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DIALOG

SNC·LAVALIN

Hamilton Rapid Transit Preliminary Design and Feasibility Study

A-LINE

INITIAL FEASIBILITY & OPPORTUNITIES REPORT
Version: 2.0

May 2012

METROLINX
An agency of the Government of Ontario

RAPIDTransit
moving HAMILTON forward

Hamilton
Public Works

CONTENTS

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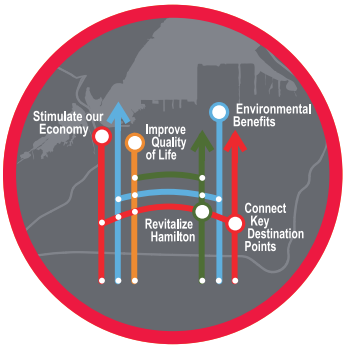
EXECUTIVE SUMMARY

This A-Line Feasibility and Opportunities Report is the first phase of the preliminary design and engineering analysis. This report reviews existing conditions along the A-Line Corridor in the City of Hamilton and assesses both land use and transportation opportunities and challenges related to rapid transit, transit-oriented development and neighbourhood and corridor improvements. This initial study for the A-Line responds to the City of Hamilton's city-building goals as reflected in the Council-approved project vision:

Rapid Transit is more than just moving people from place to place. It is about providing a catalyst for the development of high quality, safe, sustainable and affordable transportation options for our citizens, connecting key destination points, stimulating economic development and revitalizing Hamilton.



The A-Line and the B-Line are identified as priority projects under The Big Move: Regional Transportation Plan for the Greater Toronto and Hamilton Area (November 2008), with the B-Line identified as a "top 15 priority project" within the first 15 years. The A- and B-Lines will form the foundation of a high quality transit network composed of five lines at build-out to support walking, and cycling, in addition to private vehicles.

The A-Line Corridor is 16 kilometres long and runs from the waterfront (north) to the airport (south), generally along James Street and Upper James Street. The A-Line Corridor crosses a diversity of neighbourhoods (from stable communities to areas with great potential for change) and connects numerous destinations across the City, including Hamilton's downtown. It is important to note that Hamilton's downtown is identified as an Urban Growth Centre, (areas to support increased growth and development), under the regional growth plan and as a Downtown Multi-Modal Mobility Hub, (areas that are well supported by public transit), under the regional transportation plan.

Due the scale of transit investment and the Corridor's prominent location in the City, the A-Line Corridor presents immense potential to meet the municipal and regional sustainability objectives, including appropriate intensification along transit investment, to strategically invest in transit infrastructure, and improve the public realm and urban design along the Corridor to create more pedestrian-oriented and mixed use environments that support complete communities.

FIGURE 1: B-L-A-S-T NETWORK IN THE BIG MOVE: REGIONAL TRANSPORTATION MASTER PLAN

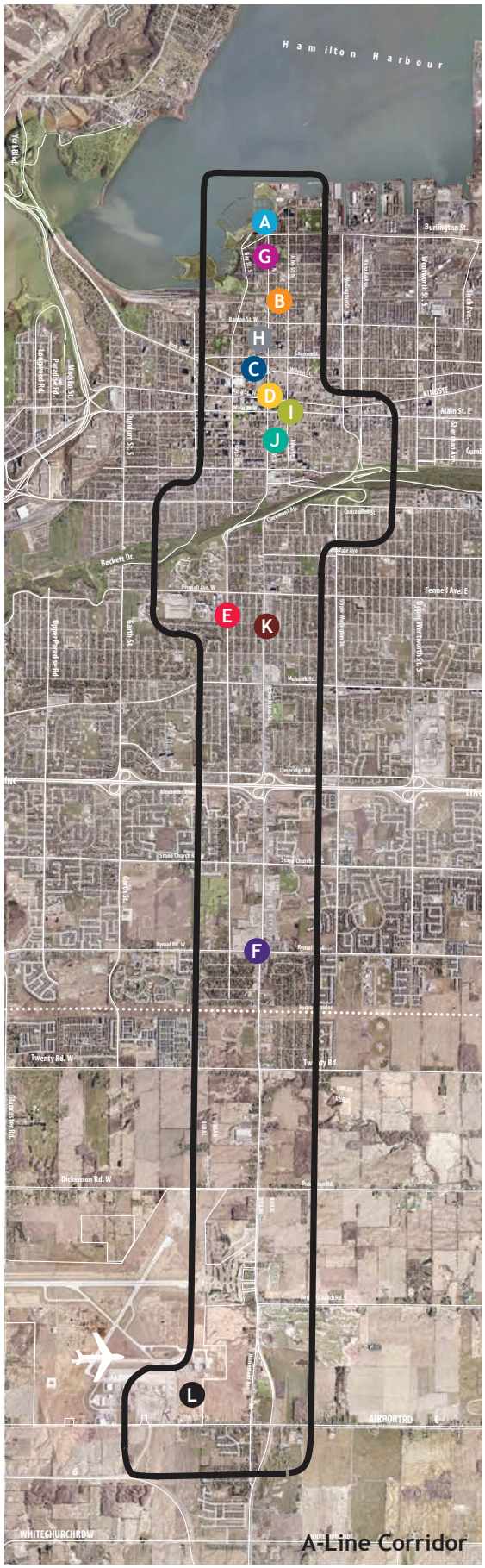


FIGURE 2: A-LINE STUDY AREA

The Urban Hamilton Official Plan, which sets out policy and development directions to respond to the City's vision for a vibrant, healthy and sustainable city, was completed in July 2009 and was approved by City Council and by the Ministry of Municipal Affairs and Housing. However, it is important to note that the Urban Hamilton Official Plan has been appealed to the Ontario Municipal Board and is not currently in effect.

Interestingly, in the Urban Hamilton Official Plan, James Street and Upper James Street (the A-Line) are identified as part of a Primary Corridor where higher order transit and intensification are to focus. The land adjoining the southern section of the A-Line Corridor comprises the Hamilton International Airport and rural area. The rural area is addressed in the Rural Hamilton Official Plan.

An Opportunity for City-Building

The City of Hamilton, with a population of over 500,000, has a rich history as a prominent manufacturing city that sits almost in the centre of the Greater Golden Horseshoe (GGH). Today, Hamilton has attracted a diverse local economic base but, like other North American cities, is challenged to grow in a sustainable way while maintaining a strong quality of life for its residents.

Rapid Transit can influence urban growth and revitalize an area. It can:

- Have an immediate influence in directing where, how and what kind of growth can take place.
- Strengthen existing neighbourhoods, rejuvenate declining areas and attract new clusters of development around stops.
- Assist with increasing population and employment densities adjacent to the line and specifically in the vicinity of RT stops.

The Rapid Transit Vision is supported by the City, Metrolinx and the Province, positioning the A-Line Corridor for higher-density, pedestrian and transit-oriented development.

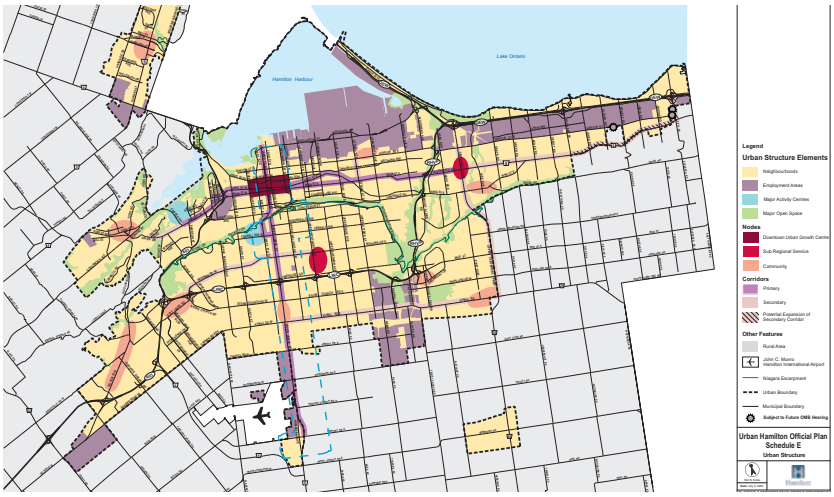


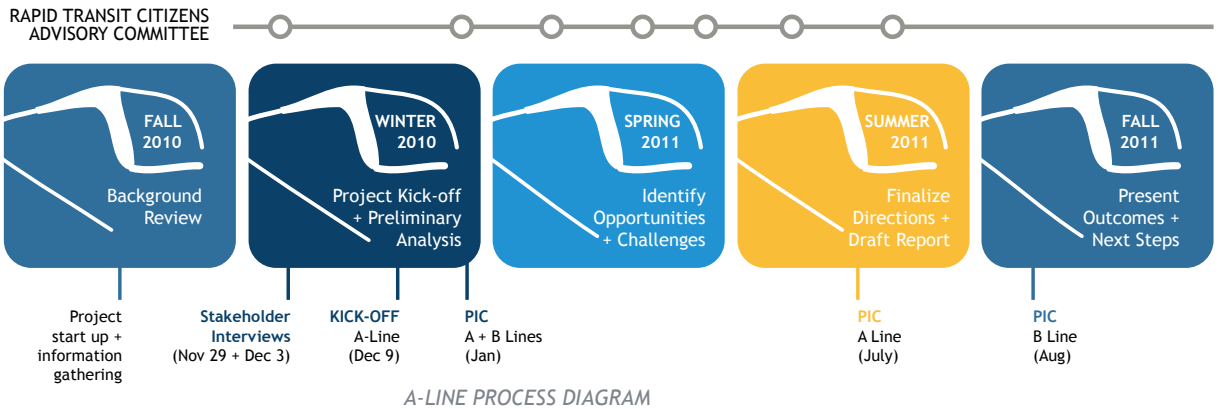
FIGURE 3: THE URBAN HAMILTON OFFICIAL PLAN

"Rapid Transit is more than just moving people from place to place. It is about providing a catalyst for the development of high quality, safe, sustainable and affordable transportation options for our citizens, connecting key destination points, stimulating economic development and revitalizing Hamilton. Rapid transit planning strives to improve the quality of life for our community and the surrounding environment, as we move Hamilton forward."- Hamilton Rapid Transit Team

“We want an image of a clean, progressive city - not just about having a pretty downtown but perception and experience of the city overall.”

- STAKEHOLDER INTERVIEW PARTICIPANT

Grounded in Public Consultation



A-LINE PROCESS DIAGRAM

This study included comprehensive consultation with both stakeholders and the general public. Stakeholder interviews were held between November 2010 and January 2011 to gain a "sample" of perspectives and to gain an understanding of existing conditions along the A-Line Corridor. The interviews were with a range of stakeholders, including City staff, neighbourhood associations, residents, local businesses,community groups, and educational institutions.

This public process has informed and shaped the A-Line Preliminary Design and Engineering Study. Key findings and recommended route options from this study were presented back to the public at Public Information Centres in July 2011.

Dublin, Ireland

A Clear Vision and Principles for the A-Line Corridor

The following vision and principles were adapted from the 2010 B-Line Opportunities and Challenges Study to guide the A-Line's land use and transportation planning and development, and to align objectives for rapid transit and transit-oriented development in the City of Hamilton.

VISION

The A-Line will . . .

BE REVITALIZED AND VIBRANT

- Contributes to a revitalized, diverse, progressive and growing city.
- Contributes to beautiful and walkable streetscape where local businesses, industries, shops, cafes, and services are accessible and thrive.
- Contributes to a vibrant downtown and a dynamic waterfront.
- Is an attractive place for new investment and growth – buildings, businesses and neighbourhoods are renewed and a growing population is supported through new development, services, and amenities.

BE CONNECTED AND WALKABLE

- Contributes to a high quality public realm and built environment.
- Has a vibrant pedestrian and cycling realm where public transit is dependable and accessible by walking.
- Links nodes, key destinations and neighbourhoods from the waterfront to the airport – strengthening the connection of neighbourhoods below the Escarpment with those above the Escarpment.
- Enables everyone to move around seamlessly, safely and comfortably by foot, bike, transit and car.


