Appendix E. Implementation Plan Report

Implementation Plan

Downtown Movement Plan

City of Mississauga
January 12, 2023

Version	Issue Date	Revision
Draft 1	2022-09-23	First Draft
Revision 01	2020-11-25	Address City's comments as of 2022-11-17
Revision 02	2020-01-12	Added an active transportation recommendation

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1 Introduction

The City of Mississauga's Downtown Movement Plan (DMP) is a critical study that will update previous plans and identify transportation infrastructure and policies required to support and guide the continued development of the Downtown Core. In Phase 1, the DMP study developed the problem and opportunity statement and, in Phase 2, identified a 2041 multi-modal network to address those problems and opportunities. The DMP multi-modal network should be implemented in a logical manner that minimizes its overall disruption to the surrounding communities and everyday users. The timing of each project will also be determined by the available funding from the City and its partners, and the progress of private developments in Downtown Mississauga.

To help the City achieve the 2041 multi-modal transportation network, the project team developed an implementation strategy and action plan that details the operational and policy improvements, infrastructure improvements, and future studies needed to move forward with the DMP recommendations. High-level costs for the infrastructure improvements are developed based upon the cost estimates in the City's 2022 Development Charges Background Study. The implementation plan also identifies "quick wins" that prioritize improvements that can be made in the short term with a low to medium level of investment.

2 Infrastructure Improvements

2.1 Multi-modal Network

The preferred street network, cycling network, and higher order transit network for the Downtown are shown in **Figure 2-1**, **Figure 2-2**, and **Figure 2-3**, respectively, and will inform the implementation plan for the DMP study. Full details on the development of these networks are provided in the **DMP Task E: Alternative Evaluation Report**. After the Public Information Centre #2, through discussion with the City, a dedicated cycling facility is proposed on the south side of Burnhamthorpe Road from Mavis Road to Hurontario Street to further encourage active modes near high-density developments and reduce the inconvenience/needs of cyclists crossing the wide Burnhamthorpe road to the existing north side multi-use path.

It is noted that the dedicated cycling facility on Living Arts Drive as shown in **Figure 2-2** has already been implemented during the DMP study. In addition,

