Appendix B - Interim Control By-law Land Use Study prepared by Dillon Consulting

DILLON CONSULTING

CITY OF BURLINGTON

Interim Control By-Law Land Use Study

December 2019

Executive Summary

Background and Basis for ICBL Study

On March 5, 2019, Burlington City Council passed an interim control bylaw (ICBL) to temporarily restrict the development of lands in the Downtown Burlington Urban Growth Centre (UGC) and the lands in proximity to Burlington GO Station (see **Figure ES-1**, Study Area). The ICBL in Burlington was triggered in response to emerging concerns over development applications with intensities significantly higher than those anticipated in the current Official Plan. In addition to this, the City identified the need to clarify the role and function of the John Street Bus Terminal as a Major Transit Station Area (MTSA), which had been used in part as the basis for a recent Ontario Municipal Board Decision, which allowed for a 26 storey high-rise building, where the Official Plan called for up to a maximum of 8 storeys.

The purpose of the Interim Control By-Law Study is to:

1. Assess the role and function of the downtown bus terminal and the Burlington GO Station on Fairview Street as MTSAs;
2. Examine the planning structure, land use mix and intensity for the lands identified in the Study Area; and,
3. As required, provide recommendations to the City on updates to the Official Plan and Zoning bylaw regulations for the lands identified in the Study Area.

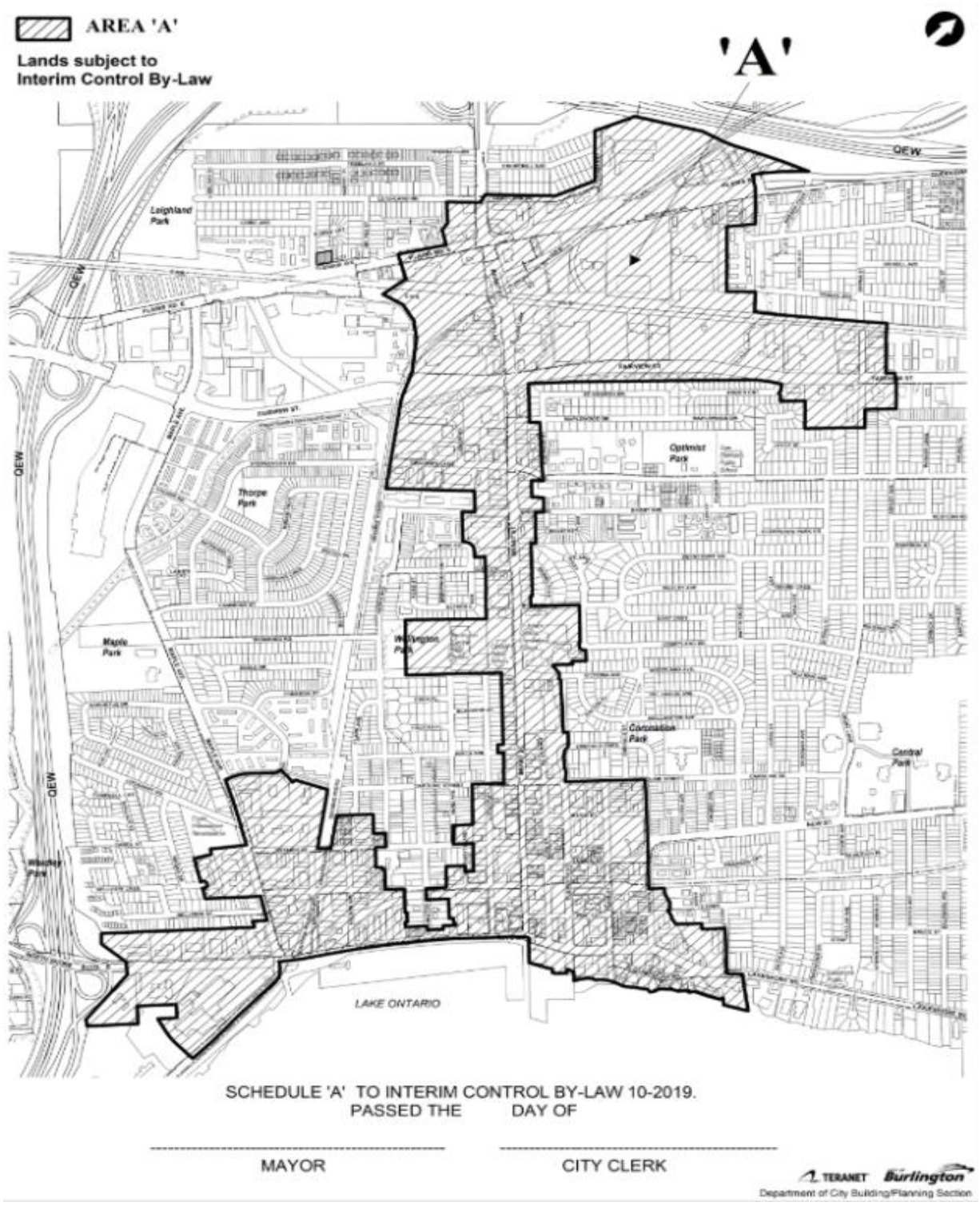

Figure ES-1-1: Lands Subject to the Interim Control By-Law

Policy Context

There are a number of policies, plans and guidelines which apply to the lands within the ICBL Study Area. The Growth Plan promotes the planning for complete communities in settlement areas across the Greater Golden Horseshoe (GGH). Complete communities are specific areas, such as mixed-use neighbourhoods within cities or towns that "offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living, including an appropriate mix of jobs, local stores and services, a full range of housing, transportation options and public service facilities". To support this principle, the Growth Plan provides policy guidance for a number of strategic growth areas which are to be planned as locations for accommodating future growth, including Urban Growth Centres and Major Transit Station Areas. While UGCs and MTSA have different definitions, they are both examples of complete community typologies and Provincial policy establishes direction for promoting intensification and transit-oriented development in both of these typologies.

The Growth Plan identifies Downtown Burlington as an UGC with a minimum density target of 200 people and jobs per hectare (to be achieved by 2031). The Growth Plan does not specifically identify each MTSA, but the Plan does include a definition for MTSAs which includes heavy rail stations (such as the Burlington GO Station) and major bus depots in an urban core (John Street Bus Terminal).

Metrolinx's Big Move identifies Burlington GO and the Downtown John Street Bus Terminal as transit facilities with regional significance. The 2041 Regional Transportation Plan identifies Burlington GO Station as a Mobility Hub (based on its location on a Priority Transit Corridor) and Downtown Burlington as an UGC, as well as improvements to the transit network intended to improve regional

connectivity, including Regional Express Rail improvements at the Burlington GO Station and a priority bus route along Brant Street to improve connectivity between Burlington GO and the Downtown John Street Bus Terminal.

The current Halton Region Official Plan reinforces Provincial direction for these two locations, identifying both Burlington GO and lands within the Downtown UGC as Major Transit Station Areas and Mobility Hubs. On-going work as part of the Region's Municipal Comprehensive Review (MCR) process, including the Defining Major Transit Requirements Study (DMTR) continue to reinforce the regional significance of these two facilities (identifying both as Regional Transit Nodes and Brant Street as a Transit Priority Corridor).

The City's current in force Official Plan implements aspects of Provincial and Regional policy, identifying Downtown Burlington as a UGC and includes policy references to Major Transit Station Areas. The current Official Plan includes the 200 people and jobs per hectare density target for the UGC but does not include a density target for MTSAs, nor does it speak to the specific location and function for each MTSA. The current Official Plan also does not fully address a number of the recent changes to the Growth Plan related to complete communities and transit-supportive development. While the land use framework for lands within the Study Area is intended to promote a diverse range of uses, a number of which are transit-supportive and are intended to support growth and intensification in and around the Burlington GO Station and the Downtown Bus Terminal, there are opportunities to address several gaps to ensure that any development which occurs in the interim aligns with Provincial and Regional policy directions while taking into account the unique functions of each transit facility, as well as any local conditions in the lands around each station.

The recently adopted 2018 Official Plan is under review with the Region and the City is also undertaking a scoped review of the building height and density policies in the Downtown. The scoped review will establish an updated framework for accommodating future growth in the Downtown, including lands around the John Street Bus Terminal. At the same time, the City has also been working on an Area Specific Plan for lands around the Burlington GO Station, which is expected to be completed after the Region of Halton completes its MCR process. Accordingly, until the new Official Plan comes into force and effect and the Area Specific Plan process is completed, there is a need to implement a number of interim-measures to guide growth and development in the Study Area, in particular in instances where there are gaps between the latest Provincial Policies and current Official Plan.

Downtown Burlington Bus Terminal Role and Function

There is a strong policy basis for Burlington's Downtown John Street Bus Terminal as an MTSA and hence the numerous policy documents at the Provincial, Regional and City levels which identify an MTSA in the Downtown. Lands within the Downtown Burlington are identified as an MTSA in the Big Move, Halton Region Official Plan and the City's adopted Official Plan (but not within the in force Official Plan). Furthermore, a number of long range plans identify potential for transit improvements along Brant Street to enhance connectivity between the Downtown and Burlington GO MTSAs. The Province's RTP 2041 includes a "Priority Bus / Priority Streetcar" corridor on Brant Street between Downtown Burlington and the Burlington GO Station; and Halton Region's DMTR reinforces this opportunity, identifying the link between the Burlington GO Station and the Downtown as a Priority Transit Corridor.

From a policy perspective, the Downtown Burlington John Street Terminal is clearly understood to be a Major Transit Station Area. From an operational perspective the John Street Terminal is estimated to have 320 boarding/alightings in the am peak period, with potential to grow to 1800 boardings/alighting in the future. However, in comparison to the characteristics of typical major

bus depots, the John Street Terminal has a number of limitations which underpin its lower ridership levels, including:

- Limited number of major trip generators in the Downtown;
- Limited connectivity to Burlington GO Station;
- Limited station infrastructure; and,
- Limited number of convergence and limited number transfers.

With the above-noted limitations in mind, it is important to recognize that not all MTSAs are equal. The various density guidelines (e.g. Growth Plan density targets, Mobility Hub Guidelines and MTO's Transit Supportive Guidelines) reinforce the notion that there is a hierarchy when it comes to transit, with facilities which operate in dedicated right-of-ways, such as subways, LRTs and BRTs, having the greatest potential for ridership compared to bus services which operate in mixed traffic. And while the current ridership levels are low, despite the fact that the Downtown is the City's densest area, the John Street Terminal functions as a relatively important transfer point in the context of the City's system. With this in mind, the station alone is not understood to be a significant driver of intensification, however, certain forms of intensification, such as employment uses or other major trip generators would help to reinforce the function of the MTSA. Furthermore, future improvements to services and infrastructure could help to improve ridership. Section 6.1 of this report further explores several opportunities to better support transit in the Downtown.

Burlington GO Station Role and Function

From both a policy and operational perspective, the Burlington GO Station Area is understood to be an MTSA. From a policy perspective, the Burlington GO Station is located along a Priority Transit Corridor in the Growth Plan and the service is considered a higher order transit service as per Schedule 5 (Growth Plan). Halton Region's Official Plan identifies the area as a both a Mobility Hub and MTSA. The strategic importance of this area was recently reaffirmed through the Region's DMTR study which identified Burlington GO as a Regional Transit Node. The City's in force and effect Official Plan also identifies the importance of the lands around Burlington GO as an opportunity for transit improvement and future intensification. From a policy perspective the Burlington GO Station Area is understood to be a Major Transit Station Area located on a Priority Transit Corridor.

From an operational perspective, the current AM peak period boardings and alightings are approximately 2,100 (including local transit boardings and alightings) which is below the defined threshold of a Gateway Mobility Hub at 4,500. However, future service improvements to Burlington Transit and Regional Express Rail (RER) as well as population and employment growth are projected to increase AM peak period passenger activity past the suggested threshold of 4,500 for a Mobility Hub. GO Rail volume is expected to increase at this station in the future due to increased density, other development outside of the Study Area, and mode share shifts.

How well does the current planning structure, land use mix, intensity align with the transit function for the Downtown and Burlington GO MTSAs?

The current planning structure, land use mix and intensity policies within the City's current in-force Official Plan are generally supportive of the transit function for the Downtown and Burlington GO MTSAs. However, there are a number of opportunities to strengthen and align the policies with the latest Provincial and Regional policies and also recognize the different functions of each MTSAs.

There are several on-going initiatives which once implemented will help to strengthen the Official Plan, including:

- Completion and endorsement of the Scoped Re-examination of the Downtown (as part of the new Official Plan);
- Approval of the new Official Plan;
- Completion, adoption and approval of an Area Specific Plan for Burlington GO Station Area MTSA; and,
- Completion of Halton Region's MCR process.

Recognizing that there are a number of on-going initiatives, the following items should be addressed to provide guidance in the interim:

- Recognizing the importance of transit supportive development within the Official Plan;
- Defining the two different functions of the Burlington GO and Downtown Burlington MTSAs based on their differing roles in the City's Official Plan;
- Providing development criteria for assessing transit and complete community supportiveness;
- Updating policies and permissions for lands in the immediate vicinity of the Burlington GO to avoid potential for unplanned/uncoordinated development in close proximity to the GO Station;
- Updating policies and permissions for mixed use areas (MXT) to ensure alignment between current Official Plan and Zoning by-law; and,
- Update the key definitions/terms to ensure alignment with the Growth Plan (transit supportive development, complete communities, Major Transit Station Area, Priority Transit Corridor, major trip generator, etc.).

Official Plan Policy Recommendations

The following section identifies a number of Official Plan policy and Zoning by-law directions for the City to consider. These directions are intended to provide guidance on an interim-basis to help the City make decisions in the short term until the new Official Plan and Associated Area Specific Plans (for the GO Station Areas) come into full force and effect. The directions are organized around the structure of the current Official Plan, with specific items identified for each of the following applicable Parts:

- Part I Policy Framework;

- Part II Functional Policies;
- Part III Land Use Policies – Urban Planning Areal;
- Part VII Schedules & Tables; and,
- Part VIII Definitions.

Part I Policy Framework

1. **Recognize the role of MTSA's and transit supportive land uses in the Land Use Vision**: Part I Section 4.0 describes the land use vision for the City. Section 4.3 provides guidance on the future built form and natural environment. These sections should be updated to establish the Major Transit Station Area concept and broadly establish the need for transit supportive development.

Part II Functional Policies

1. **Strengthen policy direction on transit supportive land uses city-wide:** Part II Section 3.4.2 d) identifies that the Long Term Transit Network shall be updated as required by external factors or internal factors and that these updates will not require an amendment to the Plan. Part II Section 6.3.d) and e) describe existing and new communities policies that promote compact forms of development and establish the need to encourage the use of public transit through built form. Part III Section 10.2.h) of the in force OP identifies that it is an objective of the municipality to facilitate public transit supportive land uses and improve the quality of, and accessibility to, transit facilities. The functional policies of the OP should be strengthened to include:
    a. Recognition of the relationship between land use and transit; and,
    b. Identification of the elements that make development transit supportive (including built form, urban design, densities, and mix of land uses).

2. **Add city-wide policy defining the need to plan for complete communities:** Part II Section 6.3 d) outlines that City Council may require the preparation of design plans in conjunction with development proposals that support the goals of mixed land use, diversity and pedestrian orientation, define the public realm and the relationship between the built form to the public realm, address issues of physical integration, encourage the use of public transit, identify opportunities to integrate pubic areas or other cultural elements into the community and promote public safety. The policies of Part II Section 6 should be strengthened to direct urban form that will optimize infrastructure, particularly along transit and transportation corridors, to support the achievement of complete communities through a more compact built form.

Part III Land Use Policies - Urban Planning Area

1. **Add policies to Part III identifying the location, function and scale of Major Transit Station Areas in Burlington**: Part II of the OP is silent on the role of Major Transit Station Areas. New

policies are needed to address provincial policy gaps and provide clarity on the role, function, scale and need for Area Specific Plans for these priority growth areas:

a. Identify the importance of planning around transit stations and the location of MTSAs in the City of Burlington;
b. Outline a MTSA typology recognizing that there are different types of MTSA's in Burlington's context, including 1) those on a Priority Transit Corridor (Burlington GO and Appleby GO), 2), those serviced by higher order transit not recognized as a Priority Transit Corridor (Aldershot GO), and 3) those not on a Priority Transit Corridor nor serviced by higher order transit (Downtown Burlington bus terminal). The MTSA typologies will be further refined through the Region's Municipal Comprehensive Review. Identify how each element of transit supportive development should be addressed based on the different contexts;
c. Identify the need for detailed OP policies or Area Specific Plans to consider the importance of these areas in accommodating employment over the long term in areas targeted for intensification;
d. Identify the need for the active transportation plan to protect opportunities for physically separated bicycle facilities (where feasible) for all reconstruction of major streets and opportunities for complete streets that serve all modes of transportation;
e. Add a policy to plan and design Major Transit Station Areas to be transit supportive and to achieve multimodal access to stations and connections to nearby major trip generators; and,
f. Add a policy directing major office and major institutional development to urban growth centres, major transit station areas or other strategic growth areas with existing or planned frequent transit service.

2. **Consider strengthening the connection between Burlington's MTSAs:** The City may consider strengthening the connection and supporting increased transit use between the Burlington GO and Downtown Burlington MTSAs through the following measures/opportunities:
    a. Transit signal priority on Brant Street north of the Downtown to improve transit reliability and travel times;
    b. Exploring the potential for dedicated HOV and queue jump lanes, when approaching the Burlington GO Station along Fairview; and,
    c. Introducing additional comfort shelters.

3. **Add a policy describing the role and function of the Downtown Burlington MTSA:** The in force OP is silent on the role and function of the Downtown bus terminal and its role in supporting future intensification in the UGC. Policies should be added to clearly articulate the role and function as it relates to ability to accommodate growth, mix of land use, planned densities, built form and character, including:

a. The Downtown Burlington bus terminal functions as an intercity bus transfer point. It is not within its own right-of-way and is not serviced by higher order or frequent transit;
b. It currently does not function as a major bus depot and this function is likely to continue into the future, unless improvements and enhancements are made;
c. Downtown Burlington is recognized as a Mobility Hub in the Halton Region Official Plan and an MTSA in the Growth Plan;
d. Given its location within the Downtown Burlington Urban Growth Centre, the lands within the MTSA should be planned to contribute to the 200 people and jobs combined per hectare that the Urban Growth Centre is planned to achieve by 2031. Given the limited function of the Downtown John Street Bus Terminal, the MTSA is not expected to be a significant driver for intensification beyond that which is required by the Downtown UGC; and,
e. Detailed OP policies are needed to identify the appropriate mix of land use, planned density, built form and character of the MTSA and Urban Growth Centre. Through the re-examination of the Official Plan Study, detailed Official Plan policies are being developed for the Downtown. To assist with assessing development applications in the interim, the City should include development criteria which allows the City to assess development applications for transit and complete community supportiveness.

4. **Add a policy describing the role and function of the Burlington GO MTSA:** The in force OP is silent on the role and function of the Burlington GO MTSA. Policies should be added to clearly articulate the role and function as it relates to ability to accommodate growth, mix of land use, planned densities, built form and character, including:
    a. Burlington GO MTSA is on a Priority Transit Corridor, serviced by higher order transit and frequent transit. It should be a primary focus for transit-oriented development and intensification;
    b. Opportunities to introduce a full mix of uses should be explored to allow the Burlington GO MTSA to function as a complete community;
    c. This area serves an important employment function for the City, and there is a need to ensure that employment uses remain an important component of this mixed-use, transit supportive node;
    d. Mobility Hub boundaries have been established by the City. The ultimate delineation of the MTSAs and density targets will need to be confirmed by the Region as part of the Municipal Comprehensive Review and should be included within the City's OP policies and schedules through a future OP review; and,
    e. Area specific planning is needed to identify the appropriate mix of land use, planned density, built form and character of the MTSA and Urban Growth Centre. In the absence of the area-specific planning studies, development criteria should be used to assess development applications.

5. **Update land use policies to support transit-supportive development within the Burlington GO MTSA:** The Burlington GO MTSA is a high priority area for transit supportive growth. The in force OP land use policies applicable to this area limit the range of permitted uses, built form and densities. Some of these lands are designated by the Region of Halton as Employment Area, included within the Provincially Significant Employment Zones (PSEZ) and currently under review. An Area Specific Plan is required to establish the transit supportive land uses, built form and densities and accordingly, the Area Specific Plan will provide additional opportunities to encourage transit-oriented development. In the interim, the following policy recommendations are made to support transit supportive development within the Burlington GO Mobility Hub:
    a. Mixed Use Corridor (MUC) - General and MUC - Commercial Corridor:
        - Examine and confirm the maximum building height for lands in the immediate vicinity of the GO station;
        - Require commercial or recreational uses on the first floor of all buildings abutting multi-purpose arterial or major arterial roads within Burlington GO Mobility Hub;
        - Remove permissions for large scale motor dealership expansions at subject sites at the south-west corner of Fairview Street and Brant Street and north-west corner of Plains Road and Brant Street;
        - Prohibit ground oriented dwelling in Mobility Hub (e.g. stand-alone townhouses); and,
        - Tie policy 5.3.2.d.v) for reduced parking rates to MTSAs and add policy on zoning specifying mandatory bicycle parking and other multi-modal infrastructure.
    b. MUC - Employment:
        - Limit range of retail to accessory retail and service commercial to serve the day to day needs of employees;
        - Increase or remove maximum FSI; and,
        - Introduce minimum building height of 2 storeys, except for industrial uses.
        - Tie policy 5.3.4.e.iv) for reduced parking rates to the Mobility Hub.
    c. General Employment:
        - Consider removal of retail and service commercial limitation for multi-storey office buildings to allow for additional commercial uses; and,
        - Remove maximum FSI.

    In addition, a policy should be added that requires large sites to be planned comprehensively and appropriate phasing plans be established.

6. **The OP should include criteria to evaluate development applications in advance of the Area Specific Plans**: The City has initiated Mobility Hub Area Specific Plans which are intended to provide further detailed planning policies for the GO Station Mobility Hubs (including Burlington GO). Tthe Downtown Mobility Hub work will be reviewed as part of the scoped re-

examination of the Official Plan currently underway. Until these planning initiatives are complete and the Official Plan is updated, there is a need to establish policy guidance and development criteria to assist in reviewing development applications within these areas in the interim. The guidelines and criteria should include factors that establish these areas as complete, transit-supportive communities, and recognize the role and function of transit in the area. The criteria should build upon the development criteria identified in Section 12.1.2(2) of the adopted 2018 OP.

Part VII Schedules

1. **Schedule changes are needed to reflect the policy changes and opportunities for clarity in policy application**: The following features should be added to the Schedules of the Official Plan:
    a. Major Transit Stations and MTSA boundaries subject to approval from the Region of Halton and will be established through the MCR therefore they cannot be implemented at this time. A special planning area could be considered in an interim basis; and,
    b. Priority Transit Corridors as identified in Schedule 5 of the Growth Plan, including the Lakeshore West GO Rail Line in Burlington (either added to policy or referenced in text).

2. **Consideration for the need for a Special Planning Area should be given**: A special planning area could be used to delineate lands within the ICBL where certain policies apply such as the Burlington GO Station Area where there may be changes to the land use permissions only for subject lands.

Part VIII Definitions

1. **Update definitions to provide clear policy direction and conform with Provincial policy:** The following definitions should be added or updated in the OP in order to guide the interpretation of policies, and align with provincial policies:
    a. Major Transit Station Area (MTSA) - The current in force Official Plan (2017) defines MTSAs as *"The area including and around any existing or planned higher order transit station (such as GO Transit commuter rail stations), or the area including and around a major bus depot in an urban core. Station areas generally are defined as the area within an approximate 500m radius of a higher order transit station, representing about a 10-minute walk."* **This definition should be updated to reflect the 2019 Growth Plan update of a 500m to 800m radius;**
    b. Transit Supportive **-** The current in force Official Plan (2017) defines Transit-Supportive Land Use as "*Planning and development practices which make transit viable and improve the quality of the experience of using transit. When used in reference to development, it generally refers to compact, mixed use development that*

has a high level of employment and residential densities to support frequent transit service. When used in reference to urban design, it generally refers to design principles that make development more accessible for transit users, such as roads laid out in a grid network rather than a discontinuous network; pedestrian-friendly built environment along roads to encourage walking to transit; reduced setbacks and placing parking at the sides/rear of buildings; and improved access between arterial roads and interior blocks in residential Areas." **This definition should be updated to align with the 2019 Growth Plan and the proposed transit supportive policies outlined above;**

c. Major Trip Generator **-** This term is not currently defined in the in force Official Plan. The Growth Plan defines Major Trip Generators as "origins and destinations with high population densities or concentrated activities which generate many trips (e.g., urban growth centres and other downtowns, major office and office parks, major retail, employment areas, community hubs, large parks and recreational destinations, post-secondary institutions and other public service facilities, and other mixed-use areas)". Mobility Hub Guidelines (2011) have terminology that is similar and call them "Large Trip Generators" and destinations include Universities, Colleges, and Airports in varying urban contexts. **A definition that is aligned with the Growth Plan definition should be added to the OP**;

d. Priority Transit Corridor - This term is not currently defined in the in force OP. Priority Transit Corridors are identified in Schedule 5 of the Growth Plan and include the Lakeshore West GO Rail Line between Union Station and Burlington GO. **A definition that is aligned with the Growth Plan definition should be added to the OP**;

e. Higher Order Transit - The in force OP defines Higher Order Transit as "*Transit that generally operates in its own dedicated right-of-way, outside of mixed traffic, and therefore can achieve a frequency of service greater than mixed-traffic transit. Higher order transit includes heavy rail (such as commuter rail) and buses in dedicated rights-of-way."* **The definition should be updated to reflect the terminology used in the 2019 Growth Plan;**

f. Frequent Transit - This term is not currently defined in the in force OP. The Growth Plan defines Frequent Transit as "*A public transit service that runs at least every 15 minutes in both directions throughout the day and into the evening every day of the week*". **A definition that is aligned with the Growth Plan definition should be added to the OP;**

g. Complete Communities - This term is not currently defined in the in force OP. The Growth Plan defines complete communities as "*Places such as mixed-use neighbourhoods or other areas within cities, towns and settlement areas that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living including an appropriate mix of jobs, local stores, and services, a full range of housing, transportation options and public service facilities. Complete communities are age-friendly and may take different shapes and*

forms appropriate to their contexts". **A definition that is aligned with the Growth Plan definition should be added to the OP**;

h. Public Service Facilities – This term is not currently defined in the in force OP. The Growth Plan defines public service facilities as "*Lands, buildings and structures for the provision of programs and services provided or subsidized by a government or other body, such as social assistances, recreation, police and fire protection, health and educational programs, and cultural services. Public service facilities do not include infrastructure.*" **A definition that is aligned with the Growth Plan definition should be added to the OP**;

i. Multimodal - This term is not currently defined in the in force OP. The Growth Plan defines multimodal as "*Related to the availability of use of more than one form of transportation, such as automobiles, walking, cycling, buses, rapid transit, rail (such as commuter and freight), trucks, air, and marine*." **A definition that is aligned with the Growth Plan definition should be added to the OP**;

j. Compact Built Form - This term is not currently defined in the in force OP. The Growth Plan defines compact built form as "*A land use pattern that encourages the efficient use of land, walkable neighbourhoods, mixed land uses (residential, retail, workplace, and institutional) all within one neighbourhood, proximity to transit and reduced need for infrastructure. Compact built form can include detached and semi-detached houses on small lots as well as townhouses and walk-up apartments, multi-storey commercial developments, and apartments or offices above retail. Walkable neighbourhoods can be characterized by roads laid out in a well-connected network, destinations that are easily accessible by transit and active transportation, sidewalks with minimal interruptions for vehicle access, and a pedestrian=friendly environment along roads to encourage active transportation*." **A definition that is aligned with the Growth Plan definition should be added to the OP**;

k. Complete Streets - This term is not currently defined in the in force OP. The Growth Plan defines complete streets as "*Streets planned to balance the needs of all road users, including pedestrians, cyclists, transit-users, and motorists."* **A definition that is aligned with the Growth Plan definition should be added to the OP**; and,

l. Mid-rise and Tall Buildings – The Adopted Burlington OP proposed a definition for Mid-rise as "a building five (5) to eleven (11) storeys in height" and Tall Buildings as "a building twelve (12) storeys or higher". **The City should consider defining mid-rise and tall buildings in the in force OP to assist in clarifying the role and function of the areas as it relates to permitted heights.**

Zoning Recommendations

The City of Burlington Zoning By-law 2020 regulates the use of land in the City of Burlington. A number of policy changes have been recommended as an outcome of the ICBL study, as summarized above. The following describes the recommended zoning changes.

1. **Existing Zoning By-law inconsistencies within the In force Official Plan**: The following zoning changes are required to address policy alignment with the in force and effect OP:
    - The MXT zone currently has a minimum height of 2 storeys and no maximum height. The lands on the north side of Fairview Road zoned MXT are designated MUC – Commercial Corridor, which have a minimum height of 2 storeys and a maximum height of 6 storeys. Until the Secondary Planning work is complete, a maximum height should be established for the subject sites, given their geographic location in proximity to the Burlington GO Station and their priority from a city-building perspective. Land use compatibility and design analysis should be undertaken for the subject lands to review the potential built form and density of future development, to establish a maximum height. Where this discrepancy exists, the subject zoning regulations and Official Plan policies should be updated to be consistent.
2. **Zoning By-law changes based on recommended policy direction**s: The following zoning changes are recommended to support the OP policy directions described in Section 7.0 above:
    - The MXG, MXC and MXE zone currently permit Motor Vehicle Service Station, Motor Vehicle Sales, Rental and Service and Motor Vehicle Repair. The OP policy direction includes a recommendation to remove permissions for large scale motor dealership expansions at the south-west corner of Fairview Street and Brant Street. This change should be reflected in the zoning for the subject site;
    - The MXT zone currently permits Stacked Townhouses, Back to Back Townhouses in certain conditions. The OP policy directions includes a recommendation to not permit ground oriented housing within the MUC – General and MUC – Commercial Corridor designations. The City may wish to consider removing the Townhouse permissions within the MXT zone;
    - The MXG zone has a maximum floor area ratio of 0.5:1. The OP policy directions recommend a number of refinements to the MUC - Employment designation, including removal or an increase of the FSI;
    - The MXG, MXC, MXE and MXT zones within the Study Area should also include a zoning regulation for mandatory bicycle parking and other multi-modal infrastructure where reduced parking is proposed;
    - The MXE zone has a maximum floor area ratio of 0.5:1 for industrial buildings and 1.0:1 for other buildings. The OP policy directions recommend several changes to the MUC – Employment designation including removal or increase of the FSI. The OP policy direction also introduces a minimum building height of 2 storeys, except for industrial uses. These changes should be reflected in the zoning for the subject sites; and,

- The GE1 zone currently has a maximum height of 9m for lands abutting residential zones. The OP Policy directions recommend a couple of refinements to the General Employment designation, including removal of the maximum FSI.

3. **Permitted Uses**: The following permitted uses would encourage transit-supportive uses in proximity to major transit stations:
    - The MXT zone currently does not permit Community Institutional uses. As these uses can support transit usage and complete communities, this use should be permitted in the MXT zone. Hotels should also be considered as a permitted use in the MXT zone, provided the built form is undertaken in a manner which is transit supportive.

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Appendices

References

List of Acronyms

APC: Automatic Passenger Count

DMTR: Defining Major Transit Requirements

HSR: Hamilton Street Railway

ITE: Institute of Transportation Engineers

GGH: Greater Golden Horseshoe

GTHA: Greater Toronto and Hamilton Area

ICBL: Interim Control By-Law

MMS: Mobility Management Strategy

MTSA: Major Transit Station Area

MTO: Ministry of Transportation

OP: Official Plan

PPS: Provincial Policy Statement

QEW: Queen Elizabeth Way

RER: Rapid Express Rail

RTP: Regional Transportation Plan

ROP: Regional Official Plan

ROPA: Regional Official Plan Amendment

TDM: Transportation Demand Management

TTS: Transportation Tomorrow Survey

UGC: Urban Growth Centre

1.0 Introduction

1.1 Background

The City of Burlington is located in the Greater Toronto and Hamilton Area (GTHA) between Lake Ontario and the Niagara Escarpment. In recent years, the City has begun to experience infilling and intensification development pressures as the supply of vacant greenfield land has steadily diminished. In particular, the City's Downtown, as well as the lands in and around the existing Burlington GO Station have seen significant change, as a number of redevelopment projects have occurred in these two locations. In some cases, transit infrastructure has been perceived to be a major driver of intensification. The Downtown includes a bus depot (John Street Bus Terminal) and as the name suggests, the Burlington GO Station area includes the Burlington GO Station which links the City with Downtown Toronto and other regional destinations via the Lakeshore West GO Train Line.

Planning for growth in Burlington is guided by several evolving provincial, regional and city planning documents which provide direction on where and how to grow. The current in force and effect Official Plan (2017) was written and approved by the Region of Halton in 1997 and has been updated through

amendments and office consolidations. The City prepared a new Official Plan, which was adopted in April 2018 and is currently with the Region of Halton for review. In February 2019, Burlington City Council voted to re-examine several aspects of the 2018 Council adopted Official Plan – specifically the policies that relate to matters of height, intensity and conformity with provincial density targets. Council also directed staff to take a closer look at the role and function of two of the four Major Transit Station Areas in Burlington and the role they play in attracting and supporting development.

On March 5, 2019, Burlington City Council passed an interim control bylaw (ICBL) to temporarily restrict the development of lands in the Downtown Burlington Urban Growth Centre (UGC) and the lands in proximity to Burlington GO Station (see **Figure 1-1**, Study Area). The "freeze" on development is for a period of one-year, with the potential to extend for a second year to allow the City to complete a land use study. An ICBL is a *Planning Act* tool available to municipal councils and permitted under Section 38 of the Planning Act which states:

> "Where the council of a local municipality has, by by-law or resolution, directed that a review or study be undertaken in respect of land use planning policies in the municipality or in any defined area or areas thereof, the council of the municipality may pass a by-law (hereinafter referred to as an interim control by-law) to be in effect for a period of time specified in the by-law, which period shall not exceed one year from the date of the passing thereof, prohibiting the use of land, buildings or structures within the municipality or within the defined area or areas thereof for, or except for, such purposes as are set out in the by-law."

The *Planning Act* also allows for the extension of the by-law:

> "The council of the municipality may amend an interim control by-law to extend the period of time during which it will be in effect, provided the total period of time does not exceed two years from the date of the passing of the interim control by-law"

The ICBL in Burlington was triggered because of two primary reasons:

1. The City is experiencing growth pressures and receiving numerous development applications with intensities significantly higher than those anticipated by the current Official Plan; and,
2. There is a need for more clarity regarding the role and function of the John Street Bus Terminal as a Major Transit Station Area (MTSA) and the appropriate level of intensity around the Burlington GO Station Area.

1.2 Study Purpose and Process

The purpose of the ICBL Study is to:

- Assess the role and function of the downtown bus terminal and the Burlington GO station on Fairview Street as Major Transit Station Areas;

- Examine the planning structure, land use mix and intensity for the lands identified in the Study Area; and,
- As required, provide recommendations to the City on updates to the Official Plan and Zoning bylaw regulations for the lands identified in the Study Area.

The ICBL Study was undertaken in four stages:

- **Stage 1:** Review Background Materials and Data Collection/Analysis;
- **Stage 2:** Assess the role and function of the downtown bus terminal and the Burlington GO Station;
- **Stage 3:** Examine the planning structure, land use mix and intensity of the subject lands; and,
- **Stage 4:** Reporting.

Throughout this report, Downtown Burlington refers to the Downtown Burlington Urban Growth Centre (generally south of Prospect Street), while the rest of the Study Area is referred to as the Burlington GO Station Area.