Atlanta, Georgia

INCLUDE COMPLETE STRONG AND SUSTAINABLE COMMUNITIES

- Contributes to more complete communities where more people can live, work, play and easily walk to and access transit and amenities.
- Contributes to a strong sense of community, reinforcing the character of neighbourhoods through design in the public realm and built form.
- Focus for higher residential, employment and built form densities and mixed uses that support transit (especially at nodes and transit stops).
- Reflects James Street's unique heritage.
- Contributes to a more sustainable future for the city – supporting non-automobile modes of transport, making efficient use of land, energy and resources, and an innovative sustainable built environment that encourages healthier lifestyles and high quality of life.
- Reflects pedestrian-oriented and transit-oriented development along the entire Corridor including neighbourhoods on the mountain where developments increasingly reflect smarter growth patterns that make more efficient and sustainable use of land.

BE DIVERSE

- Recognizes the diversity of neighbourhoods and includes a mix of housing, commercial, services, and amenities for people of all ages, incomes, household types, and abilities.
- Recognizes the diversity of the users of the system.
- The unique character of neighbourhoods, buildings and streetscapes are reinforced and celebrated.

PRINCIPLES

1. *The Corridor is a focus of community activity through the neighbourhoods.*
2. *Development reflects the character of the adjoining neighbourhoods creating unique places and spaces along the extent of the Corridor.*
3. *Development of the Corridor creates and maintains a high quality pedestrian and public realm.*
4. *Corridor development respects natural and cultural heritage resources.*
5. *Multiple modes of transportation are accommodated within the corridor and development along the corridor.*
6. *The Corridor supports transit and active transportation through built form and density.*
7. *The Corridor is a location for a variety of housing forms and tenures. Development within the corridor protects existing rental housing stock and expands the supply of rental housing.*
8. *The Corridor strengthens the connection between nodes and the Downtown as per the urban structure in the Urban Hamilton Official Plan.*

Creating a Historical Lens: James Street

Hamilton's first communities established along James Street - at the waterfront ("the Port community") and the downtown near Gore Park ("the Gore Park community"). Through continued development during this period, James Street became an important spine to the City.

Historically, James Street was highly pedestrian and transit-oriented; yet, in the mid-1950s the downtown gained a much stronger automobile-focus. More recently, Hamilton has made some significant progress in terms of revitalization efforts and the creation of a strong land use and transportation policy framework, which supports transit-orientated development and smart growth principles. The A-Line project is an opportunity to reclaim this pedestrian and transit focus along this important Corridor as part of revitalizing and building the City.

HISTORIC POSTCARDS SOURCE: JANET FORJAN-FREEDMAN, HTTP://WWW.HAMILTONPOSTCARDS.COM/PAGES/INCLINEJAMES.HTML

Promoting Transit-Oriented Development

A key strategy for capitalizing on the benefits of rapid transit is to encourage transit-oriented development (TOD). As outlined in the City of Hamilton's Transit-Orientated Development Guidelines, TOD is characterized by compact, mixed use development near transit facilities with high-quality walking environments. What sets transit oriented development apart from traditional/regular development is an increased emphasis on providing access to transit through mixed use areas with higher density, degree of activity and amenities.

The City of Hamilton is one of the first municipalities in the region to develop transit-oriented development guidelines. The guidelines include ten key principles which form a "TOD lens" that has been applied and integrated throughout this study.

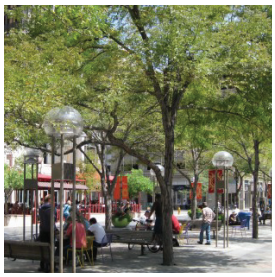
TOD 10 Key Principles:

PRINCIPLE 1:
Promote Place Making - Creating a Sense of Place

PRINCIPLE 2:
Ensure A Mix of Appropriate Land Uses

PRINCIPLE 3:
Require Density and Compact Urban Form

PRINCIPLE 4:
Focus on Urban Design

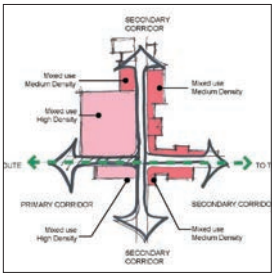


PRINCIPLE 5:
Create Pedestrian Environments

PRINCIPLE 6:
Address Parking Management

PRINCIPLE 7:
Respect Market Considerations

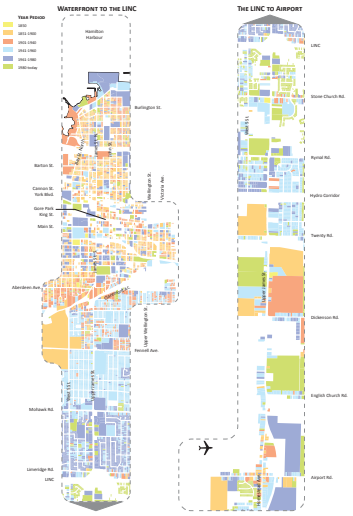
PRINCIPLE 8:
Take a Comprehensive Approach to Planning



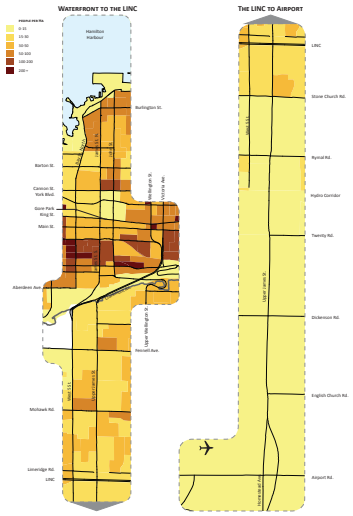
PRINCIPLE 9:
Plan for Transit and Promote Connections (for all modes)

PRINCIPLE 10:
Promote Partnerships and Innovative Implementation

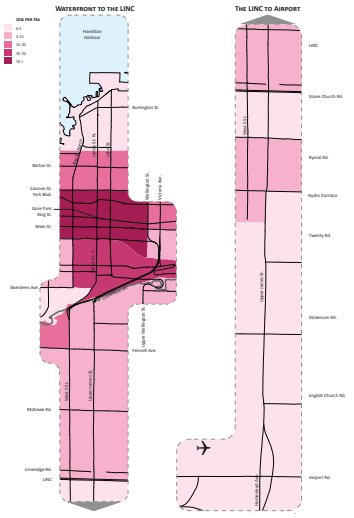
BUILDING CONSTRUCTION DATES



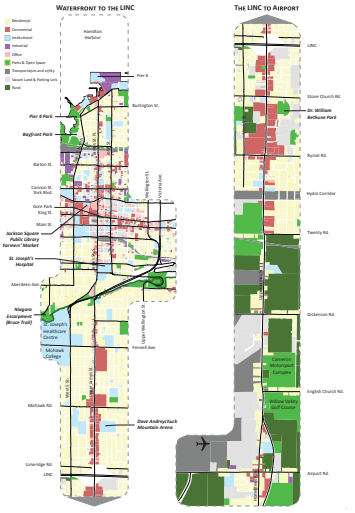
EXISTING POPULATION DENSITY



EXISTING EMPLOYMENT DENSITY



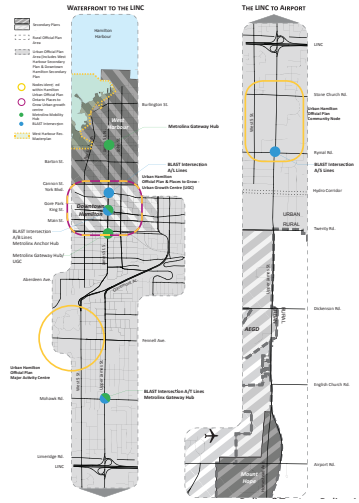
EXISTING LAND USES



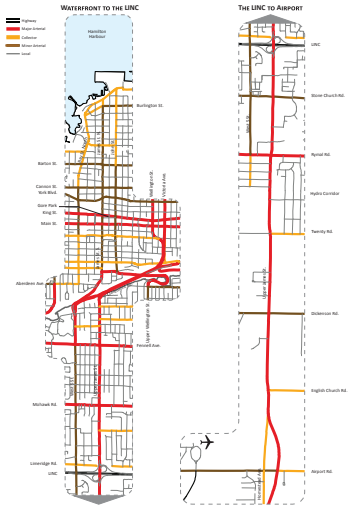
PLANNED LAND USES

Map Source: Urban Hamilton Official Plan (2009)

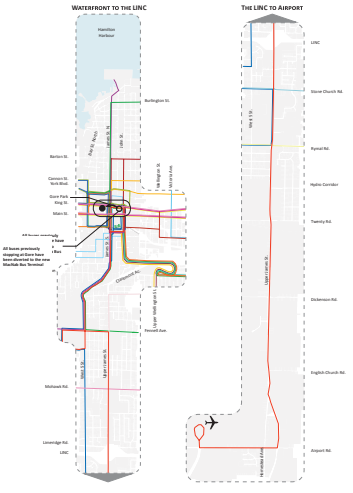
POLICY AREAS



ROAD HIERARCHY



EXISTING TRANSIT NETWORK



Existing Transit Network

EXISTING & PLANNED TRAILS/BIKE ROUTES

Map Source:
Hamilton Recreational Trails Master Plan (2007)

Analysis of Existing and Future Corridor Conditions*

*SMALL SCALE MAPPING PROVIDED FOR EXECUTIVE SUMMARY,
LARGER MAPS PROVIDED IN MAIN BODY OF THE REPORT

Ensuring an Integrated Study

As part of an integrated approach to developing rapid transit along the A-Line, this feasibility and opportunities study assesses both land use and transportation opportunities and challenges related to rapid transit, transit-oriented development and neighbourhood and corridor improvements. Further, this report is to be reviewed in conjunction with the economic potential and a business case assessment, both of which are being prepared under a separate cover.

This study has assessed existing conditions along the A-Line Corridor, including:

- Historic and policy context;
- Land uses and key destinations;
- Pedestrian, cycling, and transit infrastructure and street network;
- Public realm, heritage and historic resources; and,
- Physical and natural features.

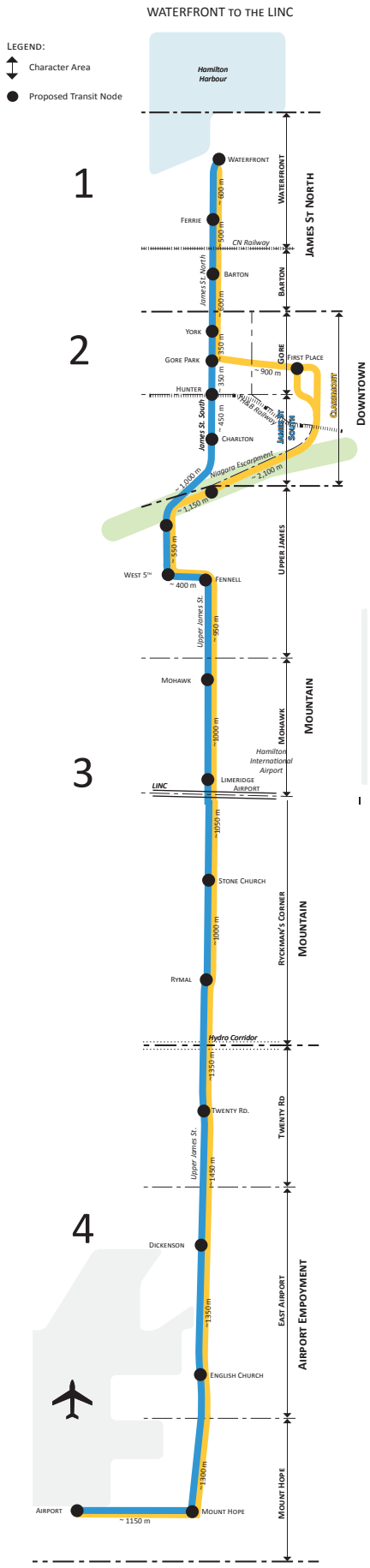
Numerous corridor maps were developed from available City data to assess existing and future conditions along the Corridor. From these, opportunities and challenges for transit-oriented development, corridor and neighbourhood improvements have been identified.

