



**City of Brampton**

# Strategic Transportation and Master Stormwater Study for City of Brampton Major Transit Station Area (MTSA) Policy Framework

Final Report

Reference:

Rev. 1 | August 8, 2024

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number

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# 1. Executive Summary

Arup has been contracted to provide technical support for the development of street networks and mobility approaches, stormwater management strategies, and related policies for twelve City of Brampton major transit station areas (MTSAs).

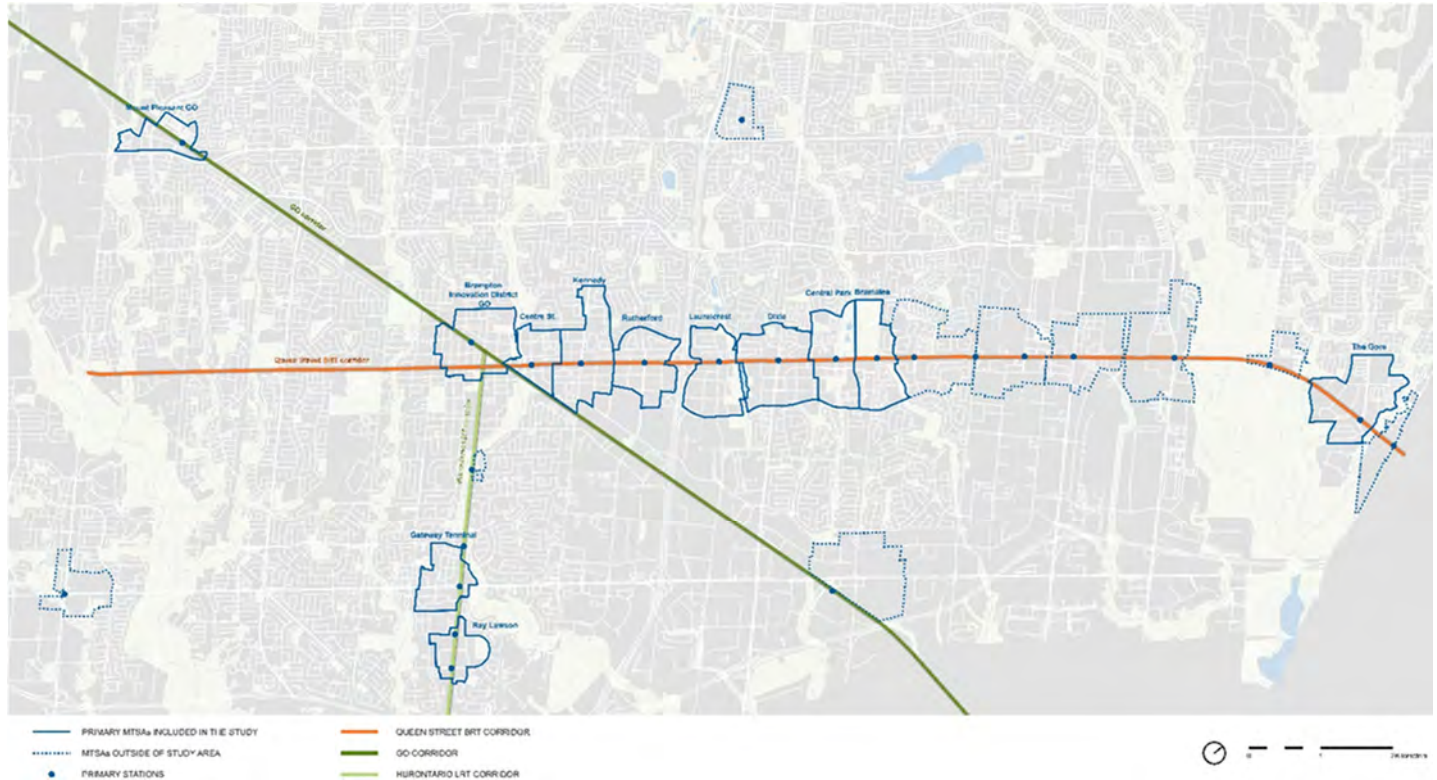


Figure 1-1 Brampton MTSAs

As part of numerous planning activities, the City of Brampton has articulated a vision for more sustainable land use and mobility patterns. Recognizing that “the best transportation plan is a land use plan,” Brampton’s draft official plan revision promotes the development of complete, compact neighbourhoods where daily travel needs are reduced and trips on foot, bicycle and transit are prioritized. Building on the City’s long-term 2040 vision, Brampton Plan orients the city toward the creation of exciting urban places for living and working that are well connected to transit and contribute to active lifestyles.

The provincial growth plan, “A Place to Grow,” establishes minimum targets for residential and employment density within MTSAs based on the transit mode. Within MTSAs served by light rail or bus rapid transit, the plan directs municipalities to achieve a combined minimum density of 160 residents and jobs per hectare; for areas served by the GO Transit rail network the target is 150 residents and jobs per hectare.

As strategic growth areas within the city, MTSAs represent a major component of the City’s approach to achieving their long-term vision to 2051. Across the city and within MTSAs, Brampton Plan describes a mobility framework that places active transport and public transit atop the transportation hierarchy. Among other outcomes, mobility policies aim to reorient away from suburban, autocentric development with a corresponding shift to more sustainable transport modes and a reduction in traffic violence and injury.

The scope of Arup’s work in support of the City of Brampton’s MTSA planning is limited to transportation and mobility and stormwater management concepts for city-owned rights-of-way. Water and wastewater servicing capacity and strategies were analyzed by other consultants under contract with the Region of Peel.

This report summarizes potential policies and strategies for inclusion within the official plan, precinct and secondary plans, and other city regulations and policies. The full report contains more detailed analysis and information to help guide future planning updates and policies.

## **1.1 Analysis and Approach**

The proposed street networks for Brampton’s MTSA have been developed through an iterative process involving both qualitative and quantitative assessments aimed at ensuring safe, direct, and convenient active-travel trips between expected new development and the primary transit stations.