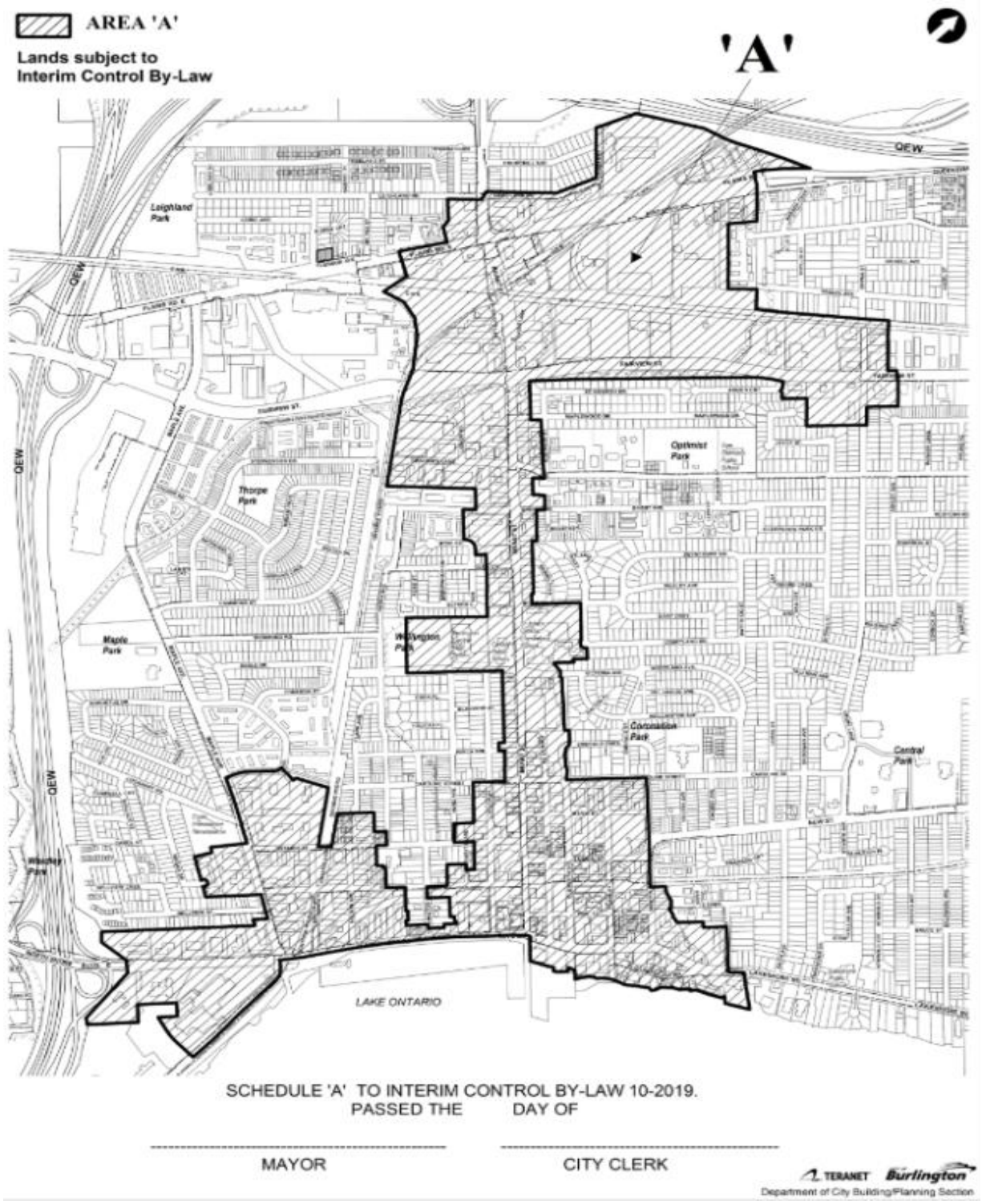


Figure 1-1: Lands Subject to the Interim Control By-Law

1.3 Report Structure

This report is organized into the following sections:

- Section 1 presents the background and purpose of the study and also outlines the purpose of the report;
- Section 2 summarizes the policy context for the ICBL, outlining relevant Provincial, Regional and City policies, as well as other reports and guidelines of relevance;
- Section 3 presents the existing and planned land uses, heights and densities, amenities, transportation networks, trip generation, transit ridership and mode share information;
- Section 4 describes key elements that make transit successful;
- Section 5, based on the content of the previous sections, describes the role and function of the areas identified as Major Transit Station Areas;
- Section 6 summarizes transportation direction within Downtown Burlington and Burlington GO Station Area; and,
- Section 7 presents the overall policy and zoning recommendations.

2.0 Policy Context

2.1 Provincial Policy Context

This section of the report outlines the key provincial policies, plans and guidelines for directing growth management, transit supportive development and the use of land in Ontario. The Provincial Policy Statement (2014), the Growth Plan for the Greater Golden Horseshoe (2019), Metrolinx's Big Move and the 2041 Regional Transportation Plan all provide direction for long range planning and the relevant aspects of these documents are briefly summarized below. This section also covers the evolution of various density targets for different types of transit modes and includes a brief overview the density targets in Places to Grow, Metrolinx's Mobility Hub Guidelines and the Ministry of Transportation's Transit Supportive Guidelines.

2.1.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest including direction for planning and regulating the development and use of land. The policies of the PPS rely on efficient land use and development patterns that support complete communities and protect the environment, public health and safety and facilitate economic growth. In order to ensure that the policies in the PPS are implemented at the local level, the Planning Act requires that all decisions affecting land use planning matters "shall be consistent with" the PPS and that all municipal official plans (OPs) are to be prepared to be consistent with the PPS.

2.1.2 Growth Plan for the Greater Golden Horseshoe

The 2019 Growth Plan (Growth Plan) for the Greater Golden Horseshoe (GGH) provides guidance for how communities are to plan for growth up to 2041. The main underlying principle is to plan for complete communities in settlement areas across the GGH. Complete communities are specific areas, such as mixed-use neighbourhoods within cities or towns that "offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living, including an appropriate mix of jobs, local stores and services, a full range of housing, transportation options and public service facilities". To support this principle, the Growth Plan provides policy guidance for a number of strategic growth areas which are to be planned as locations for accommodating future growth including:

- Urban Growth Centres (UGC);
- Major Transit Station Areas (MTSAs);
- Priority Transit Corridors; and,
- Provincially Significant Employment Zones[1].

[1] The Growth Plan provides guidance for other areas within settlement areas which are also to be planned for future growth and development, including designated greenfield areas and other lands within the built-up area. However, for the purposes of this report, the emphasis is placed on the above-noted items which are relevant for this ICBL study.

In 2006, when the original Growth Plan came into effect, the Plan identified twenty five (25) existing or emerging Downtowns as Urban Growth Centres an effort to:

- Promote downtown revitalization;
- Create complete communities that offer more options for living, working, shopping, and playing;
- Provide greater choice in housing types to meet the needs of people at all stages of life;
- Curb sprawl and protect farmland and green spaces; and,
- Reduce traffic gridlock by improving access to a greater range of transportation choices.

The 2019 version of the Growth Plan continues to recognize the original twenty five UGCs and also recognizes that the scale and intensity for UGCs may differ across the GGH, as the Plan identifies density targets ranging from 150 to 400 people and jobs per hectare for various UGCs. The Downtown Burlington UGC is to be planned to achieve a minimum density target of 200 people and jobs combined per hectare by 2031 (s.2.2.3.2.b). All UGCs "will be planned:

a) As focal areas for investment in regional public service facilities, as well as commercial, recreational, cultural and entertainment uses;
b) To accommodate and support the transit network at the regional scale and provide connection points for inter- and intra-regional transit;
c) To serve as high density major employment centres that will attract provincially, nationally or internationally significant employment uses; and,
d) To accommodate significant population and employment growth (s2.2.3.1)."

The Downtown Burlington UGC is identified on Schedule 2 of the Growth Plan. The detailed boundary delineation for the Downtown UGC was developed by the Province in 2008 as part of the implementation of the 2006 Growth Plan and was incorporated into the City's Official Plan in 2008 (OPA 55). The boundary was further refined through the last Regional Official Plan review (ROPA 38).

The Growth Plan defines Major Transit Station Areas (MTSAs) as "the area including and around any existing or planned higher order transit station or stop within a settlement area; or the area including and around a major bus depot in an urban core. Major transit station areas generally are defined as the area within an approximate 500 to 800 metre radius of a transit station, representing about a 10-minute walk". This definition has two components: existing and planned higher order transit station/stop within a settlement area and/or a major bus depot in an urban core. Higher order transit is defined in the Growth Plan as "transit that generally operates in partially or completely dedicated rights-of-way, outside of mixed traffic, and therefore can achieve levels of speed and reliability greater than mixed-traffic transit. Higher order transit can include heavy rail (such as subways and inter-city rail), light rail, and buses in dedicated rights-of-way". It is important to note that the term major bus depot is not a defined term in the Growth Plan. In Burlington, the Lakeshore West GO rail line would be considered higher order transit as it is considered to be heavy rail operating in a dedicated right of way. On this basis, the City of Burlington is understood to have three MTSAs located along the Lakeshore West GO

rail line (Aldershot GO, Burlington GO and Appleby GO MTSAs). While Downtown Burlington is not currently serviced by higher order transit, it does include the John Street Bus Terminal which has been interpreted as a major bus depot in an urban core.

The Growth Plan provides additional requirements for MTSAs that are on priority transit corridors. Priority transit corridors are defined as "transit corridors shown in Schedule 5 or as further identified by the Province for the purpose of implementing". **Figure 2-1** shows Schedule 5 from the Growth Plan which identifies priority transit corridors as identified by the Province. MTSAs that are on priority transit corridors have prescribed minimum density targets:

- 200 people and jobs per hectare if serviced by subways;
- 160 people and jobs per hectare if serviced by LRT or BRT; and,
- 150 people and jobs per hectare if serviced by GO rail at build-out (2.2.4.3.c).

Upper or single-tier municipalities are required to delineate the boundaries and further refine minimum density targets for MTSAs on priority transit corridors and can delineate other MTSAs through a municipal comprehensive review to maximize the size of the area and number of potential transit users within walking distance, as well as prioritize planning and zoning in a manner that implements the policies of the Growth Plan (as outlined in the Application of the Intensification and Density Targets Provincial Guidelines). The Lakeshore West GO line between Union Station and Burlington GO Station is identified as a Priority Transit Corridor. As the Burlington GO Station Area is located along the Priority Transit Corridor, it is expected to be planned to achieve a minimum density target of 150 people and jobs combined per hectare by build out. Downtown Burlington is not on one of the Growth Plan's Priority Transit Corridors (Schedule 5) and the Growth Plan does not define or establish density targets for major bus depots.

Within MTSAs, municipalities are to plan for a diverse mix of uses which fosters collaboration between public and private sectors, provides alternative development standards and prohibits land use and built form that would adversely affect the achievement of transit supportive densities. Transit supportive is defined in the Growth Plan as "relating to development that makes transit viable and improves the quality of the experience of using transit. It often refers to compact, mixed-use development that has a high level of employment and residential densities. Transit-supportive development will be consistent with Ontario's Transit Supportive Guidelines" (see Section 2.1.5 for more details on Ontario's Transit Supportive Guidelines).

In addition to the UGCs and MTSAs, the Growth Plan also designates lands as Provincially Significant Employment Zones. Provincially Significant Employment Zones are defined as "areas identified by the Minister in consultation with affected municipalities for the purpose of long-term planning for job creation and economic development. Provincially significant employment zones can consist of employment areas as well as mixed-use areas that contain a significant number of jobs". Within the

Study Area, the lands north of Plains Road, south of the QEW and east of Truman Street in Burlington have been designated as Provincially Significant Employment Zones.

The Growth Plan's direction for UGCs, MTSAs and Provincially Significant Employment Zones provide an important policy foundation from the Province for defining the role and function of the urban structure elements within the Study Area.

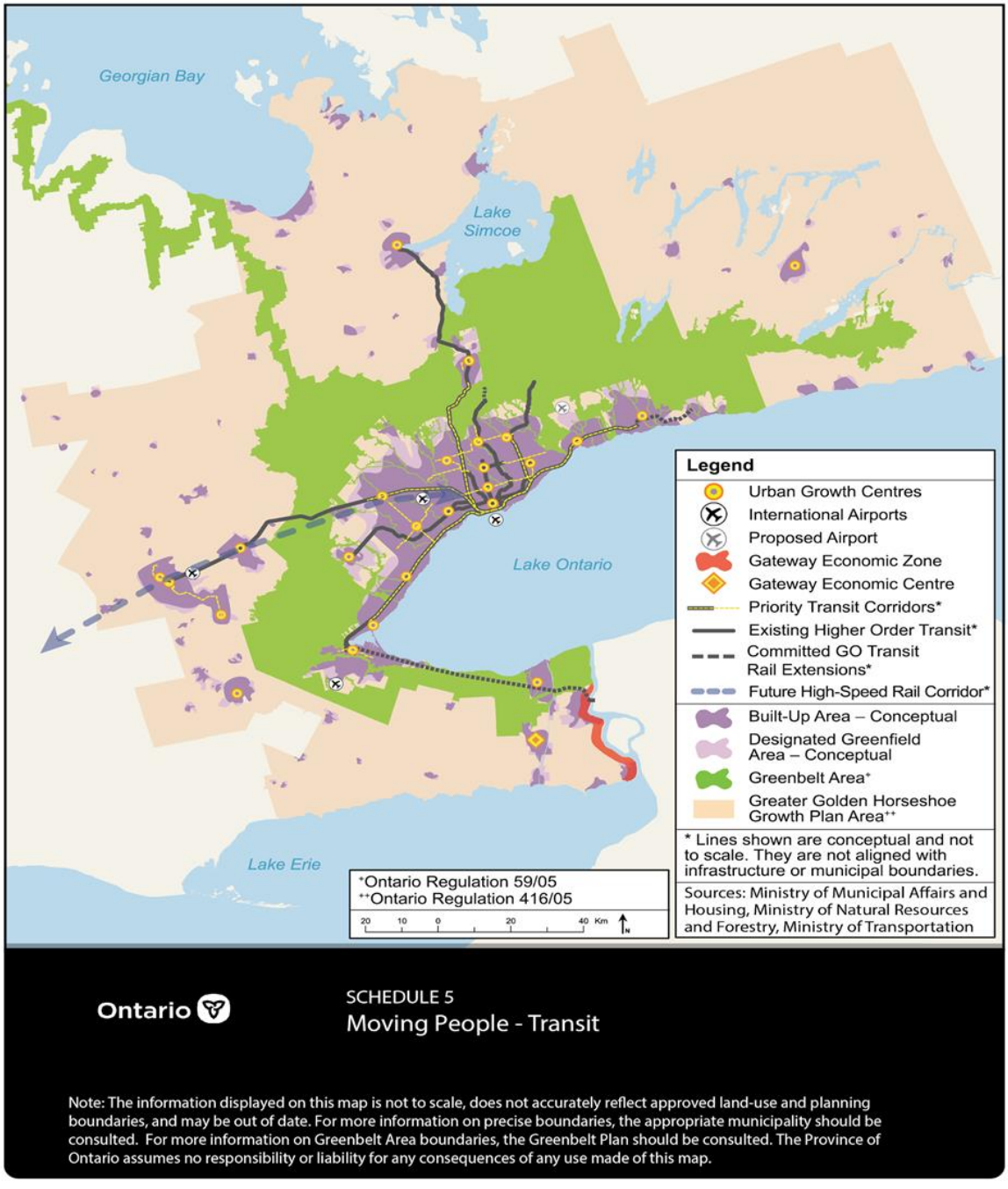


Figure 2-1: Schedule 5 of the Growth Plan showing Priority Transit Corridors (2019)

2.1.3 Metrolinx's Big Move, Regional Transportation Plan 2041, and Related Documents

Metrolinx was created with a mandate to expand regional transit. To support its mandate, Metrolinx has prepared a series of plans and guidelines, including The Big Move (2008), Mobility Hub Guidelines (2011), GO Rail Station Access Plan (2016), and the 2041 Regional Transportation Plan (2018). The above-noted plans and guidelines provide context for land use planning.

The Big Move (2008) was developed two years after Metrolinx was formed, acting as the first regional transportation plan for the GTHA and was written to complement the Growth Plan. Of particular relevance to this study was in the introduction of the Mobility Hubs concept, which built upon the Major Transit Station Area concept articulated in the Growth Plan. The Big Move identifies two types of Mobility Hub; Anchor Hubs and Gateway Hubs. Anchor Hubs include "...the major transit station area and the surrounding area in urban growth centres as well as Pearson Airport and Union Station due to their roles as the GTHA's primary international gateways." Anchor Hubs have the potential to transform the regional urban structure and act as anchors of the regional transportation system. Gateway Hubs are major transit station areas at the interchange of two or more current or planned regional rapid transit lines at which 4,500 or more people are expected to board or alight during morning peak period in 2031 (Mobility Hubs, December 2008). The Big Move shows Downtown Burlington as an Anchor Hub and Burlington GO as a Gateway Hub (**Figure 2-2**). The term Mobility Hub was carried into future Metrolinx documents; however, the terms Anchor Hub and Gateway Hub are not mentioned in the Regional Transportation Plan.

Figure 2-2: Year Plan for the Regional Rapid Transit and Highway Network, Schedule 1 of the Big Move showing Downtown Burlington as an Anchor Hub and Burlington GO as a Gateway Hub (2008)

Within The Big Move Baseline Monitoring Full Report (2013) Under *Investment Strategy #7: Build Communities that are Pedestrian, Cycling and Transit-Supportive*, Burlington GO and Downtown Burlington are identified as Mobility Hubs on the map in **Figure 2-3** but not mentioned within the text.

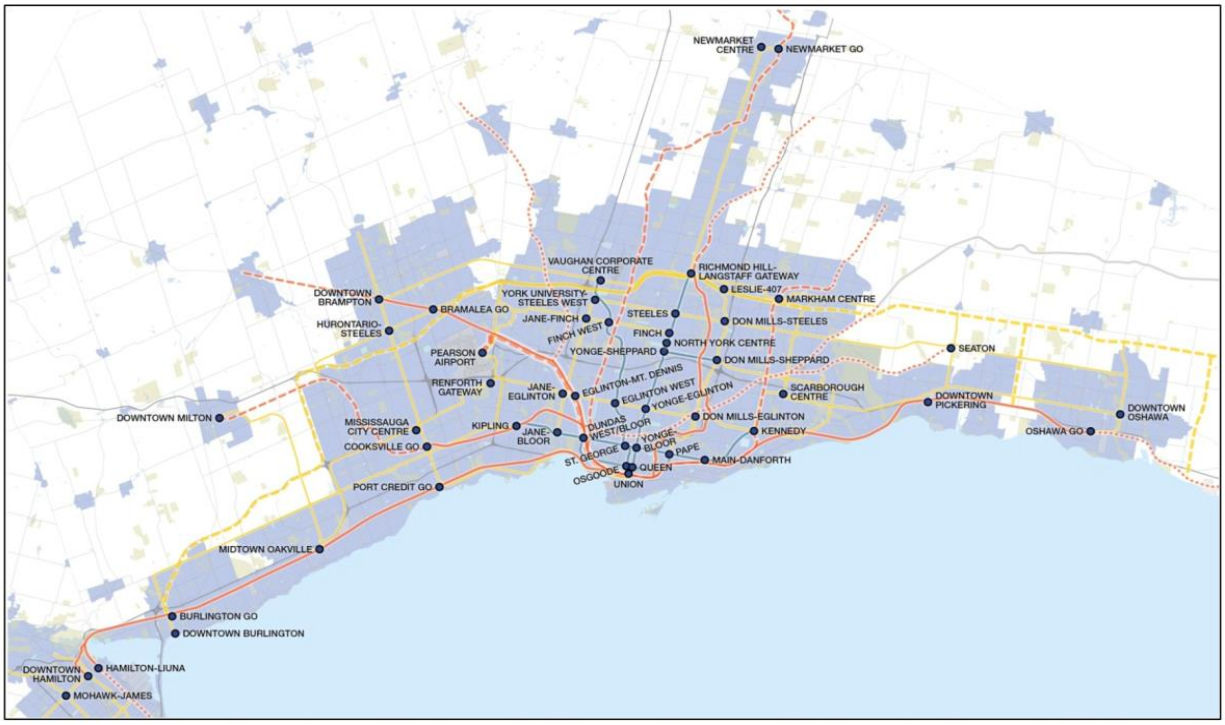


Figure 2-3: Mobility Hubs in the GTHA as identified in The Big Move Baseline Monitoring Report (2013)

The Regional Transportation Plan (RTP) was published 10 years after the Big Move in 2018. The RTP builds on The Big Move and has a planning horizon of 2041.The RTP defines Mobility Hubs "Major Transit Station Areas where multiple modes of transportation meet and have a high-density mix of land uses that encourages and supports transit use and active transportation. Mobility hubs are at the intersection of two or more Frequent Rapid Transit Network routes, are designed to support a high number of transit boardings and alightings, and facilitate seamless, efficient transfers between modes. They have a high concentration of jobs, residences, public services, and other transit-supportive land uses, or the potential to develop into areas with a high-density of mixed land uses". Mobility Hubs are generally forecast to achieve or have a potential to achieve a minimum density of around 10,000 people and jobs within an 800 metre radius. Mapping of Mobility Hubs in the RTP focuses on Mobility Hubs located on Priority Transit Corridors as defined in the Growth Plan which includes the Burlington GO Station Area; however, it is worth noting that Downtown Burlington is recognized as a Mobility Hub by Metrolinx.[2]

[2] Correspondence between Metrolinx and the City of Burlington, November 2018

The RTP includes several improvements in and around the ICBL Study Area, including a proposed priority bus route on Brant Street (Route #55 in Map 5: 2041 Frequent Rapid Transit Network; RTP, 2018), one priority route in the Burlington GO Station Area and three secondary cycling routes in the Study Area (Map 9: 2041 Regional Cycling Network; RTP 2018). The RTP includes the introduction of Regional Express Rail (RER) that is intended to shift GO service from being predominantly used by commuters to a comprehensive regional rapid transit option. RER will include two-way, 15 minute frequency, all-day service on the Lakeshore West line serving the Burlington GO Station by 2024.

2.1.3.1 GO Rail Station Access Plan

Metrolinx completed the GO Rail Station Access Plan in 2016 with a planning horizon of 2031. It is an update to the 2013 GO Transit Rail Parking and Station Access Plan in response to the Province's commitment to Regional Express Rail (RER) which is intended to increase GO service and support the development of new stations throughout the GO network. Overall, the Plan aims to reduce the dependency on single-occupant vehicles by introducing and enhancing sustainable modes of access to GO Stations. It forecasts growth in daily passengers using the Burlington GO Station as their home station from 2,725 to 4,000-8,000, and an increase from 150 to 1,000-2,000 riders using it as their destination station by 2031. To accommodate this growth, Metrolinx envisions a significant increase in the share of non-auto modes accessing the station such as cycling and walking, carpool, and pick up/drop off passengers. This includes a mode share increase to 18% local transit and 10% micro-transit such as on-demand service. The recommended Burlington GO Station access improvements include pedestrian facilities, increased local transit service to the station, micro-transit including alternative service delivery/on demand transit options, and re-design of some station elements.

2.1.3.2 Mobility Hub Guidelines

In addition to the GO Rail Station Access Plan, Metrolinx also created the Mobility Hub Guidelines for the Greater Toronto and Hamilton Area (2011). The Guidelines were created to communicate the concept of a Mobility Hub including its objectives, characteristics and the role of hubs in the region. The Guidelines identify a Mobility Hub as a neighbourhood within a 10 minute walking distance of major transit stations that aims to support new residents and jobs in an environment that supports transit and active transportation. Downtown Burlington and Burlington GO are both identified in this document as Mobility Hubs. The document identifies Downtown Burlington as a Historic Suburban Town Centre (one of their six Mobility Hub typologies). Historic Suburban Town Centres are located within small city centres with low to medium density development. They have a mix of uses with some key destinations, a walkable street network with small block sizes, and include UGCs. The guidelines classify the Burlington GO Station as a suburban transit node.

Figure 2-4 is an excerpt from the Mobility Hub Guidelines (Suggested Land Use Densities by Transit Technology and Transit Mode Share for Mobility Hubs), showing the various densities ranges and mode share for a range of different transit modes. Mobility Hubs served by bus or streetcar, which would include Downtown Burlington, have a suggested density range of between 50 and 150 residents and

jobs per hectare, along with a suggested transit mode share of 10-25% for trips originating at the Mobility Hub. Mobility Hubs served by regional rail, such as the Burlington GO Station, have a suggested density range of between 50 and 200 residents and jobs per hectare and a transit mode share of 10-25%. On-going RER improvements will upgrade current service to express rail and the corresponding suggested density will be 150-300 residents and jobs per hectare and a transit mode share of 30-60%.

TABLE ii.3 Suggested Land Use Densities by Transit Technology and Transit Mode Share for Mobility Hubs.

PREDOMINANT TRANSIT MODE SERVING MOBILITY HUB (SEE NOTE)	TRANSIT SUPPORTIVE DENSITIES (RESIDENTS AND JOBS COMBINED PER HECTARE, WITHIN MOBILITY HUB)	SUGGESTED TRANSIT MODE SHARE (TRIPS ORIGINATING WITHIN MOBILITY HUB)
Subway	**250+**	**40%**
• Subways, as a transit mode, have the ability to carry the greatest number of customers. Land use targets should reflect the ridership levels needed to justify investment in subway infrastructure. • It should be noted that traditionally, land use densities along some subway lines and stations in the City of Toronto have been moderated by high volumes of feeder transit that provide a significant proportion of ridership.		
Express Rail	**150-300**	**30-60%**
• Express rail is the enhancement of regional rail services to provide high-speed, frequent and reliable long-distance travel across the region. Mobility hubs served by express rail should have land use targets that reflect the high regional level of service provided by express rail.		
Light Rail Transit (LRT)	**200-400**	**30-50%**
• Flexibility in implementation of LRT results in a greater range of applicable contexts, resulting density, and mode split targets. Targets for transit supportive densities should reflect the ultimate configuration of LRT lines. • Higher targets should be set in LRT corridors with exclusive right-of-way, such as tunnels, elevated structures, or with complete signal protection, reflecting the higher passenger capacity of these lines.		
Bus Rapid Transit (BRT)	**100-250**	**20-35%**
• Initial implementation of BRT systems can sometimes consist of buses running in mixed-traffic with transit priority at intersections and improved customer amenities. • Higher densities should be targeted for mobility hubs on BRT corridors with service on dedicated right-of-ways.		
Regional Rail	**50-200**	**10-25%**
• Expansion, as envisioned in The Big Move, includes improving service from peak-direction and period rail service to all-day, two-way service. Land use density and mode share targets should reflect the existing and planned service levels for regional rail corridors. • In most cases, regional rail attracts the majority of its riders from a large catchment area beyond the mobility hub. As a result, ridership is less sensitive to the densities within the hub.		
Bus/Streetcar	**50-150**	**10-25%**
• Bus/streetcar service is most appropriate as an access/feeder mode to higher-tier rapid transit service in mobility hubs.		

NOTES

- The transit supportive densities and suggested mode shares presented above are intended to serve as a guide and are based upon existing research on the connection between transit, land use, and mode shares. These may vary dependent on the modes of rapid transit and quality of feeder transit, land use mix and built form characteristics, and the quality of the pedestrian and cycling environment. In mobility hubs where Growth Plan targets also apply, the latter shall prevail.
- The predominant transit mode refers to the highest-order transit mode serving the mobility hub. In most cases, other rapid transit modes will be present at a mobility hub. While density targets do not compound with multiple rapid transit modes, it should be recognized that with multiple transit modes, a higher density target could be considered.
- Density ranges provided here are for guidance only. The upper portion of these ranges should not be considered as a limit.

Figure 2-4: Table ii.3 from Mobility Hub Guidelines - Suggested Land Use Densities by Transit Technology and Transit Mode Share for Mobility Hubs

It is important to note that the densities and mode shares presented in the Mobility Hub Guidelines are intended to be a guide and there is an expectation that some variation will occur depending on site specific circumstances.

2.1.4 Ministry of Transportation's Transit Supportive Guidelines

Around the same time as Metrolinx released the Mobility Hub Guidelines, the Ministry of Transportation (MTO) issued its Transit Supportive Guidelines (2012) which provides guidance for developing transit supportive land use planning policies, urban design, and operational best practices. MTO's Guidelines provide target density ranges based on type of transit service. Downtown Burlington has the type of transit that would match "Basic Transit Service" (one bus every 20-30 minutes) which according to MTO's Transit Supportive Guidelines shown in **Figure 2-5** has an associated density of 22 units or 50 residents and jobs per hectare. As part of the upcoming Burlington Transit 5-Year Business Plan, 15 minute service is planned, approaching the Frequent Transit Service type. Burlington GO Station is served by 15-minute (maximum) bus service which would be considered frequent bus service and has an associated suggested density of 37 units or 80 residents and jobs per hectare. It is worth noting that MTO's Guidelines do not include GO rail services and the densities noted are intended to be minimum targets (however, the Mobility Hub Guidelines presented in the previous section address this gap).

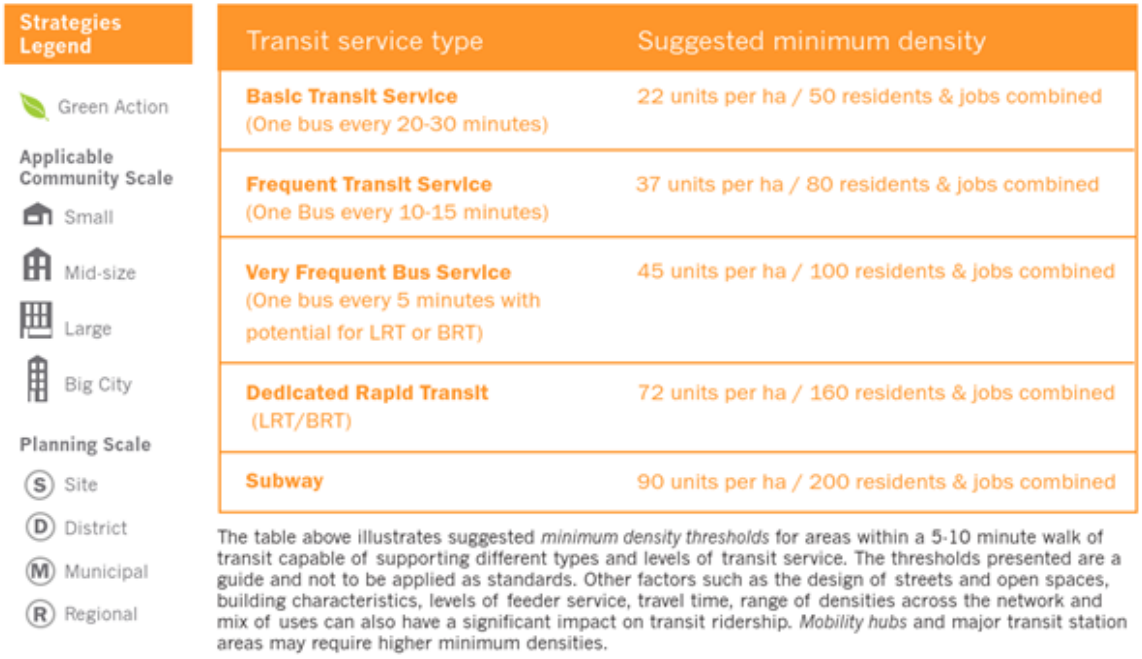


Figure 2-5: MTO Transit Supportive Guidelines and respective Transit Supportive Densities

In addition, the Guidelines also offer a set of recommendations for transit oriented development in Ontario. Recommendations include complete streets, local street and open space improvements, enhancing access to transit, supportive urban form, parking management, and an array of transit operations and network improvements.

2.2 Regional Policy Context

Halton Region's Official Plan implements various aspects of Provincial plans, policies and guidelines presented in the previous section. The following brief section highlights relevant aspects of Regional policy for the Study Area.

2.2.1 Halton Regional Official Plan

The in force Halton Regional Official Plan (ROP) is based on The Regional Plan (1995), which was approved with modifications by the Minister of Municipal Affairs and Housing in November 1995. Major reviews of the Regional Plan were undertaken, the latest being the "Sustainable Halton" comprehensive review which resulted in Regional Official Plan Amendments (ROPA) 37, 38, and 39. ROPA 37 and 38 implemented the policies of the 2006 Growth Plan for the GGH and the Greenbelt Plan, amongst other key policy initiatives; while ROPA 39 updated Regional development phasing to 2031. The last ROP office consolidation was in 2018 and was prepared based on the approvals of the Sustainable Halton amendments which occurred between 2014 and 2017.

Consistent with the Growth Plan, the ROP identifies Downtown Burlington as an Urban Growth Centre in Map 1 (Regional Structure) with a minimum density target of 200 people and jobs per hectare to be achieved by 2031 or earlier, with the requirement that Local Official Plans show how this density can be met (s.81.3). It also identifies the Burlington GO Station Area and the area surrounding the Downtown Bus Terminal as Mobility Hubs and Major Transit Station Areas in Map 1 (Regional Structure, see **Figure 2-6**). In the ROP, MTSAs are defined using similar language to the Growth Plan (see Section 2.1.2 above), while Mobility Hubs are defined as:

> "Major Transit Station Areas (MTSAs) that are designated by Metrolinx as regionally significant given the level of transit service that is planned for them and the development potential around them. They are places of connectivity between rapid transit services, and also places where different modes of transportation, from walking to high-speed rail, come together. They have, or are planned to have a concentration of mixed use development around a major transit station. Given the high level of transit service at or forecasted for Mobility Hubs relative to other MTSAs, it is recommended that the Mobility Hubs receive a commensurately higher level of development intensity and design consideration that supports transit and multi-modal travel than what may be applied in other MTSAs (s.259.3)."

The ROP (s.81.10.1) requires that local municipalities "direct major office, retail, and appropriate major institutional development to [...] Major Transit Station Areas (including Metrolinx-designated Mobility Hubs)." In the ROP, MTSAs are to achieve increased residential and employment densities, achieve a mix of uses, and provide access to various transportation modes (s.78.11). The Regional Structure (Map 1) also includes an Employment Area Overlay, which applies to select lands within the Burlington GO Station Area and prohibits residential and other non-employment uses including major retail uses in these areas, unless certain criteria can be met (s.77.4.1).

The Region of Halton is currently undertaking a new MCR process to review and update its Official Plan to align with the latest Provincial policies and plans. A component of the Regional Official Plan Review (ROPR) is the Integrated Growth Management Strategy (IGMS), which will result in a growth strategy for the Region to 2041, as required by A Place to Grow: Growth Plan (2019). Through the IGMS, forecast population and employment growth will be allocated to each of the local municipalities to 2041, along with intensification targets and density targets for each municipality in the Region. As part of the MCR process the Region is expected to delineate the boundaries and confirm density targets for all MTSAs along Priority Transit Corridors, including the Burlington GO station. The MCR process is also expected to confirm the density target for Downtown Burlington[3] (2031 and 2041 targets).

2.2.2 Mobility Management Strategy

Amongst other inputs, the Region's MCR will draw upon the Mobility Management Strategy (MMS), which was recently completed in 2017. The MMS builds upon the Halton Transportation Master Plan which established several directions to promote transit, including an overall mode-share target of 20%. The MMS is intended to support the strategic integration of Major Transit Station Areas and focus on enhancing the connectivity amongst the local municipal and intra/inter-regional transit network. To support these connections, the MMS established a Region-wide grid network of transit priority corridors referred to as the Transit Priority Mobility Network to 2041. The network serves as a key connector to link people to existing and planned Regional destinations including Urban Growth Centers, Mobility Hubs and MTSAs, employment lands, and abutting municipal connections to the City of Mississauga, City of Brampton, and the City of Hamilton.