Land Use Approach

The following reflects the general approach to the A-Line land use analysis:

- **Focus on Nodes and Corridors:** This study focuses on the area within 400 metres on either side of the rapid transit route with a particular focus on proposed A-Line transit nodes, where the greatest scale of TOD (in terms of mixed uses and intensity) is proposed.
- **Respect Diversity along the Corridor**: To recognize the diverse neighbourhoods and areas, the Corridor has been divided into four sections in which "Character Areas" or areas with distinct qualities were identified along the Corridor. This study assessed opportunities within the character areas. The analysis identified existing stable neighbourhoods that should be protected and enhanced, as well as some areas that could benefit from greater change. Intensification should be accompanied by good urban design, reflect an appropriate scale, respect neighbourhood character and heritage resources, and take guidance from the Official Plan and other planning policy and guidelines.
- **Create a Pedestrian-Friendly Corridor:** Making the Corridor pedestrian and cycling-friendly is an important objective, in order to improve access and multi-modal connections to rapid transit, key destinations and amenities and encourage pedestrian and street-oriented development. "Special pedestrian areas" have been recommended at key locations — these are pedestrian areas where public realm improvements should be prioritized and reflect a higher than standard treatment.
- **Encourage Transit-Oriented Development:** Encourage land use, densities, urban design and public realm improvements that respond to the City of Hamilton TOD Guidelines.
- **Build a Strong Sense of Place:** Respect and strengthen the diverse Character Areas through station area design, built form, and public realm. Strengthen and enhance the existing urban fabric and natural features to create a strong sense of place along the Corridor.

LAND USE: SECTIONS AND CHARACTER AREAS



- **Support "Complete Communities":** Ensure TOD contributes to vibrancy of neighbourhoods, adding to the mix of uses (shops and services, housing, employment), amenities, and infrastructure within the same area so that people can live, work, learn, shop and play, walk, cycle, and take transit (in addition to driving).

Sections

To study land use and urban design opportunities, the corridor was divided into four sections (north to south):

1 **James Street North**: Waterfront to Cannon Street

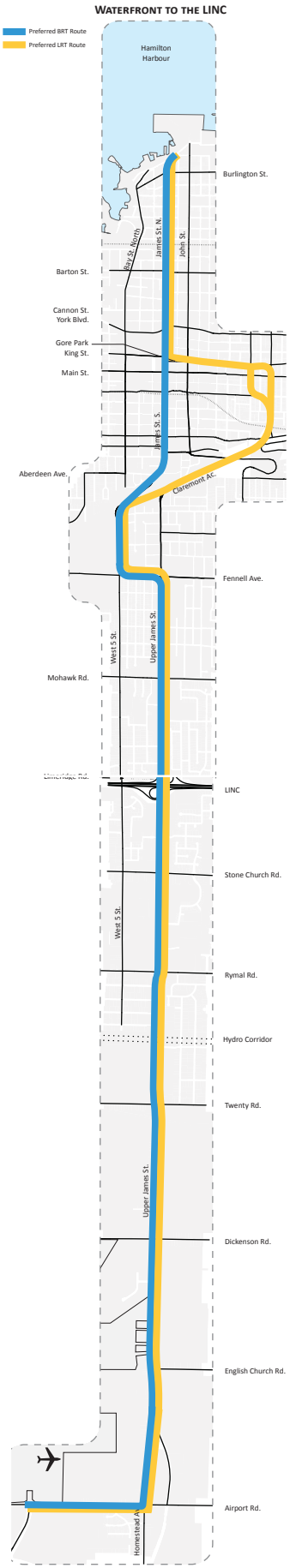
2 **Downtown**: Cannon Street to top of the Escarpment

3 **Mountain**: Top of the Escarpment to the Hydro Corridor

4 **Airport Employment**: Hydro Corridor to Airport Road

Through analysis of policy, history, and existing and future conditions, as well as through City staff and public consultation, ten character areas were identified along the potential BRT and LRT routes — with the Claremont character area replacing the James Street South character area in the case of LRT (see "Land Use: Sections and Character Areas" diagram in Section 3.2). Nineteen transit nodes have been identified along the potential BRT route, while eighteen nodes have been identified along the potential LRT route. The proposed nodes are also recommended potential locations for future rapid transit stops and should be further studied to determine exact location and design.

PREFERRED ROUTING
FOR BRT AND LRT



Transportation Approach

The following reflects the general approach to the A-Line transportation analysis:

Proposed Routing and Alignment

The potential A-Line routing and alignment was assessed as part of the study. Considerations for routing included:

- Contribution to overall project vision;
- How well they serve existing and future destinations – linking where people are travelling from to where they want to go;
- Demand – projected passenger numbers; and,
- Technical feasibility.

Routing and Technology Options

Seven options were assessed against the route considerations criteria with particular reference to the serving of key destinations and technical feasibility – including gradient and ability to use standard LRT vehicles.

Technical Feasibility

To go up and down the Niagara Escarpment the most direct route on the A-Line corridor is via James Mountain Road, which also serves the key destinations. However, the steep incline will pose a problem for LRT.

Route Option — BRT

BRT can use James Mountain Road and therefore that route is the recommended option for BRT. Ideally, to ensure that BRT is not delayed by the traffic, this would mean James Mountain Road being closed to other motorized vehicles. However, if this was considered unacceptable, the BRT could operate mixed in with other traffic but would then be subject to normal traffic delays.

Route Option — LRT

LRT systems are restricted to lower gradients, particularly for the difference in level here, and so a number of alternative LRT routes have been explored:

- Claremont Access
- Arkledun Avenue/Jolley Cut
- A tunnel under the Escarpment

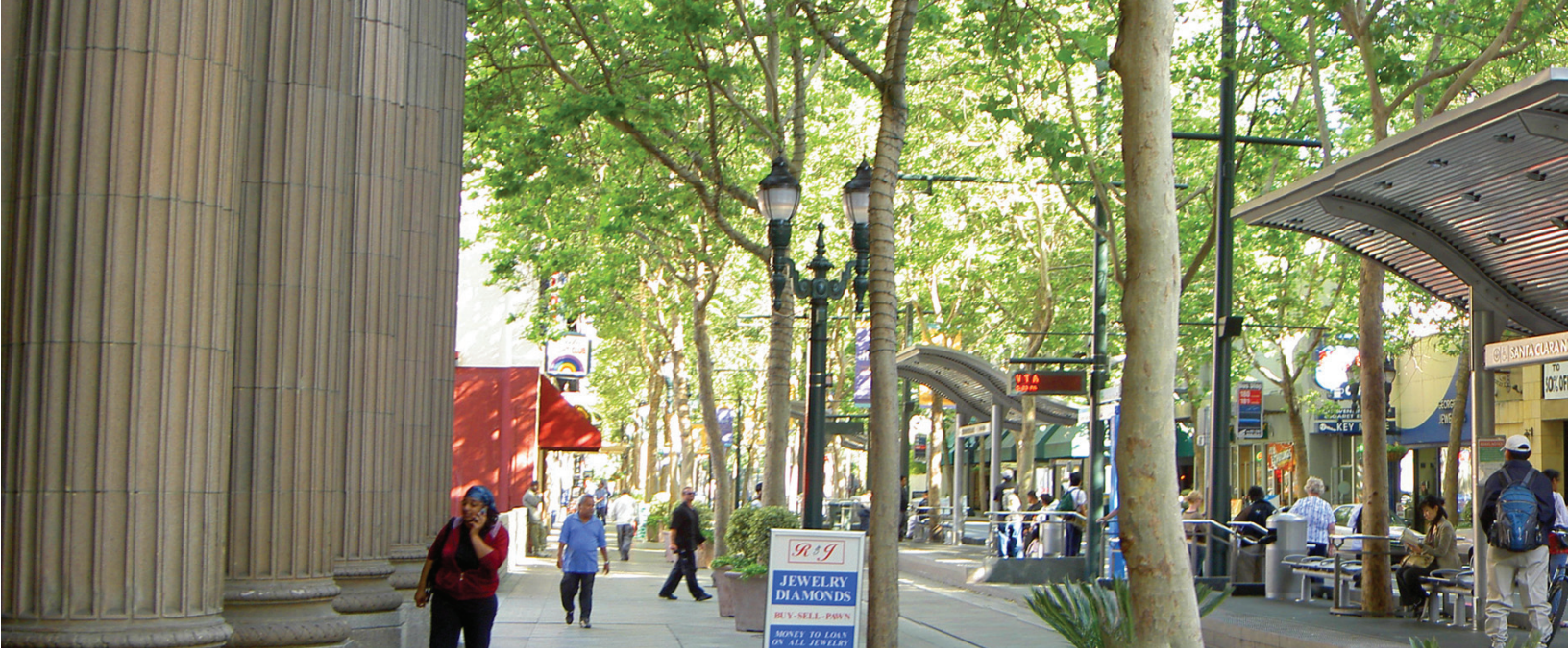
Each of these alternatives can be connected to the James Street/Upper James Street Corridor by various routes.

The route option which performed best against these factors was the Claremont Access route. Claremont Access route runs along West 5th Street to Mohawk College. An alternative option routing via Hunter Street, to serve the GO Station, and then on James Street to meet the B-Line at King Street was considered. However, this option was not preferred because it would require shared running on Hunter Street, which is currently quite narrow, and shared running in the northbound direction on James Street South.

Final Decision Factors — Route and Mode

The final decision to determine route and mode will be determined by weighing the factors identified in this report, along with the economic potential uplift and business case that either LRT or BRT on the preferred routes would deliver.

The Economic Potential Uplift and the A-Line Business Case Reports have been prepared and submitted under a separate cover. In considering the preferred mode option, and hence route, to be taken forward, it is likely that there will need to be some trade-off between competing factors - for example the performance and affordability of the mode against the level of funding available (or likely to be available), as well as the potential economic uplift they could deliver. In this respect, the final decision is about broader considerations than simply the technical feasibility or performance and is therefore expected to be decided by Council.



Implementation

This report concludes with a number of recommendations in terms of approach and potential next steps in order to capitalize on the identified opportunities.

Land Use

1. Take a nodes and corridors approach to phasing
2. Improve the public realm
3. Align and build-on existing TOD-supportive policies and review existing City processes
4. Conduct Further A-Line Studies and Update/Develop New Secondary and Corridor Plans
5. Develop stop area plans
6. Explore other planning tools
7. Other studies and initiatives

Santa Clara, California

Transportation

The A-Line Corridor can be constructed either in full from the Waterfront to Hamilton International Airport, or its implementation could be phased.

The analysis identified a series of phasing scenarios, which may be appropriate:

Phase 1 - Waterfront to Airport

Or

Phase 1 - Waterfront to Mountain Transit Centre (MTC)

Phase 2 - MTC to Airport

Or

Phase 1 - Waterfront to Mohawk College

Phase 2 - Mohawk College to MTC

Phase 3 - MTC to Airport

If a phased implementation approach is adopted, then the case for constructing the subsequent phases would need to be considered in more detail at that time, taking into account the ongoing development of the City and the changes in transport patterns which have occurred, including those arising from the presence of the A-Line first phase.


EXIT
STARBUCKS COFFEE
RAPIDTransit
Rapid Transit?
RAPIDTransit
Proposed Rapid Transit Network

1.0 INTRODUCTION

1.1 Hamilton's Rapid Transit Project

The City of Hamilton, with a population of over 500,000, has a rich history as a prominent manufacturing city that sits almost in the centre of the Greater Golden Horseshoe (GGH). Today, Hamilton has attracted a diverse local economic base however, like other North American cities, is challenged to grow in a sustainable way while maintaining a strong quality of life for its residents.

The City of Hamilton has been identified as a key growth location within the Province of Ontario's Growth Plan for GGH. Furthermore,the *Growth Related Integrated Development Strategy* (GRIDS), a made-in-Hamilton balanced growth strategy, forecasts that levels of population in the City of Hamilton are predicted to grow by 71% between 2006 and 2031. There are currently some areas of traffic congestion in the City during peak travel periods and with the forecast growth in population this is likely to deteriorate over time.

Rapid Transit (RT), when developed within an appropriate policy framework and land use planning strategy, is recognised to enhance the economic vitality and quality of life of a city. Specifically, RT can:

- create increased accessibility, higher land values and associated property tax income;

"RAPID TRANSIT IS A TREMENDOUS OPPORTUNITY FOR CITY-BUILDING".