The City of Brampton planning and urban design groups prepared preliminary land use plans, urban-design concepts with potential massing and volumes for future development, and a preliminary future street network, which were included in preliminary area plans for each MTSA. The initial street network plans were refined collaboratively with Arup during workshops held in autumn 2022. Following the autumn workshops, refinements were incorporated into updated area plans and shared publicly during focus-group sessions held in winter and spring 2023. During these group sessions, members of the public were invited to provide comments on the proposed plans and networks via small group discussions. Comments on the area plans were also received via email.

Following this public engagement exercise, Arup performed a quantitative analysis to assess expected travel-demand distribution and circuitry or directness (an assessment of the difference between straight-line distance between origins and destinations and the actual distance someone must travel over the network of streets or sidewalks). The purpose of these analyses using the programming language R was to help identify areas of potentially high demand for active travel, as well as opportunities to propose new links within the network that would allow residents of new developments to more directly reach new major transit stops and—by extension—the commercial and other amenities likely to accompany them. For vehicle travel, the analysis was intended to identify areas of potentially high demand warranting additional investigation as the MTSA develop.

This analysis helped methodically identify areas of focus which either warranted additional safety and comfort refinements for active travellers due to high levels of use or warranted new connections to make trips more direct and convenient. The analysis also yielded information about streets that may be subject to high levels of vehicle demand. Additional detail on the active transportation and vehicular network assessments is provided in Appendix B.

Arup leveraged the feedback collected during the public engagement exercise and the outputs of the quantitative analysis to propose further network refinements to improve trip quality and prioritize pedestrians and cyclists. These recommendations were reviewed with the City to establish a final proposed network based on a range of factors including feasibility of implementation based on local conditions. Most of the reviewed recommendations were incorporated into council-approved land use plans adopted in October 2023.

As a final analytical step, Arup reassessed both public stormwater management capacity and travel demand distribution and trip circuitry based on the final council-approved land-use plans. The final stormwater and network analyses are intended to help the city prioritize investments and interventions as it continues to develop fine-grained plans and negotiate with developers. Recommendations for further enhancements—including those accepted by City Planning but not included in the final land use plans—are described within each MTSA section in the full report.

## 1.2 Generally Applicable Secondary Plan policies for all MTSAs

The City of Brampton is expected to prepare both precinct-level and secondary plans covering all the MTSAs discussed in this report. This section of the executive summary describes generally applicable policies for potential inclusion within these future planning documents.

### 1.2.1 Public Realm Design

- Open spaces and public realm shall be designed to incorporate high quality plantings as a means of increasing tree cover and shading, reducing heat island impacts, and to intercept rainfall during extreme weather events.
- Streets and streetscapes are strongly encouraged to be designed and landscaped to function as a significant part of the public realm and be oriented to favor pedestrian use.
- Development and public realm improvements in the vicinity of future higher-order transit stops will be designed to: a) Provide direct and safe bike and pedestrian conditions; b) Act as a focal point contributing to the character of the local context and support an elevated architectural treatment that reflects the important role and function of higher-order transit corridors as hubs of activity for the community.

### 1.2.2 Street Network Development

- The land acquired for road widenings and new road links as a condition of development approval shall be included in the calculation of permissible gross floor area.
- The major road system consisting of Highways, Major and Minor Arterial Roads and Collector Roads provides sufficient flexibility to potentially provide bus routes within 400 metres of all residents.
- Where large size blocks are contemplated for development, access between properties at strategic locations to facilitate a local road network shall be considered at the development approval stage. As a condition of development approval, landowners may be required to enter agreements that among other matters shall determine ultimate access and shared parking arrangements.
- Access and curb cuts from Queen Street will be discouraged. Access and servicing to development from new or existing local collector streets will be encouraged. The impact of driveways, garages and parking areas along collector streets, arterial roads will be minimized by locating them at the side or back of buildings, or below grade where appropriate.
- All new developed streets should be designed according to the proposed enhanced “Green Complete Streets” guidelines to promote safe and comfortable active travel and on-site stormwater management.

### 1.2.3 Transit

- The City shall actively support the provision of local transit services with enhanced frequency during peak periods within or near areas expected to develop to accommodate additional ridership and facilitate connections with higher-order transit along the future Queen Street BRT corridor.
- The City shall actively support the provision of two-way all-day service during peak periods, on the GO Transit line from Toronto to Georgetown with the intent of improving inter-regional transit accessibility.
- To the greatest extent possible, the City shall actively support Brampton Transit and other services to adjust or develop routes that help achieve Brampton Transit’s near-term service proximity guideline of having 90% of the population within 400 metres of all routes and 800 metres of Zum BRT and Base Grid Routes and a long-term goal of transit service within 300 metres of all urban land uses.

#### 1.2.4 Active Travel

- Fine-grain active-travel networks promote walking and biking, making relatively small blocks desirable. Research on transit-oriented developments notes that relatively small blocks with a proposed average block perimeter limit of up to 400 m to 450 m can enhance connectivity. Thomas, R., & et. al. (2018). Is transit-oriented development (TOD) an internationally transferable policy concept? *Regional Studies*. Vol. 50 No. 9, 1201-1213. The City shall work with property owners and developers to ensure the creation of publicly accessible mid-block connections or through-block walkways to facilitate pedestrian and cyclist movement within and across the MTSAs in accordance with schedules 13g, 13h, 13i, and 13j of the Official Plan. Additionally, wherever possible, connections through blocks shall be developed and direct walkway routes provided to natural areas and parks, businesses, transit stops, schools, community facilities and other desirable destinations.
- The City will identify “active-travel priority corridors” within the MTSAs between new developments and future higher-order transit stops based on expected active travel demand to help prioritize investments in public realm, amenities such as street furniture and lighting, and street-animating ground-level uses. Where feasible, the City will explore traffic-calming measures on local or neighbourhood streets to reduce cut-through vehicle traffic and enhance safety and comfort.
- Cycling connections to the city-wide pathways network, where appropriate, will be provided along arterial roads and minor collectors.
- The City will review and, where necessary, update snow removal and clearing policies and procedures to facilitate year-round active travel.
- Parks and open spaces will include multi-purpose recreational trails linked to the street network to enhance connectivity for cyclists.
- The City shall encourage the provision of connections from the trail system to the bicycle lanes through parks or open space corridors, and/or along quiet residential streets with the intent of providing pleasant environments and to minimize conflicts with vehicular traffic.
- Where feasible, the City will consider the use of “continuous sidewalks” or raised crosswalks instead of traditional curb cuts for alley, local street, and driveway entrances. Continuous sidewalks prioritize pedestrians and cyclists overturning motor vehicles by extending sidewalks at the same elevation, creating an uninterrupted path for active travellers. Where continuous sidewalks or raised crosswalks are deployed, the City will deploy tactile indicators or other devices to help ensure that visually impaired users are able to discern different travel spaces.