2.2.3 Defining Major Transit Requirements

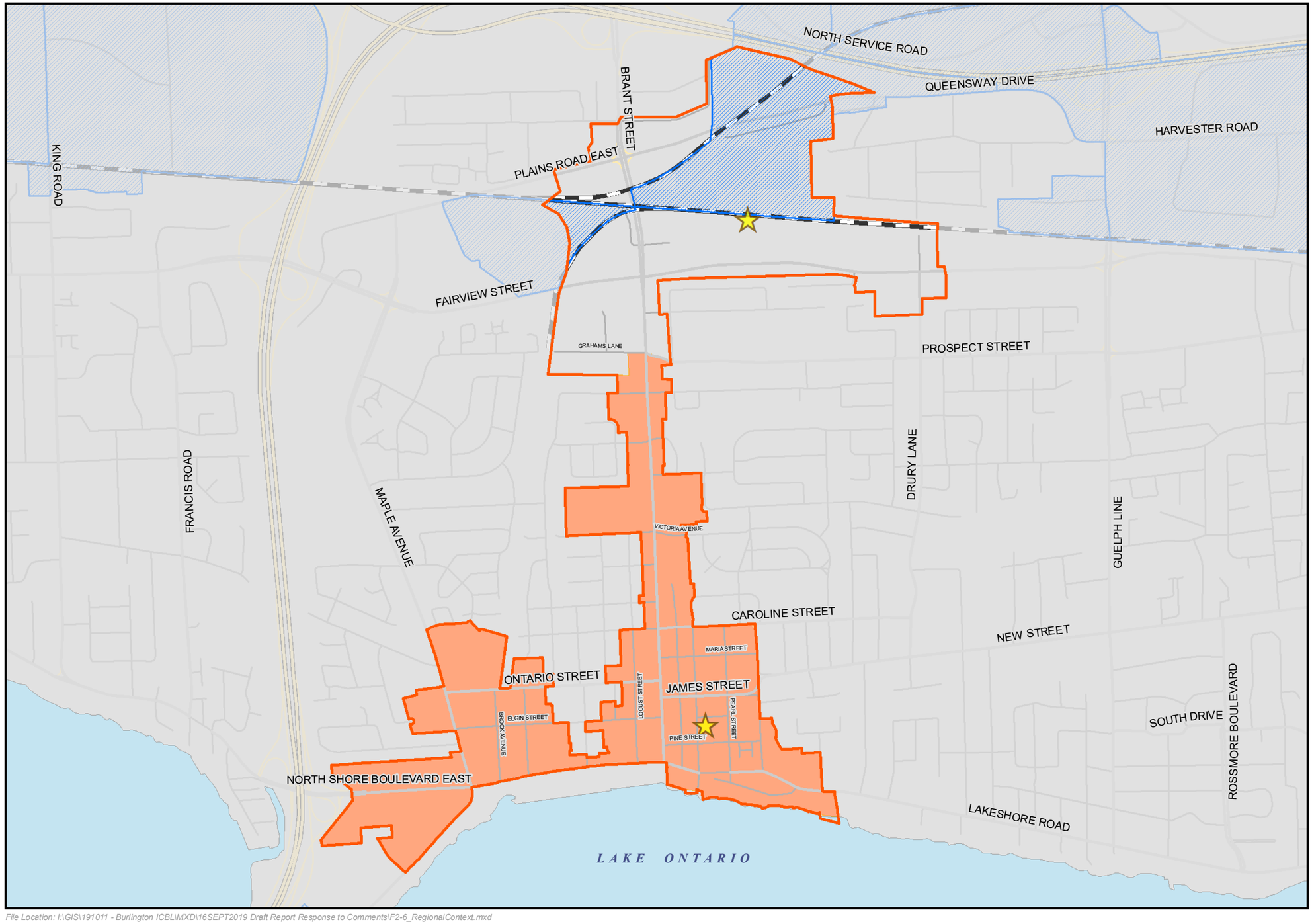
As part of the implementation of the MMS, the Region and local municipalities launched the Defining Major Transit Requirements (DMTR) Study to further evaluate existing and proposed Major Transit Station Areas, higher order transit stations and surrounding areas that are planned for intensification. The study also aimed to identify Regional infrastructure gaps, potential barriers to development, as well as to define the type, form and function of the Transit Priority Corridors established in the MMS. The study was endorsed by Regional Council in June 2019.

The DMTR Study highlights the importance of MTSAs and UGCs as Regional Transit Nodes and areas where a major portion of growth, intensification and infrastructure in Halton will occur. Downtown Burlington and Burlington GO are both identified in the DMTR as Regional Transit Nodes with recommendations for strengthening transit and active transportation connections through investing in infrastructure to increase active transportation connectivity to/within the station, facilitating transit efficiently through prioritizing transit movement and ensuring capacity for increased ridership and supporting first mile/last mile connections (see **Figure 2-7**).

[3] The Growth Plan does not require the Region of Halton to delineate the boundaries for MTSAs which are not located on a Priority Transit Corridor (s2.2.4.2).

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 2-6: REGIONAL CONTEXT



LEGEND

- Study Area

Halton Regional Official Plan Element *

- Mobility Hub
- Urban Growth Centre
- Regional Employment Area (Halton OP)

* Features shown are based on Map 1 of the 2018 Halton Regional Official Plan and are approximate.

NORTH

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: JG
DILLON CONSULTING

October 31, 2019

Scale 1:15,000

Metres
0 125 250 500

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Attachment #2 to LPS45-19/PW-18-19

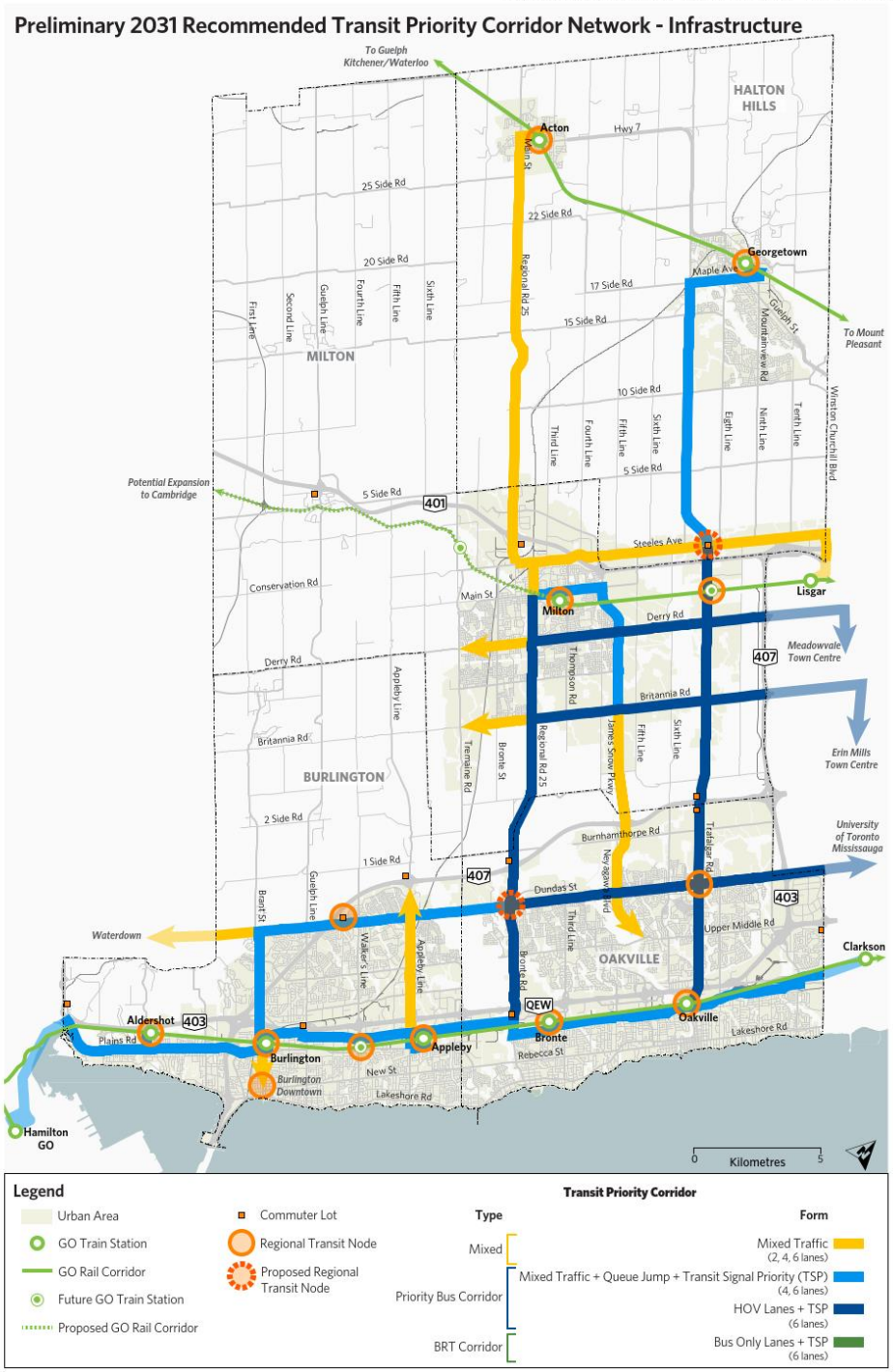


Figure 2-7: Preliminary Transit Priority Corridor Network, Halton Region (DMTR)

The Study also recommends transit priority corridor networks in 2031 and 2041 with the following potential transit improvements identified for consideration in Burlington:

- Mixed Traffic Transit Corridors on Brant Street (Burlington GO Station to Downtown Burlington) by 2031; and,
- Priority Bus Corridors on Brant Street (Dundas Street to Burlington GO) with mixed traffic conditions, queue jump lanes, and transit signal priority measures by 2031.

The results of the study and its recommendations are considered key inputs into the IGMS component of the Regional Official Plan Review which will guide Halton Region growth to 2041 and the Multi-Modal Transportation Master Plan which will set out how Halton Region will move in 2041. The work completed to date by the Halton Region suggests that both the Burlington GO Station and the Downtown UGC and their associated MTSAs are of regional significance.

2.3 Local Policy Context

2.3.1 City of Burlington Official Plan

In April 2018, City Council adopted a new Official Plan, which is under review and subject to approval by Halton Region. Until the plan is approved by the Region, the City of Burlington's current Official Plan remains in force and effect. Currently, Council is undertaking a scoped review of the building heights and densities contained within the adopted 2018 Official Plan. This study is based on the in force and effect Official Plan (hereinafter the "Burlington Official Plan"), as described further below.

The Burlington Official Plan identifies the UGC and establishes a minimum density target of 200 residents and jobs per hectare. The Burlington Official Plan also identifies Major Transit Station Areas (MTSAs) and defines them as "the area including or around any existing or planned higher order transit station (such as GO Transit commuter rail stations), or the area including and around a major bus depot in the urban core". The Burlington Official Plan does not refer directly to Mobility Hubs and does not identify the precise location of MTSAs.

2.3.2 Planned Land Uses

The UGC boundary is presented on both Schedules B and Schedule E of the Burlington Official Plan. This framework is intended to provide a clear land use/built form vision for Downtown Burlington. The UGC allows for a mix of building typologies including low-rise, mid-rise, and tall buildings within a range of land uses. In the Burlington GO Station Area, there is also a wide range of land uses, which are shown on Schedule B of the Official Plan. Land uses designations are shown in **Tables 2-1** and land uses in the Study Area are shown within **Figure 2-8**.

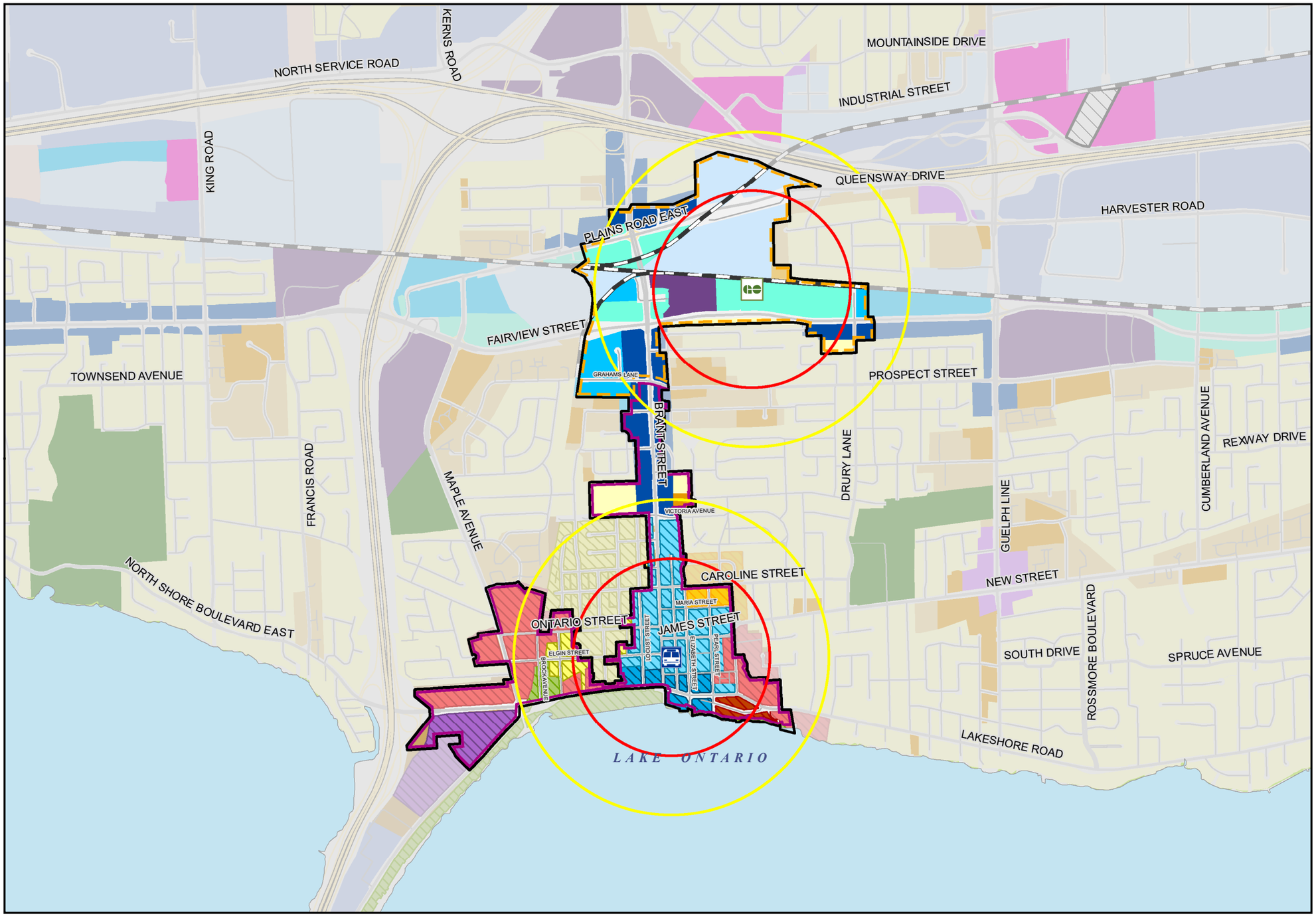
Table 2-1: Study Area Land Use Designations (Land Area)

Study Area Totals and Sub-Totals for Downtown and Burlington GO					
Land Use Designation	**Study Area Total (net ha)**	**Sub-Total Area within Downtown UGC (net ha))**	**UGC Proportion of Total Study Area**	**Sub-Total Area within Burlington GO Station Area (net ha)**	**Burlington GO Proportion of Total Study Area**
Downtown Core Precinct	17.9	17.9	11%	0	0%
DT Major Inst Precinct	7.2	7.2	5%	0	0%
Emerald Neighbourhood Precinct	1.9	1.9	1%	0	0%
General Employment	28.7	0	0%	28.7	18%
Greenlands	0	0	0%	0	0%
Mixed Use Centre	2.5	2.5	2%	0	0%
MUC - Employment	8.4	0.1	0%	8.3	5%
MUC - General	19	8.9	6%	10.1	6%
MUC - Commercial	20.7	0	0%	20.7	13%
Old Lakeshore Road	1.5	1.5	1%	0	0%
Regional Commercial	5.5	0	0%	5.5	3%
Residential - High Density	0.8	0.8	1%	0	0%
Residential - Low Density	8.5	5	3%	3.5	2%
Residential - Med. and or High	23.7	23.7	15%	0	0%
Residential - Medium Density	1.1	0	0%	1.1	1%
St. Luke's Neighbourhood	4	4	3%	0	0%
Waterfront West Public Lands	2.6	2.6	2%	0	0%
Wellington Square Mixed Use	4.7	4.7	3%	0	0%
Total:	**158.7**	**80.8**	**51%**	**77.9**	**49%**

Note: Totals may not add up due to rounding

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 2-8: PLANNED LAND USE AND TRANSIT STATION BUFFERS



LEGEND

- Study Area (approx. 201.76 ha)
- Downtown Burlington Urban Growth Centre (approx. 104.37 ha)
- Burlington GO Mobility Hub (approx. 96.96 ha)
- 500m Buffer from Transit Station
- 800m Buffer from Transit Station
- Burlington GO Station
- Downtown Bus Terminal

Land Use Plan (OP Schedule B & E)

- Residential - Low Density
- Residential - Medium Density
- Residential - High Density
- General Employment
- Business Corridor
- Regional Commercial
- Employment Commercial
- Neighbourhood Commercial
- Mixed Use Centre
- Mixed Use Corridor - General
- Mixed Use Corridor - Commercial Corridor
- Mixed Use Corridor - Employment
- Greenlands
- Major Parks and Open Space
- Deferral

Downtown Mixed Use Centre

- St. Luke's Neighbourhood Precinct
- Emerald Neighbourhood Precinct
- Downtown Residential - Medium and/or High Density Precincts
- Waterfront West / Public Lands Precinct
- Old Lakeshore Road Mixed Use Precinct
- Downtown Core Precinct
- Wellington Square Mixed Use Precinct
- Downtown Major Institutional

NORTH

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: JG
DILLON CONSULTING

October 31, 2019

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Table 2-2 provides an overview of the major land use designations within Downtown Burlington.

Table 2-2: Major Land Use Designations in the Downtown Burlington UGC

Precinct	Location	Minimum and Maximum Height	Maximum Density	Official Plan Reference
Downtown Core Precinct	Adjacent to Brant Street north of Pine Street	2 storey minimum, 4 storey maximum (up to 8 subject to specific criteria)	51 units per hectare	s.5.5.8.2.b
Downtown Major Institutional	South of North Shore Boulevard East	None	None	s.5.5.10
St. Luke's Neighbourhood Precinct	South of Baldwin Street, and north of Elgin Street, generally outside of the UGC	2.5 storey maximum for detached dwellings	25 units per hectare	s.2.5.5.4.b.ii
Downtown Residential - Medium and/or High Density Precinct	East of the UGC along Martha Street, Harris Crescent, as well as the south east side of Old Lakeshore Road	None	26 - 185 units per hectare	s.5.5.5.b
Wellington Square Mixed Use Precinct	South of Pine Street, the north side of Lakeshore Road and west side of Brant Street; and the north and south side of Lakeshore Road east of Brant Street	2 storey minimum, 8 storey maximum (up to 14 subject to certain criteria)	51 units per hectare, FAR 5:0:1	s.5.5.9.1.b s.5.5.9.1.c
Waterfront West/Public Lands Precinct	South of Lakeshore Road and surrounding Brock Avenue and Nelson Avenue south of Elgin Street	None	None	s.5.5.6
Emerald Neighbourhood Precinct	Surrounding Emerald Street and Emerald Crescent, north of Maria Street	2.5 storeys maximum for detached dwellings	25 units per hectare	s.5.5.4.b.ii
Old Lakeshore Road Mixed Use Precinct	Surrounding Old Lakeshore Road	2 storeys minimum, 6-10 storeys maximum depending on area	51 units per hectare	s.5.5.7.2.b s.5.5.7.2.e
Mixed Use Corridor - General Commercial	North of Fairview Street and at the intersection of Plains Road East and Brant Street	2 storey minimum, 6 storey maximum	Floor Area Ratio (FAR) of 1:5:1	s.5.3.2.d

Mixed Use Corridor - General	North of Plains Road East west and east of Brant Street, as well as south of Fairview Street on the west and east of Brant Street and on the west and east side of Drury Lane	a minimum of 2 storeys and a maximum of 6 storeys	FAR of 1:5:1	s.5.3.2.d

Table 2-3 describes the major land use designations within the Burlington GO Station Area.

Table 2-3: Major Land Use Designations in the Burlington GO Station Area

Designation	Location	Minimum and Maximum Height	Maximum Density	Official Plan Reference
General Employment	North of the Burlington GO Station as well as on the west side of Brant Street south of the GO train tracks	Development or redevelopment of permitted uses on lands identifies Employment Lands on Schedule A within a MTSA shall have a minimum FSI of 0.5 and building height of 2 storeys (s.3.2.2.e). Zoning for office use may permit: Max. 0.5:1 (s.3.3.2.b)	Floor Area Ratio (FAR) of 0:5:1	s.3.3.2.b
Mixed Use Corridor - General Commercial	North of Fairview Street and at the intersection of Plains Road East and Brant Street	2 storey minimum, 6 storey maximum	Floor Area Ratio (FAR) of 1:5:1	s.5.3.2.d
Mixed Use Corridor - Employment	South of the GO Tracks, north of Fairview street west of Brant street and east of Drury Lane	2 storey minimum, 6 storey maximum for industrial uses	FAR of 1:1 for any site or 0:5:1 for industrial uses	s.5.3.4.e
Mixed Use Corridor - General	North of Plains Road East west and east of Brant Street, as well as south of Fairview Street on the west and east of Brant Street and on the west and east side of Drury Lane	a minimum of 2 storeys and a maximum of 6 storeys	FAR of 1:5:1	s.5.3.2.d
Residential - Low Density	South of Fairview Street and in morsels of land north of Baldwin Street and south of Blairholm Avenue	Not exceeding the average height of the highest points of the rooflines of existing residential buildings on the immediately adjoining properties	25 units per hectare for single-detached and semi-	s.2.2.2.c s.2.5.2.e

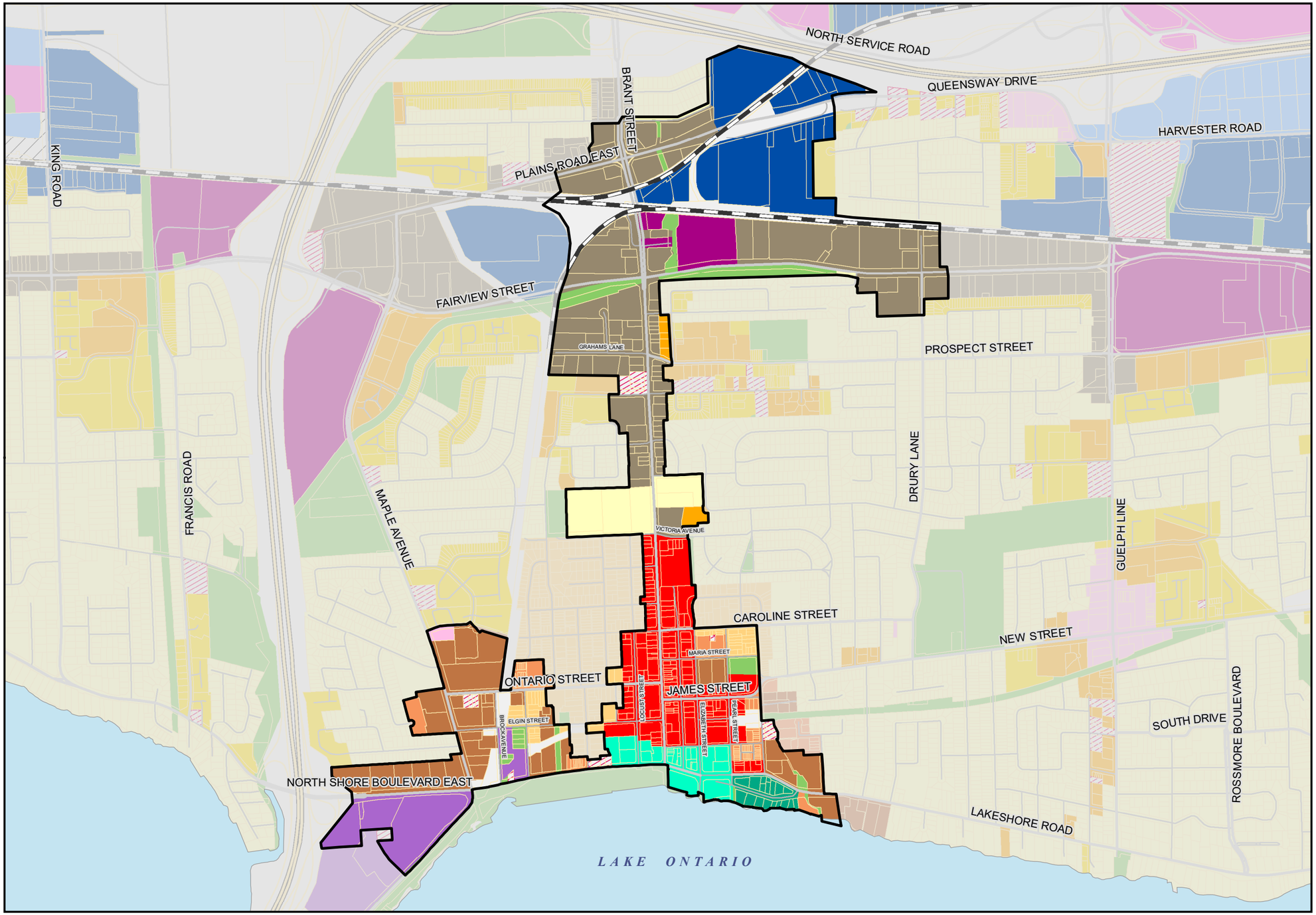
			detached housing	
Residential - Medium Density	One area north of the Burlington GO Station and north of the GO tracks	None	Between 26 and 50 units per hectare	s.2.2.2.d
Residential - High Density	One area north of Victoria Avenue	None	51 and 185 units per hectare	s.2.2.2.e

2.3.3 City of Burlington Zoning By-Law

Lands within the City of Burlington are regulated under Zoning By-law 2020, which came into force and effect on June 21, 1999. As illustrated in **Figure 2-9**, the Study Area's zoning pattern generally reflects the land use directions in the Official Plan. **Table 2-4** provides a summary of the zoning permissions applicable to the lands within the Study Area.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 2-9: BURLINGTON ICBL STUDY AREA ZONING



LEGEND

- Study Area
- Parcel Boundary

Zoning (By-Law 2020)

- Downtown Residential Low Density (DRL)
- Downtown Residential Medium Density (DRM)
- Downtown Residential High Density (DRH)
- Downtown Wellington Square (DW)
- Downtown Old Lakeshore Road (DL)
- Downtown Institutional (DI)
- Downtown Core (DC)
- Residential - Low Density (R)
- Residential - Medium Density (RM)
- Residential - High Density (RH)
- Neighbourhood Commercial (CN)
- Employment Commercial (CE)
- Regional Commercial (CR)
- Business Corridor (BC)
- General Employment (GE)
- Mixed Use Corridor (MX)
- Holding Zone (H)
- Parks and Open Space (P, O)
- Utility Services (S)
- See By-Law 4000-3

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: JG
DILLON CONSULTING

October 31, 2019

Scale 1:15,000

NORTH

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Table 2-4: Study Area Zoning

Zoning	Permitted Uses
Downtown Residential Low Density (DRL)	Detached and semi-detached homes, as well as other ground oriented, attached housing.
Downtown Residential Medium Density (DRM)	Detached and semi-detached homes, townhouses, street townhouses and stacked townhouses, as well as walk-up apartments.
Downtown Residential High Density (DRH)	Ground and non-ground-oriented housing units with density ranging between 51 and 185 units per net hectare. A limited amount of retail and service commercial uses are permitted as well as high density residential, and recreation and entertainment uses.
Downtown Wellington Square (DW)	Hotels, theatres, cafes, rooftop terraces, sidewalk patios, restaurants, cultural and recreational facilities as well as tourist-oriented attractions are permitted. Additionally, high density residential apartment uses are permitted. It is required that retail, service commercial and other pedestrian-oriented uses are provided at the street level.
Downtown Old Lakeshore Road (DL)	High-density apartment residential uses, commercial activities, cultural uses, recreational uses, entertainment uses, and community facilities. Require retail, service commercial and other pedestrian-oriented uses to be located at the street level.
Downtown Institutional (DI)	Public uses, institutional uses, community facilities and open space.
Downtown Core (DC)	Commercial activities including local service and retail uses to office and administration uses, high-density residential apartment uses which also include residential use of upper storeys of commercial buildings. This zoning also includes cultural uses, recreation, entertainment uses and community facilities. DC lands require that retail, service commercial and other pedestrian-oriented uses are at street level.
Neighbourhood Commercial (CN)	Shopping areas in small and large-scale neighbourhood commercial. Residential uses may be permitted in the second and/or third storey of retail/commercial buildings.
Residential - Low Density (R)	Single-detached and semi-detached housing units with a maximum density of 25 units per net hectare.
Residential - Medium Density (RM)	Ground or non-ground oriented housing units with a density ranging between 26 and 50 units per net hectare.
Residential - High Density (RH)	Ground or non-ground oriented housing units with a density ranging between 51 and 185 units per net hectare
Mixed Use Corridor (MX) (includes MXG, MXE, MXC and MXT)	Retail, service commercial and personal services such as financial institutions, and other uses such as community institutions and day cares. Also permit high density residential uses with a height cap of 6 storeys, with the exception of the MXT zone with no height maximum.
Parks and Open Space (P,O)	Permit municipal parks, stormwater management and erosion control, public utilities and services, cultural heritage resources, and non-intensive outdoor recreation uses such as walking trails.

Utility Services (S)	Permitted uses in include utilities
Regional Commercial (CR)	Retail uses, home and auto suppliers, furniture stores, financial institutions and offices. May permit medium and high density residential uses to a maximum of 12 storeys
General Employment (GE)	Industrial uses that involve assembling, fabricating, manufacturing, processing, warehousing and distribution uses, as well as transportation, construction, office uses and more. There is a limited range of retail and service commercial uses such as convenience stores and restaurants permitted.

2.3.4 City of Burlington Future Transportation Master Plan

The City of Burlington does not currently have an updated transportation master plan, however, work is underway to create an 'Integrated Mobility Plan'. It is intended to be a 20-year vision that defines long-term transportation needs including walking, cycling, and transit. The City published a strategic overview of the transportation system in 2014 in Discussion Paper 1: Current State of Transportation in Burlington. The paper explores possible sustainable transportation solutions including transit, active transportation and limiting road widening as potential options. In addition, it discusses investing in alternative mode to reduce single occupant vehicle usage across the city. Suggested mode share targets from the 2017 Official Plan (Part II, Section 3.4.2c) are:

- 15% of all trips within Burlington by transit;
- 30% of all eastbound trips leaving the City by transit; and,
- 10% of all westbound trips leaving the City by transit.

In addition to these targets, transportation planning in Burlington must conform to the Halton Region target of 20% transit mode share as described in Regional Official Plan Amendment 38.

2.3.5 City of Burlington Cycling Plan

The City of Burlington Cycling Plan from 2009 is currently undergoing an update that is scheduled to be presented to Council in November 2019. Within the Study Area, the draft plan proposes protected bikeways on Brant Street north of Victoria Avenue, Prospect Street east of Brant Street, Maple Avenue, Plains Road, and Fairview Street. This is in addition to several intersection improvements, and local street bikeways in the Downtown area. Recent public consultation indicated a strong desire for cycling in Downtown Burlington, particularly on Brant Street and Fairview Street, while Lakeshore Road was identified as an area with high traffic speeds and volumes, as well as a lack of cycling facilities.

2.4 Summary of Policy Context Findings

There are a number of policies, plans and guidelines which apply to the lands within the ICBL Study Area. The Growth Plan promotes the planning for complete communities in settlement areas

across the GGH. Complete communities are specific areas, such as mixed-use neighbourhoods within cities or towns that "offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living, including an appropriate mix of jobs, local stores and services, a full range of housing, transportation options and public service facilities". To support this principle, the Growth Plan provides policy guidance for a number of strategic growth areas which are to be planned as locations for accommodating future growth, including Urban Growth Centres and Major Transit Station Areas. And, while UGCs and MTSA have different definitions, they are both examples of complete community typologies and Provincial policy establishes direction for promoting intensification and transit-oriented development in both of these typologies.

The Growth Plan identifies Downtown Burlington as an UGC with a minimum density target of 200 people and jobs per hectare (to be achieved by 2031). The Growth Plan does not specifically identify each MTSA, but the Plan does include a definition for MTSAs which includes heavy rail stations (such as the Burlington GO Station) and major bus depots in an urban core (Downtown John Street Bus Terminal).

Metrolinx's Big Move identifies Burlington GO and the Downtown John Street Bus Terminal as transit facilities with regional significance. The 2041 RTP identifies Burlington GO as a Mobility Hub (based on its location on a Priority Transit Corridor) and Downtown Burlington as a UGC, as well as improvements to the transit network intended to improve regional connectivity, including RER improvements at the Burlington GO and a priority bus route along Brant Street to improve connectivity between Burlington GO and the Downtown John Street Bus Terminal.

The current Halton Region Official Plan reinforces Provincial direction for these two locations, identifying both Burlington GO and lands within the Downtown UGC as Major Transit Station Areas and Mobility Hubs. On-going work as part of the Region's MCR process, including the Defining Major Transit Requirements Study continue to reinforce the regional significance of these two facilities (identifying both as Regional Transit Nodes and Brant Street as a Transit Priority Corridor).

The City's current in force Official Plan implements aspects of Provincial and Regional policy, identifying Downtown Burlington as a UGC and includes policy references to Major Transit Station Areas. The current Official Plan includes the 200 people and jobs per hectare density target for the UGC but does not include a density target for MTSAs, nor does it speak to the specific location and function for each MTSA. The current Official Plan also does not fully address a number of the recent changes to the Growth Plan related to complete communities and transit-supportive development. And while the land use framework for lands within the Study Area are intended to promote a diverse range of uses, a number of which are transit-supportive and are intended to support growth and intensification in and around the Burlington GO Station and the Downtown

Bus Terminal, there are opportunities to address several gaps to ensure that any development which occurs in the interim aligns with Provincial and Regional policy directions while taking into account the unique functions of each transit facility, as well as any local conditions in the lands around each station.

The recently adopted 2018 Official Plan is under review with the Region and the City is also undertaking a scoped review of the building height and density policies in the Downtown. The scoped review will establish an updated framework for accommodating future growth in the Downtown, including lands around the Downtown John Street Bus Terminal. At the same time, the City has also been working on an Area Specific Plan for lands around the Burlington GO station, which is expected to be completed after the Region of Halton completes its MCR process. Accordingly, until the new Official Plan comes into force and effect and the Area Specific Plan process is completed, there is a need to implement a number of interim-measures to guide growth and development in the Study Area, in particular, in instances where there are gaps between the latest Provincial Policies and current Official Plan. The proceeding sections of this report further explore the character of lands in the Study Area, along with the current and planned function of each transit facility.

3.0 Study Area Characterization

The Study Area is 201 gross hectares in size, with the lands around the GO Station Area comprising approximately 97 hectares and lands in the Downtown[5] comprising 104 hectares. The following section describes the existing conditions within the Study Area, describing general land use, building heights and various aspects of the transportation network. This section also provides a detailed analysis of the future transportation demand and context for transit supportive development.

3.1 Existing Land Use

3.1.1 Downtown Burlington, Existing Land Use

The Downtown Urban Growth Centre (UGC) is oriented towards Burlington's waterfront on the shores of Lake Ontario. The Downtown is the City's most diverse area, offering the greatest diversity of land uses in the City. The Downtown includes a variety of different precincts featuring a range of different land uses, ranging from denser forms of residential, commercial

[5] There are two different UGC boundaries – one in the in force and effect OP and an alternate one in the Regional OP. This UGC boundary is based on the changes made through the ROPA 38 and this study is based on the updated UGC as per the Regional Official Plan.

and mixed uses to established lower-rise residential neighbourhoods. The Downtown is organized in a grid pattern with the lands along Brant Street and Lakeshore Boulevard acting as the main avenues through the area. Brant Street includes a mix of uses, including low-rise commercial shops and restaurants, mixed-use mid-rise and high rise residential buildings as well as some mid-rise institutional and office uses. Brant Street also includes two smaller public squares which are located to the north and south of City Hall.

The lands along Lakeshore Boulevard include the City's large waterfront area, along with a mix of low, mid-rise and high-rise residential and mixed use developments. The waterfront area is one of the City's unique destinations, offering people residents, visitors and people working in the Downtown an attractive place for recreation and entertainment. The waterfront area includes a number of recreational uses, including the Brant Street Pier, Spencer Smith Park, Discovery Landing, Beach way Park and the Waterfront Trail. The area also includes cultural uses, including the Art Gallery of Burlington which is located on the north side of Lakeshore Boulevard (and further to the west is the Joseph Brant Museum).

In addition to the denser uses in the Downtown UGC, the area also includes two established low-rise residential neighbourhoods which provide transition into adjoining residential

neighbourhoods to the east, west and north of the UGC. These two neighbourhoods are the Emerald Neighbourhood which is located in the north-east quadrant of the Downtown and the St. Luke's Neighbourhood which is located to the north-west portion of the Downtown. Both of these Neighbourhoods have small areas which are located in the UGC, with the majority located outside of the UGC but within the Downtown Precinct (technically outside of the ICBL Study Area). There are also a number of heritage buildings as well as buildings containing historic character which contribute to the unique character of the Downtown.