– STAKEHOLDER PARTICIPANT

- help shape the future development of a city, allowing smarter growth and Transit Oriented Development (TOD), which promotes intensification and development that better serves the needs of the community;
- decrease auto use, reduce congestion and contribute to cleaner air and healthier lifestyles;
- help capitalise on planned population and employment growth, in particular helping to ensure that growth occurs at locations where transit provision and transfer are already provided or can be developed (approach known as TOD);
- serve areas of the city which are currently not well served by transit; and,
- act as a catalyst to further encourage housing and employment growth.

In the City of Hamilton, rapid transit development will contribute towards economic growth and competitiveness in the city. Improved transit access will be particularly important in facilitating future population and employment growth, identified as part of the GRIDS. Hamilton International Airport and Hamilton Harbour have been identified as Key Employment Areas and population growth centres include Downtown Hamilton, Stoney Creek, Waterdown, Ancaster and Dundas. In order to help facilitate this growth, King/Main and James Street have been identified as corridors for intensification within the Regional Transportation Plan.

FIGURE 4: B-L-A-S-T NETWORK IN THE BIG MOVE: REGIONAL TRANSPORTATION MASTER PLAN

1.2 Purpose of Study

It is hugely important for Hamilton to do this now . . . Rapid transit is a tremendous opportunity for city-building."

- STAKEHOLDER INTERVIEW PARTICIPANT

The City of Hamilton is proposing to develop a five line rapid transit network. The B-Line, from McMaster University to Eastgate Square, has been identified as the first route to be developed and the A-Line, the subject of this report, is the second line.

Both lines are identified as priority projects under Metrolinx's The Big Move Regional Transportation Plan for the Greater Toronto and Hamilton Area (November, 2008), with the B-Line identified as a "top 15 priority project" within the first 15 years. To capitalize on the important opportunity that rapid transit presents for city-building in Hamilton, a corridor planning process is underway for the B-Line Corridor to envision future land uses, built form and public realm. This study initiates the corresponding process in the case of the A-Line and considers the land use and transportation development opportunities of the corridor in an integrated way.

This report reviews existing conditions along the corridor and assesses initial land use and transportation opportunities and challenges relating to rapid transit, transit-oriented development and neighbourhood and corridor improvements. Within this context the appropriate rapid transit technology, Light Rail Transit (LRT) or Bus Rapid Transit (BRT) are recommended along with the Rapid Transit route(s) which best meet the opportunities.

This study will provide input into further work carried out simultaneously, which will identify the economic potential of transit investment on the A-Line. The results of this initial A-Line Feasibility and Opportunities Study, as well as the Economic Potential Study and Benefits Case Assessment (BCA) (prepared under separate covers) will be used collectively by the City to determine a recommended route and mode for the A-Line. Given the early development stage of the A-Line, assessments in this study are intended to demonstrate the anticipated relative performance of the opportunities and identify where potential trade-offs may arise. As the project develops, more detailed land use and transportation assessments will be required.

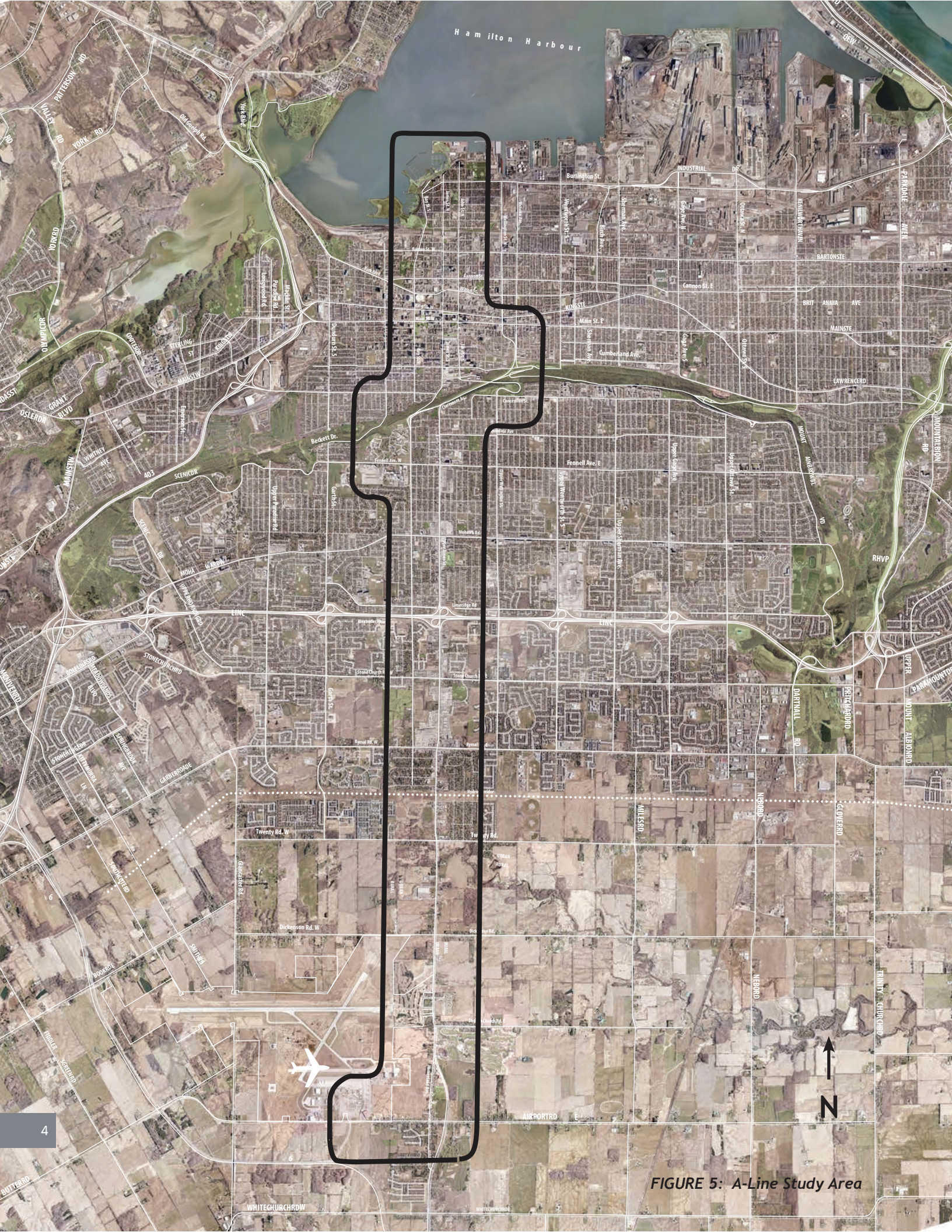
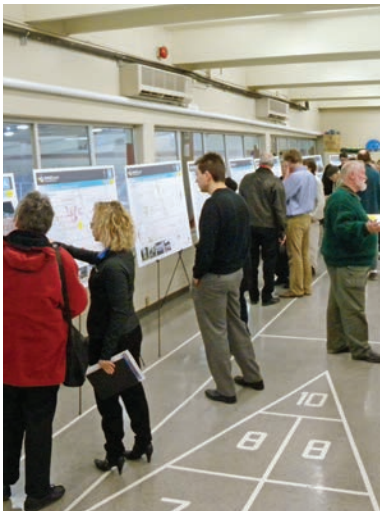


FIGURE 5: A-Line Study Area



1.3 Study Area

The A-Line, the subject of this report, generally follows the James Street / Upper James Street corridor from the waterfront, intersecting the B-Line at the heart of Downtown, then ascending the Niagara Escarpment and terminating at Hamilton International Airport (see Figure 1).

The study area is generally delineated as the area within 500 meters on both sides of James Street North, James Street South and Upper James Street. The overall route length is approximately 16 km.

The A-Line route includes the existing urban built-up area between the waterfront and Twenty Road. From Twenty Road to Hamilton International Airport, the corridor is predominantly greenfield and rural with land zoned for development within the urban boundary.

Although light rail transit (LRT) has been selected as the preferred mode for the B-Line, both LRT and Bus Rapid Transit (BRT) modes are considered for the A-Line in this study.

1.4 Approach

Recognizing that there are distinct places and destinations within the study area, as part of the analysis, "character areas" were identified along the A-Line and assessed for specific opportunities and constraints. Potential A-Line transit nodes are identified for locating rapid transit stops and focussing transit-oriented development.

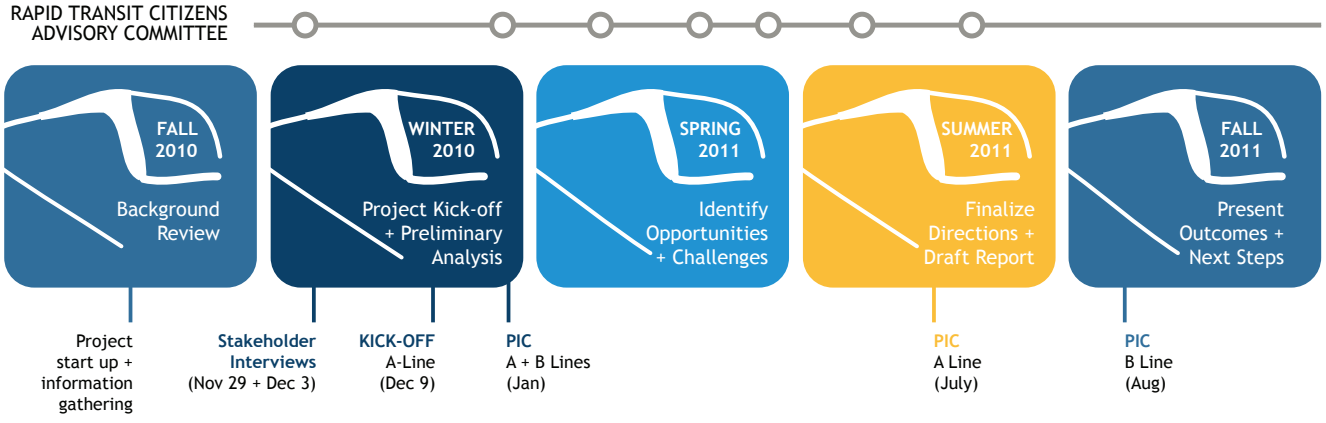
Informed by the urban planning-related opportunities and challenges, the study provides a comparative assessment of the rapid transit route options and technology choices. The assessment of the options is consistent with the Multiple Account Evaluation (MAE) approach used for the Metrolinx Benefit Cases, and was undertaken for the B-Line LRT Benefits Case. This previous work established that the A-Line could use LRT or BRT technology.

"THIS PROJECT HAS THE POTENTIAL TO BUILD-UP A GREAT SENSE OF COMMUNITY."
- STAKEHOLDER

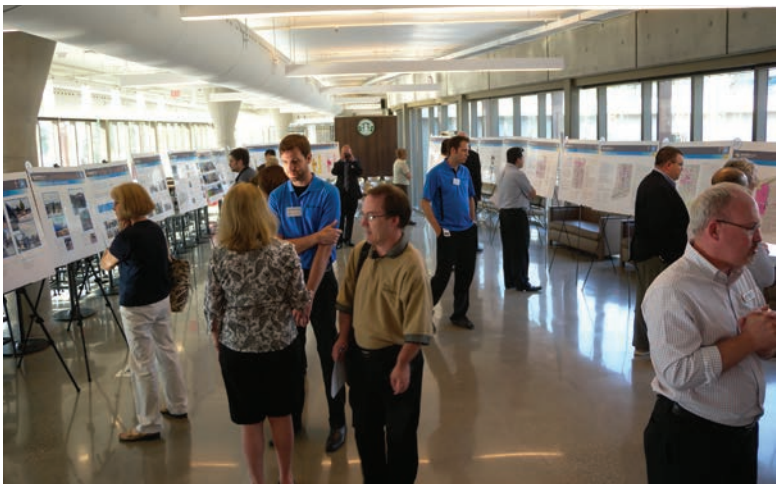
1.5 Public Process

The study included comprehensive consultation with both stakeholders and the general public. Stakeholder interviews were held between November 2010 and January 2011 to gain a "sample" of perspectives and to gain an understanding of existing conditions along the A-Line Corridor. The interviews were with a range of stakeholders, including City staff, neighbourhood associations, residents, local businesses,community groups, and educational institutions.