#### 1.2.5 Bicycle Parking

- Cycling facilities and amenities such as bicycle parking and lock-up areas will be provided at all public destinations within MTSAs, including but not limited to transit stations, parks, schools, community centres, cultural facilities, other public institutions, and retail uses.
- Bicycle parking shall be provided by all residential, commercial, institutional, employment, recreational and civic buildings. Residential buildings shall offer secure bike parking at rates sufficient to facilitate the use of bicycles as an alternative to other less sustainable modes of transit. Employment locations will be required or encouraged to provide showers, changing facilities, and secure lockers to facilitate commuters’ and visitors’ use of bicycles.
- Standard electric outlets for charging electric bicycles and other micromobility devices shall be provided in accessible areas free of charge.



### 1.2.6 Stormwater Management

- All new developed streets should be designed according to the proposed enhanced “Green Complete Streets” guidelines. Exact retention swale dimensions should be calculated for each new street to ensure that the new streets do not cause increase in peak flow for each applicable design storms (i.e., 2-, 5-, 10-, 25-, 50-, and 100-year storms)

### 1.2.7 Travel Demand Management

- Applications for development shall be required to submit travel-demand management plans scoped to reflect the proposed development and prepared by a qualified consultant that describe facilities and programs intended to discourage single-occupancy vehicle trips, minimize parking, and promote the use of transit, cycling, car and bike sharing, and car-pooling. Proposed TDM plans are encouraged to include developer, landlord, or employer-supported transit passes.

### 1.2.8 Parking

- Within major transit station areas, the City will consider the imposition of parking maximums where it deems that adequate transit services exist or will exist.
- Surface parking lots shall be avoided within MTSA to promote sustainable mode shift and reduce impervious surfaces that contribute to excessive stormwater run-off and the urban heat island effect.
- To the extent that vehicle parking is required as a condition of development, shared parking facilities and shared vehicle access points will be encouraged. As a condition of development approval, landowners shall enter into agreements which among other matters shall determine ultimate access and shared parking arrangements.

### 1.2.9 Development Phasing

Development of public transit projects will keep pace with private development and will protect for the future expansion and long-term implementation of the transit system, including higher order transit, in the Secondary Plan Area.

## 1.3 Precinct Plan Development

The City of Brampton is expected to develop precinct-level plans for at least two groups of in-scope MTSA:

- Precinct A: Centre, Kennedy, and Rutherford
- Precinct B: Laurelcrest, Dixie, Central Park, and Bramalea

The following section provides specific recommendations and observations for these precincts based on the background analysis and research conducted for this report.

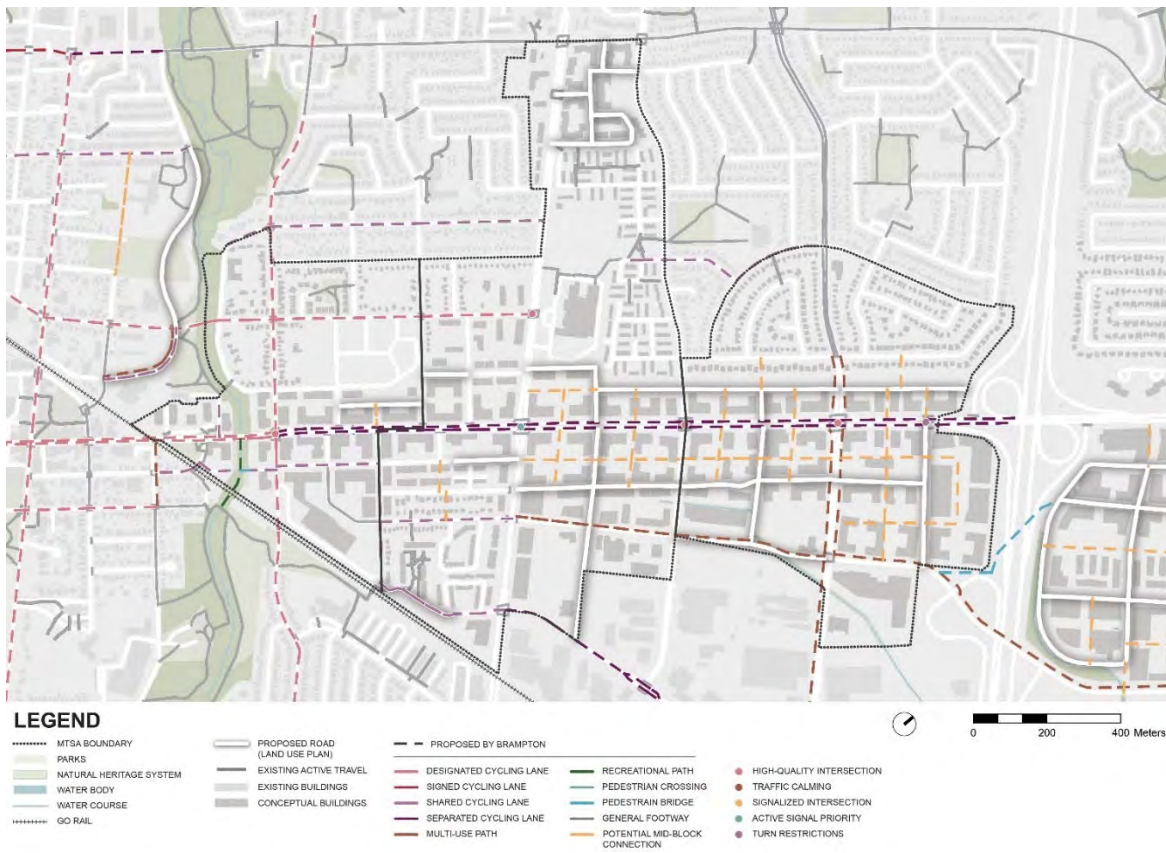
### 1.3.1 Precinct A: Centre, Kennedy, and Rutherford

The Centre Street MTSA area plan concentrates high-rise mixed-use space along the Queen Street East corridor. To the north, the high-rise mixed-use space transitions to mid-rise mixed-use areas and then to low-rise residential areas. There is a pocket of mid-rise residential space in the northwest corner of the MTSA where an existing condo building is located. The northern portion of the MTSA also includes a large cemetery. The majority of the MTSA south of the high-density Queen Street corridor is dedicated to the Peel Memorial Centre for Integrated Health and Wellness.