Further to the west of the UGC south of North Shore Boulevard, and adjacent to the waterfront, there are several public service buildings such as Joseph Brant Hospital, and an Ontario Provincial Police station. The UGC also includes the Downtown John Street Bus Terminal.

3.1.2 Burlington GO Station Area, Existing Land Use

The Burlington GO Station Area includes lands to the south of the QEW towards the northern limits of the UGC at Prospect Street, as well as lands along Fairview Street between Drury Lane and a hydro corridor to the west of Brant Street. The Burlington GO Station Area lands are largely occupied by a range of mostly lower density commercial, industrial and residential uses. The Burlington GO Station is located south of Plains Road East, north of Fairview Street on both sides of the rail corridor generally in between Brant Street (west) and Drury Lane (east). Pockets of density exist in the immediately vicinity of the GO Station, which include a recently developed high-rise residential development to the south and west of the Station. Smaller pockets of density can be found along Brant Street, where a handful of mid and high-rise residential/mixed use buildings either front onto the corridor (e.g. Brant and Ghent Avenue) or are set back within the neighbourhoods beyond Brant Street (e.g. Prospect Street).

Fairview Street is largely occupied by auto-oriented commercial uses on the north and south side including auto dealerships, service centres and various commercial plazas. The lands along Fairview Street also include several smaller light industrial uses to the west of the GO Station (north side of Fairview Street).

There are no parks, recreational, institutional, cultural or entertainment uses located in the lands around GO Station (i.e. within the Study Area). There are however, a number of smaller parks and schools within the established residential neighbourhoods which abut the Study Area to the south, east and west of the GO Station.

The Burlington GO Station Area is also in close proximity to several important transportation corridors, including Highway 403 and the QEW as well as the aforementioned Brant Street, Fairview Street and Plains Road which all have bike lanes and/or mixed bike lanes and sharrows. Fairview Street has a multi-use path adjacent to the road.

3.2 Existing and Planned Building Heights and Density

3.2.1 Downtown Burlington, Existing Building Height and Density

Existing building heights in Downtown Burlington ranges from 1 storey to 22 storeys as seen in **Figures 3-1** through **Figure 3-4**. Several of the tallest buildings in Burlington are located within the Downtown Core Precinct, in the Wellington Square Mixed Use Precinct and in the Downtown Residential area near Maple Avenue.

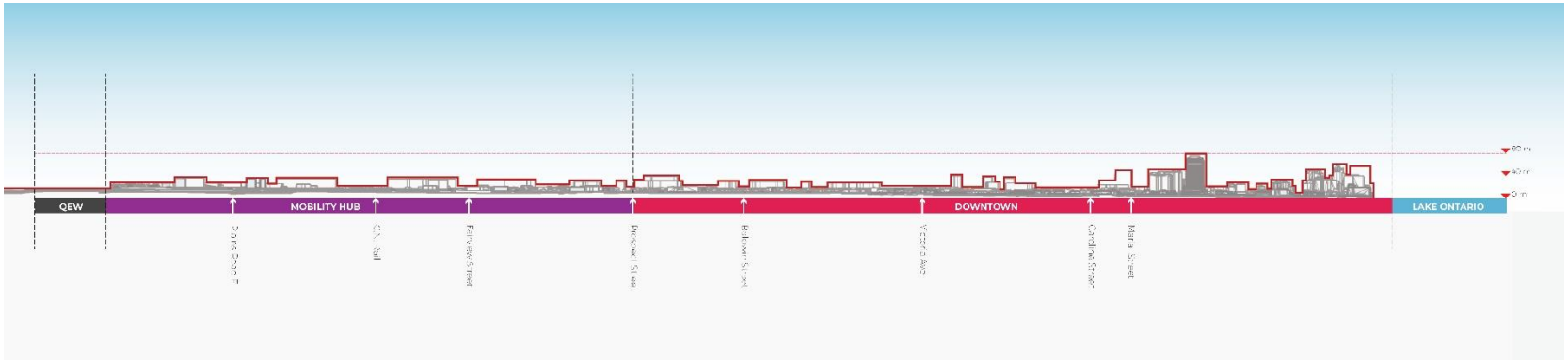


Figure 3-1: Building Heights Brant Street East Elevation

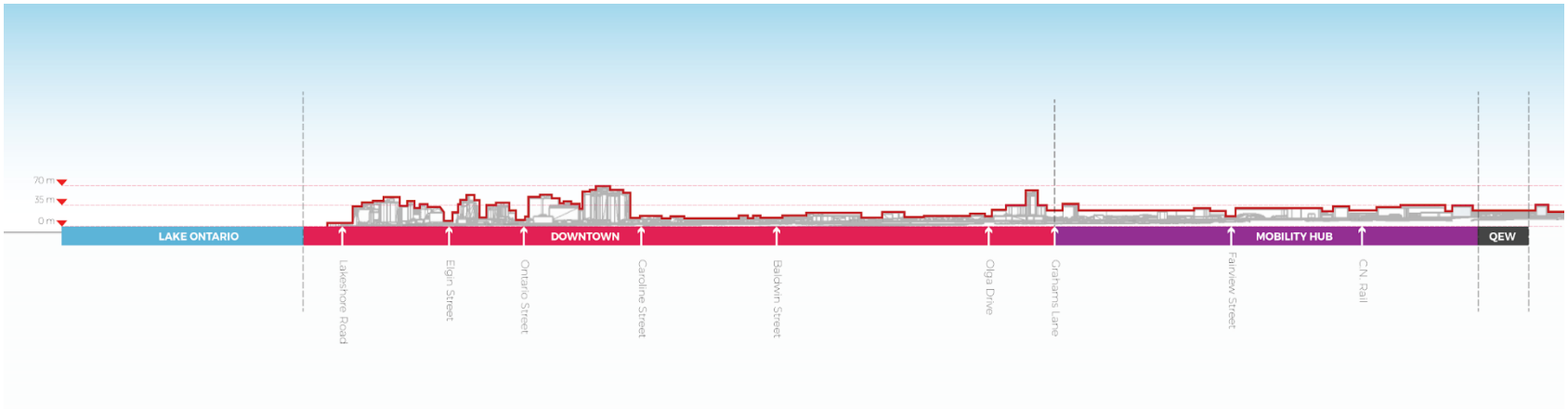


Figure 3-2: Building Heights Brant Street West Elevation

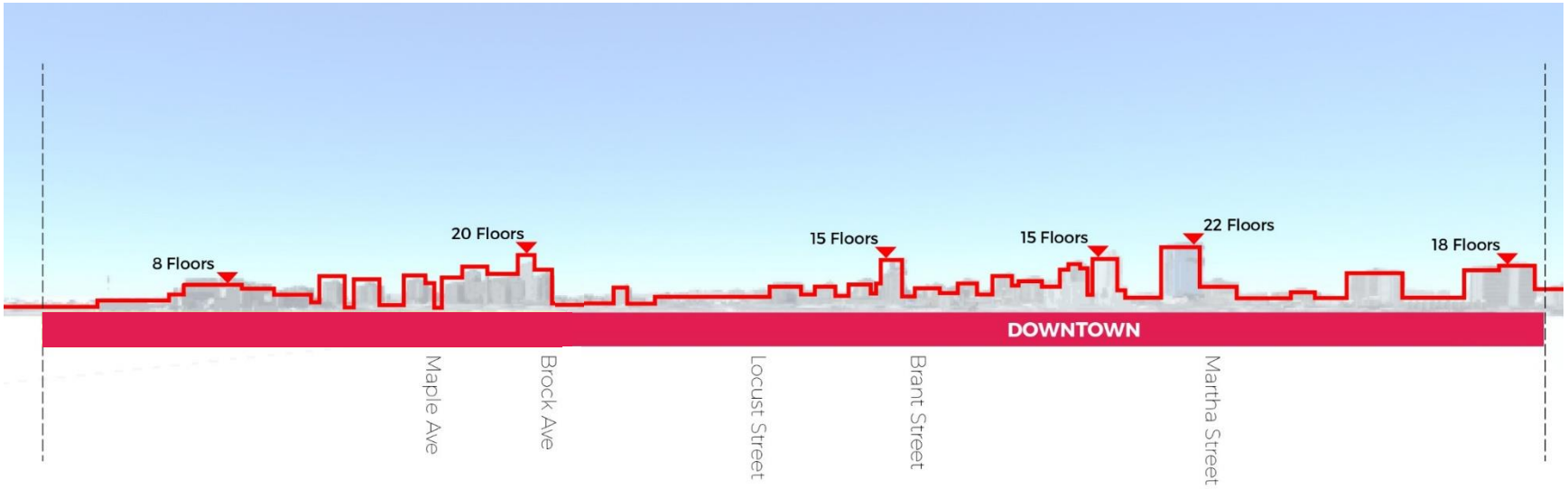


Figure 3-3: Existing Built Form - Building Heights from the Lake

Figure 3-4: Building Heights within the Downtown UGC

3.2.2 Downtown Burlington, Planned Building Height and Density

The Official Plan sets heights and densities for many of the downtown precincts within the UGC. The areas outlined within the Official Plan that have the most density allowance are the Downtown Residential - Medium and/or High Density Precincts (maximum 185 units per hectare). The following provides an overview of the permitted heights and densities in the Official Plan:

- The **Downtown Core Precinct** has a 2 storey minimum and a 4 storey maximum, with a minimum of 51 units per hectare (s.5.5.8.2.b);
- There are no minimum or maximum building heights or density stated within the Official Plan for areas designated **Downtown Major Institutional Precinct;**
- Lands designated as **St. Luke's Neighbourhood Precinct** have a 2.5 storey and a 25 units per hectare maximum (s.2.5.5.4.b.ii);
- The **Downtown Residential - Medium and/or High Density Precincts** have stated that ground or non-ground oriented units should be between 26 - 185 units per hectare (s.5.5.5.b) with no maximum number of storeys established in the Official Plan;
- The **Wellington Square Mixed Use Precinct** allows for a minimum of 51 units per hectare (s.5.5.9.1.b) a maximum Floor Area Ratio of 5:0:1 (s.5.5.9.1.c) and a minimum of 2 and a maximum of 8 storeys (s.5.5.9.1.b);
- The **Waterfront West/Public Lands Precinct** has no density requirements outlined within the Official Plan;
- The **Emerald Neighbourhood Precinct** has a maximum density requirement of 25 units per hectare (s.5.5.4.b.ii) and a maximum building height of 2.5 storeys for detached dwellings (s.5.5.4.b.ii); and,
- The **Old Lakeshore Road Mixed Use Precinct** is shown in **Figure 3-6** and allows for a minimum density of 51 units per hectare (s.5.5.7.2.b) and a minimum of 2 storeys and maximum of 10 storeys in Area A: West Sector (s.5.5.7.2.b); a minimum of 2 storeys and maximum of 6 storeys in Area B: East Sector (s.5.5.7.2.b). The Official Plan notes that there is no new construction allowed in Area C: South Sector (s.5.5.7.2.e).

Figure 3-6: Old Lakeshore Road Mixed Use Precinct (Schedule E of Burlington OP)

3.2.3 Burlington GO Station Area, Existing Building Height and Density

The existing building height and density in the Burlington GO Station Area ranges from 1 storey to 24 storeys as shown in **Figures 3-1, through Figure 3-5.** The Metrolinx Mobility Hub Profile (2015) and Halton Region Best Planning Estimates (2016) Forecast showed 30 people and jobs per hectare within the Burlington GO Mobility Hub[7].

3.2.4 Burlington GO Station Area, Planned Building Height and Density

The Official Plan sets heights and densities for lands within the Burlington GO Station as follows:

- The lands designated as **General Employment** have a maximum FAR of 0:5:1 (s.3.3.2.b;
- **Mixed Use Corridor - Commercial** allows for a minimum of 2 storeys and a maximum of 6 storeys and a FAR of 1:5:1 (s.5.3.2.d);
- **Mixed Use Corridor - Employment** allows for a minimum of 2 storeys and a maximum of 6 storeys for industrial uses and a FAR of 1:1 for any site or 0:5:1 for an industrial uses (s.5.3.4.e);
- **Mixed Use Corridor - General** allows for a minimum of 2 storeys and a maximum of 6 storeys as well as a FAR of 1:5:1 (s.5.3.2.d);
- **Residential - Low Density** has a maximum of 25 units per hectare for single-detached and semidetached housing (s.2.2.2.c). The maximum building height should not exceed the average height of the highest points of the rooflines of existing residential buildings on the immediately adjoining properties sharing lot lines with lands under application (s.2.5.2.e);
- **Residential - Medium Density** allows for between 26 and 50 units per hectare for ground or non-ground oriented housing (s.2.2.2.d); and,
- **Residential - High Density** allows for between 51 and 185 units per hectare (s.2.2.2.e).

3.3 Existing and Planned Amenities

3.3.1 Downtown Burlington

Amenities are an important part of a complete community. Existing amenities in Downtown Burlington within the extent of the UGC are shown in **Figure 3-7** including a number of major public service facilities such as schools, community facilities, the Joseph Brant Hospital, a long term care home, retirement homes, as well as a number of parks and recreational areas and entertainment/cultural facilities (Art Gallery, Performing Arts Centre). Downtown Burlington also includes City Hall and a number of shopping/commercial areas.

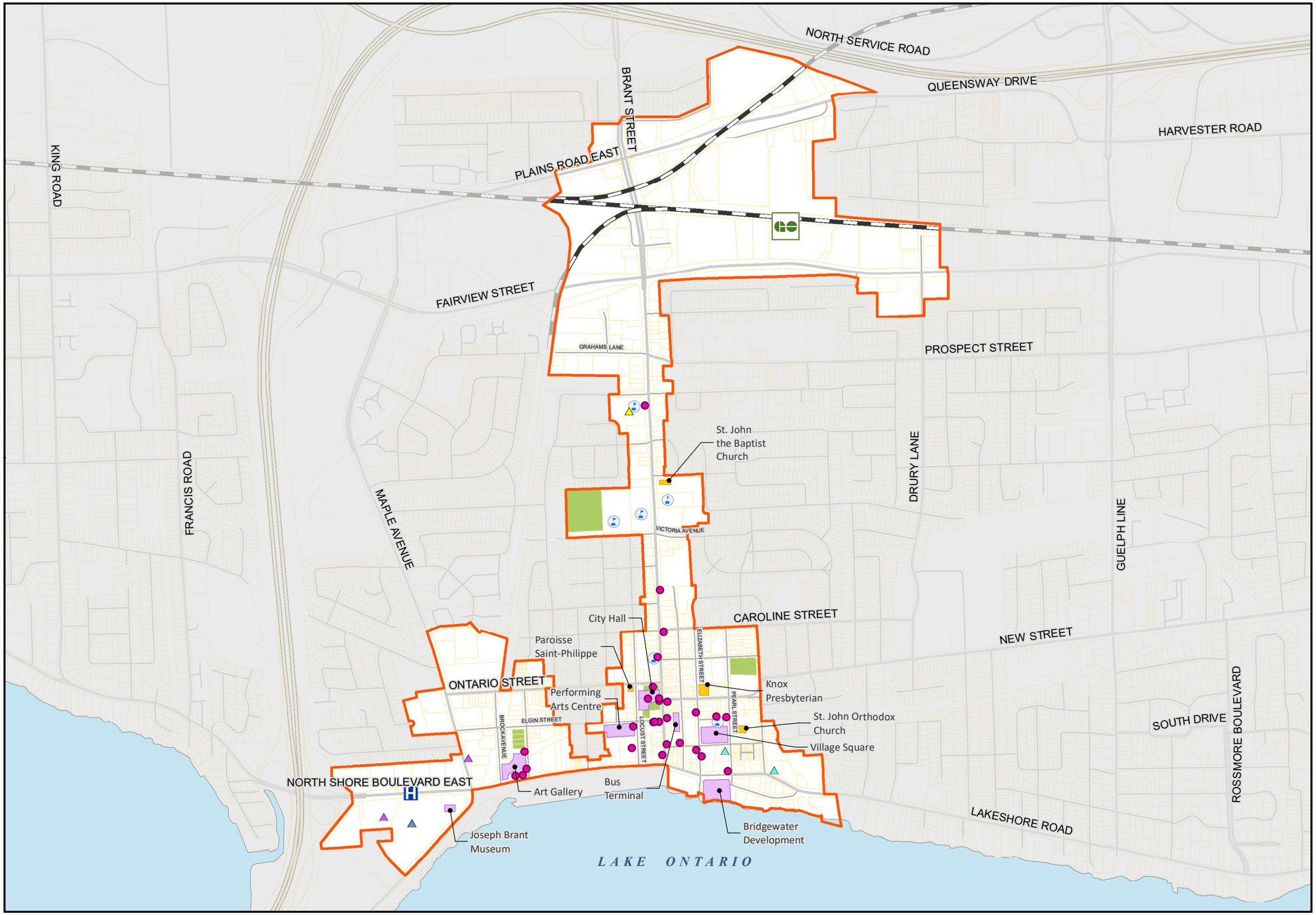
3.3.2 Burlington GO Station Area

The Burlington GO Station Area has very few amenities as shown in **Figure 3-7,** apart from the Burlington GO Station itself, and one mental health service building.

[7] UGC population from Urban Growth Centre Density Analysis staff report, June 2019 (based on 2011 Stats Canada custom data set plus Stats Canada)

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-6: AMENITIES WITHIN THE STUDY AREA



LEGEND

- Study Area
- Parcel Boundary

Amenities *

- School
- Burlington GO Station
- Public Art
- Community Support Service
- Hospital
- Long-Term Care Home
- Mental Health Services
- Retirement Home
- Parks
- Key Landmark
- Church

* Amenities outside of the study area not featured

NORTH

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3.4 Existing and Planned Transportation Network

The following section provides an overview of the transportation network serving the Study Area, the baseline transportation demand and mode share, as well as the key challenges related to streets, public transit, demand management systems, walking, and cycling networks. The Study Area transportation system is supported by limited multi-modal networks which enable people and goods to travel by different modes, at different times of the day and to access different activities and places. These networks facilitate the travel choices and movements of residents, employees, visitors and other users to, from and within the Study Area.

3.4.1 Active Transportation Network

This section provides an overview of existing conditions for active transportation (bicycling and walking) in the Study Area. Different aspects of the existing network of mobility are addressed in each sub-section and current deficiencies with the existing network or future potential are identified at the end of this report. Active transportation behaviour in the Study Area is rapidly evolving due to demographic changes including the presence of young population, as well as the recent introduction of mixed-use developments according to Transportation Tomorrow Survey data in 2006 and 2016. Although the future regional transit network and local transit services are expected to enhance connectivity, current land uses and transportation systems are primarily automobile dependent. As such, limited walking and cycling options are available for residents of the Burlington GO Station Area. Downtown Burlington residents, however, enjoy better walking and cycling conditions due to smaller block sizes, street grid pattern and variety of active transportation connections through the area.

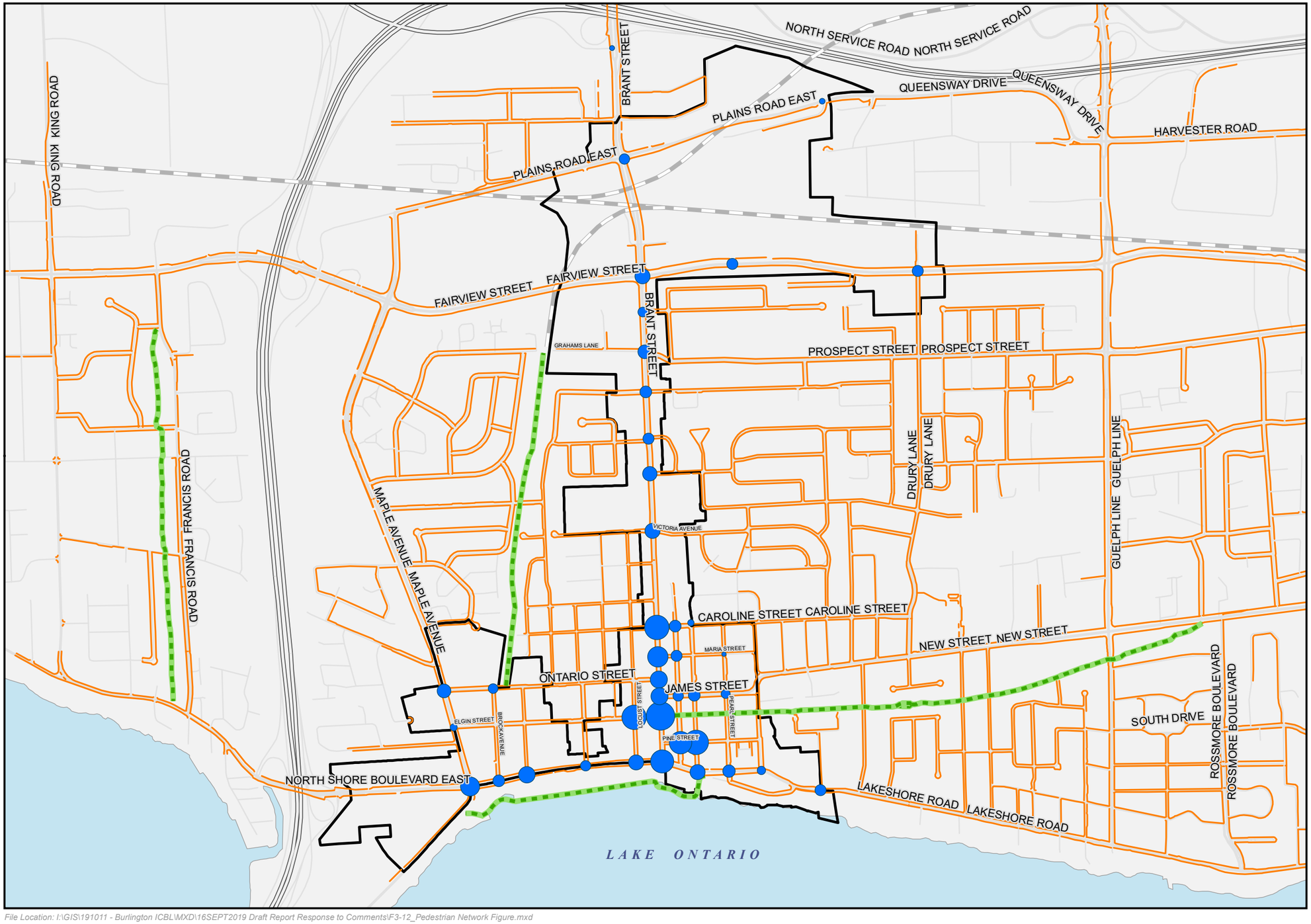
3.4.2 Pedestrian Circulation

Nearly every street within the Study Area includes sidewalks on both sides of the street. Downtown Burlington has a fine-grain street network that facilitates walking trips, however, the area around the Burlington GO Station is characterized by large blocks which make walking trips difficult. Pedestrian volumes are low at just over 100 people in the PM peak hour on Brant Street Downtown and just over 50 people (PM peak hour) near the Burlington GO Station according to traffic counts at intersections provided by the City of Burlington (see **Figures 3-8**). Further intensification would generate additional demand and increase the usage of existing facilities. There is sufficient capacity to accommodate additional pedestrian demand[8]; however, the quality of facilities (such as amenities, benches, trees or other urban design features) will require further improvements in the future.

[8] According to Highway Capacity Manual, a standard 2m sidewalk (with 1.5m pedestrian clearway) provide capacity of roughly 2,430 pedestrians per hour. Cluttered sidewalk, however, further reduces the density.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-7: EXISTING PEDESTRIAN DEMAND AND CIRCULATION



LEGEND

- Trails
- Study Area

PM Peak Hour Pedestrian Volume (2017)

- 10
- 50
- 100
- Sidewalk

*Sidewalk and trail network from City of Burlington Shapefile
*Pedestrian volumes from 2017 turning movement counts

NORTH

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3.4.3 Cycling Circulation

Currently, cycling travel is accommodated through sharrows[9], multi-use paths, and bike lanes as shown in **Figure 3-9**. According to turning movement counts, cycling volumes are approximately 15 cyclists on Brant Street and Lakeshore Road and less than 10 cyclists hourly around the Burlington GO Station area during the afternoon peak hour (for both locations). Low cycling volumes and limited access to physically separated bicycle facilities present an opportunity to add more cycling facilities and encourage cycling travel in the future. MTO has suggested design considerations for cycling facilities dependant on 85th percentile motor vehicle speeds as shown in **Table 3-1**. These guidelines should be considered when expanding or upgrading the cycling network. In particular, physical separation is preferable where vehicle speeds are in excess of 70 km/h.

Table 3-1: Cycling Facility Guidelines by Traffic Speed (Source: OTM Book 18)

85th Percentile Speed	Study Area Examples	Design Consideration
Low (30 to 49 km/h)	Some Local Roads	Speed differential between bicycles and motor vehicles is within 30 km/h, suggesting integration of the two modes as mixed traffic, in standard or wide curb lanes, may be appropriate.
Moderate (50 to 89 km/h)	Brant Street, Prospect St, Elgin St	Exclusive operating space for both bicycles and motor vehicles, in the form of paved shoulders, bicycle lanes or separated facilities is recommended.
High (70 to 89 km/h)	Fairview St, Plains Rd, Lakeshore Rd	Speed differential between bicycles and motor vehicles exceeds 40 km/h, suggesting physical separation of the two modes is most appropriate such as buffered paved shoulders.
Very high (90 km/h and greater)	None (except highways where bicycles are not permitted)	Physical separation is preferable, particularly in an urban environment. In rural areas of the province, it may not be practical to provide physically separated facilities on very high speed roadways where bicycles are currently allowed. A painted buffer between the roadway and the paved shoulder is an alternative treatment for such cases. If this is not feasible, provision of a parallel bicycle route should be explored.

[9] Sharrows are painted arrows with a bicycle on a roadway that denote it as a cycling street, however they do not offer physical protection.

The City of Burlington Cycling Plan is currently undergoing an update. The draft proposes protected bikeways on Brant Street north of Victoria Avenue, Prospect Street east of Brant Street, Maple Avenue, Plains Road, and Fairview Street. Protected cycling facilities, leading to Downtown Burlington and the Burlington GO Station Area would create a safer cycling environment and encourage further usage. These improvements are recommended in addition to several intersection improvements, new local street bikeways and upgrades to existing cycling facilities in the Study Area.

3.4.4 Transit Network and Demand

The Study Area is currently served by several local bus routes and the Route 101 express bus route that travels along Plains Road East and Fairview Street. A transit map of the Study Area is shown in **Figure 3-10** (the thicker the line, the higher the transit service frequency).

The Study Area is served primarily by Burlington Transit for local trips and trips to Hamilton, by GO Transit through Burlington GO Station for regional trips, and with limited service to and from Hamilton through Hamilton Street Railway. Peak hour headways[10] are generally 20 minutes and the combined headway of Route 1 and Route 101 (both run on Plains Rd) is 8.5 minutes. The Burlington GO Station is served by trains to Hamilton and Toronto on and off peak. Metrolinx's Regional Express Rail (RER) plan will bring 15 minute headways to this corridor by 2025.

By the end of 2019, Burlington Transit will recommend a five-year operational program to Burlington City Council that would increase frequency and service hours across the network. If approved by Council, these changes are anticipated to increase ridership.

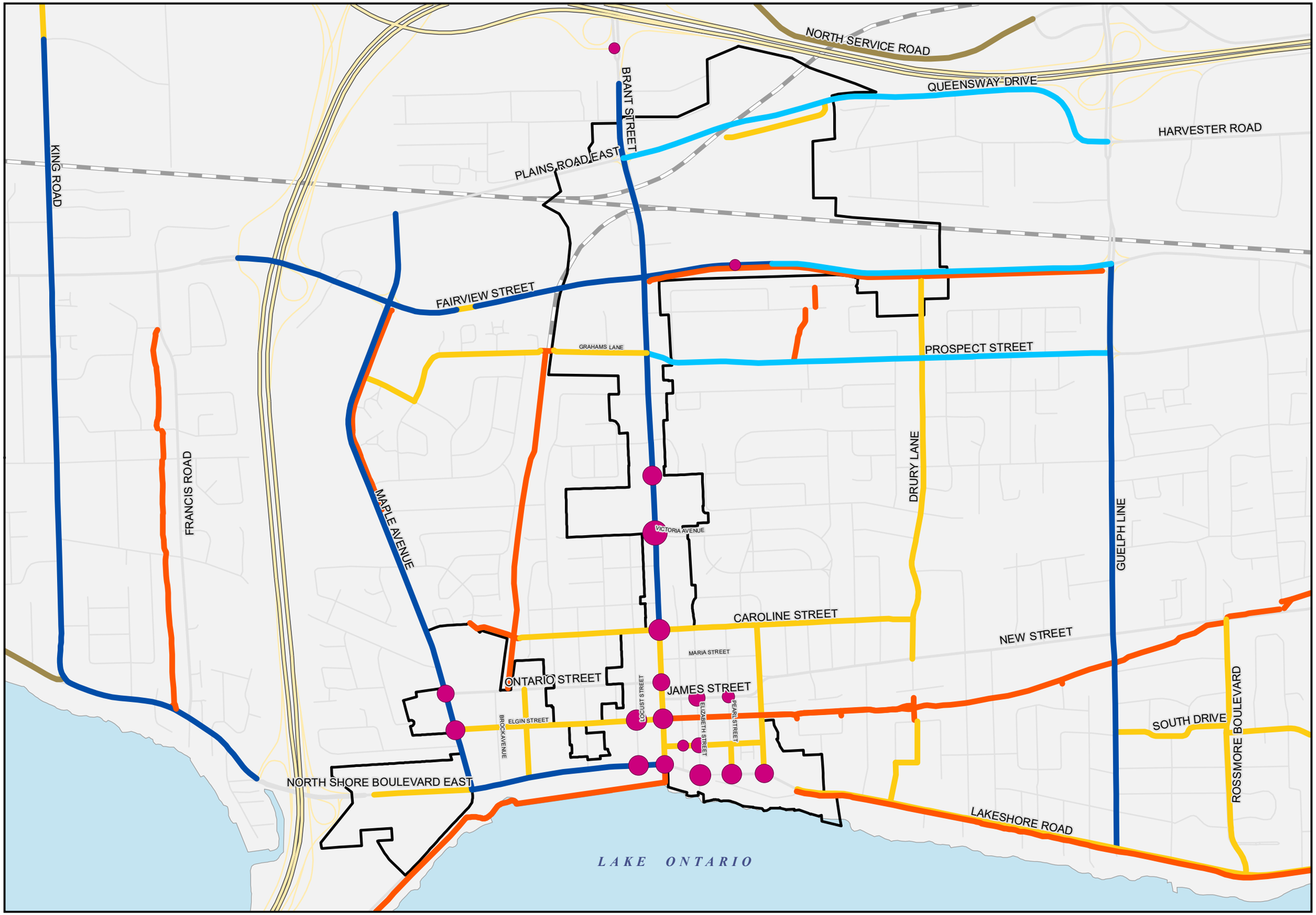
3.4.5 Street Network and Vehicle Demand

The street conditions for both arterial and local roadways were investigated to assess current deficiencies and identify network challenges. High vehicle volumes are accommodated on arterial roads within the Study Area including Lakeshore Road, Brant Street, James Street, Fairview Street, and Plains Road. While some of these roads are at capacity, others have reserve capacity during the peak hours as detailed in Section 3.5**.** Just outside the Study Area, the Queen Elizabeth Way (QEW) is a provincial freeway that connects the Study Area to the rest of the GTHA.