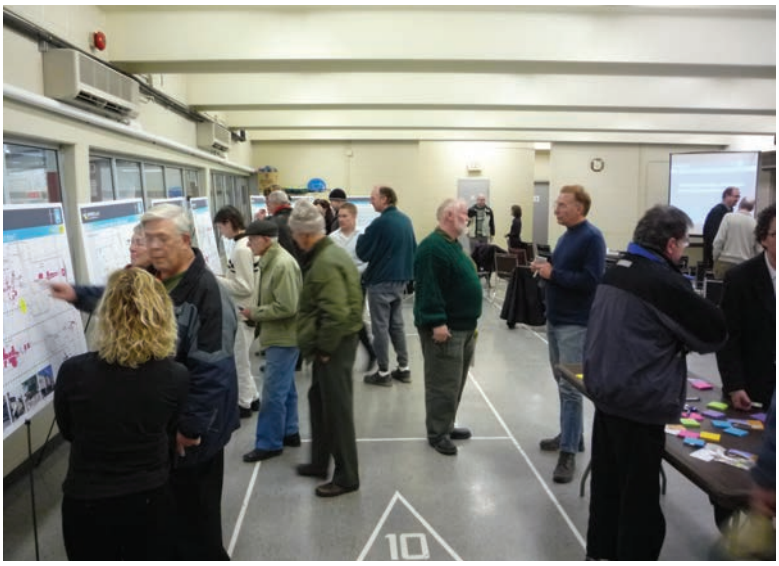
An A-Line Public Kick-Off Event was held on December 9, 2010, during which there was a presentation and opportunity for participants to contribute comments and ideas through interactive boards and discussion with the Project Team and Rapid Transit Citizens Advisory Committee (RTCAC). Information on the A-Line planning process was also represented at City of Hamilton rapid transit open houses and public meetings, together with the B-Line land use and rapid transit planning work. Regular updates were provided to the RTCAC, which provided feedback.



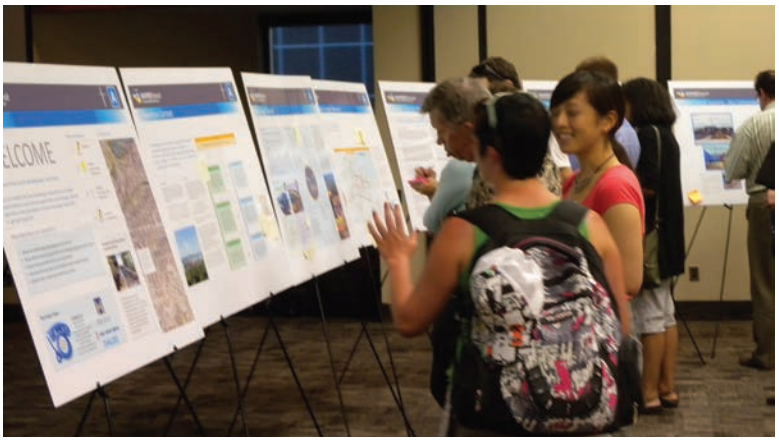
Rapid Transit Advisory Committee



PIC, Mohawk College

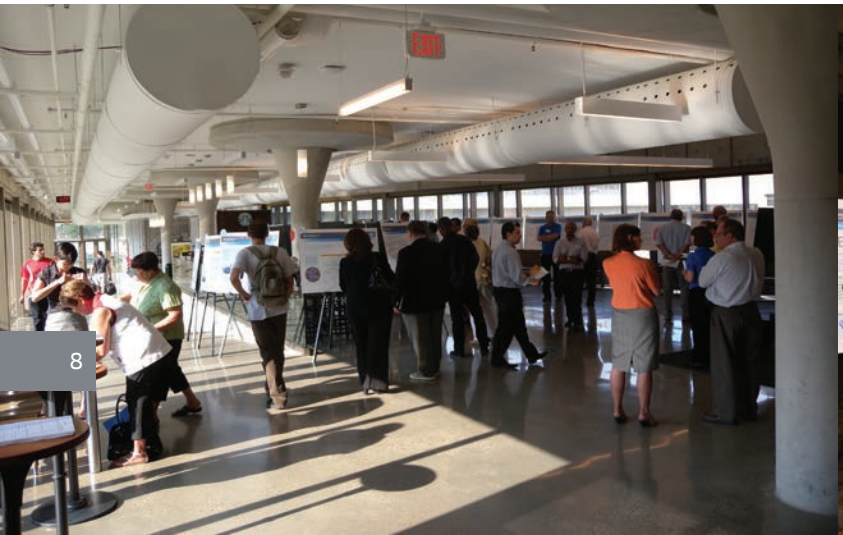


Public Kick-Off, Mountain Arena



PIC, Convention Centre


RAPIDTransit
What is your long term vision for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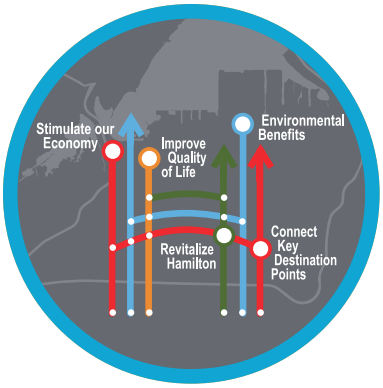


1.6 A-Line Corridor Vision and Principles

In July 2010, the City of Hamilton developed a vision and set of principles to guide the B-Line Opportunities and Challenges Study. The same vision and principles were adapted to guide the A-Line Opportunities and Challenges Study and are set out below. Vision statements specific to the proposed Character Areas along the A-Line are articulated in the Recommendation Section 3.0 of this report.

This public process has informed and shaped the A-Line Preliminary Design and Engineering Study. Key findings and recommended route options from this study were presented back to the public at Public Information Centres in July 2011.

A-LINE CORRIDOR VISION STATEMENT

The A-Line Corridor will . . .

BE REVITALIZED AND VIBRANT

- Contributes to a revitalized, diverse, progressive and growing city.
- Contributes to beautiful and walkable streetscapes where local businesses, industries, shops, cafes, and services are accessible and thrive.
- Contributes to a vibrant downtown and a dynamic waterfront.
- Is an attractive place for new investment and growth – buildings, businesses and neighbourhoods are renewed and a growing population is supported through new development, services, and amenities.

BE CONNECTED AND WALKABLE

- Contributes to a high quality public realm and built environment.
- Has a vibrant pedestrian and cycling realm where public transit is dependable and accessible by walking.
- Links nodes, key destinations and neighbourhoods from the waterfront to the airport – strengthening the connection of neighbourhoods below the Escarpment with those above the Escarpment.
- Enables everyone to move around seamlessly, safely and comfortably by foot, bike, transit and car.

INCLUDE COMPLETE, STRONG AND SUSTAINABLE COMMUNITIES

- Contributes to complete communities where more people can live, work, play and easily walk to and access transit and amenities.

- Contributes to a strong sense of community, reinforcing the character of neighbourhoods through design in the public realm and built form.
- Focus for higher residential, employment and built form densities and mixed uses that support transit (especially at nodes and transit stops).
- Reflects James Street's unique heritage.
- Contributes to a more sustainable future for the city – supporting non-automobile modes of transport, making efficient use of land, energy and resources, and an innovative sustainable built environment that encourages healthier lifestyles and high quality of life.
- Reflects pedestrian-oriented and transit-oriented development along the entire Corridor including neighbourhoods on the mountain where developments increasingly reflect smarter growth patterns that make more efficient and sustainable use of land.

BE DIVERSE

- Recognizes the diversity of neighbourhoods and includes a mix of housing, commercial, services, and amenities for people of all ages, incomes, household types, and abilities.
- The unique character of neighbourhoods, buildings and streetscapes are reinforced and celebrated.

A-LINE PRINCIPLES FOR CORRIDOR DEVELOPMENT

1. *The Corridor is a focus of community activity through the neighbourhoods.*
2. *Development reflects the character of the adjoining neighbourhoods creating unique places and spaces along the extent of the Corridor.*
3. *Development of the Corridor creates and maintains a high quality pedestrian and public realm.*
4. *Corridor development respects natural and cultural heritage resources.*
5. *Multiple modes of transportation are accommodated within the corridor and development along the corridor.*
6. *The Corridor supports transit and active transportation through built form and density.*
7. *The Corridor is a location for a variety of housing forms and tenures. Development within the Corridor protects existing rental housing stock and expands the supply of rental housing.*
8. *The Corridor strengthens the connection between nodes and the Downtown as per the urban structure in the Urban Hamilton Official Plan.*

These A-Line vision statements, in combination with the Principles for Corridor Development, provide guidance in which to carry out and focus the A-Line Opportunities and Challenges study. The study will be fundamental in realizing the City's vision and capitalizing on the benefits that rapid transit investment will bring.

1.7 Structure of Report

The structure of this document is as follows:

Report Sections:

- Chapter 2 outlines the history, existing conditions and considerations for the A-Line Corridor, as well as the policy context;
- Chapter 3 presents land use opportunities and constraints along the corridor;
- Chapter 4 sets out the route and options for LRT and BRT technologies, presents a Multiple Account Evaluation of the alternatives and set out recommended options and alignments;
- Chapter 5 presents implementation strategies and next steps; and,
- Chapter 6 provides definitions of key terms found in the study.

Appendices:

- Appendix A provides background information on the LRT and BRT technology options.
- Appendix B provides further information on the facilities to be provided at Mobility Hubs.
- Appendix C provides Illustrative Design Workbook 1 Alignments for the recommended LRT and BRT options.

1842 MAP OF HAMILTON

2

2.0 CONTEXT

"Rapid Transit is more than just moving people from place to place. It is about providing a catalyst for the development of high quality, safe, environmentally sustainable and affordable transportation options for our citizens, connecting key destination points, stimulating economic development and revitalizing Hamilton."

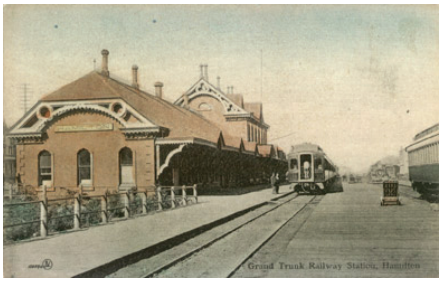
– RAPID TRANSIT VISION, CITY OF HAMILTON

This chapter sets out the historical, policy and land use context for the A-Line. Specifically, this chapter will provide an overview of the history and evolution of James Street, outline the policy and regulatory context, and detail the current land use characteristics of the A-Line corridor.

2.1 Historical Context – James Street

"It's more than a street. James is the cradle of Hamilton. It's where immigrants arrived, soldiers trained and where the unique personality of Hamilton was forged…"

– THE STORY OF JAMES, THE HAMILTON SPECTATOR, OCTOBER 30, 2010



The A-Line generally follows the James Street / Upper James Street corridor from the waterfront, intersecting the B-Line at the heart of Downtown, then ascending the Niagara Escarpment and terminating at Hamilton International Airport. As such, understanding the role of the James Street / Upper James Street corridor historically and how it has evolved to what it is today is an important part of understanding the existing conditions and the opportunities and constraints for this corridor.

James Street was named after the son of Nathaniel Hughson, who along with George Hamilton and James Durand, founded the City of Hamilton. After the war of 1812, George Hamilton, a settler and local politician, established the Hamilton town site in the northern portion of Barton Township. Several east-west roads were formed based on original Aboriginal trails, while north-south streets were formed based on a regular grid pattern. Streets were identified as "East" or "West" if they crossed James Street or Highway 6, while streets were "North" or "South" if they crossed King Street or Highway 8. By 1835, Hamilton's boundaries were extended eastward, as well as north and south along James Street to include the bay and the mountain area[2]. With this extension, James Street established Hamilton's first connection between the waterfront and Escarpment and became known as "Lake Road" since it led to Lake Ontario.