The Kennedy MTSA area plan concentrates high-rise mixed-use space along the Queen Street East corridor. Building heights and densities reduce north and south from Queen Street East. North of Queen Street East, there

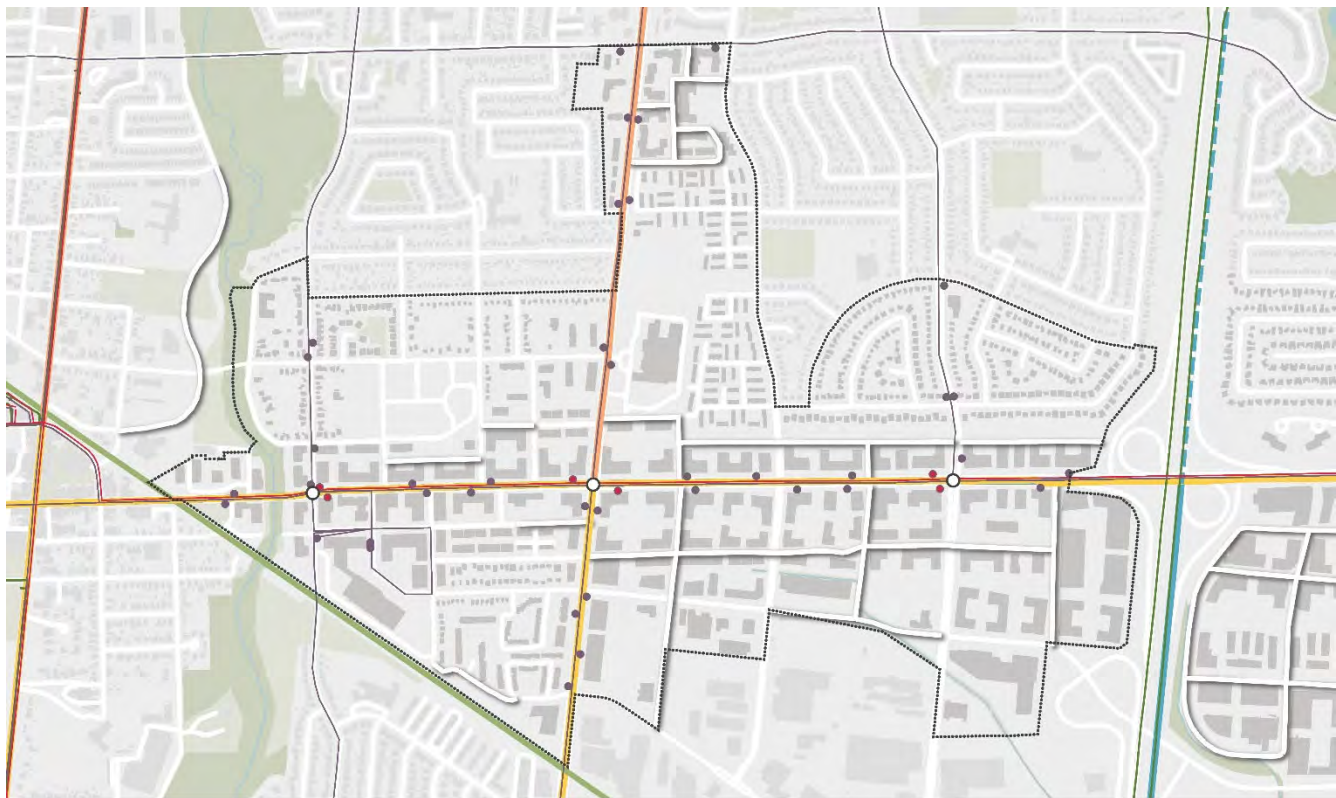
is a range of existing and proposed low-rise and mid-rise residential and mixed-use spaces and an existing secondary school. In some areas with existing condos, redevelopment potential is limited due to challenges associated with securing agreement among condo owners to redevelop. The southwest corner of the MTSA includes several existing mid-rise residential areas and proposed mid-rise mixed-use areas. The southeast corner includes proposed mid-rise mixed-use areas and existing industrial lands. A portion of the industrial lands in this area are covered by a Special Policy Area which restricts sensitive land uses due to proximity to the industrial lands south of Eastern Avenue. Several existing large blocks in this MTSA are broken up by new proposed pedestrian connections

The Rutherford MTSA area plan concentrates high-rise mixed-use space along the Queen Street East corridor. To the north, there is an established low-rise residential area. A new road and linear park / landscaped buffer are proposed to separate the high-rise corridor and the established low-rise neighbourhood. As there is a desire to remove vehicle access to buildings off Queen Street, this proposed road will play an important role in providing vehicles access to developments that front on Queen Street. To the south, the high-rise corridor is adjacent to mid-rise mixed-use areas. The southernmost part of the MTSA will feature prestige industrial space. Additionally, a community centre and neighbourhood park are planned for the southeast corner of the MTSA, and the fire station is planned to be relocated to the southwest corner.