[10] Headways are the time between bus trips on a particular route or corridor. For example, if a bus on a route arrives every 30 minutes, that route's headway is 30 minutes.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-8: EXISTING BICYCLE DEMAND AND CIRCULATION



LEGEND

- Study Area

PM Peak Hour Cycling Volume

- 1
- 5
- 10

Cycling Facility

- Multiuse Path
- Bike Lanes (Both Sides)
- Bike Lane (One Side)
- Paved shoulder
- Sharrows

*Cycling network from City of Burlington Shapefile
*Cycling volumes from 2017 turning movement count (highest hourly volume from 3:00pm-7:00pm)

NORTH

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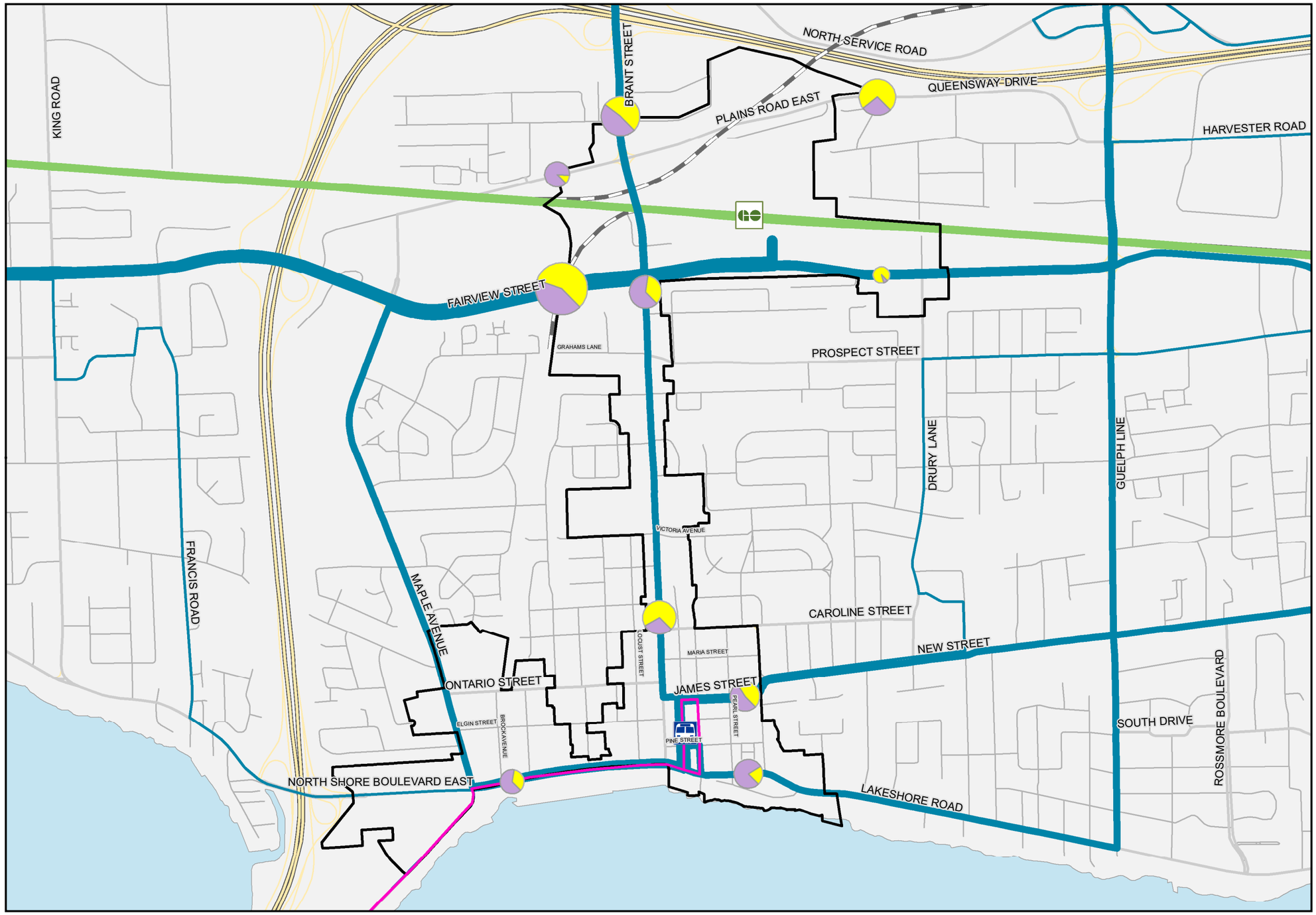
BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-9: EXISTING TRANSIT AND USAGE



LEGEND

- Study Area
- Burlington GO Station
- Downtown Bus Terminal
- Railway

Tranist Route Peak Hour Headways

- 8.5 Minutes
- 15-20 Minutes
- 30-45 Minutes
- 60 Minutes or worse
- GO Rail (~10 min)
- HSR Route (30 min)

Local Transit Screenline Volume (PM Peak Hour)

- 250
- 100
- 25
- Inbound
- Outbound

*Transit volumes from November 2018 APC Data
*Peak hour headways from October 2019 schedules

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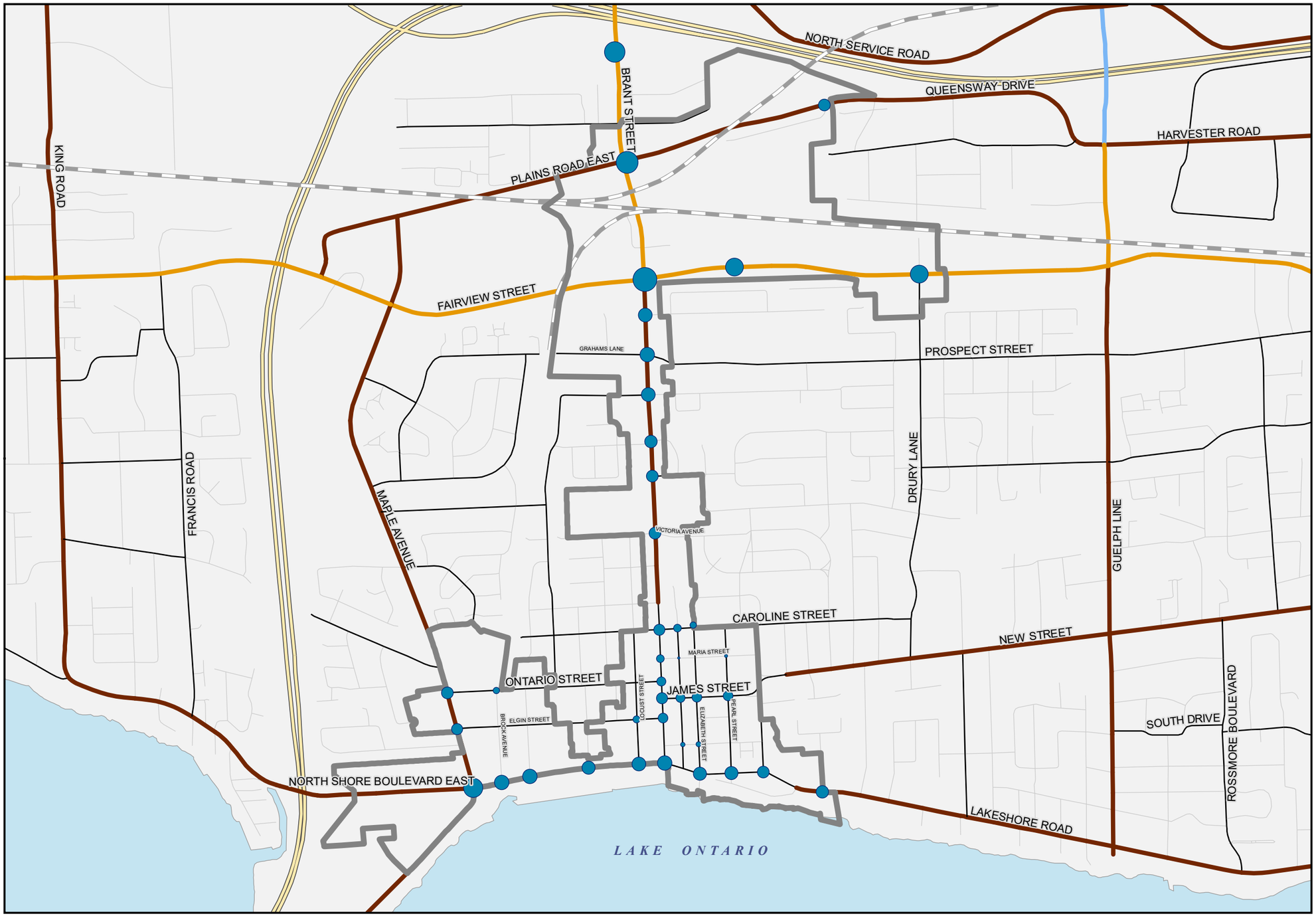
BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-10: EXISTING ROAD NETWORK AND VOLUMES



LEGEND

- Study Area
- Railway

Vehicle Volume (PM Peak Hour)

- 100
- 1,000
- 10,000

Road Classification (2017 Official Plan)

- Highway
- Multi-Purpose Arterial
- Major Arterial
- Minor Arterial
- Collector
- Local

*Vehicle volumes from 2017 turning movement counts
*Road network from 2017 Official Plan Schedules J, K, L

NORTH

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3.4.6 Existing Travel Pattern

Current mode share during the morning and afternoon peak hours to and from the Study Area is shown in **Figure 3-11** and **Figure 3-12.** Mode share in the Burlington GO Station Area and Downtown Burlington are similar with a high proportion of trips completed by vehicle. However, trips internal[11] to the Burlington GO Station Area experiences twice the auto passenger (10%) and a higher cycling mode share compared to trips within Downtown Burlington as shown in **Figure 3-13**. On the contrary, pedestrian activity is higher in Downtown Burlington due to the presence of amenities within walking distance. This data was extracted from the 2016 Transportation Tomorrow Survey (TTS).[12] According to the 2016 TTS, driving alone is the dominant mode of transportation within the Study Area. Inbound trips during the morning peak periods and outbound trips during the afternoon tend to be by vehicles compared to sustainable modes of transportation, with less than 15% of trips being completed by transit, walking and cycling.

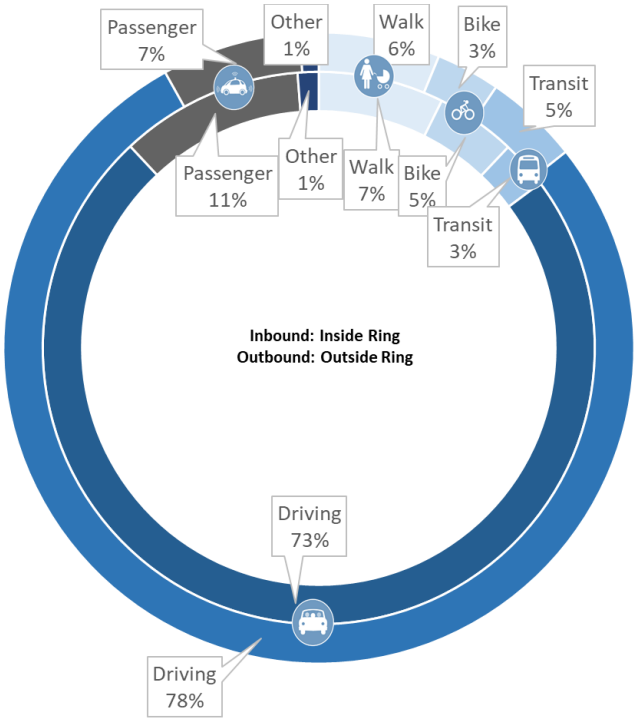


Figure 3-11: Existing Mode Share and Study Area (AM Peak Hour)

[11] Internal trips are those which begin and end within the Study Area. Since this Study Area has two distinct sub-areas (Downtown Burlington and the Burlington GO Station Area)

[12] The Transportation Tomorrow Survey is a survey of travel behaviour in the Greater Toronto and Hamilton area. It includes information about the time, purpose, origin, destination, and mode of trips. The full dataset is meant to represent all travel in the region on a typical weekday. The data is limited by a low sample size that can distort results when examining small areas. However, it is the best data available and gives an idea of travel patterns in the area.

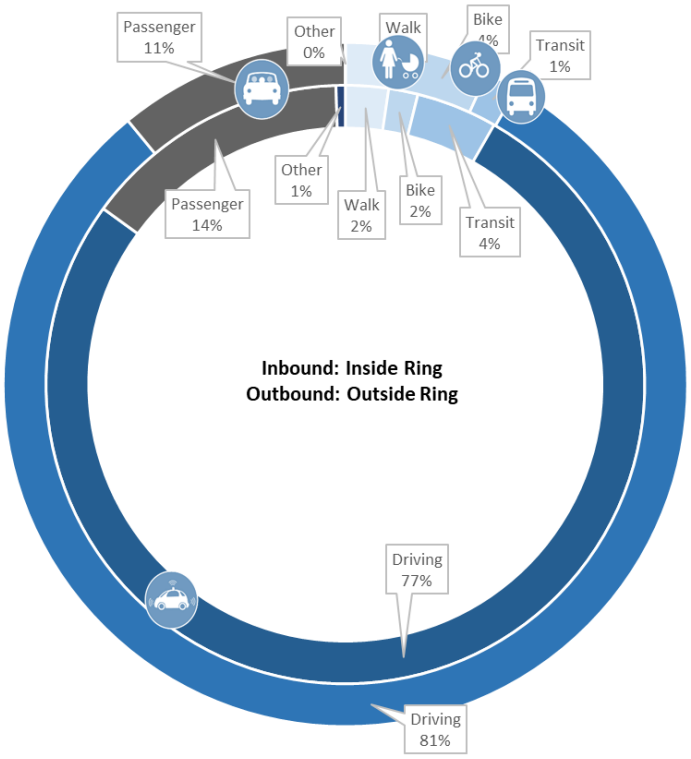


Figure 3-12: Existing Mode Share of Study Area (PM Peak Hour)

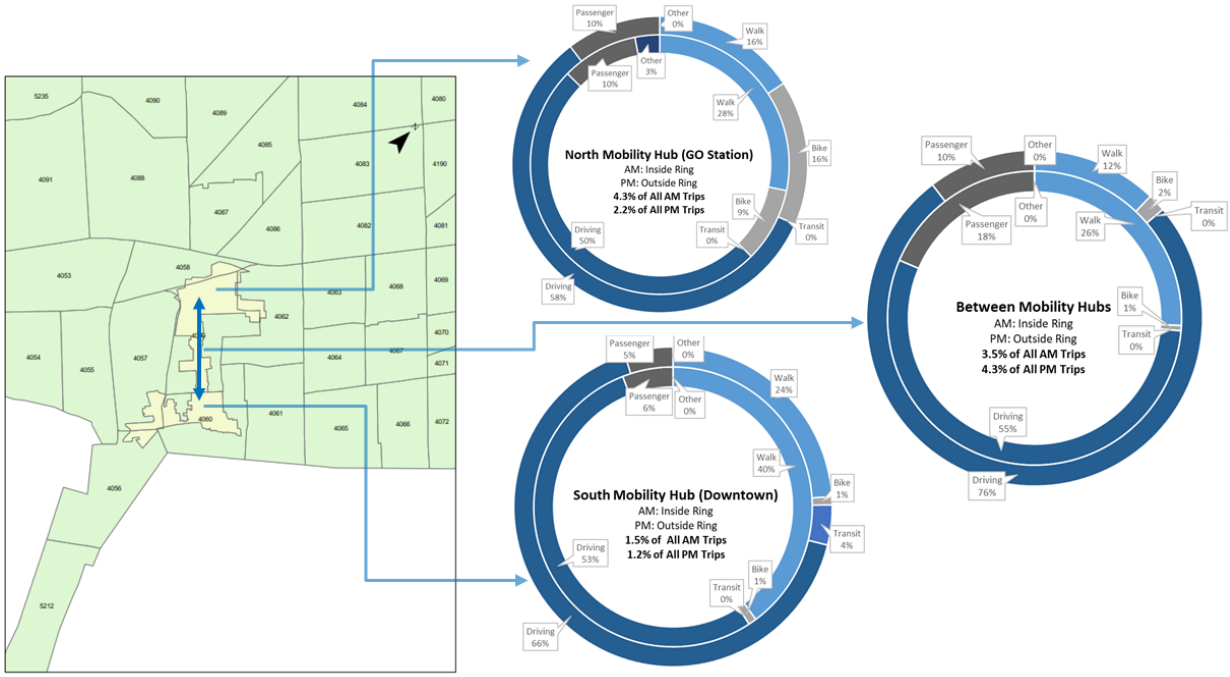


Figure 3-13: Comparison of Mode Share of Internal Trips

Internal trips within the Study Area show a higher proportion of walking and cycling as transit usage is less practical for short distances. It should be noted that cycling modes are roughly 50% higher for trips to and from apartments (based on Transportation Tomorrow Survey data). Similarly, walking and transit usage are 10 to 20% higher among the apartment dwellers. These travel behaviours associated with higher density reflect the important relationship between density, land use and sustainable travel modes.

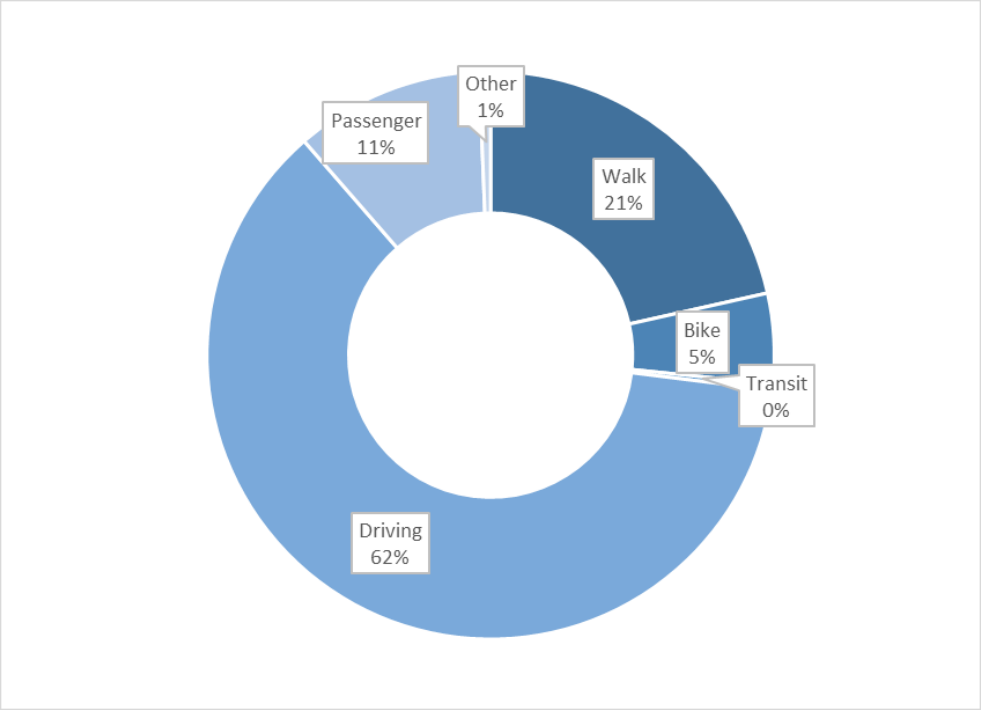
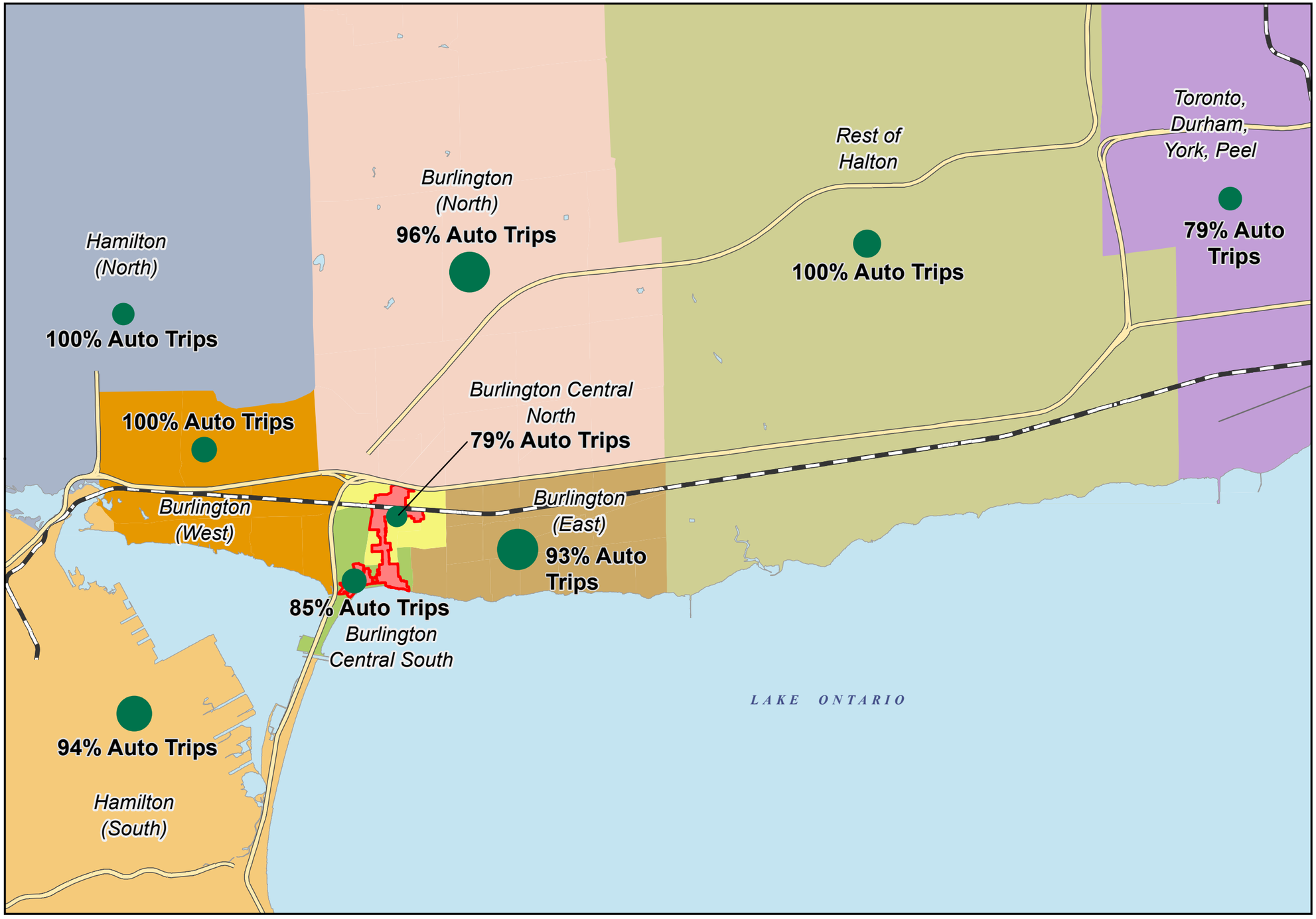


Figure 3-14: Internal Area Mode Share (PM Peak Period)

In order to assess overall travel patterns for the Study Area, trips originating and destined for the Study Area were analyzed and summarized in **Figure 3-15.** The vast majority of these trips to GTHA destinations are completed by driving alone. A significant number of trips are to and from the City of Hamilton including the north part of Hamilton such as Ancaster and Dundas. Approximately 60% of trips originating from or finishing in the Study Area start or end within the City of Burlington. This indicates that many daily needs or work trips are contained within the City of Burlington, typically a healthy indicator of a sustainable city particularly if the majority of the trips use sustainable modes. Trips within Burlington and towards Hamilton provide opportunities for transit improvements that could reduce single occupant vehicle usage. Easy access to GO Transit services provides better options for residents to use transit if they are travelling to Toronto or destinations along the Lakeshore West GO Train Line. The relatively lower percentage of auto trips to central north Burlington reflects more connected and frequent transit services to employment areas. Note that the auto mode share in **Figure 3-15** includes passengers.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-15: OVERALL TRAVEL PATTERNS AND DISTRIBUTION OF TRIPS ACROSS GTHA



LEGEND

- Study Area
- Freeway
- GO Rail Corridor

PM Peak Driving Volume to/from Study Area

- 100
- 500
- 1,000

Mode Share Analysis Area

- Burlington (East)
- Burlington (North)
- Burlington (West)
- Burlington Central North
- Burlington Central South
- Flamborough, Ancaster, Dundas
- Hamilton
- Rest of Halton
- Toronto, Durham, York, Peel

***Includes trips from 4-7PM in the 2016 Transportation Tomorrow Survey. Does not include internal trips.**

NORTH

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3.5 Future Transportation Demand

The following section describes the future transportation demand based on a full build-out scenario of the in force and effect Official Plan existing land use designations to the planning horizon of 2031 as shown in **Figure 3-16**. This assessment will assist with illustrating the future transportation network as well as highlight any issues associated with future transportation demand within the Study Area. Future demand will also provide a greater understanding how the Study Area will perform in the future compared to existing conditions.

3.5.1 Multi-modal Trip Generation Methodology

The detailed mode share assumptions, current and future trips, and results of the multi-modal trip generation can be found in **Appendix A**.

Land-use Assumptions
To identify the transportation impact of additional density within the Study Area, the future trips for all primary modes (vehicle, transit, walking and cycling) were projected assuming the maximum allowable density as per the in force and effect Official Plan.
The following describes the methodology for calculating future trips to the Study Area.

Trip Generation Estimation
To estimate future trip generation, a combination of TTS data for mode share and relevant trip generation rates for different land-uses from the Institute of Transportation Engineers Trip Generation Manual (ITE) were used. Detail trip generation rates and estimation results are provided in Appendix A. First, baseline trips and mode share for trips originating and ending in the Study Area were established using data from the 2016 TTS and traffic data from the City of Burlington. As the Study Area spans over six traffic zones, the traffic zone outputs were weighted based on what proportion of the Study Area falls within each traffic zone and which current land uses are contained in the Study Area.

Next, the total number of additional person trips as a result of future increased density were estimated using data from the Trip Generation Manual (2010) produced by the Institute of Transportation Engineers (ITE) and the number of estimated new additional residential units and employment in the Study Area by 203113. While ITE provides vehicle trip rates per residential unit and per employee for various land uses, it does not provide person trip rates for all land uses. ITE trip rates were expanded to person trips for all land uses within the Study Area using assumed rates for vehicle mode share and vehicle occupancy. The assumed rates were based on ITE data and the California Smart-Growth Trip Generation Rates Study from the University of California where available.

[13] Person trips were estimated based on mixed-use trip generation approach described in the latest ITE Trip Generation Manual (version 10).

Mobility Hub Name	Population			Employment			Housing Type			Employment Type		
	2016 (Stats Can)	Build Out	Change (2016 to 2031)	2016 (Region Empl Survey)	Build Out	Change (2016 to 2031)	% Low density (3 storeys and under)	% Medium Density (4 to 8 storeys)	% High Density (9 and over storeys)	% Industrial	% Commercial/ population related	% Institutional
Downtown Burlington	9,217	17749	8532	6,970	9307	2337	3%	4%	94%	0%	68%	32%
Burlington GO	142	2835	2693	1977	9680	7703	7%	85%	7%	14%	77%	8%

Figure 3-16: Land-Use Changes for Additional Density Between Current Year and 2031[14]

[14] The population numbers are from the UGC population from Urban Growth Centre Density Analysis staff report, June 2019 (based on 2011 Stats Canada custom data set plus Stats Canada population growth by dissemination area [2011-2016] which includes the UGC and portions of adjacent neighbourhoods. This assumes that all new growth over the 2011-2016 timeframe occurred in the UGC). The employment numbers are from the 2016 Region of Halton Employment Survey (provided by the City of Burlington on August 2, 2019).
The full build out scenario presented is based on the maximum building footprint permitted within the Study Area based on the land use designation in the in force Official Plan and a number of density assumptions.

3.5.2 Mode Share

New person trips were redistributed among different transportation modes based on mode share targets from the Halton Region Transportation Master Plan, which envisions a 5% mode share for active transportation and a 20% mode share for transit. Since the current mode share varies with different land uses, the assumed future mode share reflects these differences (such as high-rise, mid-rise and low-rise residential, general office and commercial land-use category), but is anchored on the Halton Region targets. The future mode shares assume a much higher share of transit, walking, and cycling trips compared to existing mode share.

Adjustment for Existing Active Transportation Mode Share

Existing internal trips account for less than 10% of all trips originating and ending in the Study Area, and active transportation accounts for roughly 26% of internal trips (a significantly higher share than external trips). There is an opportunity to grow internal trips to influence active transportation mode share.

Recognizing that the mode share of trips associated with current land uses will change over time as walking and cycling infrastructure improves, it was assumed that the mode share of active transportation trips would change. It was assumed that a proportion (roughly 70%) of current vehicle trips that are less than 1 kilometre would be converted to walking trips and that a proportion (roughly 30%) of trips between 1 and 5 kilometres would be converted to cycling trips. The final future mode share is summarized in the next section.

Future Mode share

Finally, additional vehicle trips and transit trips were distributed onto the road network and transit network to examine the impact on the transportation network. Both morning and afternoon peak hours were analyzed; however, PM peak is discussed here as the transportation network is generally more utilized during the afternoon peak hours.

Current afternoon peak mode share is dominated by vehicle travel with 92% of trips being taken by vehicle (including drivers and passengers). This proportion is expected to be reduced in the future driven by increased density, improvements to pedestrian and cycling facilities, and transit improvements by Burlington Transit and GO Transit (including, but not limited to RER). **Table 3-2** summarizes the current and anticipated future mode share for the Study Area. Note that background refers to general change before additional density will be developed within the Study Area.

Table 3-2: Afternoon Peak Hour Mode Share in the Study Area

Mode	Current[1]	Future (2031) Background Demand[2]	Future (2031) Total Demand[3]
Vehicle	79%	70%	61%
Passenger	13%	13%	13%
Transit (Local)	1%	2%	11%
Transit (GO)	1%	2%	1%
Transit (Local and GO)	0%	1%	1%
Walking	3%	6%	7%
Cycling	3%	5%	5%

[1]Based on 2016 Transportation Tomorrow Survey Data

[2]This represents the future mode share for trips associated with current land uses, excluding new development.

[3]This is the total future mode share including new development.

Total Future Trips within Study Area

Based on TTS data, there are currently an estimated 5,700 trips beginning and ending within the Study Area during the PM peak hour. By 2031, the multi-modal trip generation approach estimated that a total of 9,100 person trips will be generated in the morning peak hour and 9,600 person trips during the afternoon peak hour based on the density of people and jobs in the Study Area described in the Official Plan. Due to the change in mode share, this growth in total trips represents only 4,700 additional vehicle trips. **Figure 3-17** shows the total change in person trips by mode as a result of the future growth.

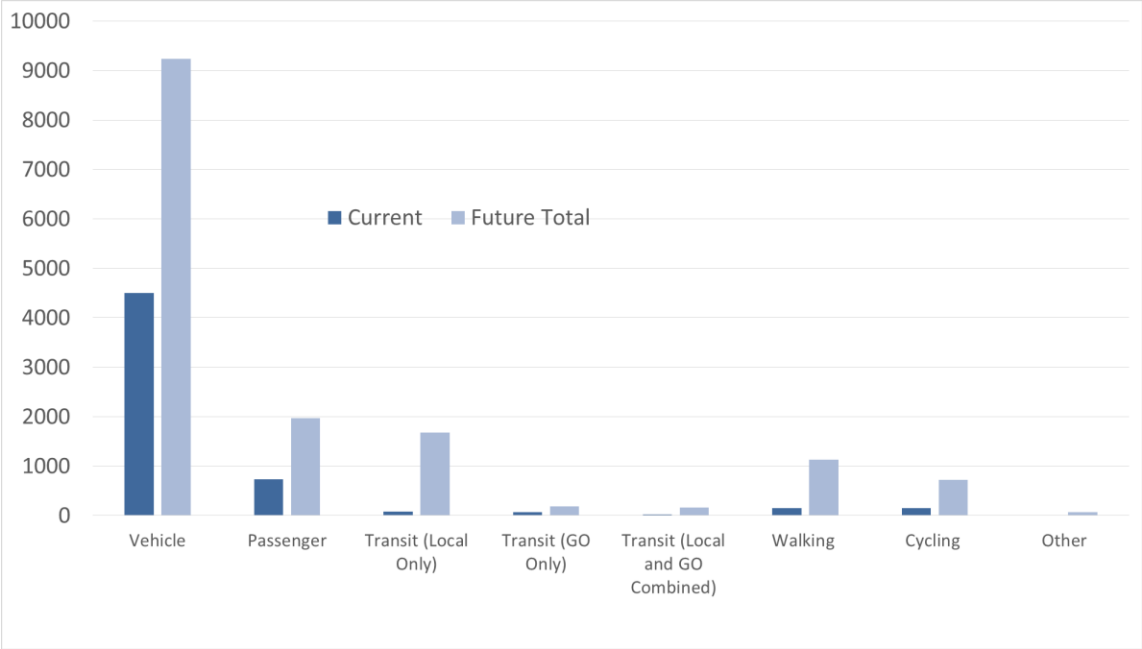


Figure 3-17: Total Future Trips for All Transportation Modes Originating or Ending in Study Area (PM Peak Hour)

3.5.3 Transit Ridership and Capacity

To analyze current and future transit ridership and capacity, Automatic Passenger Count (APC)[15] data from Burlington Transit, cordon count data[16] from GO Transit, and the multi-modal trip generation methodology discussed above were utilized to project future level of transit usage within the Study Area.

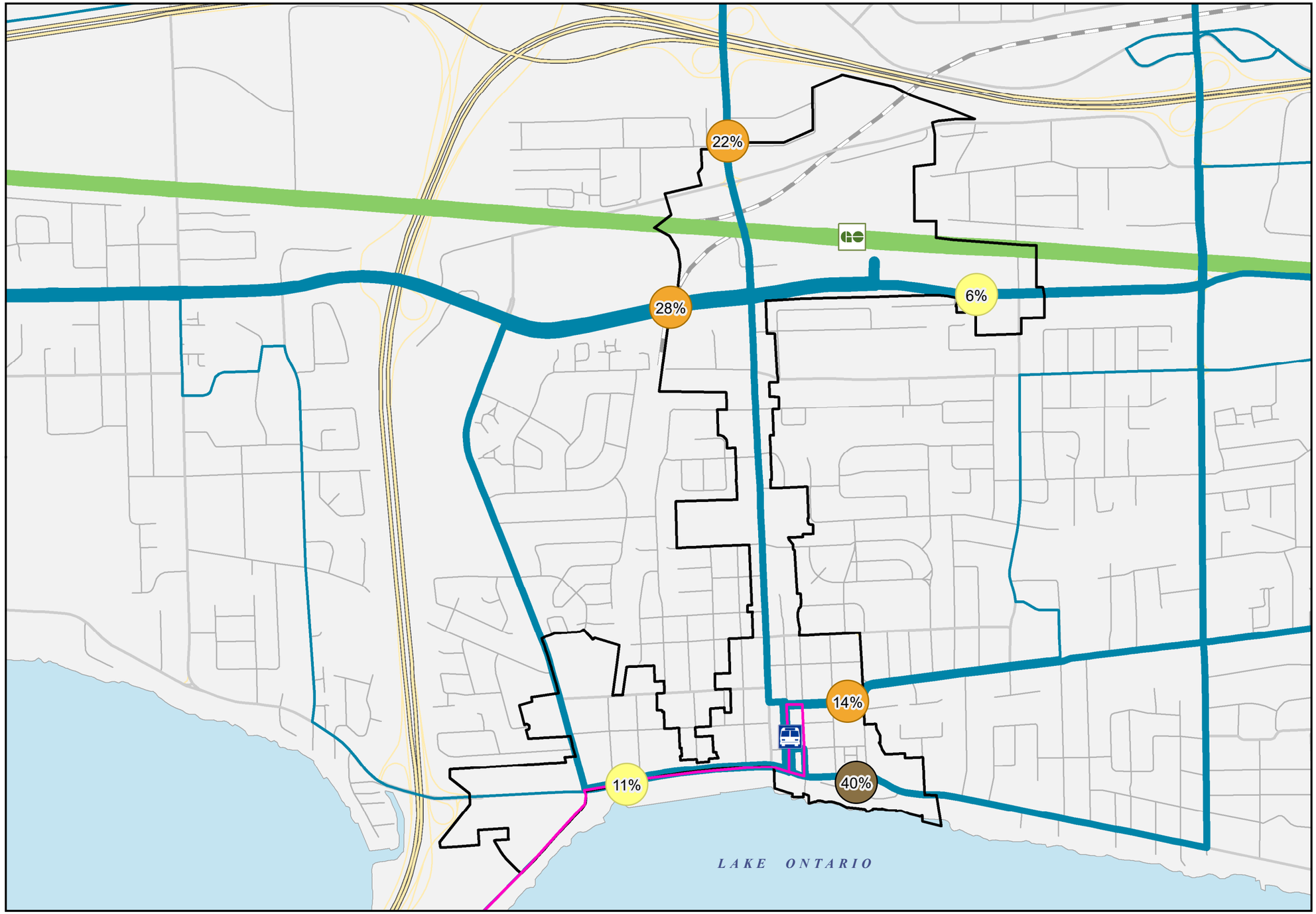
The APC data showed a current average peak hour utilization of Burlington Transit routes of 7-35%, indicating sufficient transit capacity is available for future growth. However, additional service hours to increase the frequency of service and improve travel times for local Burlington Transit will likely be required to attract future transit ridership. Based on cordon count data from Metrolinx, there is currently sufficient capacity on the Lakeshore West trains going eastbound from Burlington GO during the weekday peak periods. Additional capacity through RER service improvements will provide further capacity improvements that will accommodate expected future growth from the Study Area. However, this study did not analyze capacity constraints downstream at Toronto's Union Station due to demand from all Lakeshore West stations. Impacts on the entire corridor and Union Stations are being examined as part of the RER study by Metrolinx.

[15] Automatic Passenger Count data is collected using sensors that count passengers boarding and alighting a transit vehicle. The data shows how many people get on and off at each stop and at what times.
[16] Cordon count data is collected by Metrolinx and represents the number of passengers boarding and alighting GO Train services.