2 "Timeline of events in Hamilton", Wikipedia, http://en.wikipedia.org/wiki/Historicaltimeline_of_events_in_Hamilton%2C_Ontario#cite_note-ELLENFAIR2-66

ELECTRIC STREET CAR: JAMES STREET NORTH FROM LISTER TO NORTHEAST SIDE.

Incorporated as a town in 1833, then as a city in 1846, Hamilton grew, annexing parts of the Ancaster Township, the Saltfleet Township, and eventually all of the Barton Township. By 1960, Hamilton became part of the regional municipality of Hamilton-Wentworth.[3] Two communities developed along James Street in the early 19th century, near the Harbour ("Port Community") and around Gore Park ("Gore Park Community"). The Port and Gore Park Communities became well established neighbourhoods in 1840 to 1850.

In this same period of strong residential growth, major offices, including the Canada Life Assurance Company, the first life insurance company in Canada, were beginning to establish and cluster on James Street. This created the foundation of a robust Downtown commercial district.

Rail City – an Era of Growth

In 1854, the Great Trunk Railway Company completed Hamilton's first railway - the Great Western Railway - and established its first station at Stuart Street and Caroline Street. This railway advanced Hamilton's growth and turned the city into a major centre that was part of the North American immigration route. In 1875, the City of Hamilton's population was 30,000 and by the early 20th Century, the population had grown to 120,000.

After the World War I, the Great Trunk Railway Company was merged into the Canadian National Railway (CNR) company. Recognizing that Hamilton was experiencing immense growth, in 1928, the CNR decided to build a new railway station at James Street and Murray Street and new road bridges over the railway tracks for James Street, Bay Street, John Street, Catherine Street, and eventually, MacNab Street.

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3 Library and Archives Canada, "Cultural Landmarks of Hamilton-Wentworth". Chronology of the Regional Municipality of Hamilton-Wentworth. http://epe.lac-bac.gc.ca/100/200/301/ic/can_digital_collections/culturals_landmarks/twps.html.

This landmark station was completed and opened in 1931 and for years to come would be where many going to war would leave and return, and tens of thousands of immigrants from Italy, Portugal and other places in the world would arrive in Hamilton.[4] Many of these early immigrants started businesses along James Street North, which quickly became a culturally diverse and vibrant centre of the City where Hamiltonians lived, worked and played.

James Street was also where local government duties were administered for over a century. The City's 1839 market along James Street (by King Street) became the site of Hamilton's first town hall. The 1839 City Hall building was replaced by a stone building in 1888. City Hall operated in the 1888 building until 1960 when City Hall moved to its current location on Main Street.[5]

In response to the success and vibrancy of James Street, in 1875, the Hamilton Street Railway (HSR), the Transit Division of the City of Hamilton, began to operate horse-drawn public transportation – first along James Street and then on other city streets. Horses were replaced by the first electric street car in 1892 – the first two routes running on King Street East and James Street North. In the same year, to accommodate the City's growth and address the physical barrier that the Niagara Escarpment was between the lower lands and the mountain farmland, an incline railway was constructed along the mountain. This railway linked James Street with Caledonia Road (Now Upper James Street) with a lower station and an upper station. The steam-powered line successfully connected the agricultural lands to the city markets, so that the farmers could easily transport their produce. In 1942 the incline railway was dismantled and its steel was used for war efforts.

As illustrated in the historic postcards and photographs to the left, the hundred year period between the 1850s and 1950s was Hamilton's "streetcar glory days". Photos show a vibrant pedestrian-oriented James Street with many people walking and taking the street car – pedestrians, transit and vehicles seem to be effectively integrated. The public realm is marked by generous sidewalks, street furniture, trees and landscaping. There is also a compact urban built form with a strong urban frontage, street-oriented retail and interesting storefronts. Stops are located in front of stores and community gathering places such as the Public Market.

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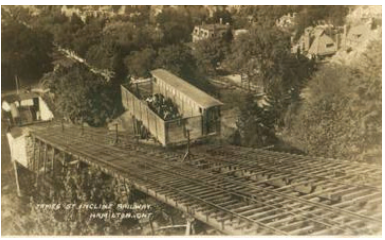
4 Tom Luton, "CNR James Street Station/LIUNA Station," Hamilton Transit History. http://hamiltontransithistory.host-ed.net/LIUNA.html.

5 Mark McNeil, "A Street with a History", Hamilton Spectator (Saturday, October 30, 2010): J3



HISTORIC POSTCARDS AND PHOTO SOURCE: JANET FORJAN-FREEDMAN, HTTP://WWW.HAMILTONPOSTCARDS.COM/PAGES/INCLINEJAMES.HTML

The streetcar supported downtown retail and added to the vibrancy and activity on the street, while enabling people to effectively walk and take transit in and around the Downtown core.

Accompanying the proliferation of rail and streetcar use, a number of prominent church, civic and commercial buildings developed along the corridor, reinforcing James Street as the commercial and civic spine of the city. To respond to this growth, a second railway station was built at Hunter Street and James Street in 1932. This station is now the Hamilton GO Centre.

The last streetcars ran in 1951 when they were replaced by trolleys. Although there are no more streetcars, the Hamilton Street Railway, the present day bus-operator in the City, continues using its historic name, capturing the legacy of the streetcar days. The end of the streetcar made way for a new era in Hamilton – one focussed on the automobile.

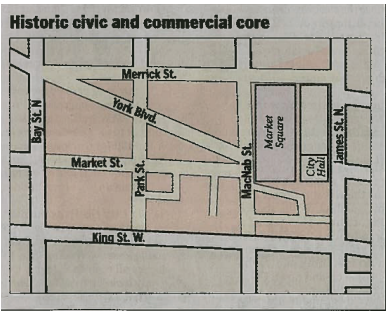
Automobile-Oriented Growth: Downtown Renewal and the Suburbanization of Upper James

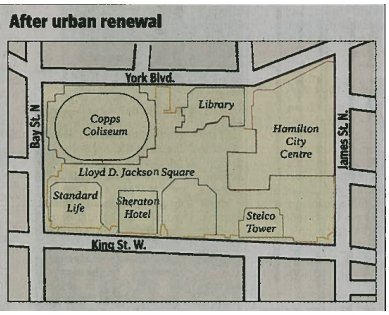
In the 1950s and 1960s, Hamilton experienced a pattern of growth not dissimilar to what was happening in other Canadian cities at that time – the suburbanization of the city, which included a shift from building the city around pedestrians and transit, to

DID YOU KNOW?

HAMILTON'S "FIRSTS" ON JAMES STREET...

- Early 1800s: Hamilton's first neighbourhoods established along James Street.
- 1835: Hamilton's first connection between the Bay and the Escarpment was established on James Street.
- 1835: Christ Church, the First Anglican Church in Hamilton is built on James Street.
- 1837: Hamilton's first industry, the McQuesten foundry was built near Merrick Street.
- 1839: The City's first public market is established at James North Street and the old York Road. The Market becomes Hamilton's first Town Hall.
- 1872: Bank of Hamilton's head offices were first established at King and James Streets.
- 1875: James Street was the location for the first wooden walkway and the first horse-drawn tram line in Hamilton.
- 1886: The first indoor commercial mall in Canada is built as the Lister Block building on the corner of James Street and King William Street. Together, the market and Lister Block building create Hamilton's first commercial district on James Street.
- 1888: The first City Hall is built on James Street, replacing the Market Town Hall.
- 1893: The first large department store in Hamilton "the Right House" was built.
- 1880 – 1900s: James Street was the first centre of arts and culture as home to the city's first opera house, grand theatres and luxury hotel.
- 1892: Hamilton's incline railway is built to enable movement from the base of the escarpment to the top of the Escarpment (Lower City to Upper City).
- 1929: Hamilton's first skyscraper - the Pigott Building - was built at James Street and Main Street.





FROM THE HAMILTON SPECTATOR, "A BOLD VISION FOR DOWNTOWN RENEWAL", OCT 30, 2010

building the city around automobiles.

In the 1950s, growth moved above the mountain areas, creating a distinct suburban grid pattern around Upper James Street to Fennell Avenue. Long blocks and large development parcels characterized the emerging suburbs, made of low-density single-family residential homes and automobile-oriented commercial development. The continuous proliferation of suburban malls and big box retail on the mountain southward along Upper James Street competed with the pedestrian-oriented historic Downtown Commercial District that once served the entire city.

In the efforts to "save" Downtown, in 1960, Mayors Lloyd Jackson and Vic Copps set forth an ambitious vision for downtown renewal which eventually led to the relocation of City Hall to Main Street the following year. There is a view that the decision to move City Hall was made in order to capture traffic entering the city on Main Street from the imminent construction of Highway 403. By moving City Hall, the focus of downtown shifted from James Street to Main Street.

> *"Coming into Hamilton on York meant motorists came upon the downtown at James. City Hall was there as well as the market. The entrance to the city led to the heart of the city. But coming in on Main Street, James was just another street".*[6]

The old City Hall on James Street was demolished to enable expansion of Eaton's department store and the once lively street-oriented farmers' market was moved underground to the parking level to make way for a new multi-phase Jackson Square shopping mall and complex. To build this complex, a significant amount of the historic building stock in the downtown core was demolished and some streets were also eliminated and re-aligned. The historic civic and commercial core was therefore drastically transformed during this period.

"This 'renewal' process, and the elimination and realignment of the streets around these new mega complexes not only resulted in the elimination of dozens of small businesses, but also exacerbated the traffic and parking problems downtown. Ultimately, people still preferred to shop and park free in the 'burbs', and the economic decline of the downtown continues to this day…there are certain historical ironies in this story…the people-friendly plaza complex that was to include City Hall, Hamilton Place,… Jackson Square…ended up being fragmented by fast-moving, one-way traffic on Main Street and King Street."

- Bill Manson, local historian

6 Mark McNeil, "A bold vision for downtown renewal," The Hamilton Spectator (October 30, 2010): J6

2.2 Policy Context

There are several key policy documents that set the direction for growth and transport provision in Hamilton over the next twenty years. At the strategic level, Metrolinx (the agency tasked with improving the coordination and integration of all modes of transportation in the Greater Toronto and Hamilton area) has produced a *Regional Transportation Plan*, *The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area* (2008), which creates a common vision for transportation in the region. At the municipal level, the *Urban Hamilton Official Plan* (2009) and the *Growth Related Integrated Development Strategy (GRIDS)* (2006) set the context for growth for the City of Hamilton as a whole, whilst the *Hamilton Transportation Master Plan* (2007) sets the policies and strategic direction for transportation in the City over the next 30 years. Secondary Plans provide direction on development, transportation, built form and urban design for more specific areas of the city, such as the Downtown and West Harbour areas.

Figure 5 provides a summary of the key plans relevant to this document. In the following section, each plan and its relevance to the A-Line proposals is looked at in turn. Further policy documents, are also included in order to inform the land use assessment of the A-Line corridor outlined in Section 3.0.

Return to a Transit-Oriented City

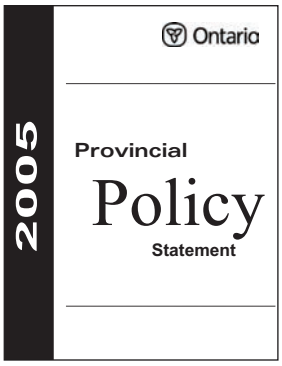
As highlighted above, James Street was once highly pedestrian and transit-oriented; yet in the mid-1950s, the downtown gained a much stronger automobile-focus. More recently, Hamilton has made some significant progress in terms of revitalization efforts and the creation of a strong land use and transportation policy framework, which supports transit-orientated development and smart growth principles.

The historical lens to James Street is important to understanding its present and future and its opportunities and challenges. The introduction of A-Line rapid transit presents an immense opportunity to reclaim James Street's legacy as a vibrant pedestrian and transit-oriented spine in the City and ultimately, to build sustainable and complete communities in

Hamilton.

2.2.1 Provincial and Regional Plans

Provincial and regional plans take a strategic approach for the development of the Greater Toronto Area and Hamilton (GTAH), recommending measures to guide and enhance development in a manner that achieves growth whilst retaining the character and environment of the area.