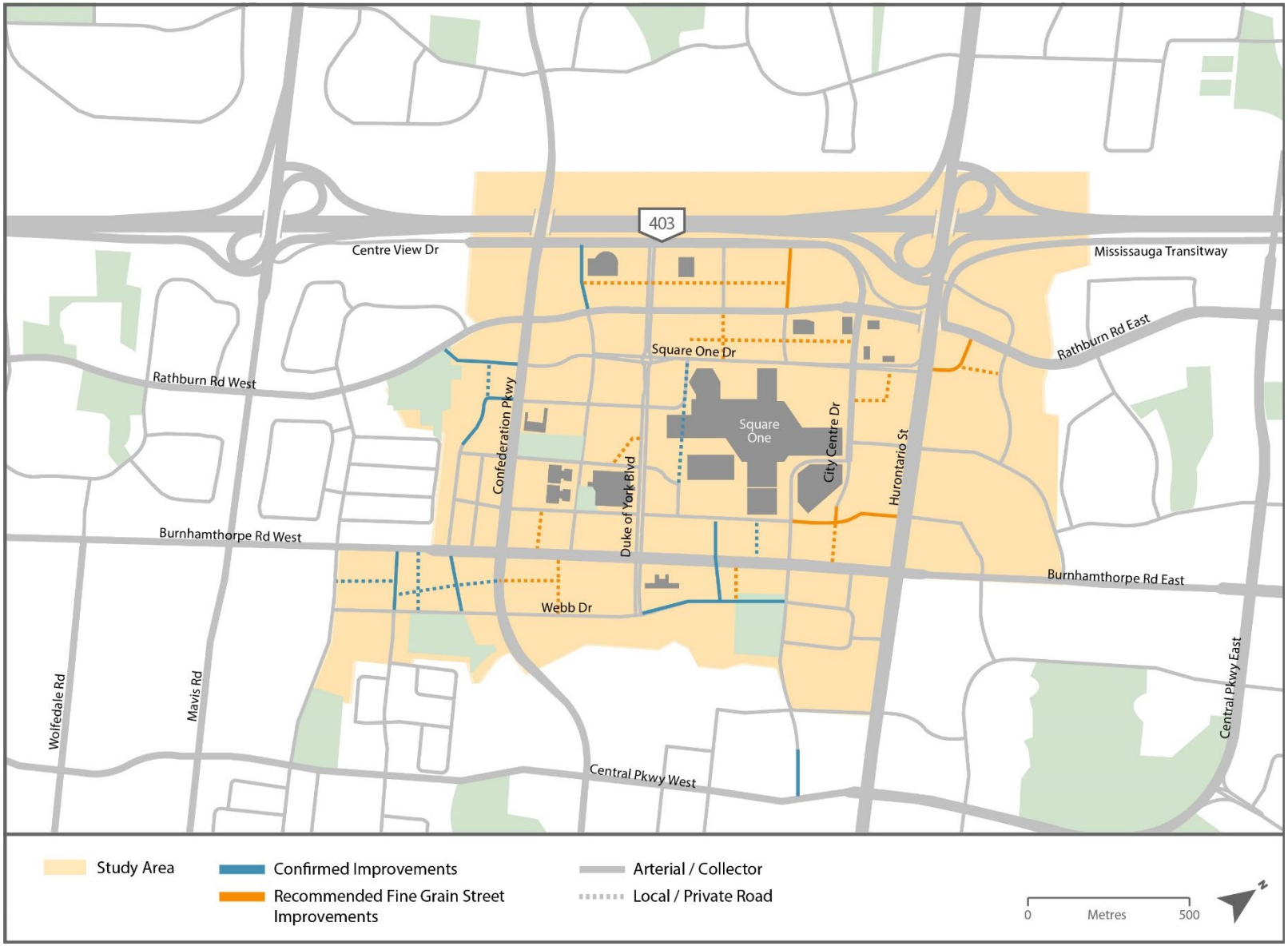

Figure 2-1. Street Network

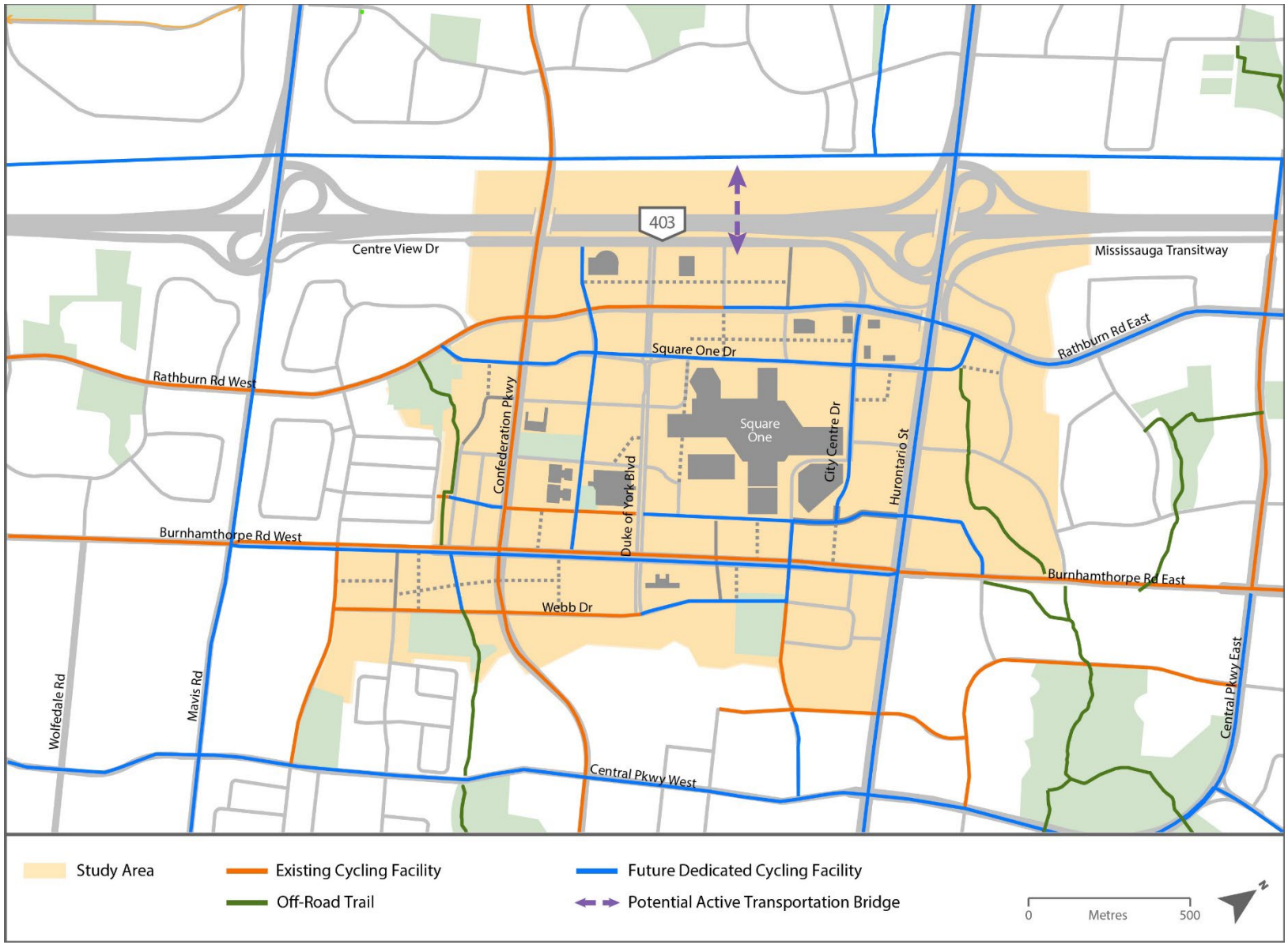

Figure 2-2. Cycling Network - Dedicated Cycling Facility

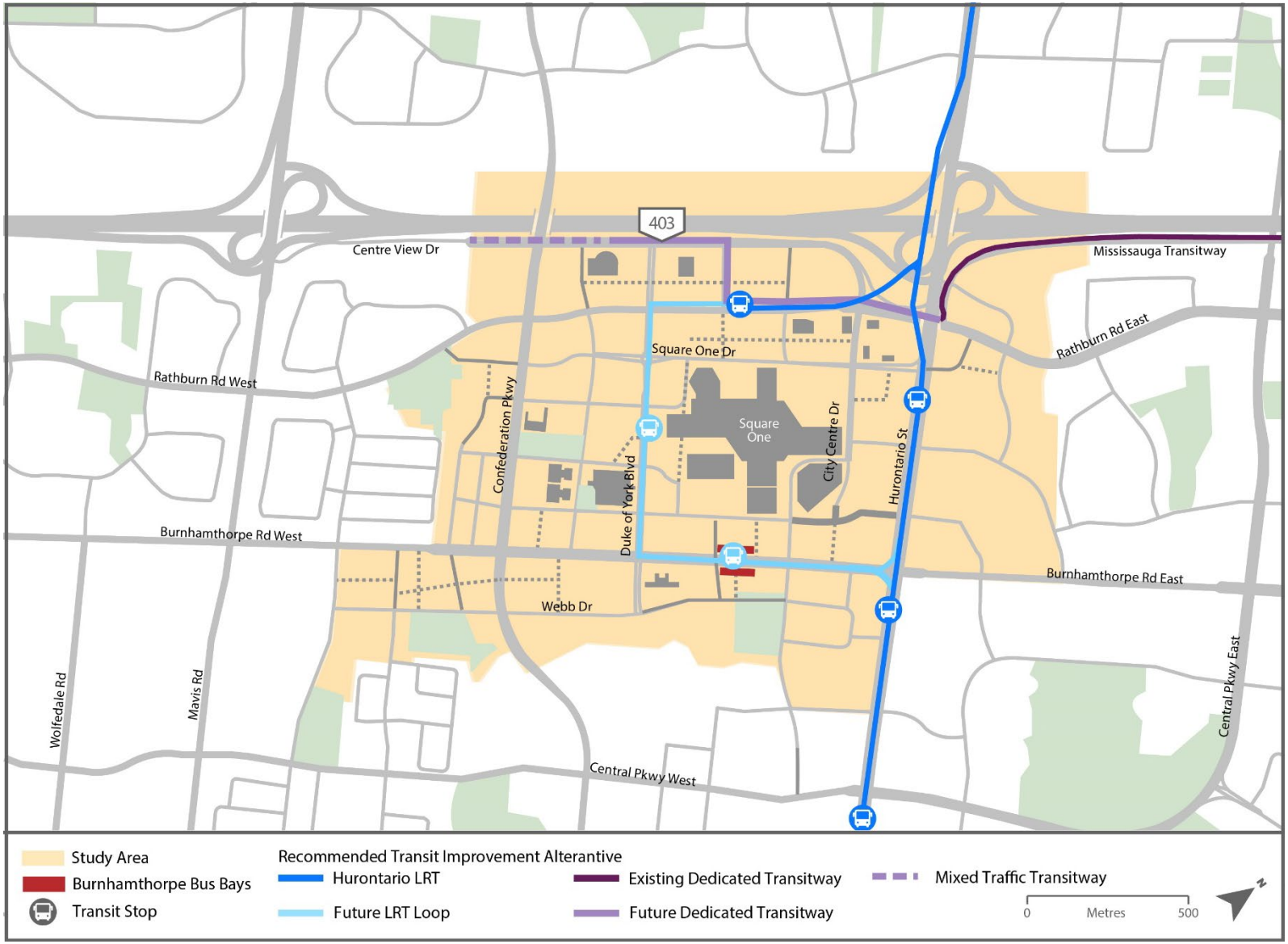

Figure 2-3. Higher Order Transit Network

2.2 Street Network

Per the City's Changing Lanes street classification, all streets within Downtown Mississauga are classified as 'Strategic Growth' for all functional classes (arterial, major collector, minor collector, and local), where growth through redevelopment or intensification is targeted. Strategic Growth streets are intended to be vibrant mixed-use destination streets that support high density transit-oriented development. Regardless of the street's functional class (arterials, collectors or locals), all roads should consider enhanced facilities for active transportation (AT), not limited to the improvements identified in **Figure 2-2**. Next step EA studies and development applications should further investigate opportunities to support both AT and on-street parking where possible.

