hub services and locations.

Implementation K: Initiate study to determine curbside priorities for different streets.

Implementation L: Develop strategies to support MaaS.

3 *Alameda County Transportation Commission. (2020). New Mobility Framework, Draft Technology Categories. Alameda County, CA. Alameda County Transportation Commission.*

Implementation Plan Summary

A summary of the implementation action items identified in Section 7 is listed in **Table 7.4**. The table highlights projects as "**quick wins**" if they are easy, fast, and economical to implement, and will have immediate impacts. These quick win projects are shown in ***green***.

Table 7.4 Summary of Implementation Plan Items

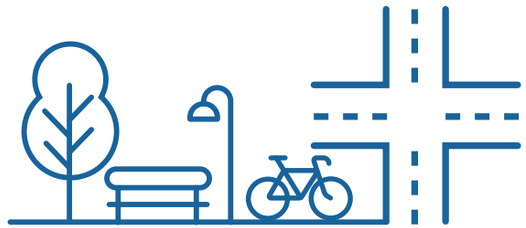
ID	ACTION
A	Proceed with next steps required for construction of road projects (road extensions).
B	Proceed with next steps required for construction of sidewalk projects.
C	Proceed with next steps required for construction of cycling projects.
D	Proceed with next steps required to further investigate the Highway 403 AT flyover.
E	Collaborate with Metrolinx to commission a transit study for HMLRT Loop alignment.
F	Work with MiWay, Metrolinx, and Oxford Properties to complete TPAP study for DMTTC.
G	MiWay to identify and implement short-term transit infrastructure improvements.
H	Investigate opportunities to use smart sensor technology to regulate parking demand.
I	Continue to monitor response from e-scooter strategy and explore next steps.
J	Identify appropriate EcoMobility Hub services and locations.
K	Initiate study to determine curbside priorities for different streets.
L	Develop strategies to support MaaS.

***Green** = quick win projects*

Costing

Full costing for street infrastructure (road, sidewalks, and cycling facilities) is provided in **Appendix E**. Costing is provided in 2022 dollars and is consistent with the City's 2022 Development Charges (DC) study where possible.

The total street infrastructure program cost without property acquisition is estimated to be **$42.13 M**. Property costs may also be required for **Category 1** and **Category 4** road projects; however, the City should work with the developers to minimize property costs.
A high-level property cost has been estimated based on available information in the City's 2022 DC or the current land cost in Downtown Mississauga from the City's real estate land value study — $112,400 / m (assuming 26 m ROW).
Total land acquisition costs for **Category 1** and **Category 4** road projects could amount to an additional **$112.99 M** for a total program cost of **$155.08 M**.



Street infrastructure program cost

$42.13 million

Property acquisition cost

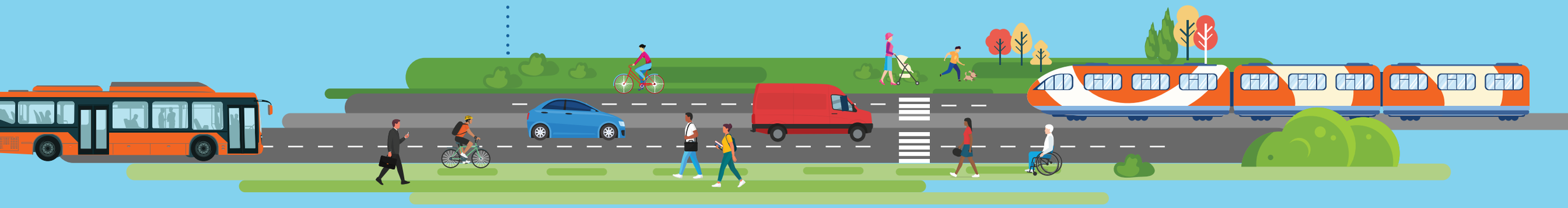
$112.99 million

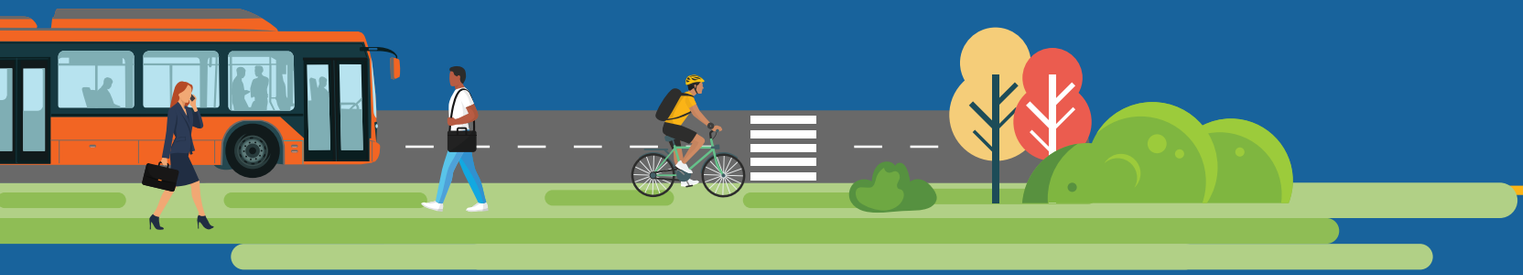
Total estimated cost

$155.08 million

Appendices

- **Appendix A:** Existing Conditions Report
- **Appendix B:** Multi-Modal Network and Plans Report
- **Appendix C:** Public Consultation Summaries
- **Appendix D:** Alternative Evaluation Report
- **Appendix E:** Implementation Plan Report





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