**Figure 1-2 Future Street Network and Conceptual Development - Precinct A**





**Figure 1-3 Existing and Future Public Transit Network - Precinct A**

### 1.3.1.1 Public Transit Accessibility and Frequency

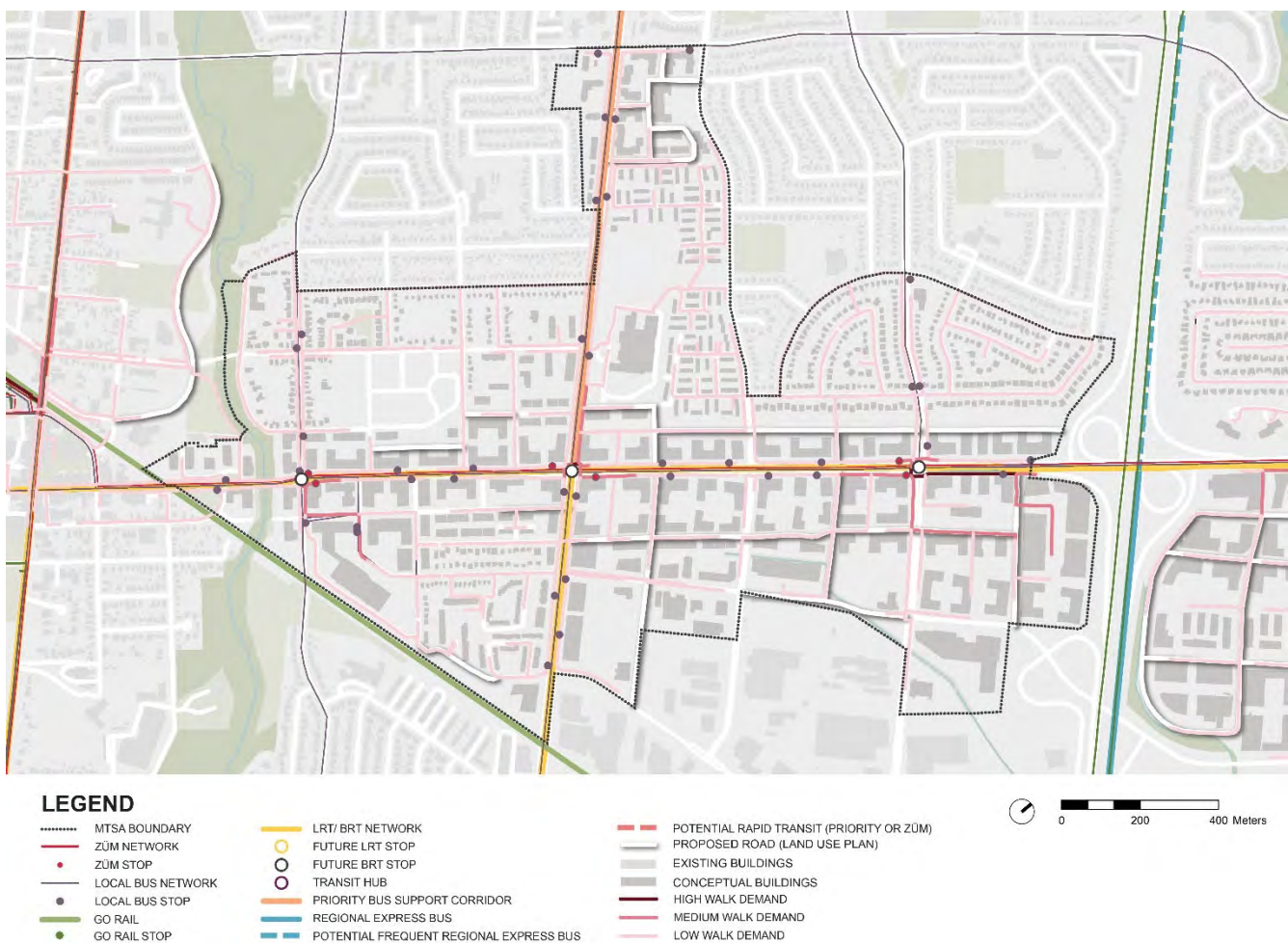
- Local bus service:
  - Within the precinct, significant growth is expected to occur south of Queen Street. The City shall actively support the provision of new local transit services through the areas expected to accommodate the most significant population and job growth. Among the local transit routes, the City shall explore with Brampton Transit (1) the extension of local bus service on Rutherford Road South between Queen Street and Clark Street or Orenda Road and (2) along the Clark Street extension and Eastern Avenue or Orenda Road. New routes shall be considered to bolster transit access to higher-order transit along Queen Street, the GO rail network, and other regional services.

### 1.3.1.2 Active travel

- Connectivity with existing and future networks:
  - Pedestrian and cyclist links shall be provided in accordance with schedules 13d, 13e, and 13f of the Official Plan and the Active Travel Master Plan to serve as a recreational, utilitarian and aesthetic amenity to the community and to integrate the elements of the Residential and Commercial Land Uses, Transportation, Recreational Open Space and Natural Heritage system.

- Pedestrian-priority design:
  - The City will identify “active-travel priority corridors” within the MTSA between new developments and future Queen Street BRT stops based on expected active travel demand to help prioritize investments in public realm, amenities such as street furniture and lighting, and street-animating ground-level uses. Where feasible, the City will explore traffic-calming measures on local or neighbourhood streets to reduce cut-through vehicle traffic and enhance safety and comfort.
  - Within the Centre Street MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East, Church Street, John Street and Lynch Street.
  - Within the Kennedy MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East and Kennedy Road.

Within the Rutherford MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East and roads within the southeast corner of the MTSA.



**Figure 1-4 Overlay of Future Transit Network and Aggregated Active Travel Demand - Precinct A**

### 1.3.1.3 Mode Shift

- Travel demand management:

- Applications for development shall be required to submit travel-demand management plans scoped to reflect the proposed development and prepared by a qualified consultant that describe facilities and programs intended to discourage single-occupancy vehicle trips, minimize parking, and promote the use of transit, cycling, car and bike sharing, and car-pooling. Proposed TDM plans are encouraged to include developer, landlord, or employer-supported transit passes.
- Within the Centre Street MTSA, travel demand management should be emphasized for developments that contribute traffic to Queen Street, John Street, and Beech Street.
- Within the Kennedy MTSA, travel demand management should be emphasized for developments expected to contribute traffic to Hansen Road, Eastern Avenue, John Street, Queen Street, and June Avenue.
- Within the Rutherford MTSA, travel demand strategies should be emphasized for developments expected to contribute traffic to Hansen Road, Eastern Avenue, Orenda Road, the proposed street connection between Hansen Road and Rutherford Road North, and the proposed street connection between Queen Street East and Clark Boulevard.