The design of Downtown streets should follow the City's Complete Streets Guide. Draft demonstration cross sections that illustrate the potential arrangement of each Strategic Growth classification are provided in **Appendix A**.

Desired right-of-way (ROW) widths per Changing Lanes demonstration cross-sections and Mississauga Official Plan are shown in **Table 2-1**. The desired widths need to be considered in further EA studies to confirm the best cross section solution.

Table 2-1. Changing Lanes Demonstration Cross Section ROW widths

Road Class	Desired ROW (m)
Arterial Strategic Growth	Around 40
Major Collector Strategic Growth	26 to 30
Minor Collector Strategic Growth	20 to 26
Local Strategic Growth	18 to 20

The DMP recommended road functional classification map (**Figure 2-4)** is based on the Downtown Local Area Plan (DLAP) and the preferred street network (**Figure 2-1**).

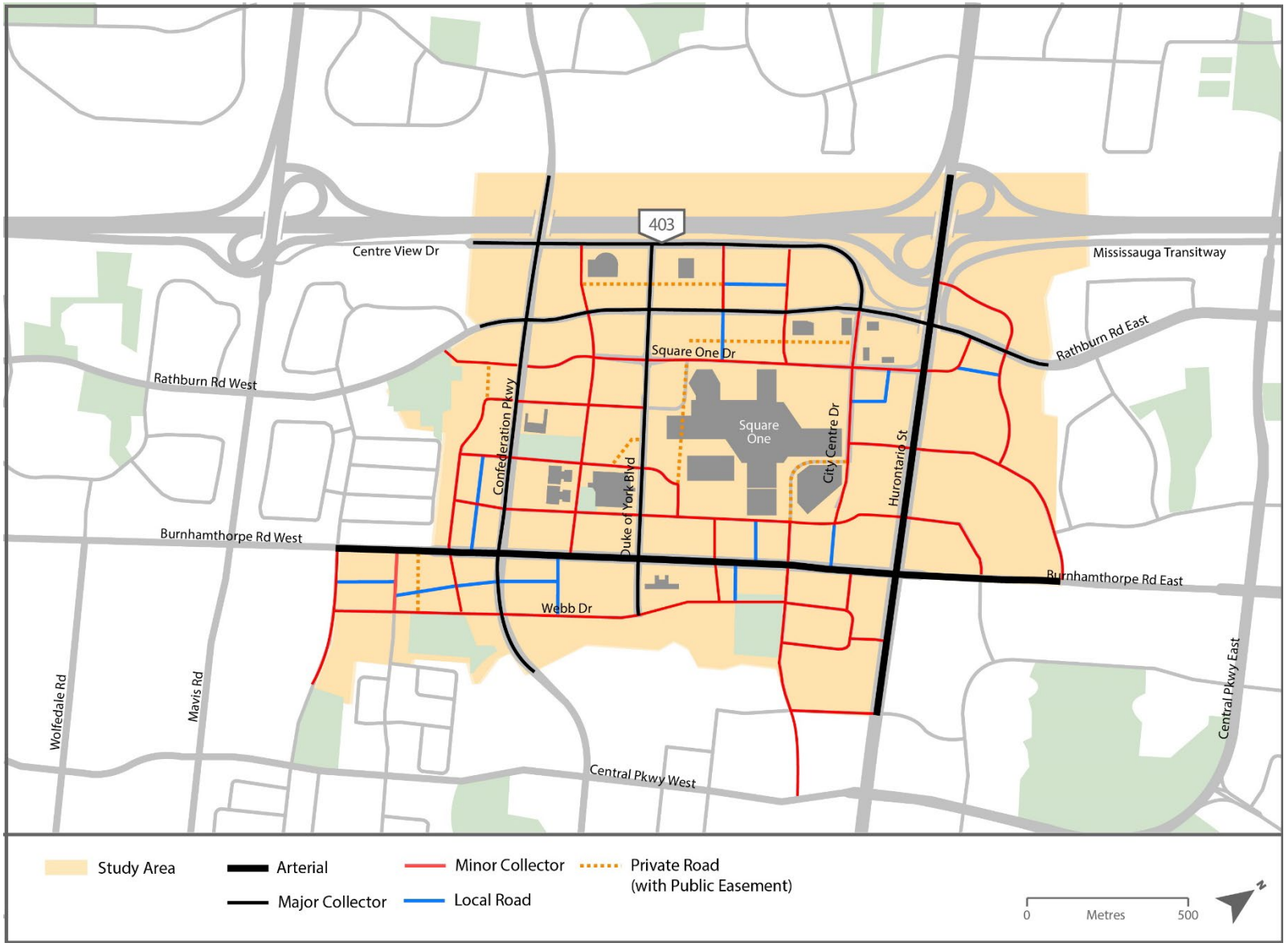

Figure 2-4. Road Classification Map

Revisions to the road functional classes from the DLAP are noted in **Table 2-2** with project identifiers referenced in **Section 2.2.1**.