Provincial Policy Statement (2005), Province of Ontario

The *Provincial Policy Statement* was adopted as the long term vision for the Province of Ontario in 2005. It provides direction on matters related to provincial land use planning and development. The *Planning Act* requires that all decisions affecting land use planning matters be consistent with the *Provincial Policy Statement*.

Among its key objectives, the *Provincial Policy Statement* seeks to build strong communities, encourage more efficient and effective use of land and infrastructure with a mix of land uses, sustain a clean and healthy environment, conserve natural and cultural heritage resources, and ensure a strong economy through employment and residential development opportunities.

Provincial Plans:
- Places to Grow - A Growth Plan for the Greater Horseshoe (2006)

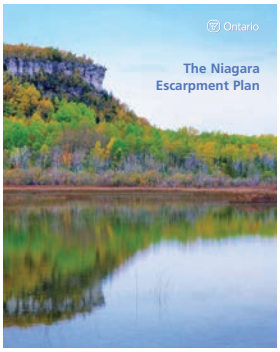
Metrolinx Plans:
- The Big Move - Transforming Transportation in GTHA (2008)
- Green Paper 2 - Mobility Hubs (2008)
- Mobility Hub Guidelines for the Greater Toronto and Hamilton Area (2011)

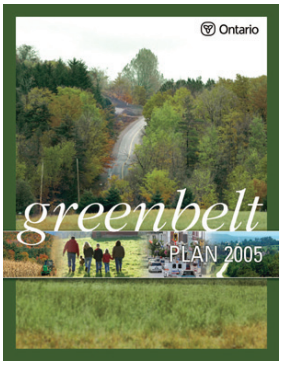
Municipal Plans:
- GRIDS (2006)
- Rural Hamilton Official Plan (2006)
- Urban Hamilton Official Plan (2009)
- Hamilton Transportation Master Plan (2007)
- Hamilton Port Authority Land Use Plan (2002)
- Hamilton Airport Master Plan (2004)
- Downtown Hamilton Secondary Plan
- West Harbour - Setting Sail Secondary Plan

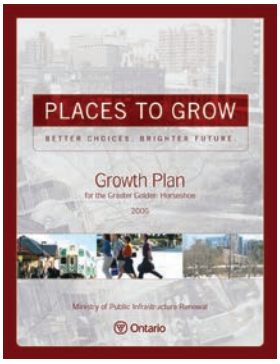
Planning Directions:
- Downtown Transportation Master Plan
- Downtown Secondary Plan Design Strategy
- Downtown Heritage Character Zone Design Guidelines
- TOD Guidelines (2010)

Street Masterplans:
- Traditional Streets (individual streetscape masterplans)
- Mobility Streets (individual streetscape masterplans)

FIGURE 5: KEY POLICY DOCUMENTS







It is important to note that the Province is currently undertaking a review of its land use policies within the *Provincial Policy Statement*. The intent of the review is to ensure that the Province's land use planning policies are effectively protecting Ontario's interests.

Niagara Escarpment Plan (1985, last amended 2005), Niagara Escarpment Commission, Province of Ontario

The *Niagara Escarpment Plan* includes policies for seven land use designations (Natural, Protection, Rural, Recreation, Urban, Minor Urban and Mineral Resource Extraction). It provides development criteria and establishes objectives for the Niagara Escarpment Park System. The plan's overall goal is to protect the Niagara Escarpment as an important natural and cultural heritage resource in the region and to facilitate a balance between preservation, recreation and development.

Protecting the Greenbelt: The Greenbelt Plan (2005), Province of Ontario

The *Greenbelt Plan* is a foundational plan to *Places to Grow*, Ontario's Growth Plan for the Greater Golden Horseshoe (GGH) (see summary below). The *Greenbelt Plan* determines where urbanization and development should not occur in order to permanently protect the agricultural land base and ecology of the GGH. The Plan complements and includes land included in the *Niagara Escarpment Plan*.

Places to Grow: Growth Plan for the Greater Golden Horseshoe, Province of Ontario (2006)

Responding to the Provincial direction to strategically focus and encourage smart growth in the GGH, *Places to Grow* is a 25-year plan that seeks to strategically manage growth in urban areas by focusing development within the "built-up boundary", urban growth centres (i.e. downtown Hamilton), major transit station areas, and intensification corridors (i.e. A-Line, B-Line).

- **Built-up boundary:** Limits of the developed urban area as defined by the Minister of Public Infrastructure and Renewal in accordance with Policy 2.2.3.5. of Places to Grow.
- **Urban Growth Centres:** Urban Growth Centres are identified in Schedule 4 of Places to Grow and are to be planned according to Policy 2.2.4. They are to be focal areas for investment in institutional and region-wide public services, commercial, recreational, and cultural and entertainment uses. They are also to support major transit infrastructure and accommodate a significant

share of population and employment growth in the region, acting as high density major employment centres attracting provincially, nationally, or internationally significant uses.

- **Major transit station areas:** The areas in and around higher order transit stations within settlement areas including and around a major bus depot in an urban core. Major Transit Station Areas are to support increased residential and employment densities and mixed uses.
- **Intensification Corridors:** Intensification areas along major roads, arterials or higher order transit corridors that have potential to provide a focus for higher density mixed-use development consistent with planned transit service levels. Intensification corridors will accommodate local services, including recreational, cultural and entertainment uses.

The GGH area includes the Cities of Hamilton and Toronto and urban areas of Oshawa and Niagara. The GGH area is identified as one of the fastest growing regions in North America. It is essential that the projected growth for this area is planned and that growth occurs in suitable locations that have good transport links. The economy of the GGH is quite diverse, supporting such sectors as manufacturing and information technology. In addition, agriculture plays an important role in the economy and one of the main objectives of the *Growth Plan* is to ensure agricultural land and the GGH's natural heritage is safeguarded from development.

There are several key principles which underpin the Growth Plan. Those that are relevant to this study are as follows :

- Build compact, vibrant and complete communities;
- Plan and manage growth to support a strong and competitive economy;
- Optimize the use of existing and new infrastructure to support growth in a compact, efficient form; and,
- Provide for different approaches to managing growth that recognize the diversity of communities in the GGH.

Further, there are several areas which will form the focus for future growth, these include:

- **Intensification of the existing built up areas** – By 2015, a minimum of 40% of all residential development occurring within each municipality will be within the built-up area. Density targets are also set within the plan for each municipality.
- **Urban Growth Centres** – These centres will have a target density of 250 residents and jobs combined per hectare.
- **Major transit station areas and corridors for intensification** – These will be designated in official plans to achieve an increase in residential and employment densities that support and ensure the viability of existing and planned transit service levels and achieve a mix of residential, office, institutional and commercial development wherever appropriate. Similarly, the UHOP is based on a nodes and corridor approach
- **Employment Lands** – Employment lands will provide for a mix of employment uses, a diversified economic base, enable protection of employment areas for current and future uses, and including necessary infrastructure to support current and forecasted employment needs.

"NEW URBANISM IS REALLY LIKE OLD URBANISM IN HAMILTON – IT IS ABOUT RETURNING TO THE BASIC PRINCIPLES OF WHAT MAKES THE CITY WORK".

– STAKEHOLDER PARTICIPANT

- **Major Office Development** – Major office development should be located in urban growth centres, major transit station areas of areas with existing frequent transit services or where a transit service is planned.
- **Greyfields** – These are usually, but not exclusively, uncontaminated, former commercial properties that may be underutilized, derelict or vacant.
- **Designated greenfield areas** – Areas within settlement areas that are not built-up areas. Where a settlement area does not have a built boundary, the entire settlement area is considered a designated greenfield area. Greenfield areas have been identified for development and will be expected to achieve a minimum density of 50 residents and jobs combined per hectare.

In regards to transportation, the Growth Plan sets out several objectives for the development and expansion of transportation corridors . These are to:

- Ensure that corridors are identified and protected to meet current and projected needs for various travel modes;
- Support opportunities for multi-modal use where feasible, in particular prioritizing transit and goods movement needs over those of single occupant automobiles;
- Consider increasing opportunities for moving people and goods by rail where appropriate;
- Consider separation of modes within corridors where appropriate; and,
- For goods movement corridors, provide linkages to planned or existing intermodal opportunities.

The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area (November, 2008), Metrolinx

In June 2007, the Province of Ontario announced the *MoveOntario 2020* vision, a multi-year rapid transit action plan for the Greater Toronto and Hamilton Area. The A-Line Corridor was one of the 52 projects identified by *MoveOntario 2020*. Building on this action plan, Metrolinx developed and adopted *The Big Move* as the Regional Transportation Plan (RTP) in 2008.

The potential regional rapid transit network identified in the RTP includes expansion of the express and regional rail network

to serve Niagara, together with proposal for rapid transit routes to link Downtown Hamilton with McMaster University, Hamilton International Airport and the former town of Ancaster. This Plan identifies a future rapid transit network for Hamilton consisting of five lines - together called the "B-L-A-S-T" network (as shown in Figure 7). The B-Line and A-Line have been identified for completion within 15 years. Since publication of *The Big Move*, development work on the B-Line has progressed and this report initiates the start of the corresponding process for the A-Line.

The RTP identifies several key challenges facing the GTAH, including geographical challenges. Specifically, the challenge relates to the physical layout of the region, with its dispersed settlement pattern and population density that make car use essential in many instances. The RTP suggests that congestion in city centres is likely to become more severe over the coming decades and years of under investment have resulted in disconnected and varied transit services in some places. Currently, the road and highway system is inefficiently used and, given the population growth planned for the GTAH, this is likely to result in increased congestion problems in the future.

In addition to congestion issues, the RTP states that the transportation system needs to respond to changes in employment and provide for those who cannot afford or choose not to own a car. The RTP also needs to respond to growing trends, such as people travelling further distances more frequently as part of their job. Further, building communities that are pedestrian, cycle and transit supportive will also be important to delivering the transportation goals of the RTP. A summary of the key challenges facing the GTAH and how rapid transit can help to address these challenges are identified in Table 1.

Linked to the development of transit-friendly communities is the development of a system of connected Mobility Hubs. The location and characteristics of these hubs is discussed in further detail in *Green Paper 2 – Mobility Hubs* (see Next page).

Challenge	Rapit Transit Response
Accommodating population growth	Ensure rapid transit system is designed to serve both current and future population centres.
Increasing reliance on cars	Rapid transit needs to offer a high quality, reliable alternative to car travel, serving key destinations.
A region designed for cars	Rapid transit system should be designed with priority, and where relevant, separation from cars and general traffic.
Congestion	Provide rapid transit with priority at junctions and ensure that it offers real journey time advantages over travel by car.
Disconnected and varied transit services	Development of multi-modal transit hubs and nodes where rapid transit can provide interchange with existing local and long distance transit services.
Years of insufficient investment	Rapid transit can act as the catalyst for investment in neighbourhoods and interchange facilities along the proposed route.
Inefficient use of the existing road and highway system	Roadspace reallocation to provide a dedicated rapid transit route can offer an opportunity to improve the efficiency of the highway network.
Ensuring economic competitiveness for future generations	Rapid transit can help to facilitate economic growth by improving links between key employment centres such as Hamilton International Airport Employment Growth District and Downtown.
Lack of options in areas of higher social need	The rapid transit system can be designed to provide links to areas of higher social need. In particular linking areas of higher social need with key employment areas and local services (including hospitals and health centres) will help to improve transport options.
Protecting agricultural lands and natural areas	Rapid transit can help to reduce the number of car journeys and therefore transport related emissions in environmentally sensitive areas. Hamilton planning policy already protects the agricultural areas bounding the City from development through use of Green Belt policy protection.

TABLE 1: KEY TRANSPORTATION CHALLENGES FOR THE GTHA

The Big Move also intends to improve transport options and connections for people who live in areas of Social Need. Figure 6 illustrates that within the Greater Golden Horseshoe area, Hamilton has areas that are defined as having 'high need' on the basis of the six indicators used to measure social need. The indicators used are as follows:

- Proportion of single parent families
- Proportion of people aged over 15 who are classified as low income (the threshold for these changes)
- Proportion of people aged over 20 who have not completed high school
- Proportion of total income that comprises government transfer payments
- Proportion of active labour force that are unemployed
- Proportion of population over the age of 65

The figure further illustrates that Downtown Hamilton has the highest levels of social need within the region. Based on the analysis provided in *The Big Move*, it can be argued that rapid transit on the A-Line would provide improved connections to/from this area and in doing so, improve the transport options and access to services and employment for those with high levels of social need.