#### 1.3.1.4 *Phasing and Development*

- The Region of Peel has identified existing constraints within the wastewater servicing network in this precinct that will require long-term infrastructure upgrades. The City will work with developers to coordinate the phasing of development with short-, medium- and long-term upgrades. Within areas subject to capacity constraints, the City will encourage developers to explore the adoption of strategies to reduce wastewater flow, including water efficiency and greywater recycling. (For further details on water and sanitary servicing, consult the full report and the analyses prepared for the Region of Peel).

#### 1.3.2 **Precinct B: Laurelcrest, Dixie, Central Park, Bramalea**

The Laurelcrest MTSA preliminary area plan has a large portion of land dedicated to the natural heritage system along its eastern edge. There is a development of single-family homes north of Queen Street with limited development potential. Most of the Laurelcrest MTSA’s development potential is concentrated south of Queen Street. The highest density uses are concentrated along Queen Street, with mid-rise and industrial uses located farther south. An east-west landscape buffer is proposed to separate the industrial areas from mixed-use areas. A landscape buffer is also proposed to separate the MTSA from Highway 410, which runs north-south along the western edge of the MTSA.

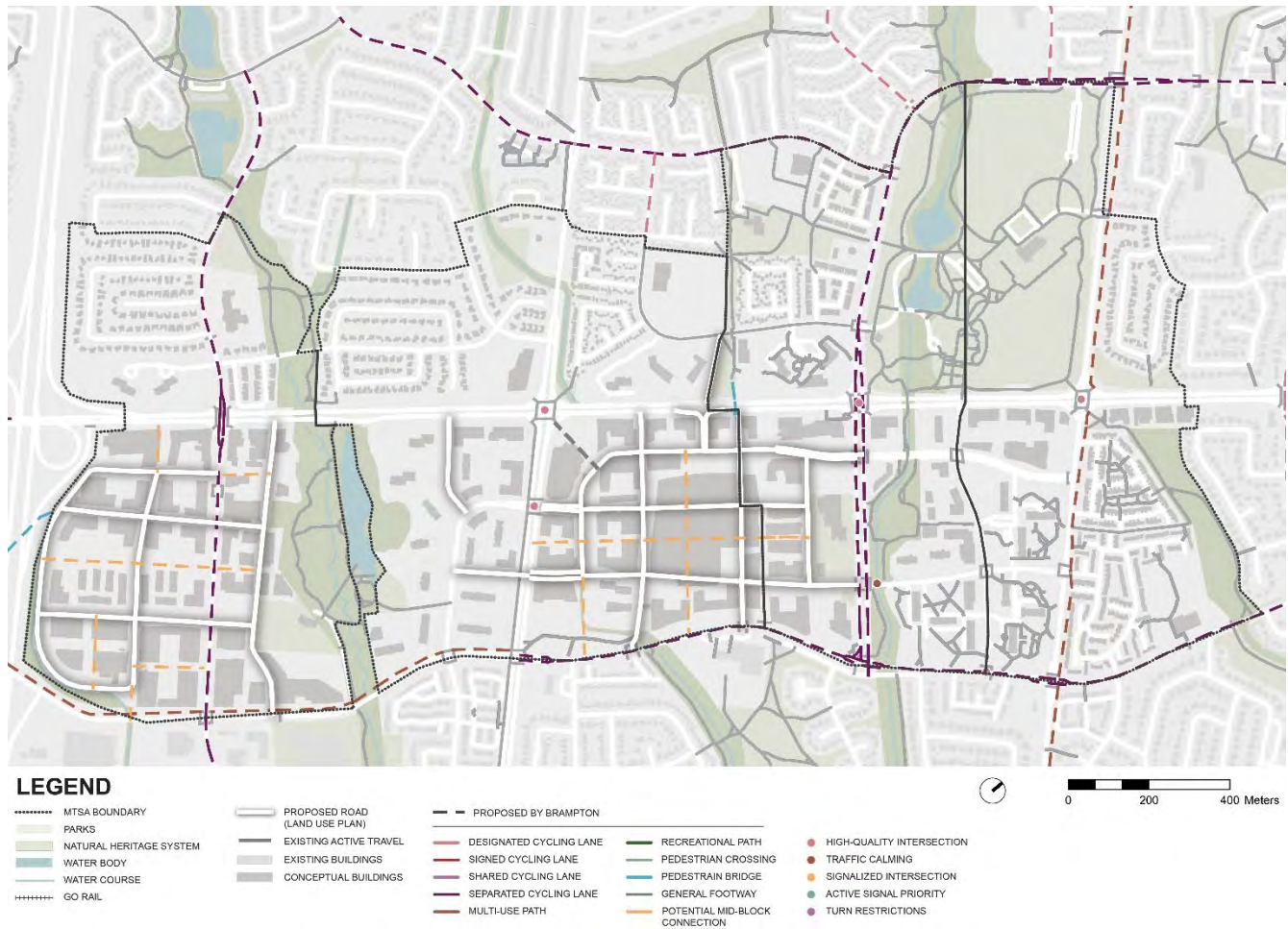
The Dixie MTSA preliminary area plan clusters most redevelopment south of Queen Street. High-rise residential areas are located southwest of Queen Street and Dixie Road. Mid- and high-rise mixed-use areas are located southeast of Queen Street and Dixie Road. In particular, the preliminary area plan contemplates the eventual transition of the area currently occupied by the Bramalea City Centre shopping mall into a combination of mid- and high-rise development with corresponding street and active connections.

The Central Park MTSA area plan proposes high-rise mixed uses along Queen Street East. The northwest corner of the MTSA includes low-rise residential areas north of the high-rise mixed-use space on Queen Street East. The southwest corner includes a pocket of mid-rise mixed-use space within the high-rise mixed-use space. The southeast corner of the MTSA contains existing high-rise residential areas south of the planned high-rise mixed-use space on Queen Street East. The northeast corner of the MTSA is dominated by Chinguacousy Park. This MTSA also includes several important institutional features such as Region of Peel offices, Bramalea terminal, and the Chinguacousy Branch of the Brampton Library.