Table 2-2. DMP revisions to road classification from DLAP

Index #	Road Name	From	To	DLAP Classification	DMP Classification Recommendation
A1	Street E	Station Gate	East of Station Gate	Private Road (with public easement)	Local Road
A4.1	Square One Drive E	Hurontario Street	Rathburn Road E	Minor Collector	Local Road
A10	City Centre Drive (Street D)	City Centre Drive	Burnhamthorpe Road W	Minor Collector	Local Road
A20	Street B	Princess Royal Drive	Duke of York Boulevard	Local Road	Private Road (with public easement)

2.2.1 Road Improvements

All the new roads need to be designed per the City's Complete Streets Guide, considering right-of-way elements such as landscaping, streetlights, active transportation facilities, and parking facilities. Proposed new roads 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 the growth of Downtown Mississauga. Projects will be driven by the City in accordance with the EA or as part of the TPAP process and coordinated with developers. The future road will be maintained by the City. Example projects of this type are City Centre Drive (east extension) and Hammerson Drive.
- **Category 2: New Public Roads through Planning Act process:** These road projects are within lands currently owned by a single developer. Construction may be developer driven but the completed road will be owned and maintained by the City. An example project of this type is The Exchange where the City completed the EA Study, but the road was constructed by the developer.
- **Category 3: New Private Roads through Planning Act process**: These road projects will be developer driven and maintained but allow public easement. Example projects of this type are Street F between West of Station Gate Road and City Centre Drive (north and parallel of Square One Drive).
- **Category 4: New Public Roads with Completed EA**: These roads have completed EAs and should proceed to next steps of detailed design for construction

A list of proposed road projects is shown in **Table 2-3**. 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. A map of project locations with property parcels is shown in **Figure 2-5.**

It is noted the Project A9 – Street H in the YMCA land, connecting City Centre Drive to Burnhamthorpe Road West, has been changed to a pedestrian mew through the development application process and therefore been removed from the Road Project map.

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

Table 2-3. Road Projects Implementation / EA Requirements

#	Road Name	From	To	Improvement Type	Implementation (Category)
A1	Street E	Station Gate Road	Hammerson Drive Extension (A2)	New Road (Local Road)	City, TPAP (1)
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* (Minor Collector)	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	Has been changed to a pedestrian mew and removed from Road Projects	
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)
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)

#	Road Name	From	To	Improvement Type	Implementation (Category)
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 Road (Local Road)	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 2.3.2.**
- On-street parking should be considered on roads with an asterisk (*) in Improvement Type.

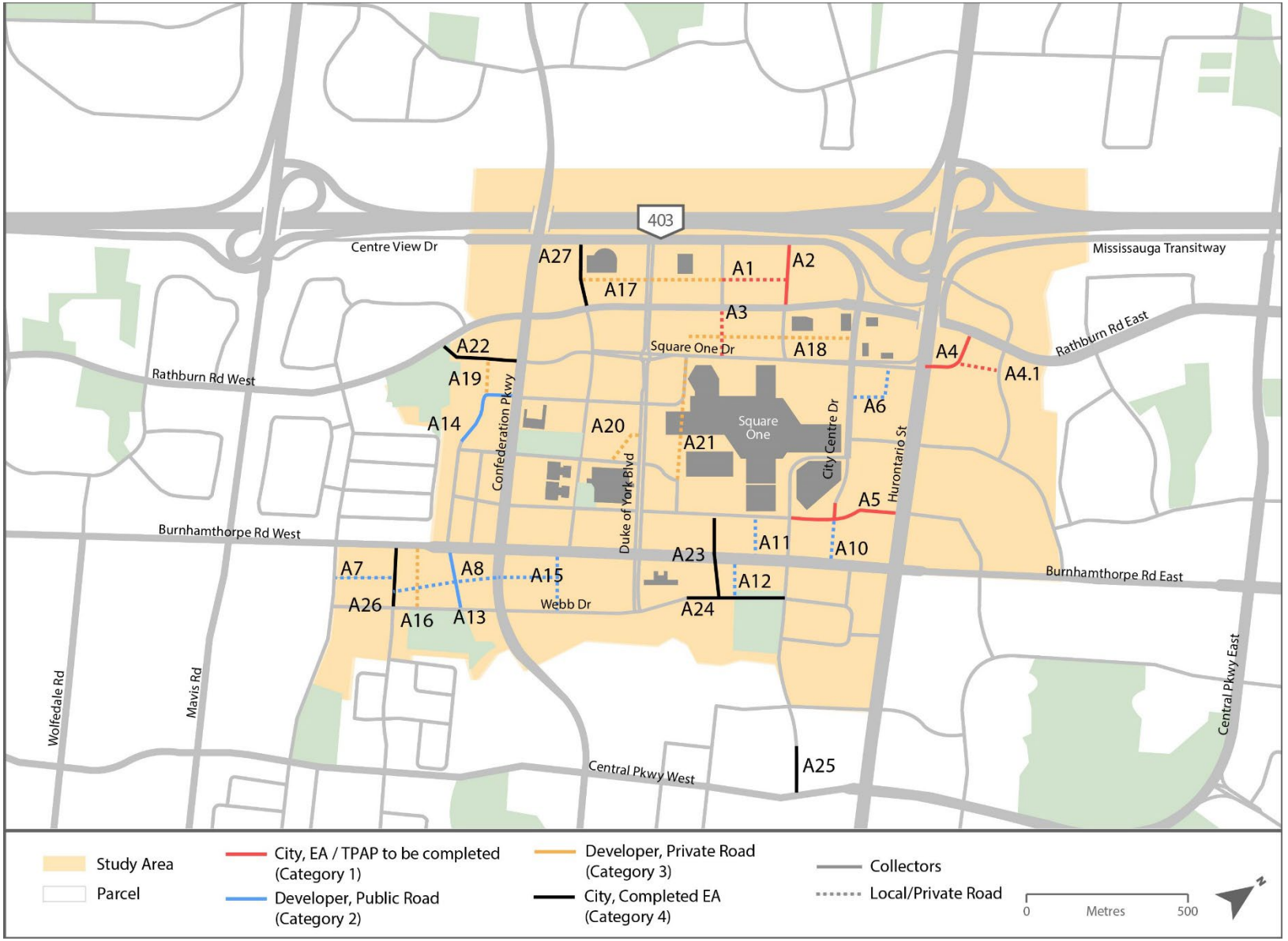

Figure 2-5. Map of Road Projects Implementation (with property parcels)

2.2.2 Dedicated Bike Facilities and Sidewalk

The implementation of most active transportation projects (both individual sidewalks or cycling facilities) are included as part of road projects outlined in **Section 2.2.1**. Additional active transportation projects required for the DMP study area include existing gaps in the network or existing substandard facilities that require upgrade. These projects will either be developer driven, or follow Schedule A+ of the Municipal Class EA process, or will be completed as part of other projects (Hurontario LRT). Cycling facilities should also be considered on any roads when going through an EA or Planning Act process implementation, even if not identified in the DMP at this time. On-street parking should also be considered at appropriate locations to support development and local businesses.