In order to assess future transit potential, a number of screenlines were analyzed at the Study Area's key entry points. Screenlines for each direction (north, south, east and west of Study Area) provide a general sense of where transit service constraints may arise under future conditions. Results of local transit capacity analysis along the screenlines is shown in **Figure 3-18.** Note that internal trips were not projected as TTS data on existing trips showed very few transit trips beginning and ending within the Study Area, therefore, very short transit trips within the Study Area are considered insignificant on the future transit route capacity. This does not mean, however, that ridership on the Brant Street corridor is non-existent. Many trips from the Burlington GO Station transfer via the Downtown John Street Bus Terminal and vice versa, however, the majority of these trips would be destined for locations outside the Study Area and would be captured by the screenlines in **Figure 3-18** as they enter or exit the Study Area.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-18: EXISTING AND FUTURE TRANSIT USAGE AT ENTRY POINTS OF STUDY AREA



LEGEND

- Study Area
- Burlington GO Station
- Downtown Bus Terminal

Tranist Route Peak Hour Headways (min)

- 15
- 20
- 30
- GO Rail (~10 min)
- HSR Route (30 min)

Future Transit Utilization (PM Peak Hour Outbound)*

- >50%
- 50%-100%
- >100%
- XX% Current Utilization

***A recent service change combined service on Plains Road and Fairview Street. Current utilization on Fairview Street includes demand from Plains Road.**

***Future transit utilization based on current transit frequencies. Increased service hours can prevent overcrowding.**

NORTH

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: DK
DILLON CONSULTING

October 31, 2019

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With the anticipated future growth, a few local transit corridors are expected to be at or near capacity during the afternoon peak hour for outbound trips from Downtown Burlington and at capacity for the morning peak hour inbound trips to the GO Station area as shown in **Figure 3-19, 3-20, and 3-21**. The current utilization is based on a 4:00pm-5:00pm peak hour obtained from automatic passenger count data. Note that this capacity analysis is based on current transit frequencies and screenlines are selected similar to vehicle screenline (see next section). However, an increase in service hours for Burlington Transit is anticipated as part of their upcoming Five-Year Transit Business Plan, which is expected to recommend increasing capacity.[17]

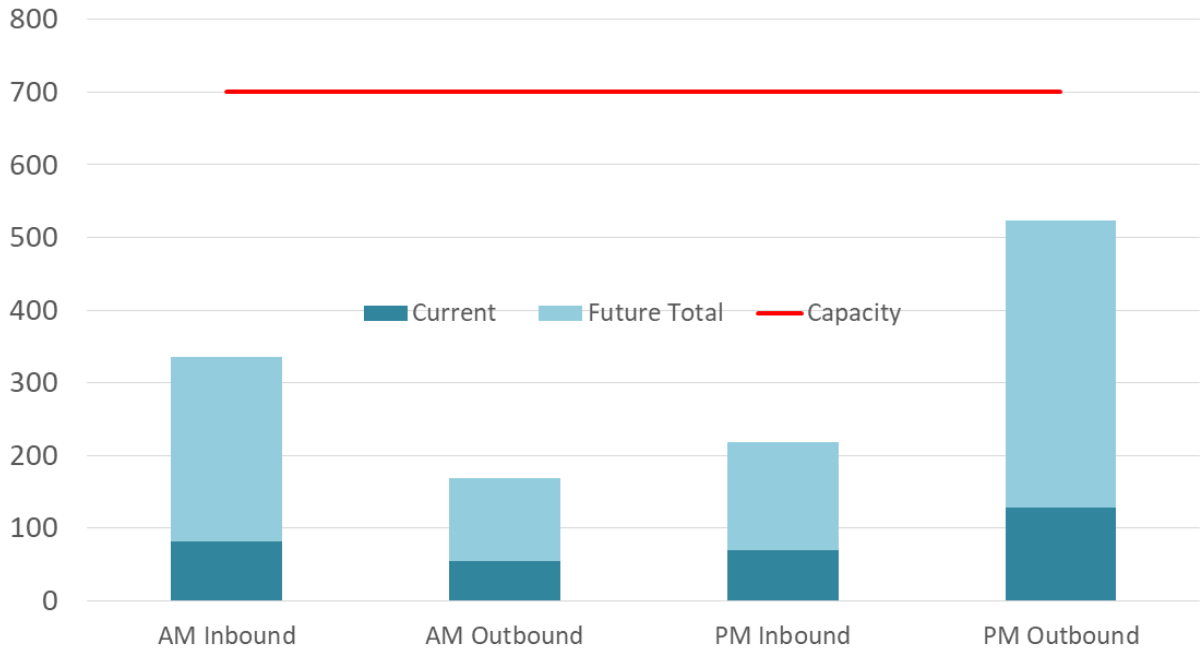


Figure 3-19: Downtown Burlington Local Transit Screenline Demand and Capacity (Peak Hour)

[17] Transit Business, Plan, City of Burlington, available at https://www.burlingtontransit.ca/en/our-services/burlington-s-transit-plan.aspx

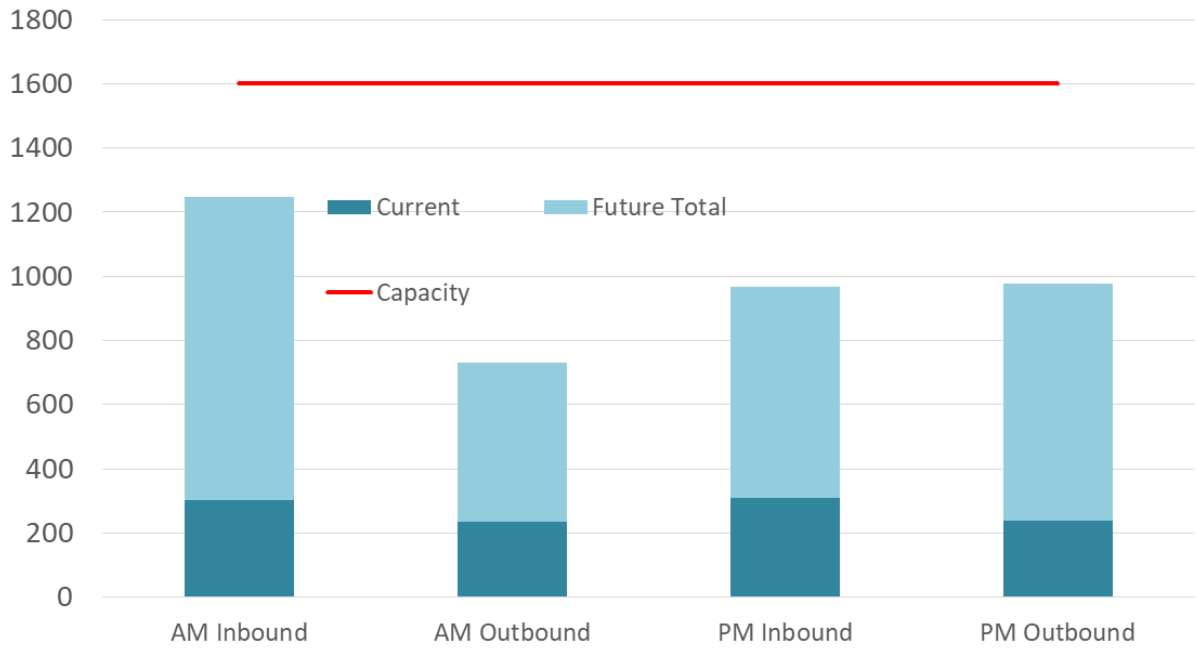


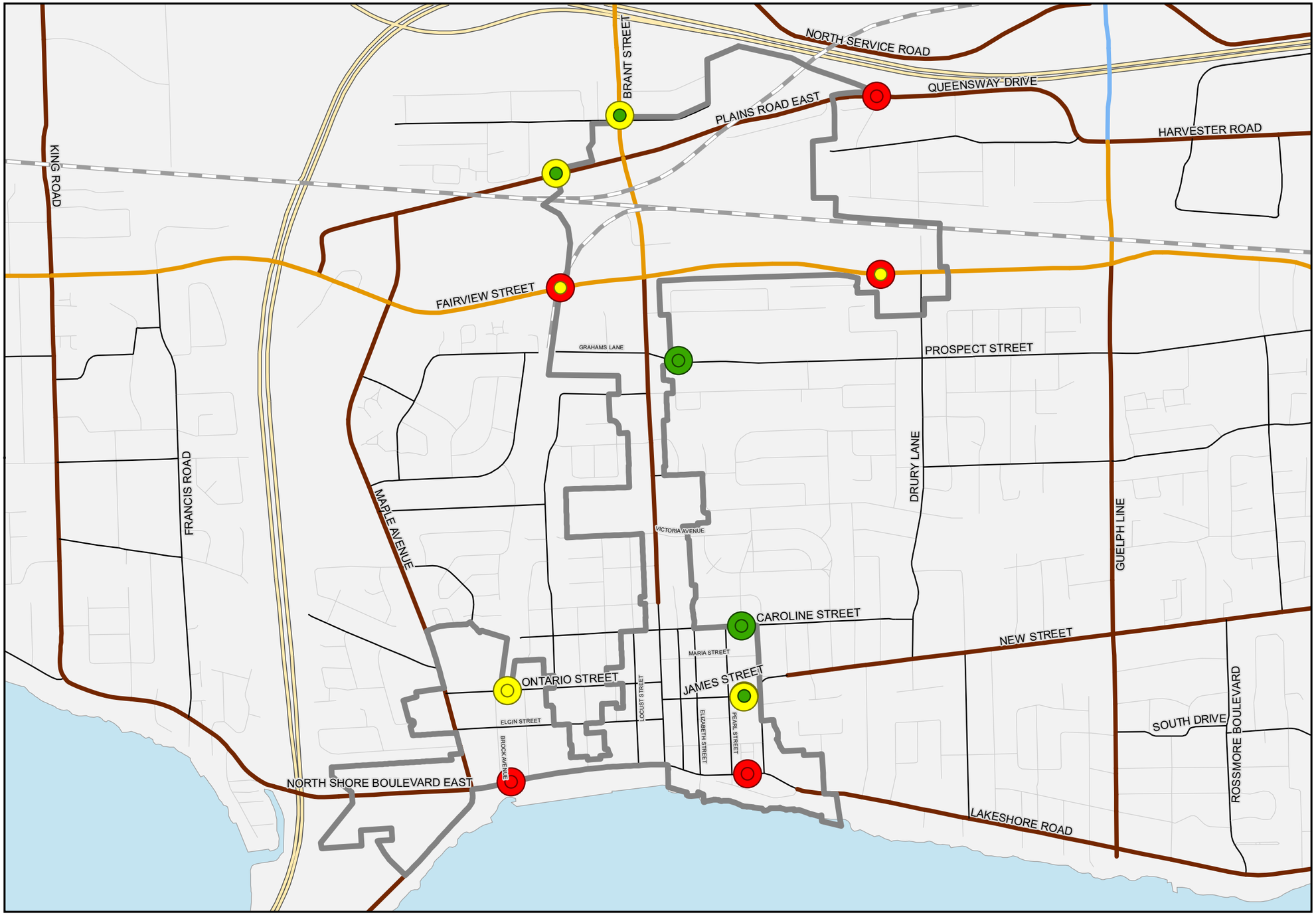
Figure 3-20: Burlington GO Station Area Local Transit Screenline Demand and Capacity (Peak Hour)

3.5.4 Vehicle Volume and Capacity

Turning movement counts at intersections and average annual traffic volume throughout the Study Area were used to analyze current vehicle volumes and capacities. The screenlines were established by a previous traffic study conducted by WSP (dated July 5, 2018). Similar to transit, these screenlines represent traffic conditions at key entry points to the Study Area. The screenlines are displayed in **Figure 3-21.** Current screenlines are based on the WSP traffic study, while the future is based on projected vehicles from the trip generation. Assuming a lane capacity of 800 vehicles per hour, several roads illustrated in **Figure 3-21** will be at or near capacity in the future.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 3-21: EXISTING AND FUTURE VEHICLE TRAFFIC CONDITIONS



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The future vehicle trips will create additional pressure on the capacity on some Study Area roads, particularly during the PM peak hour. Using the trip generation described above, additional future vehicle trips were distributed onto the road network at the screenline points using the existing traffic proportion entering at different entry points. Since no new road widenings are expected, the existing pattern of use for each Study Area road was expected to be similar under future conditions. Note that 7% of future trips generated by the future developments in the Study Area were not included at screenlines since they are considered internal trips that do not cross the screenline points. The proportion of internal trips was determined from the 2016 Transportation Tomorrow Survey data which indicates that 7% of total trips from the Study Area are internal. This analysis predicts that the combined demand will exceed the combined road capacity on all Study Area arterials in the afternoon peak hours as summarized in **Figure 3-22 and Figure 3-23.**

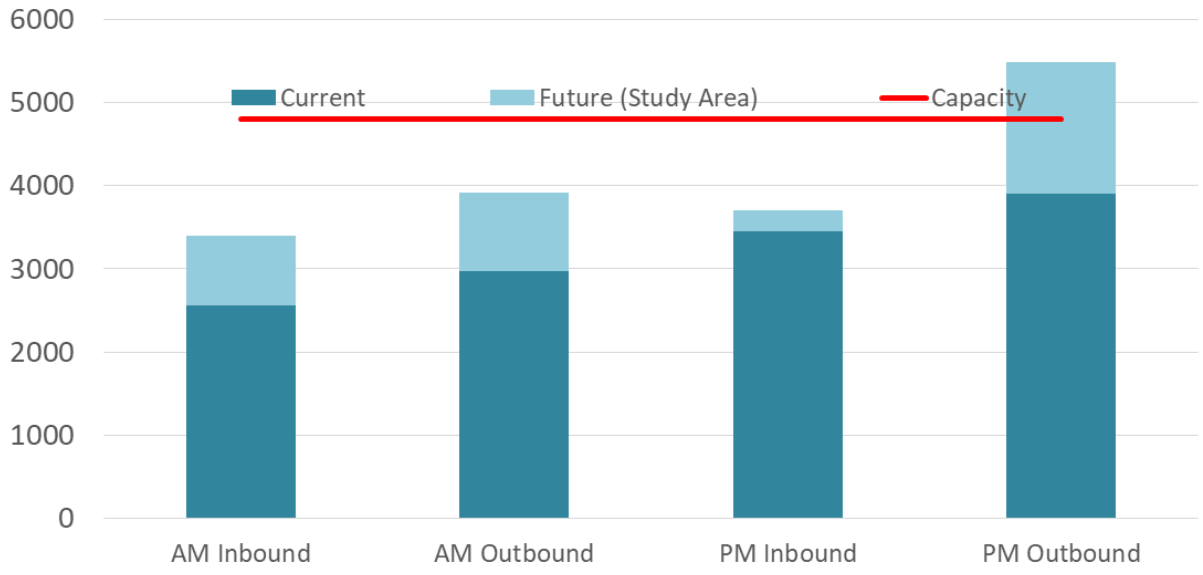


Figure 3-22: Burlington GO Station Area Vehicle Screenline Demand and Capacity

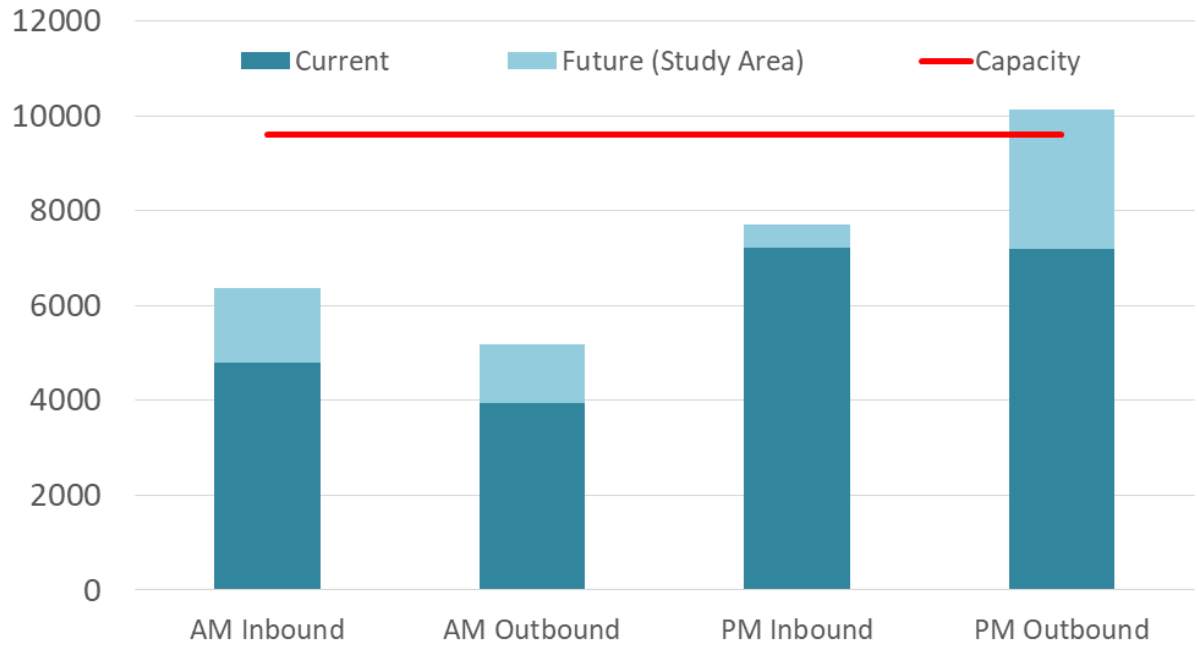


Figure 3-23: Burlington GO Station Area Vehicle Screenline Demand and Capacity (Peak Hour)

4.0 Transit Supportive Development Context

4.1 Policies for Transit Supportive Development

As noted in Section 2, one of the key objectives of the Growth Plan is to promote transit supportive development. The Growth Plan's definition of transit-supportive is based on the PPS and modified to address the nuances of the Growth Plan. The Provincial Policy Statement (2014) defines transit-supportive in relation to land use patterns. Transit-supportive means "...development that makes transit viable and improves the quality of the experience of using transit. It often refers to compact, mixed-use development that has a high level of employment and residential densities. Approaches may be recommended in guidelines developed by the Province or based on municipal approaches that achieve the same objectives."

The ***proposed PPS (2019)*** provides additional direction for transit supportive stating that planning authorities "shall provide for an appropriate range and mix of housing options and densities to meet projected market-based needs of current and future residents of the regional market area by [...] requiring transit-supportive development and prioritize intensification, including potential air rights development, in proximity to transit, including corridor and stations" (1.4.3.e).

In order to manage and direct land use to achieve efficient and resilient development and land use patterns, the proposed PPS (2019) states that healthy, livable, and safe communities are

> "... promoting the integration of land use planning, growth management, transit-supportive development, intensification and infrastructure planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and serving costs" (s.1.1.1).

Additionally, the proposed PPS (2019) states that transit-supportive development will be promoted in appropriate locations and will accommodate

> "... a significant supply and range of housing options through intensification and redevelopment where this can be accommodated taking into account existing building stock or areas, including brownfield sites, and the availability of suitable existing or planned infrastructure and public service facilities required to accommodate projected needs" (s.1.1.3.3).

4.2 The Key Elements that Make Transit Successful and Case Studies

While the precise language and policies around transit-supportive development continues to evolve, there is a common thread which relates to the promotion of more compact forms of development to create additional demand for transit services. The importance of this thread is illustrated by the fact that a number of the plans and policies include specific density targets. However, it is important to recognize that transit supportive development is not solely about increased densities, rather density represents one of several important ingredients which help to foster transit supportive communities.

Transit-supportive forms of development are strongly associated with travel behaviour and sustainable mobility. The "7 D's" (the first 5D's described in academia by Cervero and Kockelman and last 2D's subsequently suggested by VTPI[18] and CUTA[19]/WRI[20]) are considered major drivers of

[18] TDM Strategies, Victoria Transportation Policy Institute, accessed in June 2019 at https://www.vtpi.org/tdm/

19 CUTA. Public Transit Must Embrace Digital, Accessed in June 2019 at http://cutaactu.ca/en/blog-posts/public-transit-must-embrace-digital

20 WRI. Real-Time Transit Data Is Good for People and Cities. What's Holding This Technology Back? Accessed in June 2019 at https://www.wri.org/blog/2016/02/real-time-transit-data-good-people-and-cities-whats-holding-technology-back

transit and sustainable mobility usage in urban areas. The following section outlines these seven transit supportive characteristics, provides best practice examples and provides a high level assessment of Downtown Burlington and the Burlington GO Station Area for each of the characteristics:

1. *Good accessibility to destinations* -Transit serves the destinations people need to go for daily needs including work purposes and emphasizes the walkability and bikeability of places around transit service points. While Downtown Burlington is highly walkable, areas around the Burlington GO Station lack the same high quality walking environment. Downtown Hamilton, is an example of an area with very high walkability (i.e., a Walkscore more than 90) and is one of the most walkable downtowns among the outer ring cities in the GHTA (Source: Walkscore).

2. *Short distance to transit* - Transit is frequently available within a short walking distance (e.g. 500-800 metre walk) and service coverage offers a transit option to the majority of the population and employment. Fundamental features such as link-to-node ratio[21] (i.e. shorter blocks and availability of crossings) are one of the key conditions of shorter walking distance. Shorter trips that are generated and stay within the same area are generally known as internal trips. A grid network exists in Downtown Burlington creating this shorter walking distance, however, blocks are larger around the Burlington GO Station Area. Smaller walkable blocks with the right land-use produces a higher number of shorter trips. For instance, due to the availability of amenities and a variety of land uses, the amount of internal trips in Downtown Burlington is around 8% (based on 2016 Transportation Tomorrow Survey data), approaching the 10% level generally observed in GTHA suburban cities. Guelph and Hamilton are good examples of downtown areas that achieve high link-to-node ratios that result in higher volume of internal trips due to the presence of a strong grid network in their downtowns or nearby GO Station destinations.

3. *Diversity of land use* - A mix of uses that provide easy access to daily needs within the neighbourhood or area. Land-use diversity encourages transit, creating shorter trips and minimizing the need to travel longer for different purposes. Amenities in Downtown Burlington are easily accessible, reducing the need for longer travel. Typically diversity of land-use is measured through the Simpson Index[22], calculated for a specific geographic area by comparing the amount of land in each land use category to the

[21] Link-node ratio, measures the ratio of road segments (links) to intersections (nodes). A higher number means that travellers have increased route choices, allowing more direct connections for access between any two locations. According to this index, a simple box of streets would score a 1.0. A four-square grid of streets would score a 1.33, while a nine-square grid of streets would score a 1.5. Dead-end streets would reduce the index value. Taken from Victoria Transportation Policy Institute's Transportation demand Management Encyclopedia. While there is no accepted standard for link-node ratio, some studies recommend that a score of 1.4 is needed to support a walkable community. Source: Performance Indicators, Places to Grow.

[22] Performance Indicator, Places to Grow, Diversity of Land Uses, Page 20, accessed in 2019 at http://www.mah.gov.on.ca/AssetFactory.aspx?did=10849.

amount of land occupied by all land uses. Lack of land-use diversity encourages longer local trips. The Burlington GO Station Area lacks land-use diversity compared to the Downtown Burlington. Guelph and Peterborough are examples of downtown areas that have a high diversity of land uses available within a short walking or cycling distance.

4. *Pedestrian and cycling friendly design* - Design that facilitates active transportation usage to transit connections. Without walking and cycling, transit service points are less accessible. Basic urban structural elements such as shorter blocks, higher density, and grid street patterns are key determinants of walking and cycling friendly design. For instance, density of intersections[23] encourages walking and cycling, particularly when infrastructure and associated facilities are provided. While the street and block sizes provide higher intersection density in Downtown Burlington, the area around the Burlington GO Station lacks these key features. Guelph is considered one of the best examples in the GTHA walkable/bikeable design and facilities, achieving a high active mode share. Kitchener has also made notable improvements in the last five years through the introduction of bicycle facilities, bike parking and tactical urbanism techniques for placemaking.

5. *Density of employment and population* - Density ensures that there is a critical mass of transit demand generated by residents and employees within an area, facilitating frequent transit service. Metrolinx's Mobility Hub profiles (2015) identified density suggestions for a variety of Mobility Hubs based on a radius of 800m from transit facilities. It also identified a threshold transit supportive density of 50-200 people and jobs per hectare for areas served by regional rail, and 50-150 people and jobs per hectare for areas served by bus. Based on this available information, Downtown Burlington is gradually moving towards higher density, passing the suggested basic transit service density threshold. Downtown Burlington was one of the higher density downtown hubs identified in the 2015 Mobility Hub profiles. However, a lack of key destination and major trip generators remains a challenge to perform close to its best competitors. For instance, with key destinations and major employers, Downtown Hamilton is now trending to be the highest density among the GTHA cities outside of Toronto.

6. *Demand management* - Effective transportation demand management actions help shift trips from single occupant automobile trips towards more sustainable modes. Implementing policy to reduce car ownership is one of the best ways to shift demand to sustainable modes. Car ownership remains high in both Downtown Burlington and the Burlington GO Station Area. An example of best practices related to car-less households is Downtown Oshawa, where roughly a quarter of the households are without personal

[23] Intersection density is the number of surface street intersections in a hectare, derived from Performance Indicator, Places to Grow, Diversity of Land Uses, Page 25, accessed in 2019 at http://www.mah.gov.on.ca/AssetFactory.aspx?did=10849.

vehicles as per the Transportation Tomorrow Survey. Census statistics indicate the national Canadian proportion of carless household is roughly 25%, hence, which is an ideal target for suburban cities to manage vehicle demand through official plan policy.

7. *Digital mobility* - access to transit information makes transit use easy and transfers as seamless and convenient as possible. Multi-modal access and real-time information at transit service points is a key element to digital mobility. The Mobilityscore[24] tool is one of the best multi-modal digital measures recently introduced in the United States. Besides ride hailing options (such Uber or Lyft), few shared mobility options (such as bike share, high-occupant rideshare or shuttle, shared micro-mobility i.e. shared scooters) are available in Downtown Burlington or the Burlington GO Station Area. Downtown Hamilton is one of the best examples of digital mobility in the GTHA with the recent introduction of bike share, a car share system and rideshare/shuttle activities.

Figure 4-1 presents an assessment of Downtown Burlington and the Burlington GO Station Area based on the seven performance criteria and targets discussed above. It should be noted that this this assessment measure is a relative assessment, comparing the two areas against best performers elsewhere in the GTHA.

Performance Criteria	Destination Access	Distance to Transit	Diversity of Uses	Design for Active Transportation	Density of Jobs and Population	Demand Management	Digital Mobility
Target	>90 Walk Score (Bike Score)	1.4 Link-Node Ratio	>1.0 Simpson Diversity Index	0.6/ha Intersection Density	Areas with Regional Rail: 50-200 people/jobs per hectare Areas with Bus: 50-150 people/jobs per hectare	>25% households without a car	>80 Mobility Score
Target Source	Suggested threshold by Walkscore.com	Performance Indicator, Places to Grow	Performance Indicator, Places to Grow	Performance Indicator, Places to Grow	Mobility Hub Guidelines	Canadian National Average	Suggested threshold by TransitScreen
Downtown	89 (71)	1.45	0.78	0.48	>50	14%	60
GO Station Area	48 (72)	1.1	<1	0.21	<50	12%	69
Best GTHA Performers	Hamilton (92)	Hamilton (1.7) Guelph (1.7)	Guelph (0.84) Peterborough (0.83)	Downtown Oshawa (0.6) Downtown Kitchener (1.0)	Downtown Hamilton (~190)	Downtown Oshawa (25%)	Downtown Hamilton (~100)

Figure 4-1: Analysis of Key Elements of Transit Drivers in GHTA

[24] Transitscreen. Introducing Mobilityscore. Accessed in June 2019 at https://transitscreen.com/products/mobilityscore

Data sourced from Performance Indicators for the Growth Plan for the Greater Golden Horseshoe, Walkscore, 2016 Census of Canada, and TransitScreen

4.3 Summary of Key Findings

Downtown Burlington has many of the land use and design characteristics that help to support transit. However, factors like additional density (particularly jobs) and a higher diversity of land uses would enable higher transit mode share. In the Burlington GO Station Area, large block sizes make it more difficult to access transit through active modes. While the Burlington GO Station Area carries significant transit volume, it has the potential to accommodate much more transit ridership with increased density and better pedestrian and cycling facilities. The analysis presented in this section suggests that both the Downtown MTSA and the Burlington GO Station MTSA have existing characteristics which will help to promote increased use of transit and also a number of areas which can be strengthened and improved. The next section of this report provides a more detailed comparison of each area relative to other transit stations in the GGH and defines the role and function for each area.

5.0 Role and Function of the Major Transit Station Areas

To achieve complete communities, A Place to Grow prioritizes growth in strategic areas such as UGCs and MTSAs. To optimize investments in transit and reduce congestion, A Place to Grow identifies priority transit corridors and the Province directs municipalities to complete detailed planning for MTSAs on these corridors to support planned service levels. The Burlington GO Station Area is identified as a Priority Transit Corridor in Schedule 5 of *A Place to Grow*. Transit facilities in Downtown Burlington are mainly reflected by the on-street bus presence at the John Street Terminal. The following section provides an assessment of these two areas, shown in **Figure 5-1.**

5.1 Comparable MTSAs in GTHA

A series of locations were selected from the Mobility Hub Profiles (2015) produced by Metrolinx. As noted earlier in this report, Mobility Hubs represent a specific type of MTSA. The Mobility Hub profiles summarize key characteristics from a land-use, demography, socio-economic and

transportation perspective. Comparable locations were identified with a GO Station and without a GO Station in a downtown environment. The selected locations are illustrated in **Figure 5-2** and include:

Mobility Hubs with a GO Station:

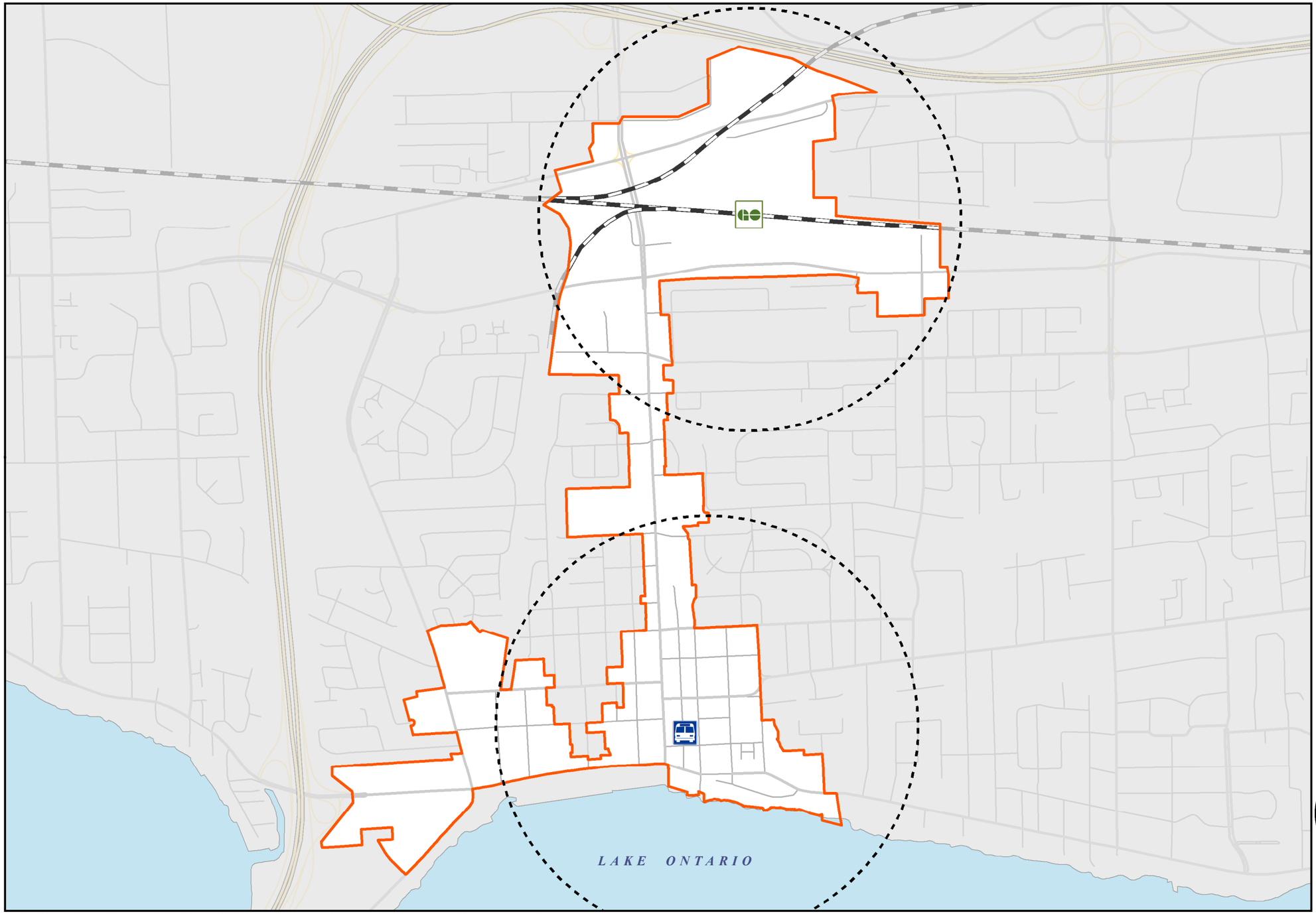
- Langstaff GO;
- Pickering GO;
- Newmarket GO;
- Midtown Oakville GO; and,
- Milton GO.

Mobility Hubs in a location outside the Toronto core without a GO Station:

- Hurontario-Steeles;
- Newmarket Centre (UGC);
- Don Mills-Steeles;
- Mohawk-James; and,
- Downtown Oshawa (UGC).

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 5-1: MOBILITY HUB BOUNDARIES



LEGEND

- Study Area
- Mobility Hub Boundaries (Mobility Hub Profiles 2015)

Terminals

- Burlington GO Station
- John Street Terminal

NORTH

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: DK
DILLON CONSULTING

October 31, 2019

Scale 1:15,000

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File Location: I:\GIS\191011 - Burlington ICBL\MXD\16SEPT2019 Draft Report Response to Comments\F5-1_Multimodal Hubs Map with Buffers.mxd

The assessment of MTSAs is based on information readily available in the Mobility Hub Profiles (2015). The profiles describe a variety of criteria. Key criteria from these profiles were chosen for comparison because they represent the most critical issues related to the land-use and mobility. This is not an exhaustive list, but rather a general representation of characteristics, the majority of which were listed earlier as drivers of successful transit usage:

- **Density (population and employment per hectare):** The Mobility Hub profiles were based on 2011 census data and used an 800 metre radius around each station. The 800 metre radius around the Burlington GO Station and Downtown Burlington terminal are shown in **Figure 5-1**. As such, the densities reported in this document may differ from densities reported by the municipalities but are sufficient for comparison purposes;
- **Mobility Hub typology:** Suburban and historic characteristics were considered to select locations with similar features;
- **Travel demand performance:** Metrics such as car ownership, surface parking, mode share and trip generation were compared to understand transit performance among the comparable hub locations;
- **Transit performance:** Transit usage, type of facility, operation and function of transit routes (such as number of routes, frequency of routes, bus loading facilities, stop/station infrastructure, etc.) or services were compared to gain better knowledge of transit features at hub locations;
- **Active transportation access:** Walkability, bikeability and associated features were compared using intersection density[25], link-to-node ratio, walkscore[26], and bike score[27];and,
- **Multi-modal Access:** Easy access to multiple modes were estimated using MobilityScore. MobilityScore[28] takes into account all mobility options, from public transit to carsharing, bikesharing, and hailed ridesharing services. It gives a number from 0-100 that denotes how easy it is to get around with multiple mobility tools. The tool algorithm emphasizes the benefit of having multiple modes at a given location or area and does not include walkscore or bikescore as it was reported separately.

[25] Intersection density, is the number of surface street intersections in a hectare. The more intersections, the greater is the degree of connectivity. The Ministry of Transportation's Transit Supportive Guidelines recommend that municipalities achieve a street intersection density of greater than 0.3 intersections per hectare, with higher street intersection densities of over 0.6 intersections per hectare in mixed-use nodes and corridors. Source: Performance Indicators, Places to Grow.

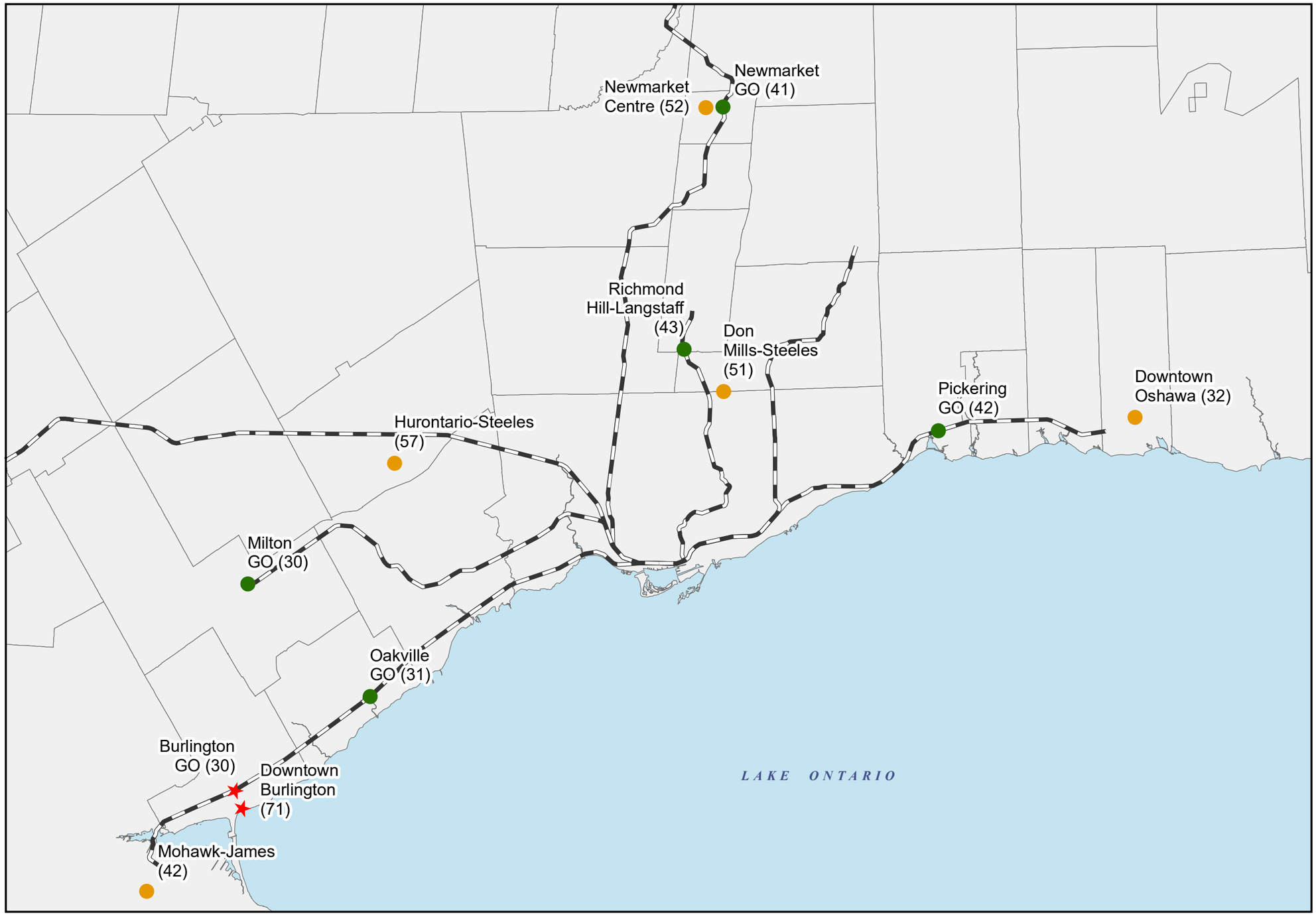
[26] Walk Score is a private company that provides walkability services and apartment search tools through a website and mobile applications. Its flagship product is a large-scale, public access walkability index that assigns a numerical walkability score to any address in the United States, Canada, and Australia. Source: Walksocore.com.