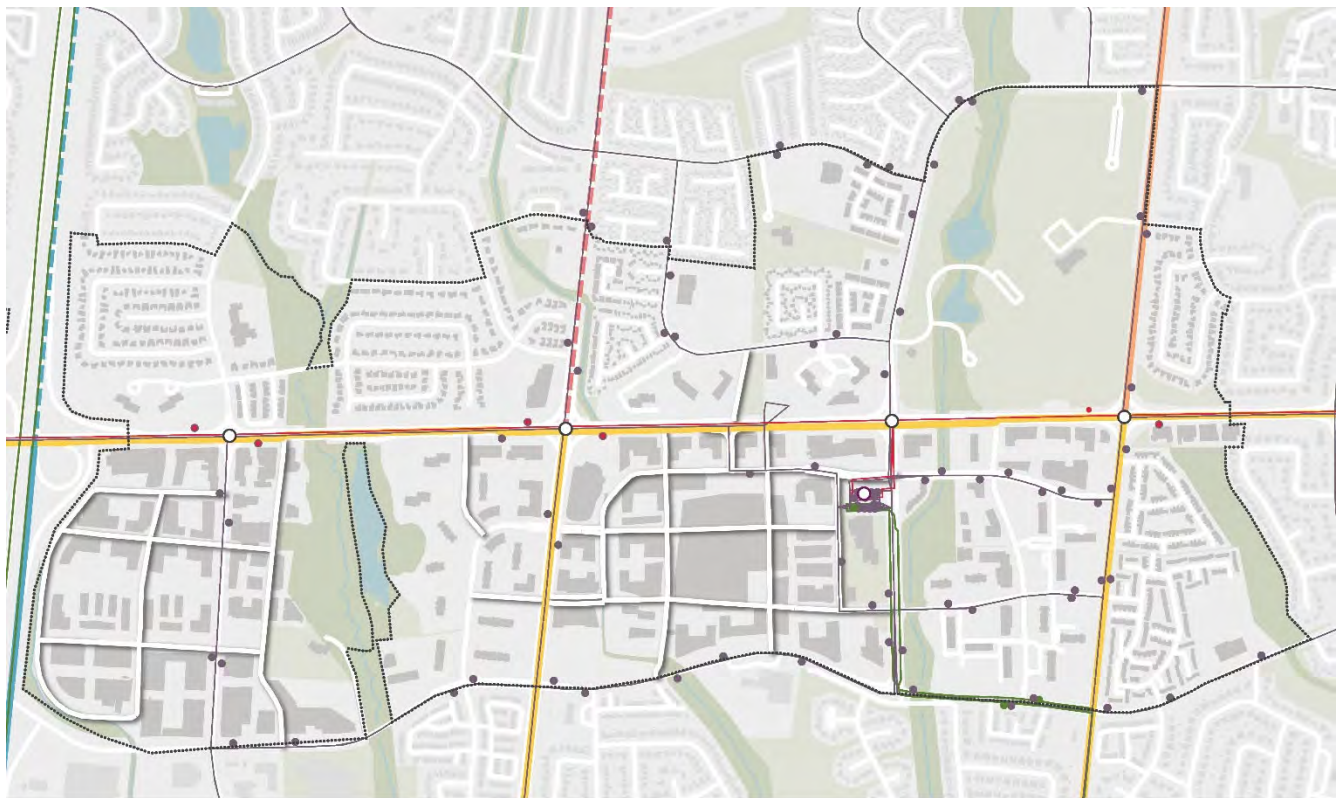
The Bramalea MTSA preliminary area plan largely reflects existing uses north of Queen Street East. The southwest and southeast corners of Bramalea Road and Queen Street East are marked for high-rise mixed uses. The southwest portion of the MTSA includes a lot of condos that are unlikely to redevelop, in part because of the



difficulty of achieving unanimous agreement from existing owners. The southeast portion of the MTSA includes low-rise residential areas, open space, and a school.

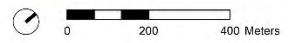


**Figure 1-5 Future Street Network and Conceptual Development - Precinct B**



**LEGEND**

- |       |                   |       |   |
|-------|-------------------|-------|---|
| ----- | MTSA BOUNDARY     | ----- | POTENTIAL RAPID TRANSIT (PRIORITY OR ZUM) |
| ----- | ZUM NETWORK       | ----- | PROPOSED ROAD (LAND USE PLAN)             |
| •     | ZUM STOP          | ----- | EXISTING BUILDINGS                        |
| ----- | LOCAL BUS NETWORK | ----- | CONCEPTUAL BUILDINGS                      |
| •     | LOCAL BUS STOP    | ○     | FUTURE LRT STOP                           |
| ----- | GO RAIL           | ○     | FUTURE BRT STOP                           |
| •     | GO RAIL STOP      | ○     | TRANSIT HUB                               |
| ----- |                   | ----- | PRIORITY BUS SUPPORT CORRIDOR             |
| ----- |                   | ----- | REGIONAL EXPRESS BUS                      |
| ----- |                   | ----- | POTENTIAL FREQUENT REGIONAL EXPRESS BUS   |



**Figure 1-6 Current and Future Public Transit Network - Precinct B**

**1.3.2.1 Public Transit Accessibility and Frequency**

- Local bus service:
  - The City shall actively support the provision of new local transit services through the areas expected to accommodate the most significant population and jobs growth. Within this precinct, among the local transit routes the City shall explore with Brampton Transit are (1) new routes serving the Laurelcrest MTSA development area bounded by Queen Street, Highway 410, West Drive, and Clark Boulevard and (2) new routes serving the Dixie development area bounded by Queen Street, Central Park Drive, Clark Boulevard, and Dixie Road.