A list of additional active transportation projects on existing roads is provided in **Table 2-4** and **Table 2-5** and illustrated in **Figure 2-6** and **Figure 2-7**, for sidewalks and cycling, respectively. It is noted that facilities related to the Hurontario LRT are not shown.

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, DMP recommends a Highway 403 active transportation (AT) flyover that will allow cyclists and pedestrians to safely cross Highway 403 by 1) connecting Downtown Mississauga to the proposed east-west multi-use path north of Highway 403 and 2) connecting the proposed Downtown Mississauga Transit Terminal (per **Section 2.3.2**) and the proposed East-West Cross-Regional Rail Connection (Project 29 in the GGH Plan[1]) to provide easier transfer between the two higher-order transit corridors. 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 Rail Connection which will be the primary trigger of the AT flyover. The study also needs to further investigate the AT flyover's alignment and consider the following challenges:

- **South of Highway 403:** design requirements and space proofing to support and connect to the proposed Downtown Mississauga Transit Terminal,
- **North of and adjacent to Highway 403:** Conflicting property interests from widening of Highway 403, future East-West Cross-Regional Rail Connection, and hydro and oil pipeline easements.

Implementation D: Proceed with next steps required to further investigate the Highway 403 AT flyover.

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

Table 2-4. Sidewalk Projects Implementation / EA Requirements

#	Road Name	From	To	Implementation
B1	Centre View Drive (north side gap)	Rathburn Road	Western study area boundary	City, EA Class A+
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, EA Class A+
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	Arbitus Way	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, EA Class A+