[27] Bike Score measures whether an area is good for biking. For a given location, a Bike Score is calculated by measuring bike infrastructure (lanes, trails, etc.), hills, destinations and road connectivity, and the number of bike commuters. Source: https://www.walkscore.com/methodology.shtml.

[28] Transitscreen. Introducing MobilityScore. Accessed in June 2019 at https://blog.transitscreen.com/introducing-mobilityscore

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 5-2: COMPARABLE MOBILITY HUBS IN THE GTHA



LEGEND

- In Study Area (Job/Pop Density per ha)
- GO Rail Station (Job/Pop Density per ha)
- Not a GO Rail Station (Job/Pop Density ha)
- GO Rail Corridor
- Municipal Boundary

*Density figures from 2015 Metrolinx Mobility Hub Profiles

NORTH

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: DK
DILLON CONSULTING

October 31, 2019

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5.2 Role and Function of the Downtown Burlington Bus Terminal

The Downtown Burlington Bus Terminal on John Street was opened in 1987 with two on-street bus loading bays in each direction, facilitating transfers between passengers. Currently, the terminal facilitates transfers between Burlington Transit buses and one Hamilton Street Railway (HSR) bus. Buses are required to leave the Brant Street corridor in order to access the bus terminal on John Street. The on-street presence of the terminal is relatively small in comparison to other suburban transit terminals that have dedicated off-street loops and more bus bays. A small passenger information kiosk is also present at the bus terminal, which provides in-person information on bus services and allows customers to purchase transit fare media during its hours of operation.

5.2.1 Downtown Area Travel Behaviour

Travel behaviour within Downtown Burlington is one of the key indicators of existing conditions. **Figure 5-3** summarizes internal travel behaviour pattern within Downtown Burlington. One and a half percent (1.5%) of all AM peak trips and 1.2% of all PM peak trips are internal to Downtown Burlington. Key observations are:

- Roughly two-thirds of trips are completed by vehicle even though trip distance within Downtown Burlington is less than one kilometre. Roughly 5% of trips are completed as a vehicle passenger. Reducing vehicle usage by a quarter would reduce pressure on existing streets, particularly during the weekday peak hours;
- Short-distance vehicle and passenger trips are ideal for shared mobility including carshare, bikeshare or high occupant rideshare; and,
- Walking and cycling represent more than one-third of internal trips. Increasing this mode share to over half of all person trips would be an ideal travel pattern given that the area trips are of a short distance.

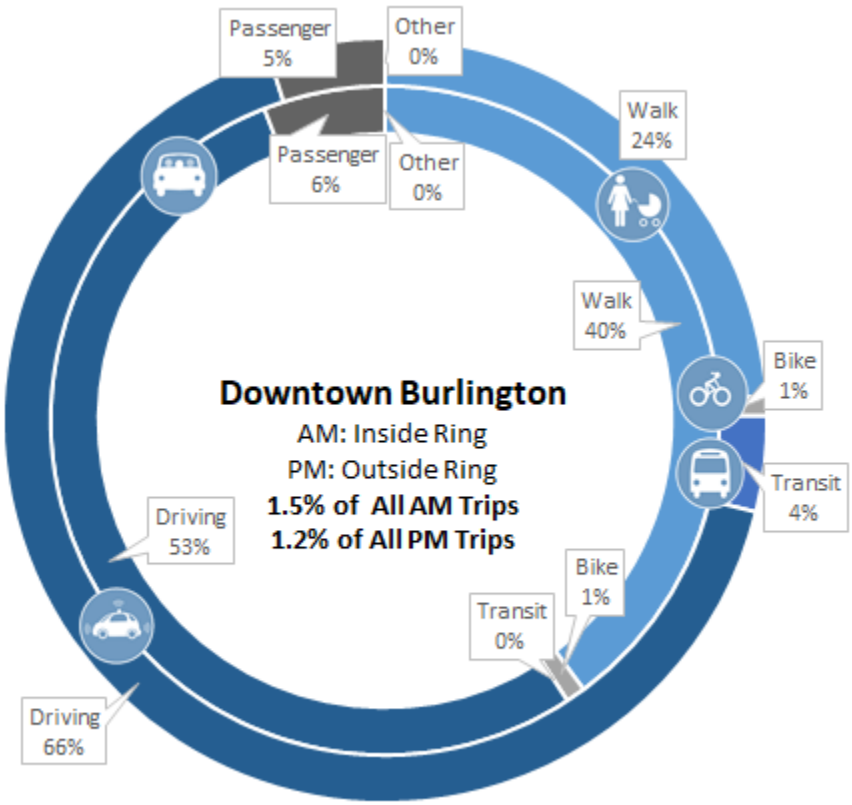


Figure 5-3: Internal Travel Behaviour within Downtown Area (TTS 2016 Data)

5.2.2 Existing Policy Guidance for the Downtown Bus Terminal

The following summarizes the information included in provincial and municipal policy documents and guidelines specific to the Downtown Burlington Bus Terminal:

- **Growth Plan (2019)**: Downtown Burlington is identified as an MTSA due to the fact that the definition of MTSA in the Growth Plan includes areas "…around a major bus station in an urban core…". No density targets are included in the Growth Plan for MTSAs associated with bus stations;
- **Metrolinx Regional Transportation Plan (2018):** defines Mobility Hubs as MTSAs with two or more frequent transit routes and does not identify Downtown Burlington as a Mobility Hub[29];
- **Metrolinx Mobility Hub Guidelines (2011):** identifies Downtown Burlington as a Mobility Hub and included a suggested density of 50-150 residents and jobs per hectare for Mobility Hubs served by bus;

[29] Mapping of Mobility Hubs in the RTP focuses on Mobility Hubs located on Priority Transit Corridors as defined in the Growth Plan which includes the Burlington GO Station Area. The RTP does not map all MTSA. While not explicitly stated in the RTP, Downtown Burlington is still recognized as a Mobility Hub by Metrolinx (Correspondence between Metrolinx and the City of Burlington, November 2018).

- **Metrolinx The Big Move (2008)**: identifies Downtown Burlington as an Anchor Hub. The 2013 Big Move Baseline Monitoring Report includes Downtown Burlington as a Mobility Hub on report figures but does not reference it within the report text;
- **Halton Region Official Plan (office consolidation 2018)**: identifies Downtown Burlington as a Mobility Hub and an MTSA; and,
- **City of Burlington Official Plan (office consolidation 2017)**: identifies Downtown Burlington as UGC but does reference the John Street Terminal.

5.2.3 Role and Function of the Downtown Bus Terminal Compared to Similar Areas

In comparing the Downtown Burlington MTSA with other similar areas, only two have a local off-street bus terminal (excluding Greyhound or other regional or intercity services). The other three represent dedicated on-street terminals or transfer points. A summary of this comparison is provided in **Figure 5-4**.

	Priority Transit Corridor	Urban Growth Centre (UGC)	Density	Jobs/Person	Transit Mode Share (AM%)	Bus Bays	Households Without Car (%)	Surface Parking (%)	Intersection Density/ha
Downtown Burlington	✗	✓	71	0.5	6	4 (On-Street)	14	12	0.48
Hurontario-Steeles	✓	✗	57	0.4	16	15 (Off-Street)	18	11	0.33
Newmarket Centre	✓	✓	52	1.2	7	11 (Off-Street)	10	22	0.40
Don Mills-Steeles	✗	✗	51	0.3	24	No Terminal	8	15	0.38
Mohawk-James	✗	✗	42	0.3	12	No Terminal	15	7	0.50
Downtown Oshawa	✗	✓	32	0.2	15	No Terminal	25	8	0.63

Source: Metrolinx Mobility Hub Profiles, 2015

Legend

✓ Yes ✗ No Best Performance

Figure 5-4: Comparison of Key Characteristics of Similar Downtown Mobility Hubs without GO Stations

Trip generators are key to transit usage within a Mobility Hub. There are a limited number of key trip generators (such as such as major institutions, employment centres, town centres or regional shopping centres according to Mobility Hub Guidelines) in Downtown Burlington compared to its peers in the GTHA. Key destinations (which are an important element influencing trips) in Downtown Burlington include:

- Burlington City Hall;
- Burlington Waterfront;
- Joseph Brant Hospital;

- Burlington Performing Arts Centre;
- Art Gallery of Burlington; and
- Central High School.

The following observations can be made about the role and function of Downtown Burlington:

- The Downtown has a high density when compared to similar municipalities;
- Due to its historic street network pattern, the intersection density (intersections per hectare) in Downtown Burlington is higher than other similar municipalities, indicating better walking facilities and relatively shorter blocks;
- Peers include bus stations which have more bus bays physically separated from street facilities;
- The lack of express service, indirect connection to adjacent municipalities (particularly Downtown Hamilton and employment districts) and lower numbers of trip generators such as employment or education destinations within Downtown Burlington are likely the primary reasons for low ridership;
- Transit mode share in Downtown Burlington is 6% which is lower compared to other similar municipalities; and,
- The level of employment in the Downtown Burlington, as demonstrated by the jobs per person ratio of 0.5 is similar to other comparators but less than the best performing peer comparator (Newmarket Centre). To increase transit ridership, the Downtown would need higher employment and greater number of large trip generators.

5.2.4 Definition and Characteristics of a Major Bus Depot

As noted, the Growth Plan's inclusion of the Downtown Bus Terminal as an MTSA is due to its role as a major bus depot. The term major bus depot is not a provincially defined term, and the Growth Plan does not provide guidance on what constitutes a major bus depot. Transit terminals or major stations are often defined as intermodal facilities according to international transit associations such as American Public Transit Association (APTA). An intermodal facility can be defined as a place where an interface occurs between transportation systems. In a passenger terminal, people enter the facility by one mode of access (e.g. on foot, riding a bicycle, by car, by bus or train, etc.) and leave by another. The term "multi-modal terminal" is generally applied to a terminal that serves multiple transit operators and/or modes, such as combined bus and rail stations.

The term "intermodal" implies not only multiple transit modes but also a high degree of connectivity and interchange between modes. The APTA does not differentiate between "intermodal" and "multi-modal": *Intermodal (multi-modal) are those issues or activities, which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes.*

The Center for Transportation Excellence offers the following definition for "Intermodal Passenger Terminal":

"An existing railroad passenger terminal which has been or may be modified as necessary to accommodate several modes of transportation, including intercity rail service and some or all of the following: intercity bus, commuter rail, intra-city rail transit and bus transportation, airport limousine service, airline ticket offices, rent-a-car facilities, taxicabs, private parking and other transportation services."

In the absence of a specific definition of major bus depot in the Growth Plan, a series of best practices associated with typical major bus depots or passenger terminals was used to develop common characteristics of a major bus depot. These common characteristics were used to assess the Downtown Bus Terminal under existing and future conditions. This assessment is described below and summarized:

- **Location**: Typically major bus depots are strategically located within a community, with a mix of land uses that can support transit. They also typically represent a central point on the local transit network. The Downtown John Street Bus Terminal is located in the heart of Downtown Burlington, in an area with one of the highest densities in the City. The key challenge with the Downtown location is that there are a limited number of major trip generators in Downtown to attract a significant number of people during the peak hours. The utilization of the transit routes that go through Downtown Burlington are not as high as other key corridors and nodes in the City (e.g. the GO Stations);
- **Connectivity**: Major bus depots are typically linked to a larger transit network and regional transit systems (where available) with different types of service connecting many destinations. Connections to multi-modal infrastructure and facilities are one of the key features of a major bus terminal. In Downtown Burlington, there are no priority corridors that connect to the Downtown Bus Terminal and the majority of bus routes operate on a 20 minute headway. The introduction of a priority bus corridor in mixed traffic conditions on Brant Street between the Downtown Burlington and the Burlington GO station (as identified by the Metrolinx Regional Transportation Plan and Halton Region's Mobility Management Plan) may change the characteristics. No dedicated or standard bicycle lanes or secure bicycle parking (such as bike station) facilities exist near the John Street Bus Terminal location. Bicycle lanes may be introduced on Brant Street in the future. Currently, there are no taxi, ride hailing, carshare or other transit supportive facilities near the existing bus terminal. The introduction of multi-modal infrastructure including shared mobility may add travel options in the future;
- **Physical Infrastructure**: Typically, bus terminals are off-street with bus bays and associated facilities serving multiple functions to service local or regional transit services. The current on-street facility is used by both buses and cars passing on John Street. In order to serve transit customers with higher quality service compared to

current mixed-traffic conditions, this portion of John Street would need to have priority bus segments (e.g. dedicated lanes or a bus only segment);

- **Transit Transfer**: Typical major bus terminals experience a high amount of transfers between transit vehicles or different transportation modes. According to real-time data providers such as Moovit[30], transfers between transit services in transit stations/bus depots in large Canadian cities are very high (Montreal 73%, Ottawa 62%, Toronto 73% and Vancouver 60%). Large passenger terminals reported half or more transfers between different transportation modes or services.[31] While there is no established threshold, more than 50% transfers between transit services are typically observed at major transit terminals. The Downtown Bus Terminal experiences approximately 30% transfers, indicating that most riders reach Downtown Burlington as a destination and do not transfer to reach another destination; and**,**
- **Convergence**: Besides connectivity, the convergence of transit routes at the same point for easy transfers is one of the key features of at major bus terminals. In many cases, rapid transit or express bus services also make use of bus depots to facilitate transfers from other routes. The Downtown Bus Terminal provides an opportunity to transfer between five Burlington Transit routes and one HSR route (with a link to East Hamilton). Convergence of many routes or services at major bus terminals are common features at similar facilities around GTHA. Currently, five routes (out of a total of 17) converge at the terminal. However, the use of the Downtown Bus Terminal for transferring passengers is minimal, as reflected in the low number of transfers that take place.

Key Performance Criteria	Location: Central and Intermediate: Land-use & Network	Connectivity: Linked to the regional transport system	Infrastructure: Physically separated	Transfer: >50% transfer activities	Convergence: Obligatory points of passage
Current	Central from land-use perspective not central from local transit network perspective	No express service available	Only small booth/kiosk	~30%	Some routes terminate at the terminal
Potential Future	Transit network function unlikely to change. No new major trip generators	Potential addition of frequent bus service on Brant Street at per RTP 2041, significant investment	Potential with significant investment	Could be higher with frequent or express service	Function unlikely to change

Figure 5-5: Key Characteristics of Major Bus Terminal or Depot

[30] Transferring public transit lines, Moovit, accessed in July 2019 at https://moovitapp.com/insights/en/Moovit_Insights_Public_Transit_Index-transfer-count

[31] Passenger Terminal, The Geography of Transport Systems

(Source: For Criteria and terminal features 1. Jean-Paul Rodrigue and Brian Slack, The Geography of Transport Systems- The spatial organization of transportation and mobility, New York: Routledge, ISBN 978-1138669574; For intermodal transit terminal definition 2. Intermodal passenger terminal, APTA.)

Based on this assessment, it can be concluded that Downtown Bus Terminal does not currently function as a "major bus depot". While the Downtown Bus Terminal is centrally located in a downtown area with higher densities, it is not located in the central part of the Burlington Transit network, is not physically separated from roadway traffic (to give it more presence and priority), is not connected to high frequency or express routes and does not provide a high transfer function. Route changes that took place on September 1, 2019 saw some frequency improvements on Brant Street, but also one less bus route converge at the Downtown Bus Terminal.

5.2.5 Assessment of Downtown Burlington as an MTSA

There is a strong policy basis for Burlington's Downtown John Street Bus Terminal as an MTSA and hence the numerous policy documents at the Provincial, Regional and City levels which identify an MTSA in the Downtown. Downtown Burlington is identified as an MTSA in the Big Move, Halton Region Official Plan and the City's adopted Official Plan (but not within the in force Official Plan). Furthermore, a number of long range plans identify potential for transit improvements along Brant Street to enhance connectivity between the Downtown and Burlington GO MTSAs: The Province's RTP 2041 includes a "Priority Bus / Priority Streetcar" corridor on Brant Street between Downtown Burlington and the Burlington GO Station; Halton Region's DMTR reinforces this opportunity, identifying the link between the GO Station and the Downtown as Priority Transit Corridor.

From a policy perspective, the Downtown Burlington John Street Bus Terminal is clearly understood to be a Major Transit Station Area. However, in comparison to the characteristics of typical major bus depots, the John Street Terminal has a number of limitations which underpin its relatively low ridership levels, including:

- Limited number of major trip generators in the Downtown;
- Limited connectivity to Burlington GO Station;
- Limited station infrastructure; and,
- Limited number of convergence and limited number transfers.

Figure 5-6 shows the results of the assessment.

	Provincial	Regional	Local	Current Status	Downtown Burlington as an MTSA
Transit Corridor	No Priority Transit Corridor in Downtown Burlington *(Schedule 5, Places to Grow)* Priority Bus/Priority Streetcar corridor on Brant Street *(RTP 2041)*	No higher order transit corridor in Downtown Burlington *(Halton Region OP, 2016)*	No higher order transit corridor in Downtown Burlington *(Burlington Official Plan, 2017)*	Higher Order Transit is not present in Downtown and there are no future plans.	Downtown does not provide higher order transit component of MTSA
Transit Station and Area	Downtown Burlington identified as an Anchor Hub *(Metrolinx Mobility Hub Guidelines)*	Identified as Mobility Hub & MTSA *(Halton Region OP, 2016)*	MTSA defined as area around high order transit stations or a major bus depot *(Burlington Official Plan, 2017)*	Boarding & Alighting (AM Peak Period) 2,900 (Target) 1,800 (Future) 320 (Current) *(Target: Mobility Hub Background Paper, 2008)*	Bus Terminal is under performing relative to established thresholds

Figure 5-6: Assessment of Downtown as MTSA
*Current boardings and alightings are based on automatic passenger count data from 2018. Future is based on the multi-modal trip generation is Section 3.5.

With the above-noted limitations in mind, it is important to recognize that not all MTSAs are equal. The various density guidelines reinforce the notion that there is a hierarchy when it comes to transit, with facilities which operate in dedicated right-of-ways, such as subways, LRT/BRT having the greatest potential for ridership compared to bus services which operate in mixed traffic. And while the current ridership levels are low, despite the fact that the Downtown is the City's densest area, the Downtown John Street Bus Terminal functions as a transfer point in the context of the City's system transit. With this in mind, the station alone is not understood to be a significant driver of intensification, however, certain forms of intensification, such as employment uses or other major trip generators would help to reinforce the function of the MTSA. Furthermore, future improvements to services and infrastructure could help to improve ridership. Section 6.1 further explores several opportunities to better support transit in the Downtown.

5.3 Role and Function of the Burlington GO Station Area

The Burlington GO station is the major transit facility in the City of Burlington. It currently serves as an important transfer facility, connecting local services with regional services and enabling local connections. It is also the operational terminus for many Burlington Transit routes, where buses layover between trips and drivers can take breaks. Its land use is currently low density with potential for intensification. It has approximately 2,500 daily Burlington Transit boardings, 50-60% of which are transfers.

Access to Burlington GO can be constrained by traffic issues on Fairview Street during peak periods. Prioritizing the access of other modes to the GO Station will help bolster its success as the largest transit hub in the City of Burlington.

5.3.1 Burlington GO Station Area Travel Behaviour

Travel behaviour within the Burlington GO Station Area is one of the key indicators of existing conditions and future opportunities. **Figure 5-7** summarizes internal travel behaviour pattern within the GO station area: 4.3% of all AM trips and 2.2% of all PM trips are internal to the GO Station Study Area.

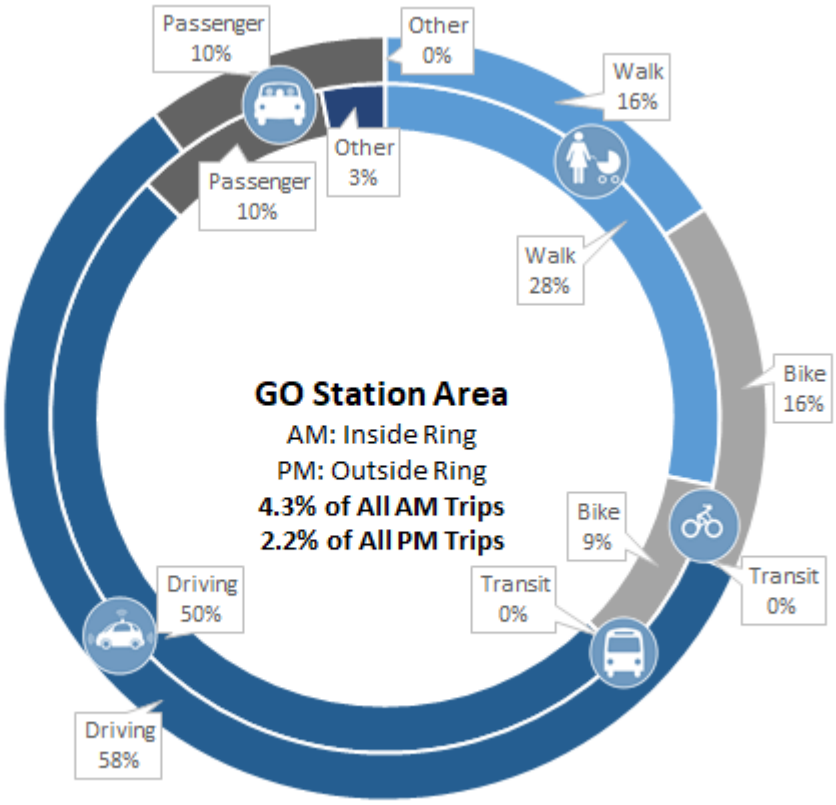


Figure 5-7: Internal Travel Behaviour within GO Station Area

Key observations are:

- Roughly half or slightly more than half of the trips are completed by vehicles, even though trip distance within the Burlington GO station area is less than one kilometre. Reducing vehicle usage to under one-quarter of the trips would reduce pressure on existing streets, particularly during peak hours. Introduction of shared mobility and active transportation modes would be a key strategy to deal with vehicle usage for very short trips;

- Walking and cycling represents more than one-third of internal trips. Increasing this mode share to over half of the trips would be an ideal travel pattern given area trips are often a very short distance; and,
- Roughly 10% of trips are completed by a passenger in a vehicle.

Volume on GO Rail service is expected to increase with the introduction of Regional Express Rail, increased density, and changing mode share. Based on Metrolinx's Fall 2016 Cordon Counts[32] , passenger volume from Burlington GO accounts for 12% of total AM peak period capacity. In 2031, that figure is expected to increase to 14%, excluding background growth outside of the Study Area based on the trip generation in Section 3.5. The total growth in GO Rail trips is illustrated in **Figure 5-8**. While GO Rail trips are expected to increase, the mode share of passengers arriving at the GO Station are also expected to change as shown in **Figure 5-9**. Note that this includes only GO Rail passengers and not those connecting to other local transit services or GO Bus.

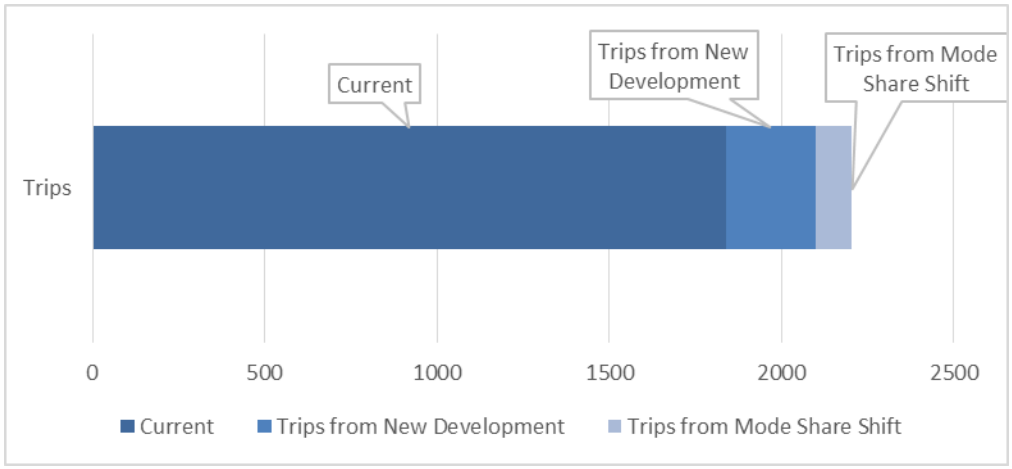
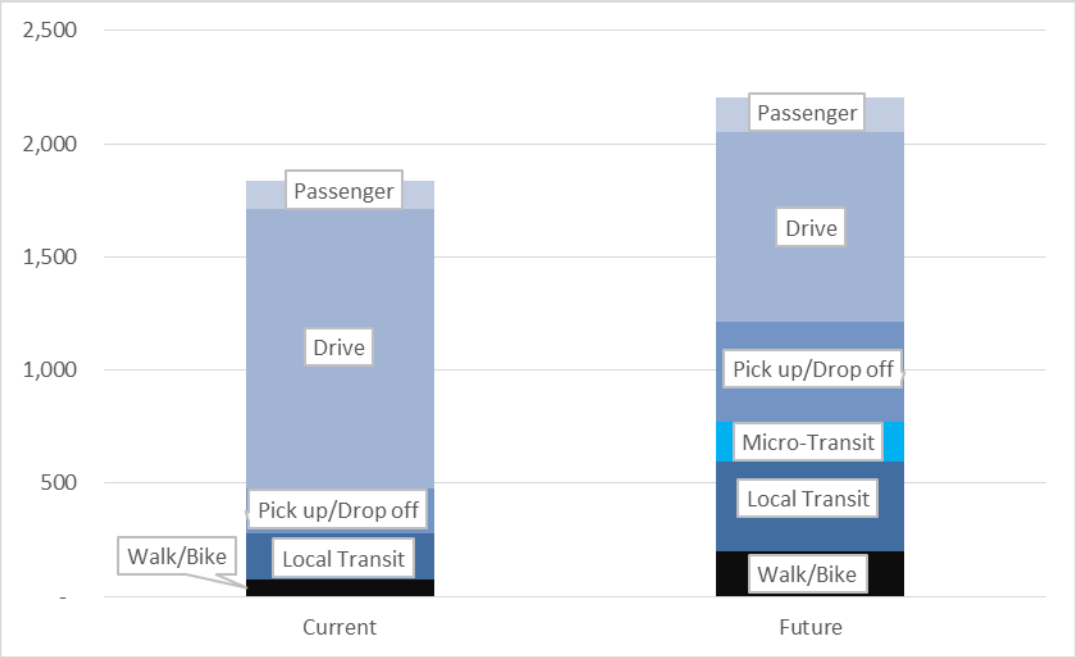


Figure 5-8: AM Peak Period Burlington GO Rail Trip Growth

[32] Cordon counts provided by Metrolinx describe boardings and alightings at GO Rail Stations across the GO network.



*Note that future does not include Future Background Trips.

*Current and Future Mode Share sourced from Metrolinx GO Station Access Plan

Figure 5-9: AM Peak Period GO Rail Station Access

5.3.2 Existing Policy Guidance for the Burlington GO Station Area

The following recaps the information included in provincial and municipal policy documents and guidelines specific to the Burlington GO Station Area:

- **Growth Plan (2019)** – identifies the Burlington GO Station as an MTSA and the GO Rail line as a priority transit corridor. A density target of a minimum of 150 people and jobs per hectare is identified;
- **Metrolinx Regional Transportation Plan (2018)** - identifies the Burlington GO Station as "Mobility Hub on a Priority Transit Corridor";
- **Metrolinx The Big Move (2008)** – identifies Burlington GO Station as a Gateway Hub, which is not a term included in future Metrolinx documents. The 2013 Big Move Baseline Monitoring Report includes the Burlington GO Station as a Mobility Hub on report figures but does not reference it within the report text;
- **Halton Region Official Plan (office consolidation 2018)** - identifies the Burlington GO Station as a Mobility Hub and MTSA. Future RER service will provide additional express rail; and,
- **City of Burlington Official Plan (office consolidation 2017)** – identifies the Burlington GO Station as an MTSA.

5.3.3 Role and Function of the Burlington GO Station Area Compared to Similar Mobility Hubs

The Burlington GO Station Area was assessed compared to other peers in the GTHA. Several key characteristics, identified in the Mobility Hub profile and performance characteristics of the Growth Plan were compared to understand its current function and future potential. A summary of this assessment is provided in **Figure 5-10**.

The following is observed based on an overall assessment:

- When compared to other suburban Mobility Hubs of a similar density, the Burlington GO Station Area is on the lower end of jobs per resident and has a low intersection density. The addition of more employment uses near the station can help with these metrics;
- A finer grained street network, with shorter block sizes would improve active transportation indicators such as intersection density;
- The Burlington GO station Area has a high transit mode share for station access but a very low transit usage within the GO Station Area compared to the best performing comparators. This means that people use transit to travel to/from the Burlington GO Station, but not for general travel within the area;
- Currently, the area has a relatively low amount of surface parking. Future surface parking should be restricted for new developments; and,
- The area around the Burlington GO Station does not have many walking and cycling friendly features compared to its GTHA peers.

	Urban Growth Centre (UGC)	Density	Jobs/Person	Transit Mode Share (AM%)	Station Access by Transit (%)	Households Without Car (%)	Surface Parking (%)	Intersection Density
Burlington GO	✗	30	0.5	10	17	12	9	0.21
Langstaff GO	✓	43	0.4	21	7	2	11	0.27
Pickering GO	✓	42	1.0	13	12	10	15	0.25
Newmarket GO	✗	41	0.6	7	4	16	10	0.54
Midtown Oakville GO	✓	31	1.6	9	23	14	15	0.22
Milton GO	✓	30	0.4	9	9	5	11	0.28

Source: Metrolinx Mobility Hub Profiles, 2015

Legend

✓ Yes ✗ No Best Performance

Figure 5-10: Comparison of Key Characteristics of Similar Downtown Mobility Hub with GO Station

5.3.4 Assessment of Burlington GO Station Area as MTSA

From both a policy and operational perspective, the Burlington GO Station Area is understood to be an MTSA. From a policy perspective, the Burlington GO Station is located along a Priority Transit Corridor in the Growth Plan and the service is considered a higher order transit service as per Schedule 5 (Growth Plan). Halton Region's Official Plan identifies the area as a both a Mobility Hub and an MTSA. The strategic importance of this area was recently reaffirmed through the Region's DMTR study which identified Burlington GO as a Regional Transit Node. The City's in force and effect Official Plan also identifies the importance of the lands around Burlington GO as an opportunity for transit improvement and future intensification. From a policy perspective the Burlington GO Station Area is understood to be a Major Transit Station Area located on a Priority Transit Corridor.

From an operational perspective, the current AM peak period boardings and alightings are at 2,100 (including local transit boardings and alightings) which is below the defined threshold of a Gateway Hub at 4,500. However, future service improvements to Burlington Transit and RER as well as population and employment growth are projected to increase AM peak period passenger activity past the suggested threshold of 4,500 for a Mobility Hub. Note that the 5,400 future boardings and alightings is higher than the GO Rail ridership described in earlier as it includes boardings and alightings on local and regional transit. GO Rail volume is expected to increase at this station in the future due to increased density, other development outside of the Study Area, and mode share shifts.

Figure 5-11 provides a summary of the assessment.

	Provincial	Regional	Local	Current Status	Burlington GO as an MTSA
Transit Corridor	Priority Transit Corridor *(Schedule 5, A Place to Grow)*	Identified as Commuter Rail Corridor *(Halton Region Official Plan, 2016)*	N/A	Higher Order Transit	Provides Higher Order Transit component of MTSA
Transit Station and Area	Gateway Hub *(Metrolinx Mobility Hub Profile)* Mobility Hub on Priority Transit Corridor *(RTP 2041)*	Identified as Mobility Hub & MTSA *(Halton Region Official Plan, 2016)*	MTSA defined as are around high order transit stations or a major bus depot *(Burlington Official Plan, 2017)*	Boarding & Alighting (AM Peak Period) 5,400 (Future) 4,500 (Target) 2,100 (Current) *(Target Source: Mobility Hub Background Paper, 2008, Mobility Hub Guideline, 2013)*	Meeting performance threshold for an MTSA

Figure 5-11: Assessment of Burlington GO Station Area as an MTSA
*Current boardings and alightings are based on automatic passenger count data from 2018. Future boardings and alightings are based on the multi-modal trip generation in Section 3.6. It includes both GO Rail and local transit trips and transfers.

Based on the overall assessment, it is concluded that the Burlington GO Station is functioning as an MTSA as defined in the Growth Plan as well as based on best practices from typical station areas in the GTHA.

5.4 Connections between Downtown and the GO Station Area

This section briefly discusses the existing and future scenarios which could help to improve the transportation connectivity between Downtown Burlington and the Burlington GO Station. **Figure 5-12** summarizes internal travel behaviour pattern between the two key areas. Key observations are:

- More than two-thirds of the trips are completed by vehicle even though trip distances are short, roughly one kilometre. Reducing vehicle usage to under 50% would reduce pressure on key connecting streets such as Brant Street, particularly in peak hours. Introduction of shared mobility and easy to access multi-modal networks are key strategies to deal with vehicle usage for very short trips;
- Walking and cycling represent less than one-third of internal trips. This is significantly lower than internal travel behaviour observed within Downtown Burlington and the Burlington GO station areas. Increasing this mode share to over half of trips would be an ideal travel pattern given area trips are a very short distance; and

- Roughly 10-18% of trips are completed as a passenger in a vehicle, a particularly high-occupant rideshare.

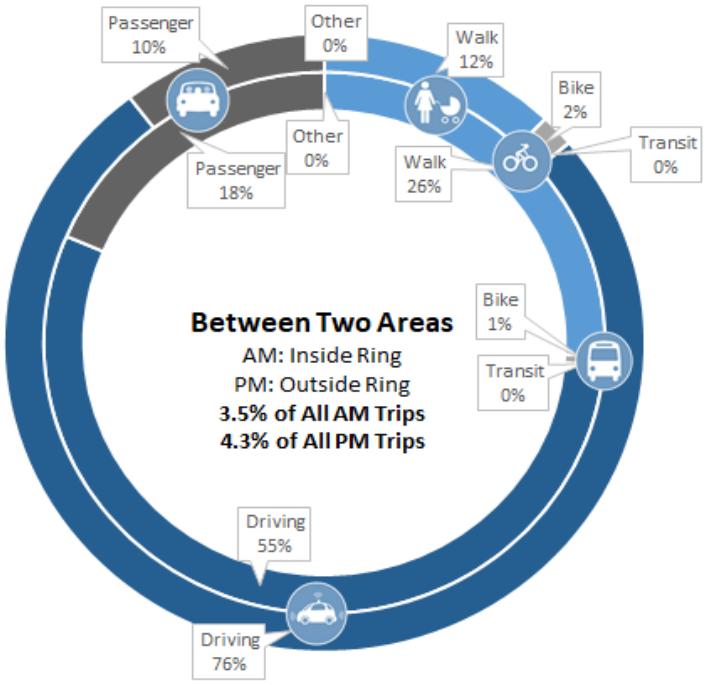


Figure 5-12: Internal Travel Behaviour within GO Station Area

6.0 Transportation Planning Directions

As part of this study, several recommendations have been identified regarding longer term infrastructure and transportation planning initiatives. These recommendations do not fit into the Official Plan policy directions or zoning recommendations, but should be considered in the context of long range planning, in particular as part of the City's upcoming Integrated Mobility Master Plan update.