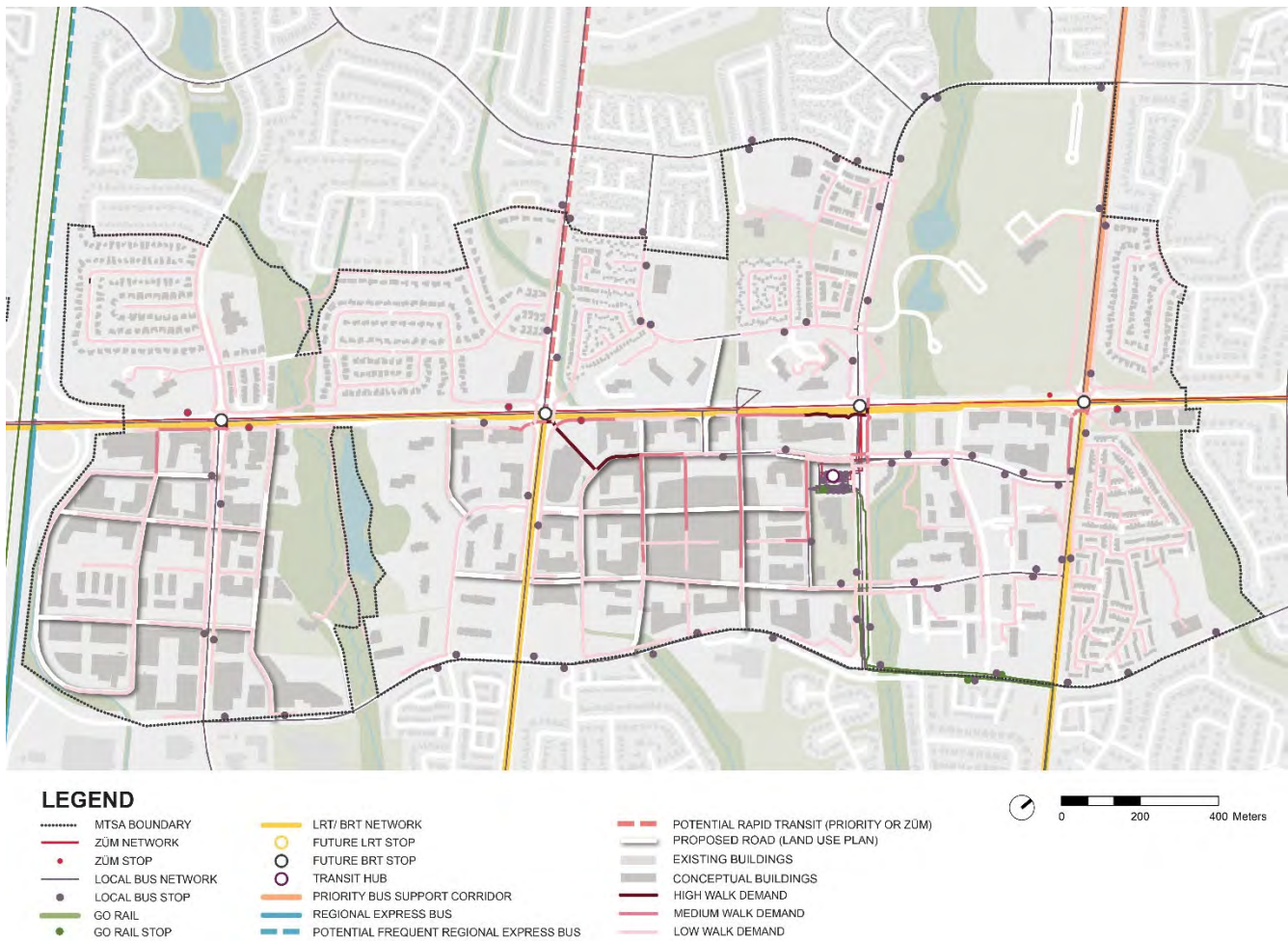
**1.3.2.2 Active Travel**

- Connectivity with existing and future networks:
  - Pedestrian and cyclist links shall be provided in accordance with schedules 13g, 13h, 13i, and 13j of the Official Plan and the Active Travel Master Plan to serve as a recreational, utilitarian, and aesthetic amenity to the community and to integrate the elements of the Residential and Commercial Land Uses, Transportation, Recreational Open Space and Natural Heritage System.



### 1.3.2.3 *Pedestrian-Priority Design*

- The City will identify “active-travel priority corridors” within the MTSA between new developments and future Queen Street BRT stops based on expected active travel demand to help prioritize investments in public realm, amenities such as street furniture and lighting, and street-animating ground-level uses. Where feasible, the City will explore traffic-calming measures on local or neighbourhood streets to reduce cut-through vehicle traffic and enhance safety and comfort.
- Within the Laurelcrest MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East, West Drive, and the north-south road extending south from Queen Street East west of West Drive based on expected active demand.
- Within the Dixie MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East, Helena Court, and the street network planned for the Bramalea City Centre area based on expected active demand.
- Within the Central Park MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East, Central Park Drive, Team Canada Drive, Peel Centre Drive, and the north-south proposed street west of Team Canada Drive based on expected active demand.
- Within the Bramalea MTSA, active-transport facilities, including street furniture and tree planting, or Complete Streets upgrades should be prioritized for Queen Street East, Bramalea Road, and Knightsbridge Road based on expected active demand.



**Figure 1-7 Overlay of Future Public Transit Network and Aggregated Walk Demand to BRT - Precinct B**

#### 1.3.2.4 Mode Shift

- Travel demand management:

- Applications for development shall be required to submit travel-demand management plans scoped to reflect the proposed development and prepared by a qualified consultant that describe facilities and programs intended to discourage single-occupancy vehicle trips, minimize parking, and promote the use of transit, cycling, car and bike sharing, and car-pooling. Proposed TDM plans are encouraged to include developer, landlord, or employer-supported transit passes.
- Within the Laurelcrest MTSA, travel demand management should be emphasized for developments that contribute traffic to Queen Street and Lambeth Street.
- Within the Dixie MTSA, travel demand management should be emphasized for developments expected to contribute traffic to Queen Street East and portions of the new street network proposed for the current location of the Bramalea City Centre.
- Within the Central Park MTSA, travel demand management should be emphasized for developments expected to contribute traffic to eastbound Queen Street East, Hanover Road, and portions of the new street network proposed for the existing Bramalea City Centre.

- Within the Bramalea MTSA, travel demand management should be emphasized for developments expected to contribute traffic to Queen Street East.

#### *1.3.2.5 Phasing and Development*

In this precinct, the Region of Peel has identified existing constraints within the wastewater servicing network. The principal constraints relate to the Spring Creek Tunnel Trunk, which is already under evaluation by the Region of Peel. As a result of required upgrades, work on Clark Boulevard has been deemed unavoidable despite constructability challenges. The City of Brampton will work with the Region of Peel to harmonize other planned interventions on Clark Boulevard to minimize disruptions. (For further information regarding water and sanitary servicing, consult the reports prepared for Peel Region.)