Table 2-5. Cycling Projects Implementation / EA Requirements

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

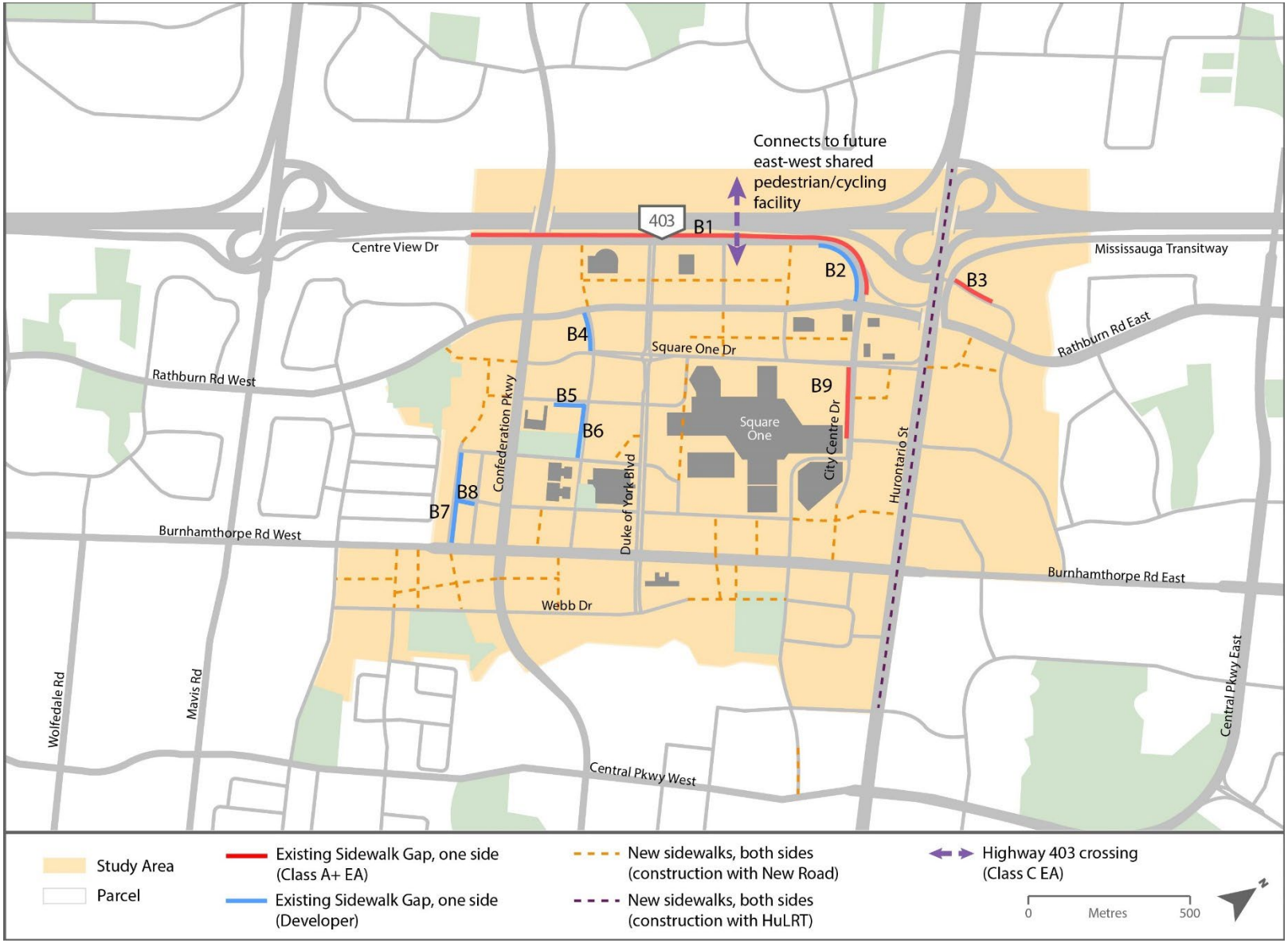

Figure 2-6. Map of Sidewalk Projects Implementation

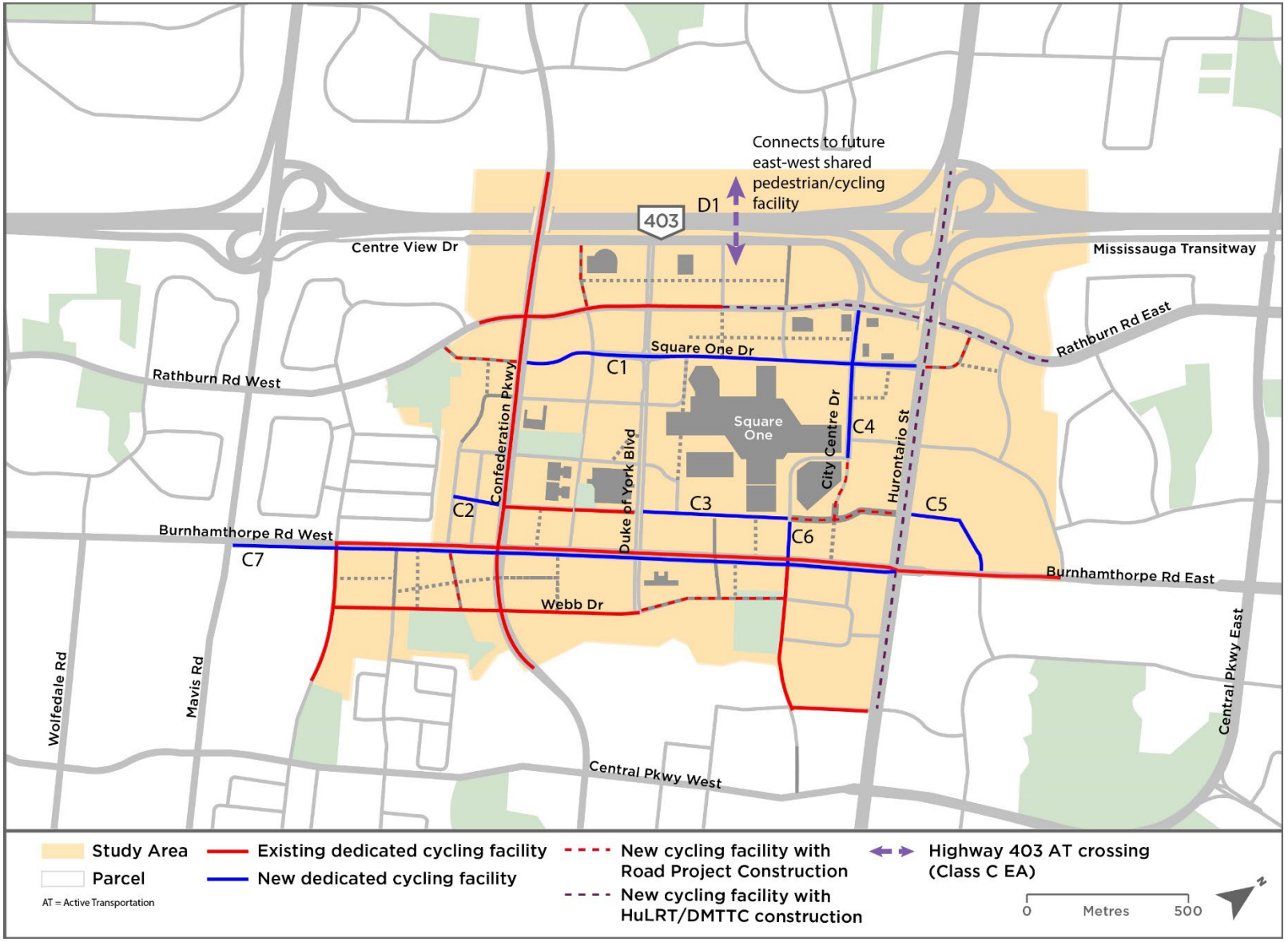

Figure 2-7. Map of Cycling Projects Implementation

2.3 Higher-Order Transit

Higher-order transit will be the backbone of the transportation system moving people to/from Downtown Mississauga. The main proposed additions to the higher-order transit network include the expansion of Hurontario LRT (HuLRT) with a loop within Downtown Mississauga (Downtown Loop) and the Downtown Mississauga Terminal and Transitway Connection (DMTTC). The HuLRT and the Burnhamthorpe bus bays at The Exchange are assumed in the future base network as they have already been designed or under construction; therefore, they are not further discussed in this implementation plan.

2.3.1 Hurontario LRT Downtown Loop

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 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 study for the Downtown Loop alignment.

2.3.2 Downtown Mississauga Terminal and Transitway Connection (DMTTC)

In addition to the Downtown Loop, transit services are expected to improve through decreased travel times and future expanded transit services within the DMP study area to accommodate the significant growth in Downtown Mississauga. This will apply pressure to the current City Centre Transit Terminal facility that is already experiencing capacity issues. The DMTTC is proposed as a single, multi-story transit facility at the northeast corner of Rathburn Road and Station Gate Road to provide a seamless transit experience for all users and operators and a dedicated transitway through the Downtown core connecting the existing transitway to the new terminal. The expanded facility would provide additional bus bays to accommodate higher service frequencies by all transit operators (MiWay and GO Transit) using the facility. In addition, transfers between transit modes (LRT, Mississauga Transitway buses, other MiWay express and local buses) and between operators will also be more convenient. Pedestrians will no longer need to cross Rathburn Road and/or Station Gate Road to complete transfers. The next step to progress the DMTCC includes completing the Transit Project Assessment Process (TPAP) study in collaboration with major stakeholders such as MiWay, Metrolinx, and Oxford Properties.

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

2.3.3 Short-term Transit Improvements for Downtown Mississauga

The Downtown Loop and DMMTC are major infrastructure improvements that will take years to design and construct. Downtown Mississauga is growing at an unprecedented pace that needs

short-term transit improvements to accommodate growing travel needs and to provide quality transit options for new residents before the Downtown Loop or DMTTC is available. MiWay should identify existing transit gaps and expedite short-term transit infrastructure improvements to keep up with the fast growth in Downtown Mississauga.

Short-term infrastructure improvements include bus-only lanes, queue jump lanes, transit priority measures, and better bus stops/shelters. In addition to short-term infrastructure improvements, MiWay should consider opportunities to continue improving servicing strategy required to support operation and route improvements, optimization of the existing systems, and first- and last-mile solutions to access HuLRT.

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

3 Parking

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.

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. As an example, San Francisco's SFpark program monitors 8,200 of the city's curbside parking spaces and adjusts prices dynamically with the goal to maintain a 15% vacancy rate and eliminate the need for drivers to cruise around in search of available spaces[2]. Restricting parking supply and increasing total cost to drive can also improve the competitiveness and attractiveness of sustainable modes of transportation, as previously mentioned.

[2] Hamilton, Emily. (2016). *The Benefits and Risks of Policymakers' Use of Smart City Technology*. Arlington, VA. Mercatus Center, George Mason University

In addition to the Downtown Parking Strategy study, the use of technologies such as parking sensors and digital signage has also been recommended through the PMPIS. These initiatives can help augment user experience, reduce traffic congestion, and further inform dynamic pricing efforts and overall understanding of automotive patterns in the downtown and other busy areas in the City. Parking sensors 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.

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

4 New Mobility

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 the 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.

4.1 Ongoing initiatives

4.1.1 Shared Micro-mobility Study

A micro-mobility study has been initiated to explore creating a system of shared bikes, electric bicycles (e-bikes), or electric scooters (e-scooters) as a recommended action item of the City's Transportation Master Plan. In general, these devices are alternatives to vehicles and are both lightweight and low-emission while providing opportunities for users to connect to the greater transportation system in Mississauga.