6.1 Downtown Burlington

6.1.1 Integrated Mobility Improvement Opportunities

There are a number of opportunities to improve infrastructure in the Downtown to support the existing and future people living and working in the Downtown. Potential improvements include:

1. Improve multi-modal connections to major destinations including bikeshare, shared micro mobility, and a carshare network.
2. Provide priority pedestrian and bicycle crossing at key intersections.

3. Consider connecting Downtown Burlington and Burlington GO with a semi-express bus service.
4. Consider a cycle track along Lakeshore Road, Maple Avenue, Guelph Line, Brant Street.
5. Improve cycling and walking facilities to reduce vehicle usage on Lakeshore Road.
6. Provide dedicated spaces for on-street and shared off-street pick-up-drop-off, other curbside activity and loading facilities while exempting loading requirement for ground-floor or ancillary retail and commercial uses.

6.1.2 Transit Improvement Opportunities

Based on the aforementioned comparison and assessment, this study identifies three options for improving the transit function and operation in Downtown Burlington. Two of the options maintain a centrally located facility offering a bus terminal function with a third option that distributes small multi-modal "hubs" throughout the Study Area. This section provides a high-level summary of these three future possibilities. A comprehensive assessment of the Downtown Bus Terminal should be conducted along with a business case to establish the strategic direction for the future bus terminal and potential higher order transit corridor on Brant Street in the upcoming Integrated Mobility Master Plan.

- **Option 1: Relocation of the Terminal to Brant Street**: One of the benefits of a bus terminal is that it allows bus operators a place to layover between runs and provides an area where passengers can transfer between routes. Most buses that pull into the Downtown Bus Terminal do not layover very long and there are few transfers that occur. To access the Downtown Bus Terminal, a number of buses must pull off Brant Street (the major north-south corridor), which adds travel time to passengers that are not destined to this terminal stop. One option would be to maintain an on-street terminal, but relocate it to Brant Street next to City Hall. This option would represent an improvement over the current state, as it eliminates the need for buses to deviate onto John Street. There are challenges to this option that would need to be considered including the potential impact on existing streetscape and the service interruptions and/or temporary detours that would be required during festivals and events (particularly during the summer).

- **Option 2: Improve Passenger Amenities at Existing Terminal Location**: Regardless of location, the Downtown bus terminal could be enhanced to include better connectivity with active modes and passenger amenities in addition to higher service levels. Furthermore, additional routes could be redirected here to increase convergence at the terminal. This may require occupying some of the off-street parking lot space on either side of the existing John Street terminal. As it exists currently, the terminal does not offer significantly more amenity than a regular sheltered bus stop. Providing more connectivity and infrastructure would contribute to its planned function as an MTSA facility.

- **Option 3: Replace Bus Terminal with Smaller Multi-modal "Hubs":** The current bus terminal centralizes bus operations and transfers to one point in Downtown Burlington. However, it provides little additional amenities and operational advantage. Having a central location for transfers may not be necessary for the effective functioning of the transit network in the Downtown. The Downtown Bus Terminal facilitates a minimal number of transfers making it possible to decentralize these transfers over several intersecting bus routes across Downtown Burlington. Since most buses that service Downtown Burlington travel on the Brant Street corridor, transfers could be facilitated at sheltered stops along Brant Street. This model works well where there are many intersecting frequent bus routes, reducing overall transfer times and the need for structured amenities. The City could develop small multi-modal hubs to provide one-stop service points for all sustainable modes including multiple transit routes, regional connections, shared mobility options such as car share, bike share, rideshare, micro-mobility (i.e. scooters, ebikes, etc.) and bicycle parking within 2 to 4 min walking distance. These multi-modal hubs could be located at existing major destinations such as schools, hospitals, and community centres. Where there are no major destinations nearby, smaller scale local hubs could fill the gaps and provide the same level of access to multi-modal transportation options. This option could be designed to put all residents within 200-300 metres of a multi-modal hub or the intersection of major transit lines. **Figure 6-2** illustrates this multi-modal hub concept. Depending on how each hub is designed, this option may not produce a facility/location which fits with the Growth Plan's major bus depot definition.

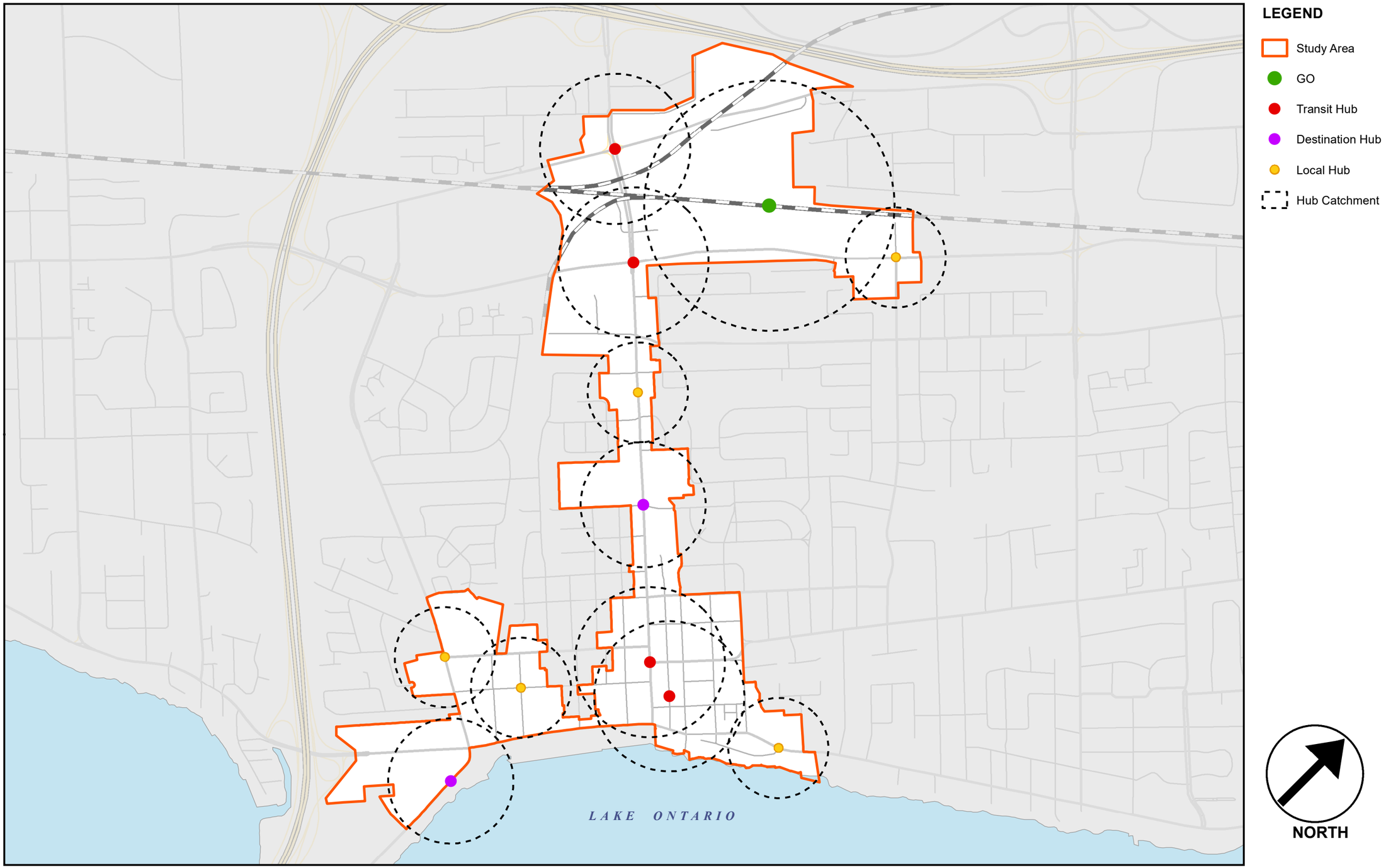
Option	Advantages	Disadvantages	Relative Cost
1: Relocation/ Enhancement	• Eliminate need for buses to deviate to John Street • Increase capacity and convergence of routes at the terminal • Centralize location near major destination (e.g. City Hall) • Improves connectivity to Burlington GO • Improves transit services in the Downtown	• Impact to streetscape needs to be studied • High capital cost	High
2: Improve Existing Terminal	• Increase capacity and convergence of routes at the terminal • Improves transit services in the Downtown	• Buses continue to divert onto John Street	Medium
3: Multi-modal Hubs	• Better access to transit and other sustainable modes for those not within walking distance of the current terminal • Improves transit services in the Downtown	• Requires further study to develop concept • May not improve connectivity to Burlington GO compared to other options	Low

Figure 6-1: Comparison of Downtown Bus Terminal Options

It is recommended that the City of Burlington further explore the multi-modal hub concept as part of the development of its new Integrated Mobility Master Plan and/or Future Transit Master Plan.

BURLINGTON INTERIM CONTROL BY-LAW STUDY

FIGURE 6-2: MULTIMODAL HUBS (CONCEPT ONLY)



LEGEND

- Study Area
- GO
- Transit Hub
- Destination Hub
- Local Hub
- Hub Catchment

NORTH

MAP PREPARED BY: LK
DILLON CONSULTING
CHECKED BY: DK
DILLON CONSULTING

October 31, 2019

Scale 1:15,000

Metres

0 125 250 500

File Location: I:\GIS\191011 - Burlington ICBL\MXD\16SEPT2019 Draft Report Response to Comments\F5-7_Multimodal Hubs Figure.mxd

6.2 Burlington GO Station Area

6.2.1 Integrated Mobility Improvement Opportunities

The following general integrated mobility improvements are recommended around the Burlington GO station area to help increase the demand for sustainable travel modes:

1. Improve connection to the future Highway 407 transitway service;
2. Improve pedestrian and cycling infrastructure on the north side of the station;
3. Build priority pedestrian and bicycle crossing interchanges at key intersections;
4. Designate multi-modal hubs around the Burlington GO Station Area to improve access;
5. Pilot an on-demand mobility service to enhance connectivity to the Burlington GO Station;
6. Consider connecting Downtown Burlington and Burlington GO with a semi express bus service; and,
7. Consider a cycle track on Fairview Street, Guelph Line and Brant Street; and a bike lane on North Service Road.

6.2.2 Transit Improvement Opportunities

There are a number of specific opportunities to improve transit along the Brant Street corridor to better facilitate connectivity to the GO station. Three options specific to the Downtown were presented in the previous section. In addition to the options presented in Section 6.1.2 the following opportunities have been identified for lands along the Brant Street corridor and in proximity to the station area:

1. Promote transit-supportive development and an associated variety of land-uses to increase demand for sustainable modes;
2. Implement transit signal priority on Brant Street north of Downtown Burlington to improve transit reliability and travel time. This would be a first phase to developing a bus priority corridor;
3. Explore the potential for dedicated HOV and queue jump lanes with 10 minute combined service frequency, particularly when approaching the Burlington GO Station;
4. Introduce additional comfortable shelters and passenger amenities at key locations on Brant Street. Consideration should be made to include the following features:
    a. Heated shelters;
    b. Distinctive design;
    c. PRESTO machines;
    d. Benches and trash receptacles; and,
    e. High quality real-time passenger information.
5. Include a relatively higher number of stop facilities including at key locations such as near City Hall;

6. Introduce separated cycling facilities, double tree canopy sidewalk and associated amenities and trip end facilities (such as frequent bike parking) as well as designated on- and off-street shared mobility spaces or facilities along the corridor;
7. Introduce new walking routes between key destinations or developments to main streets; and,
8. Introduce intersection placemaking opportunities at key crossing or intersections.

7.0 Official Plan Policy and Zoning Directions

The following section identifies a number of Official Plan policy and Zoning by-law directions for the City to consider. The following directions are intended to provide guidance on an interim-basis to help the City make decisions in the short term until the new Official Plan and associated Area Specific Plans (for the GO Station Areas) come into full force and effect. The directions are organized around the structure of the current Official Plan, with specific items identified for each of the following applicable sections:

- Part I Policy Framework;
- Part II Functional Policies;
- Part III Land Use Policies – Urban Planning Area;
- Part VII Schedules & Tables; and,
- Part VIII Definitions.

7.1 Part I Policy Framework

1. **Recognize the role of MTSA's and transit supportive land uses in the Land Use Vision**: Part I Section 4.0 describes the land use vision for the City. Section 4.3 provides guidance on the

future built form and natural environment. These sections should be updated to establish the Major Transit Station Area concept and broadly establish the need for transit supportive development.

7.2 Part II Functional Policies

1. **Strengthen policy direction on transit supportive land uses city-wide:** Part II Section 3.4.2 d) identifies that the Long Term Transit Network shall be updated as required by external factors or internal factors and that these updates will not require an amendment to the Plan. Part II Section 6.3.d) and e) describe existing and new communities policies that promote compact forms of development and establish the need to encourage the use of public transit through built form. Part III Section 10.2.h) of the in force OP identifies that it is an objective of the municipality to facilitate public transit supportive land uses and improve the quality of, and accessibility to, transit facilities. The functional policies of the OP should be strengthened to include:
    a. Recognition of the relationship between land use and transit.
    b. Identify the elements that make development transit supportive (including built form, urban design, densities, and mix of land uses).

2. **Add city-wide policy defining the need to plan for complete communities:** Part II Section 6.3 d) outlines that City Council may require the preparation of design plans in conjunction with development proposals that support the goals of mixed land use, diversity and pedestrian orientation; define the public realm and the relationship between the built form to the public realm; address issues of physical integration; encourage the use of public transit; identify opportunities to integrate pubic areas or other cultural elements into the community and promote public safety. The policies of Part II Section 6 should be strengthened to direct urban form that will optimize infrastructure, particularly along transit and transportation corridors, to support the achievement of complete communities through a more compact built form.

7.3 Part III Land Use Policies - Urban Planning Area

1. **Add policies to Part III identifying the location, function and scale of Major Transit Station Areas in Burlington**: Part II of the OP is silent on the role of Major Transit Station Areas. New policies are needed to address provincial policy gaps and provide clarity on the role, function, scale and need for Area Specific Plans for these priority growth areas:
    a. Identify the importance of planning around transit stations and the location of MTSAs in the City of Burlington.
    b. Outline a MTSA typology recognizing that there are different types of MTSA's in Burlington's context, including 1) those on a Priority Transit Corridor (Burlington GO and

Appleby GO), 2), those serviced by higher order transit not recognized as a Priority Transit Corridor (Aldershot GO), and 3) those not on a Priority Transit Corridor nor serviced by higher order transit (Downtown Burlington bus terminal). The MTSA typologies will be further refined through the Region's Municipal Comprehensive Review. Identify how each element of transit supportive development should be addressed based on the different contexts.

c. Identify the need for detailed OP policies or Area Specific Plans to consider the importance of these areas in accommodating employment over the long term in areas targeted for intensification.
d. Identify the need for the active transportation plan to protect opportunities for physically separated bicycle facilities (where feasible) for all reconstruction of major streets and opportunities for complete streets that serve all modes of transportation.
e. Add a policy to plan and design major transit station areas to be transit supportive and to achieve multimodal access to stations and connections to nearby major trip generators.
f. Add a policy directing major office and major institutional development to urban growth centres, major transit station areas or other strategic growth areas with existing or planned frequent transit service.

2. **Consider strengthening the connection between Burlington's MTSAs:** The City may consider strengthening the connection and supporting increased transit use between the Burlington GO and Downtown Burlington MTSAs through the following measures/opportunities:
    a. Transit signal priority on Brant Street north of the Downtown to improve transit reliability and travel times.
    b. Exploring the potential for dedicated HOV and queue jump lanes, when approaching the Burlington GO station along Fairview.
    c. Introducing additional comfort shelters.

3. **Add a policy describing the role and function of the Downtown Burlington MTSA:** The in force OP is silent on the role and function of the Downtown bus terminal and its role in supporting future intensification in the UGC. Policies should be added to clearly articulate the role and function as it relates to ability to accommodate growth, mix of land use, planned densities, built form and character, including:
    a. The Downtown Burlington bus terminal functions as an intercity bus transfer point. It is not within its own right-of-way and is not serviced by higher order or frequent transit.
    b. It currently does not function as a major bus depot and this function is likely to continue into the future, unless significant improvements and enhancements are made.
    c. Downtown Burlington is recognized as a Mobility Hub in the Halton Region Official Plan and an MTSA in the Growth Plan.

d. Given its location within the Downtown Burlington Urban Growth Centre, the lands within the MTSA should be planned to contribute to the 200 people and jobs combined per hectare that the Urban Growth Centre is planned to achieve by 2031. Given the limited function of the Downtown John Street Bus Terminal, the MTSA is not expected to be a significant driver for intensification beyond that which is required by the Downtown UGC.
e. Detailed OP policies are needed to identify the appropriate mix of land use, planned density, built form and character of the MTSA and Urban Growth Centre. Through the re-examination of the Official Plan Study, detailed Official Plan policies are being developed for the Downtown. To assist with assessing development applications in the interim, the City should include development criteria which allows the City to assess development applications for transit and complete community supportiveness.

4. **Add a policy describing the role and function of the Burlington GO MTSA:** The in force OP is silent on the role and function of the Burlington GO MTSA. Policies should be added to clearly articulate the role and function as it relates to ability to accommodate growth, mix of land use, planned densities, built form and character, including:
    a. Burlington GO MTSA is on a Priority Transit Corridor, serviced by higher order transit and frequent transit. It should be a primary focus for transit-oriented development and intensification.
    b. Opportunities to introduce a full mix of uses should be explored to allow the Burlington GO MTSA to function as a complete community.
    c. This area serves an important employment function for the City, and there is a need to ensure that employment uses remain an important component of this mixed-use, transit supportive node.
    d. Mobility Hub boundaries have been established by the City. The ultimate delineation of the MTSAs and density targets will need to be confirmed by the Region as part of the Municipal Comprehensive Review and should be included within the City's OP policies and schedules through a future OP review.
    e. Area specific planning is needed to identify the appropriate mix of land use, planned density, built form and character of the MTSA and Urban Growth Centre. In the absence of the area-specific planning studies, development criteria should be used to assess development applications.

5. **Update land use policies to support transit-supportive development within the Burlington GO MTSA:** The Burlington GO MTSA is a high priority area for transit supportive growth. The in force OP land use policies applicable to this area limit the range of permitted uses, built form and densities. Some of these lands are designated by the Region of Halton as Employment Area, included within the Provincially Significant Employment Zones (PSEZ) and currently under review. An Area Specific Plan is required to establish the transit supportive land uses, built form and densities and accordingly, the Area Specific Plan will provide additional opportunities to

encourage transit-oriented development. In the interim, the following policy recommendations are made to support transit supportive development within the Burlington GO Mobility Hub:

a. Mixed Use Corridor (MUC) - General and MUC - Commercial Corridor:
   - Examine and confirm the maximum building height for lands in the immediate vicinity of the GO station.
   - Require commercial or recreational uses on the first floor of all buildings abutting multi-purpose arterial or major arterial roads within Burlington GO Mobility Hub.
   - Remove permissions for large scale motor dealership expansions at subject sites at the south-west corner of Fairview Street and Brant Street and north-west corner of Plains Road and Brant Street.
   - Prohibit ground oriented dwelling in Mobility Hub (e.g. stand-alone townhouses).
   - Tie policy 5.3.2.d.v) for reduced parking rates to MTSAs and add policy on zoning specifying mandatory bicycle parking and other multi-modal infrastructure.

b. MUC - Employment:
   - Limit range of retail to accessory retail and service commercial to serve the day to day needs of employees.
   - Increase or remove maximum FSI.
   - Introduce minimum building height of 2 storeys, except for industrial uses.
   - Tie policy 5.3.4.e.iv) for reduced parking rates to the Mobility Hub.

c. General Employment:
   - Consider removal of retail and service commercial limitation for multi-storey office buildings to allow for additional commercial uses.
   - Remove maximum FSI.

In addition, a policy should be added that requires large sites to be planned comprehensively and appropriate phasing plans be established.

6. **The OP should include criteria to evaluate development applications in advance of the Area Specific Plans**: The City has initiated Mobility Hub Area Specific Plans which are intended to provide further detailed planning policies for the GO Station Mobility Hubs (including Burlington GO). The Downtown Mobility Hub work will be reviewed as part of the scoped re-examination of the Official Plan currently underway. Until these planning initiatives are complete and the Official Plan is updated, there is a need to establish policy guidance and development criteria to assist in reviewing development applications within these areas in the interim. The guidelines and criteria should include factors that establish these areas as complete, transit-supportive communities, and recognize the role and function of transit in the area. The criteria should build upon the development criteria identified in Section 12.1.2(2) of the adopted 2018 OP.

7.4 Part VII Schedules

1. **Schedule changes are needed to reflect the policy changes and opportunities for clarity in policy application**: The following features should be added to the Schedules of the Official Plan:
    a. Major Transit Stations and MTSA boundaries subject to approval from the Region of Halton and will be established through the MCR therefore they cannot be implemented at this time. A special planning area could be considered in an interim basis.
    b. Priority Transit Corridors as identified in Schedule 5 of the Growth Plan, including the Lakeshore West GO Rail Line in Burlington (either added to policy or referenced in text).

2. **Consideration for the need for a Special Planning Area should be given**: A special planning area could be used to delineate lands within the ICBL where certain policies apply such as the Burlington GO Station area where there may be changes to the land use permissions only for subject lands.

7.5 Part VIII Definitions

1. **Update definitions to provide clear policy direction and conform with provincial policy:** The following definitions should be added or updated in the OP in order to guide the interpretation of policies, and align with provincial policies:
    a. Major Transit Station Area (MTSA) - The current in force Official Plan (2017) defines MTSAs as *"The area including and around any existing or planned higher order transit station (such as GO Transit commuter rail stations), or the area including and around a major bus depot in an urban core. Station areas generally are defined as the area within an approximate 500m radius of a higher order transit station, representing about a 10-minute walk."* **This definition should be updated to reflect the 2019 Growth Plan update of a 500m to 800m radius.**
    b. Transit Supportive - The current in force Official Plan (2017) defines Transit-Supportive Land Use as "*Planning and development practices which make transit viable and improve the quality of the experience of using transit. When used in reference to development, it generally refers to compact, mixed use development that has a high level of employment and residential densities to support frequent transit service. When used in reference to urban design, it generally refers to design principles that make development more accessible for transit users, such as roads laid out in a grid network rather than a discontinuous network; pedestrian-friendly built environment along roads to encourage walking to transit; reduced setbacks and placing parking at the sides/rear of buildings; and improved access between arterial roads and interior blocks in residential Areas."* **This definition should be updated to align with the 2019 Growth Plan and the proposed transit supportive policies outlined above.**

c. Major Trip Generator **-** This term is not currently defined in the in force Official Plan. The Growth Plan defines Major Trip Generators as "origins and destinations with high population densities or concentrated activities which generate many trips (e.g., urban growth centres and other downtowns, major office and office parks, major retail, employment areas, community hubs, large parks and recreational destinations, post-secondary institutions and other public service facilities, and other mixed-use areas)". Mobility Hub Guidelines (2011) have terminology that is similar and call them "Large Trip Generators" and destinations include Universities, Colleges, and Airports in varying urban contexts. **A definition that is aligned with the Growth Plan definition should be added to the OP**.

d. Priority Transit Corridor - This term is not currently defined in the in force OP. Priority Transit Corridors are identified in Schedule 5 of the Growth Plan and include the Lakeshore West GO Rail Line between Union Station and Burlington GO. **A definition that is aligned with the Growth Plan definition should be added to the OP**.

e. Higher Order Transit - The in force OP defines Higher Order Transit as "*Transit that generally operates in its own dedicated right-of-way, outside of mixed traffic, and therefore can achieve a frequency of service greater than mixed-traffic transit. Higher order transit includes heavy rail (such as commuter rail) and buses in dedicated rights-of-way."* **The definition should be updated to reflect the terminology used in the 2019 Growth Plan.**

f. Frequent Transit - This term is not currently defined in the in force OP. The Growth Plan defines Frequent Transit as "*A public transit service that runs at least every 15 minutes in both directions throughout the day and into the evening every day of the week*". **A definition that is aligned with the Growth Plan definition should be added to the OP.**

g. Complete Communities - This term is not currently defined in the in force OP. The Growth Plan defines complete communities as "*Places such as mixed-use neighbourhoods or other areas within cities, towns and settlement areas that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living including an appropriate mix of jobs, local stores, and services, a full range of housing, transportation options and public service facilities. Complete communities are age-friendly and may take different shapes and forms appropriate to their contexts*". **A definition that is aligned with the Growth Plan definition should be added to the OP**.

h. Public Service Facilities – This term is not currently defined in the in force OP. The Growth Plan defines public service facilities as "*Lands, buildings and structures for the provision of programs and services provided or subsidized by a government or other body, such as social assistances, recreation, police and fire protection, health and educational programs, and cultural services. Public service facilities do not include infrastructure.*" **A definition that is aligned with the Growth Plan definition should be added to the OP**.

i. Multimodal - This term is not currently defined in the in force OP. The Growth Plan defines multimodal as "*Related to the availability of use of more than one form of transportation, such as automobiles, walking, cycling, buses, rapid transit, rail (such as commuter and freight), trucks, air, and marine*." **A definition that is aligned with the Growth Plan definition should be added to the OP**.

j. Compact Built Form - This term is not currently defined in the in force OP. The Growth Plan defines compact built form as "*A land use pattern that encourages the efficient use of land, walkable neighbourhoods, mixed land uses (residential, retail, workplace, and institutional) all within one neighbourhood, proximity to transit and reduced need for infrastructure. Compact built form can include detached and semi-detached houses on small lots as well as townhouses and walk-up apartments, multi-storey commercial developments, and apartments or offices above retail. Walkable neighbourhoods can be characterized by roads laid out in a well-connected network, destinations that are easily accessible by transit and active transportation, sidewalks with minimal interruptions for vehicle access, and a pedestrian=friendly environment along roads to encourage active transportation*." **A definition that is aligned with the Growth Plan definition should be added to the OP**.

k. Complete Streets - This term is not currently defined in the in force OP. The Growth Plan defines complete streets as "*Streets planned to balance the needs of all road users, including pedestrians, cyclists, transit-users, and motorists."* **A definition that is aligned with the Growth Plan definition should be added to the OP**.

l. Mid-rise and Tall Buildings – The Adopted Burlington OP proposed a definition for Mid-rise as "a building five (5) to eleven (11) storeys in height" and Tall Buildings as "a building twelve (12) storeys or higher". **The City should consider defining mid-rise and tall buildings in the in force OP to assist in clarifying the role and function of the areas as it relates to permitted heights.**

7.6 Zoning Recommendations

The Local Policy Context was described in Section 3.3 of this report. The City of Burlington Zoning By-law 2020 regulates the use of land in the City of Burlington. A number of policy changes have been recommended as an outcome of the ICBL study, as described in Section 7.0 of this report. In addition, there are a number of regulatory changes that are recommended based on the findings of the ICBL study and the need for alignment between the OP policies and zoning regulations. The following describes the recommended zoning changes.

1. **Existing Zoning By-law inconsistencies within the in force Official Plan**: The following zoning changes are required to address policy alignment with the in force and effect OP:
    - The MXT zone currently has a minimum height of 2 storeys and no maximum height. The lands on the north side of Fairview Road zoned MXT are designated MUC –

Commercial Corridor, which have a minimum height of 2 storeys and a maximum height of 6 storeys. Until the Secondary Planning work is complete, a maximum height should be established for the subject sites, given their geographic location in proximity to the GO station and their priority from a city-building perspective. Land use compatibility and design analysis should be undertaken for the subject lands to review the potential built form and density of future development, to establish a maximum height. Where this discrepancy exists, the subject zoning regulations and Official Plan policies should be updated to be consistent.

2. **Zoning By-law changes based on recommended policy direction**s: The following zoning changes are recommended to support the OP policy directions described in Section 7.0 above:
    - The MXG, MXC and MXE zone currently permits Motor Vehicle Service Station, Motor Vehicle Sales, Rental and Service and Motor Vehicle Repair. The OP policy directions include a recommendation to remove permissions for large scale motor dealership expansions at the south-west corner of Fairview Street and Brant Street. This change should be reflected in the zoning for the subject site.
    - The MXT zone currently permits Stacked Townhouses, Back to Back Townhouses in certain conditions. The OP policy directions includes a recommendation to not permit ground oriented housing within the MUC – General and MUC – Commercial Corridor designations. The City may wish to consider removing the Townhouse permissions within the MXT zone.
    - The MXG zone has a maximum floor area ratio of 0.5:1. The OP policy directions recommend a number of refinements to the MUC - Employment designation, including removal or an increase of the FSI.
    - The MXG, MXC, MXE and MXT within the Study Area should also include a zoning regulation for mandatory bicycle parking and other multi-modal infrastructure where reduced parking is proposed.
    - The MXE zone has a maximum floor area ratio of 0.5:1 for industrial buildings and 1.0:1 for other buildings. The OP policy directions recommend several changes to the MUC – Employment designation including removal or increase of the FSI. The OP policy direction also introduces a minimum building height of 2 storeys, except for industrial uses. These changes should be reflected in the zoning for the subject sites.
    - The GE1 zone currently has a maximum height of 9m for lands abutting residential zones. The OP Policy directions recommend a couple of refinements to the General Employment designation, including removal of the maximum FSI.
3. **Permitted Uses**: The following permitted uses would encourage transit-supportive uses in proximity to major transit stations:
    - The MXT zone currently does not permit Community Institutional uses. As these uses can support transit usage and complete communities, this use should be permitted in the MXT zone. Hotels should also be considered as a permitted use in the MXT zone, provided the built form is undertaken in a manner which is transit supportive.

Appendix A

Multi-modal Trip Generator

Multimodal Site Traffic Generation

Mode Share	Size and Mode Share	ITE Category
Units	150	Single Family Detached (210)
Walk	10%	
Bike	5%	
Transit	20%	
Driving	53%	
Passenger	12%	
Other	0%	
Units	1046	Multi-family Low Rise (221)
Walk	10%	
Bike	2%	
Transit	20%	
Driving	55%	
Passenger	13%	
Other	0%	
Units	2699	Multi-family High Rise (222)
Walk	10%	
Bike	5%	
Transit	20%	
Driving	60%	
Passenger	5%	
Other	1%	
Employees	1,396	Institutinal 540 (Communit y College)
Walk	5%	
Bike	5%	
Transit	20%	
Driving	59%	
Passenger	11%	
Other	0%	
Employees	1,091	General Light Industrial (110)
Walk	5%	
Bike	5%	
Transit	20%	
Driving	59%	
Passenger	11%	
Other	0%	
Employees	7,552	ITE 710: General Office
Walk	10%	
Bike	5%	
Transit	20%	
Driving	54%	
Passenger	10%	
Other	0%	

	AM Peak Hour			PM Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Total Net New Vehicle Traffic Volumes	3402	1539	4941	2032	3190	5223
Total New Vehicle Passenger Trips	771	401	1172	531	683	1214
Total New Transit Trips	1239	583	1821	764	1162	1926
Total New Walking Trips	452	245	697	296	470	766
Total New Cycling Trips	305	133	438	178	282	460
Total New Other Trips	24	14	38	17	23	40
Total New Tirps	6193	2914	9107	3818	5810	9628

Vehicle Performance (Peak Hour)

Inbound

Downtown Burlington

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
James St	190	720	61	49	251	769	24%	31%	80%	96%
Lakeshore Rd (East Side)	585	1063	187	72	772	1135	73%	97%	118%	142%
Lakeshore Rd (West side)	1201	1013	385	69	1586	1082	75%	99%	56%	68%
Caroline St	349	449	112	30	461	479	44%	58%	50%	60%
Ontario St	240	212	77	14	317	226	30%	40%	24%	28%
Subtotal	**2565**	**3457**	**822**	**235**	**3387**	**3692**				

Burlington GO Station Area

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
Fairview East Side	609	1836	195	125	804	1961	38%	50%	102%	123%
Prospect St	141	287	45	19	186	306	18%	23%	32%	38%
Brant North Side	1503	1679	481	114	1984	1793	63%	83%	62%	75%
Fairview West Side	1491	1141	478	77	1969	1218	93%	123%	64%	76%
Plain Rd (West Side)	825	1128	264	77	1089	1205	52%	68%	63%	75%
Plain Rd (East Side)	233	1147	75	78	308	1225	15%	19%	64%	77%
Subtotal	**4802**	**7218**	**1538**	**490**	**6340**	**7708**				

Total	**7367**	**10675**	**2360**	**724**	**9727**	**11399**

Outbound

Downtown Burlington

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
James St	292	259	92	103	384	362	37%	40%	29%	38%
Lakeshore Rd (East Side)	832	623	262	248	1094	871	104%	114%	69%	90%
Lakeshore Rd (West side)	1263	2249	397	895	1660	3144	79%	87%	125%	163%
Caroline St	204	195	64	78	268	273	26%	28%	22%	28%
Ontario St	384	573	121	228	505	801	48%	53%	64%	83%
Subtotal	**2975**	**3899**	**935**	**1551**	**3910**	**5450**				

Burlington GO Station Area

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
Fairview East Side	1233	1207	388	480	1621	1687	77%	85%	67%	87%
Prospect St	109	165	34	66	143	231	14%	15%	18%	24%
Brant North Side	1048	2092	329	832	1377	2924	44%	48%	78%	101%
Fairview West Side	602	2017	189	802	791	2819	38%	41%	112%	146%
Plain Rd (West Side)	544	1367	171	544	715	1911	34%	37%	76%	99%
Plain Rd (East Side)	402	342	126	136	528	478	25%	28%	19%	25%
Subtotal	**3938**	**7190**	**1238**	**2861**	**5176**	**10051**				

Total	**6913**	**11089**	**2173**	**4412**	**9086**	**15501**
Total Inbound and Outbound	**14280**	**21764**	**4533**	**5136**	**18813**	**26900**

Transit Performance (Peak Hour)

Inbound

Downtown Burlington

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
James St	26	35	80	73	106	108	9%	38%	13%	39%
Lakeshore Rd (East Side)	17	18	52	38	69	56	12%	49%	13%	40%
Lakeshore Rd (West side)	39	17	119	36	158	53	19%	75%	8%	25%
Caroline St	0	0	0	0	0	0	0%	0%	0%	0%
Ontario St	0	0	0	0	0	0	0%	0%	0%	0%
Subtotal	**82**	**70**	**251**	**147**	**333**	**217**				

Burlington GO Station Area

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
Fairview East Side	17	22	52	46	69	68	6%	25%	8%	24%
Prospect St	0	0	0	0	0	0	0%	0%	0%	0%
Brant North Side	53	67	162	141	215	208	11%	44%	14%	42%
Fairview West Side	190	132	582	277	772	409	39%	158%	27%	84%
Plains Rd (East Side)	28	84	86	176	114	260	5%	20%	15%	46%
Plain Rd (West Side)	16	6	49	13	65	19	11%	46%	4%	13%
Subtotal	**304**	**311**	**931**	**653**	**1235**	**964**				

Total	**386**	**381**	**1183**	**800**	**1569**	**1181**

Outbound

Downtown Burlington

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
James St	24	40	51	121	75	161	9%	27%	14%	58%
Lakeshore Rd (East Side)	15	56	32	170	47	226	11%	33%	40%	161%
Lakeshore Rd (West side)	15	32	32	97	47	129	5%	17%	11%	46%
Caroline St	0	0	0	0	0	0	0%	0%	0%	0%
Ontario St	0	0	0	0	0	0	0%	0%	0%	0%
Subtotal	**54**	**128**	**114**	**388**	**168**	**516**				

Burlington GO Station Area

	Current		Change		Future (With Mode Share Change)		AM v/c		PM v/c	
	AM	PM	AM	PM	AM	PM	Current	Future	Current	Future
Fairview East Side	25	2	53	6	78	8	36%	111%	3%	12%
Prospect St	0	0	0	0	0	0	0%	0%	0%	0%
Brant North Side	23	61	49	185	72	246	8%	26%	22%	88%
Fairview West Side	56	98	118	297	174	395	11%	36%	20%	81%
Plains Rd (East Side)	113	31	239	94	352	125	27%	84%	7%	30%
Plain Rd (West Side)	17	47	36	142	53	189	5%	15%	13%	54%
Subtotal	**234**	**239**	**495**	**724**	**729**	**963**				

Total	**288**	**367**	**609**	**1112**	**897**	**1479**

Total Inbound and Outbound	**674**	**748**	**1792**	**1912**	**2466**	**2660**

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