In 2021, the City updated by-laws to regulate the use of personal e-scooters within Mississauga. In the summer of 2022, Council endorsed a pilot project to start a shared e-scooter program similar to bike-share. This e-scooter program is currently in the system implementation and business planning process. This interim e-scooter strategy will help get community feedback on the interest of using e-scooters and help inform the City on the potential of shared micro-mobility systems within Mississauga.

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

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

4.2 Future Considerations

4.2.1 EcoMobility Hubs

An EcoMobility Hub is an integrated mobility interchange for multimodal systems[4]. The concept for these hubs is to leverage emerging technologies and improve transportation efficiency, providing a single access point for multimodal systems such as bike-sharing, ridesharing, and car-sharing. In general, EcoMobility Hubs are envisioned to serve as intermediate transfer points, located close to transit stations to provide connection to trip ends. An example of a Mobility Hub (branded as an EcoMobility Hub) is shown in **Figure 4-1**.

These hubs may also be on a smaller scale, such as an integrated bike share and bus stop, or on-street car-sharing. Although EcoMobility Hubs currently exist and are used to organize existing mobility, the service concept will continue to evolve to accommodate future mobility in aspects such as charging for electrified vehicles.

There is strong potential to integrate EcoMobility hubs at key transit stops and destinations within the transportation network in Downtown Mississauga. Providing mobility services can offer seamless first and last mile connections with opportunities to connect to proposed higher-order transit services.

Implementation J: Identify appropriate EcoMobility Hub services and locations.

Figure 4-1. EcoMobility Hub Concept (multi mobility, Sophia von Verg, 2014)

[4] City of Toronto. (2017). *ConsumersNext: Final Report*. Toronto, ON. City of Toronto.

4.2.2 Curbside Management

The curb is the shared transitional space between the roadway and the sidewalk. Common uses of the curbside traditionally include on-street parking and passenger pick-up and drop-off; however, technological advances are resulting in competing interests for the space. These emerging interests are illustrated in **Figure 4-2** and include shared micro-mobility services (e.g., e-scooters), Transportation Network Companies (e.g., Uber), E-commerce deliveries (e.g., Amazon), and food delivery services (e.g., DoorDash). Cities must learn to manage all uses of the curb to maximize mobility, safety, and access to wide variety of curbside demand. Poor curbside management practices may result in traffic spillover onto travel lanes.

Curbside management will be an essential component to support new mobility options required for a modal shift in Downtown Mississauga. Challenges are already being observed in the initial phases of the Parkside Village development along Confederation Parkway near City Centre Drive (as shown in **Figure 4-3**), and future growth will only further increase demand for valuable curb space. A curbside management study is recommended to characterize street types and identify hierarchy of curbside priorities throughout Downtown Mississauga.

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

Figure 4-2. Curbside Interest Groups (Institute of Transportation Engineers)

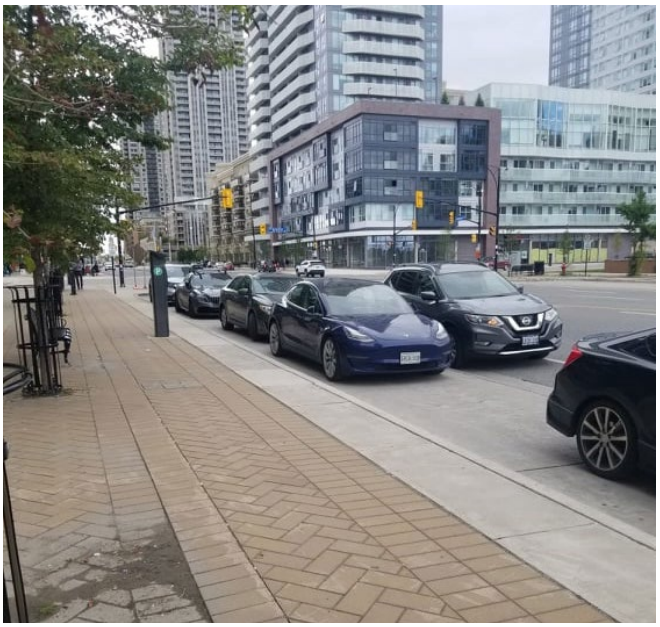

Figure 4-3. Food courier vehicle blocking travel lane and bike lane along Confederation Parkway, north of Burnhamthorpe Road (facing north, midday September 2021)

4.2.3 Mobility-as-a-Service (MaaS)

Mobility-as-a-Service (MaaS) is described as "a distribution model that delivers users' transport needs through one single interface of a service provider (such as a smartphone application), combining different transport modes to offer tailored mobility packages"[5]. Although the interpretations and descriptions may vary greatly, MaaS is intended to improve the users' mobility experience by integrating information, payment, services, and policies.

A variety of mobility options and services could be integrated into a MaaS platform. These services include:

- bike-sharing (e.g., BikeShare in Toronto, SoBi in Hamilton);
- e-scooter sharing (e.g., Lime, Roll, Bird - which have become quite popular in Calgary);
- car-sharing (e.g., Zipcar, Car2go);
- ride-hailing services, like traditional taxi service (e.g., Uber, Lyft, DiDi in China); and
- ride-sharing services (e.g., Lyft Line, UberPOOL).

Strategies to support MaaS in Downtown Mississauga should be explored to allow for rapid integration of mobility options (such as e-scooter sharing) once they are made available.

Implementation L: Develop strategies to support MaaS.

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[5] Arias-Molinares, D., Garcia-Palomares, J. (2020). *The Ws of MaaS : Understanding mobility as a service from a literature review.* IATSS Research, Volume 44, Issue 3, Pages 253-263.

5 Implementation Plan Summary

The implementation action items identified in the previous sections is listed in **Table 5-1**.

Table 5-1. 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 HLRT 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.

6 Quick Wins

“Quick wins” are improvements that can be implemented in the short term (within 5 years) with low or medium level of investment. Suitable items that the City should aim to achieve as quick wins are identified in **Table 6-1**.

Generally, all transit action items are critical to achieve higher-order transit improvements required to support Downtown Mississauga, including an interim transit servicing strategy. Key road projects include roads that will either strengthen the fine-grained street network or support the development of the DMTTC and other under-construction developments. Other quick wins include further exploration of all new mobility items.

Table 6-1. Quick win action items

ID	Action
A	Proceed with next steps required for construction of road projects (road extensions) • **A1 – Street E: Station Gate Road to 200m east of Station Gate Road** • **A2 – Hammerson Drive from City View Drive to Rathburn Road West** • **A5 – City Centre Drive (Street C): Kariya Drive to Hurontario Street** • A22 – Square One Drive: Confederation Parkway to Rathburn Road • A23 – The Exchange: City Centre Drive to Burnhamthorpe Road • A24 – Webb Drive: 125m east of Duke of York Boulevard to Kariya Drive • A25 – Kariya Gate: 110m south of Elm Drive to Central Parkway West • A26 – Redmond Road: Burnhamthorpe Road West to Webb Drive • A27 – Living Arts Drive: Centre View Drive to Rathburn Road West **Bolded items** indicate road projects that are either part of the DMTTC or are key to strengthen the fine-grained network in Downtown Mississauga.
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

7 Costing

The road projects identified as Category 1 and Category 4 will be led by the City**.** The cost for those projects is summarized in **Table 7-2**, **Table 7-3**, and **Table 7-4**. Costing is consistent with the City's 2022 Development Charge (DC) study where possible, with benchmark costs including sidewalks, illumination, utilities, landscaping, and non-benchmark engineering and contingencies. On-street parking facilities are excluded from costing. Full DMP recommended road project costs (including projects through the planning act process) are provided in **Appendix 2**.

The total cost of those city-led road projects (without property acquisition) is estimated to be **$44.07 M**. Property costs may also be required for; however, the City should work with the developers to minimize property costs. If property acquisition is required, the current cost of land in Downtown Mississauga from the City's real estate land value study is $112,400 / m (assuming 26 m ROW). Total land acquisition costs for 2.5 km of Category 1 and Category 4 road projects could amount to an **additional $163.58 M** for a total of **$207.66 M.**

It should be noted that projects A1, A2, A3, and A5 are currently not part of the City's 2022 Development Charges (DC) Study. It is anticipated that they will be included in the next DC update.

Table 7-1. Summary of City Street Network Costs

Street Network Component	Facility Cost ($M)	Property* Cost ($M)	Total with all Property ($M)
Road	35.89	163.58	199.47
Sidewalk	0.17		0.17
Cycling	8.01		8.01
Total	**44.07**	**163.58**	**207.66**

*Property costs assume 26m ROW based on $112,400 / m per City's 2022 DC information

Table 7-2. City Road Cost Program

ID	Road Name	From	To	Improvement Type	Implementation (Category)	Length (m)	Road Cost ($M)	Property Cost ($M)	Total Cost ($M)	Special Notes
A1	Street E	Station Gate	East of Station Gate	New Road (Local Road)	City, TPAP (1)	450	1.94	50.59	52.53	Property may be required
A2	Hammerson Drive (Street A)	City View Drive	Rathburn Road W	Road Extension (Minor Collector)	City, TPAP (1)	200	1.22	22.48	23.71	Property may be required
A3	Station Gate Road	Rathburn Road W	Square One Drive	Road Extension (Minor Collector)	City, TPAP (1)	150	1.01		1.01	No property, City owns CCTT
A4	Square One Drive E	Hurontario Street	Rathburn Road E	Road Extension (Minor Collector)	City Class C EA (1)	350	4.00	21.62	25.62	Project cost from 2022 DC, roundabout removed
A4.1	Square One Drive E	Square One Drive E (A4)	Shipp Drive	New Road (Local Road)	City Class C EA (1)					
A5	City Centre Drive (Street C)	Kariya Drive / City Centre Drive	Hurontario Street	Road Extension (Minor Collector)	City Class C EA (1)	350	2.04	39.35	41.39	Property may be required
A22	Square One Drive W	Confederation Parkway	Rathburn Road W	Road Extension (Minor Collector)	EA completed (4)	260	18.03	5.44	23.47	Project cost from 2022 DC
A23	The Exchange	City Centre Drive	Webb Drive	Road Extension (Minor Collector)	EA completed (4)	260	2.44	10.05	12.48	Project cost from 2022 DC
A24	Webb Drive	125m East of Duke of York Boulevard	Kariya Drive	Road Extension (Minor Collector)	EA completed (4)	300	2.66	14.05	16.72	Project cost from 2022 DC
A25	Kariya Gate	110m South of Elm Drive	Central Parkway W	Road Extension (Minor Collector)	EA completed (4)	150	1.88		1.88	Project cost from 2022 DC
A26	Redmond Road	Burnhamthorpe Road W	Webb Drive	Road Extension (Minor Collector)	EA completed (4)	170	0.63		0.63	Project cost from 2022 DC
A27	Living Arts Drive	Centre View Drive	Rathburn Road W	Road Extension (Minor Collector)	EA completed (4)				0.00	Funded
						Total ($M)	**35.89**	**163.58**	**199.47**	

Table 7-3. City Sidewalk Cost Program

ID	Sidewalk Locations	From	To	Implementation	Length (m)	Sidewalk Cost ($M)
B1	Centre View Drive (north side)	Rathburn Road	Western study area boundary	City, EA Class A+	1,360	0.14
B3	Sherwoodtowne Boulevard (north side)	75m east of Hurontario Street	175m east of Hurontario Street	City, EA Class A+	100	0.01
B10	City Centre Drive (west side)	Square One Drive	Robert Speck Parkway	City, EA Class A+	200	0.02
					Total ($M)	**0.17**

Table 7-4. City Cycling Cost Program

ID	Road Name	From	To	Facility Type	Implementation	Length (m)	Cycling Cost ($M)	Special Notes
C1	Square One Drive	Confederation Parkway	Hurontario Street	Bicycle Lane	City, EA Class A+	1260	0.08	Project cost from 2022 DC (adjusted to include connection to Shipp Drive)
C2	Curran Place	Parkside Village Drive	Confederation Parkway	Bicycle Lane	City, EA Class A+	170	0.01	Project cost from 2022 DC
C3	City Centre Drive (E-W)	Duke of York Boulevard	Kariya Gate	Cycle Track	City, EA Class A+	470	0.11	Project cost from 2022 DC
C4	City Centre Drive (N-S)	South of Robert Speck Parkway	Rathburn Road	Cycle Track	City, EA Class A+	300	0.07	Project cost from 2022 DC (adjusted to account for project boundary differences)
C5	Absolute Avenue	Hurontario Street	Burnhamthorpe Road	Bicycle Lane	City, EA Class A+	360	0.02	Project cost from 2022 DC
C6	Kariya Gate / Kariya Drive	City Centre Drive (E-W)	Burnhamthorpe Road	Cycle Track	City, EA Class A+	150	0.07	Project cost from 2022 DC (adjusted to account for project boundary differences)
C7	Burnhamthorpe Road	Mavis Road	Hurontario Street	Cycle Track	City, EA Class A+	2050	1.64	Project cost from 2022 DC (adjusted to account for project boundary differences)
D1	Highway 403 Crossing	Centre View Drive	Proposed east-west multi-use trail	Multi-use Path	City, EA Class C	300	6.00	Estimated from 2022 DC benchmark
						Total ($M)	**8.01**	