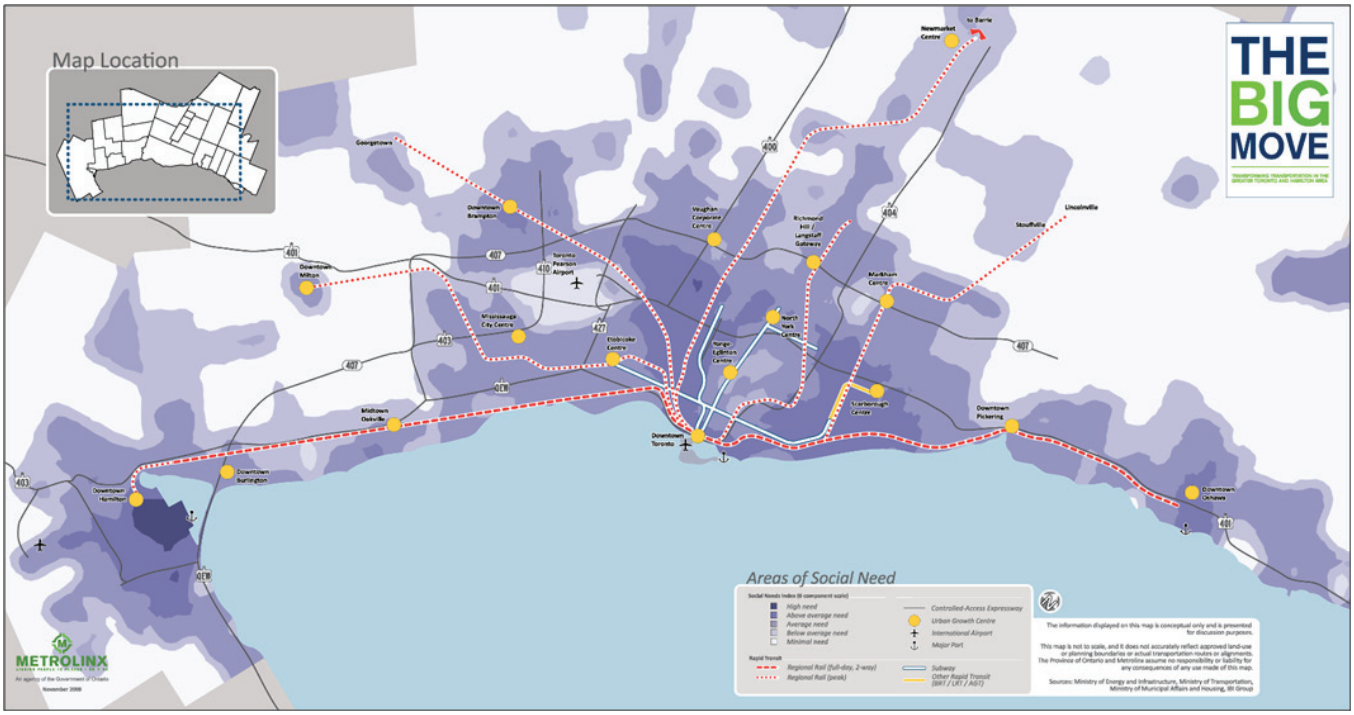


FIGURE 6: AREAS OF SOCIAL NEED

FIGURE 7: PROPOSED B-L-A-S-T NETWORK

"YOU CAN ARGUE TRAFFIC FLOW OVER AND OVER AGAIN UNTIL THERE IS NO MORE TRAFFIC BECAUSE NO ONE LIVES THERE ANYMORE."

– STAKEHOLDER INTERVIEW PARTICIPANT

Green Paper 2 - Mobility Hubs - Development of a Regional Transportation Plan for the Greater Toronto and Hamilton Area (2008), Metrolinx

Mobility Hubs are key components of the aforementioned Regional Transportation Plan, *The Big Move*, but the idea of Mobility Hubs is that they are more than just transport interchanges – they are destinations and centres of activity, encompassing entertainment, shopping, recreation, family services and other amenities. Mobility Hubs are central to the concept of transit-oriented development (TOD). The Hubs must be located in areas where a significant density of people work and live nearby and consist of a mix of uses that promotes public transport usage over the private automobile. Currently, in many cities within the GTHA, employment and housing densities are too low to support efficient transit, especially in the more suburban areas outside city centres. Central to the concept of Mobility Hubs is that transit should act as a driver for future land-use decisions and create further development opportunities. In the GTHA currently, the frequency levels of transit services do not act as a driver to development but a high frequency, dedicated light rail or bus rapid transit system could act as a catalyst to regeneration and growth.

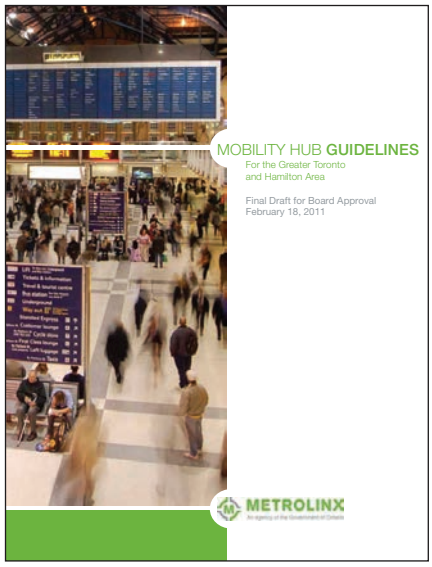
The facilities to be provided at Mobility Hubs are also detailed within Green Paper 2 and are reproduced in Appendix B.

- Several different types of Mobility Hubs are identified within the Green Paper 2, which are:
- **Primary Hubs** - significant regional city centres. These include significant regional city centres with the potential for the highest levels of population and employment densities and that generate the highest levels of travel demand to and from these centres, including subway stations and some urban growth centres.
- **Secondary Hubs** - major activity centres. These are functionally important gateways with inter-regional connections, such as airports, emerging centres, universities and colleges.
- **Tertiary Hubs** - major transit stations. These include all stations on a higher-order line not included in the above definitions.

There are several candidate Mobility Hubs, as outlined in the Metrolinx *Green Paper #2: Mobility Hubs*, identified within the Hamilton area. These are detailed in Table 2 below.

Location	Type	Current state of maturity	Potential for growth
Downtown Hamilton	Urban growth centre	Mature	High
Hamilton International Airport	Unique destination	N/A	N/A
McMaster University	Unique destination	Planned	High
Mohawk College	Unique destination	N/A	N/A

TABLE 2: POTENTIAL MOBILITY HUBS



Mobility Hubs Guidelines for the Greater Toronto Area and Hamilton Area (February, 2011, Draft for Board Approval), Metrolinx

In February 2011, Metrolinx released its *Mobility Hubs Guidelines*, which builds on the 2008 Green Paper 2 and provides more specific information and requirements for Mobility Hubs in the GTAH, including the mobility hubs along the A-Line.

As outlined in the guidelines document, Mobility Hubs are major transit station areas, as defined in the Growth Plan for the Greater Golden Horseshoe, that are particularly significant given the level of transit service that exists and/or is planned and the development potential around the stations. Mobility hubs are places of connectivity between regional rapid transit services, and where different modes of transportation, from walking to high-speed rail, come together. They have, or are planned to have an attractive, intensive concentration of employment, living, shopping and enjoyment around a major transit station.

To be identified as a Mobility Hub, a major transit station area must be located at the interchange of two or more current or planned regional rapid transit lines as identified in the RTP, and be forecasted in the RTP to have 4,500 or more combined boardings and alightings in the morning peak period in 2031. In addition, these areas are generally forecasted to achieve or have the potential to achieve a minimum density of approximately 10,000 people and jobs within an 800 metre radius.

Three Mobility Hubs have been identified along the A-Line Corridor: the future multi-modal transit station in Downtown, the Hamilton-LIUNA station, and the station at the intersection of Mohawk Road and Upper James Street.

2.2.2 Municipal Plans

Municipal plans build on the provincial guidance and focus on ensuring the best mode and level of development for Hamilton.

Growth Related Integrated Development Strategy (2006), City of Hamilton

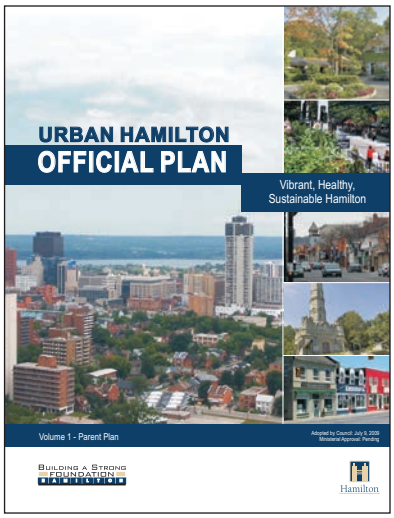
The *Growth-Related Integrated Development Strategy* (GRIDS) lays out growth development options for Hamilton over the next 30 years. These options were based on nine directions that reflected the community's vision for growth in Hamilton, as shown below.

***GRIDS* – Nine Directions to Guide Development**

1. **Mix of uses within neighbourhoods to provide opportunities to live, work and play.**
2. **New development within existing built up area.**
3. **Protect rural areas for rural economy.**
4. **Design neighbourhoods to improve access to community life.**
5. **Retain and attract jobs in strength areas and new sectors.**
6. **Encourage travel by foot, bike and transit and enhance regional connections.**
7. **Maximize the use of existing buildings, infrastructure and vacant or abandoned land.**
8. **Protect ecological systems.**
9. **Maintain and create attractive public and private spaces and respect unique character of existing buildings, neighbourhoods and settlements.**

The purpose of the *GRIDS* strategy was to identify the most appropriate places for growth and the types of growth that should be located at key locations within Hamilton. The *GRIDS* strategy accommodates a projected population of 660,000 and some 80,000 additional households within the City by 2031. The Strategy also facilitates the development of Hamilton International Airport as an economic growth node within both the City of Hamilton and the Greater Golden Horseshoe.

After review of the growth options, the "nodes and corridor" urban structure was chosen to guide future growth in the City of Hamilton. In this structure corridors are identified as the key locations to support higher order transit service, intensification and a mix of uses, including higher density residential, retail, institutional and recreation. These corridors link nodes together, and intensification areas in the City. The James Street/Upper James Street corridor is identified as a 'corridor' in *GRIDS*.



Urban Hamilton Official Plan (2009- Appealed to the Ontario Municipal Board and currently not in effect) , City of Hamilton

Building on the preferred nodes and corridor growth structure identified through *GRIDS*, the *Urban Hamilton Official Plan* is the City's long-term land use plan and includes policy directions to guide planning and development. The *Urban Hamilton Official Plan* identifies Upper James Street as a Primary/Urban Corridor.

The *Official Plan* defines Urban Corridors and Nodes as follows :

- **Urban Corridors:** Areas of street-oriented uses which incorporate a mix of retail, employment and residential uses, developed at medium densities, located along arterial or collector roads serving as major transit routes. Such corridors may form the boundaries of residential subdivisions or neighbourhoods, but should act as a linear focus for activities and uses within the community. While the Official Plan identifies James Street/Upper James Street as an urban corridor, there are certain portions where arterial commercial uses are currently permitted (i.e. drive-to commercial destination).
- **Urban nodes:** Discrete areas that contain compact, mixed-use (residential, commercial and institutional) development and service the surrounding areas. They are accessible by higher order transit, active transportation, a good road network, and exhibit high quality urban design.

The *Official Plan* goes on to state that Urban Corridors and Nodes:

- Are the focus for re-urbanization activities (population growth, private and public redevelopment and infrastructure investment);
- Provide focal points of activity for neighbourhoods and communities;
- Provide a vibrant pedestrian environment and facilitate active transportation; and,
- Are interconnected and served by various transportation modes, including higher order transit.

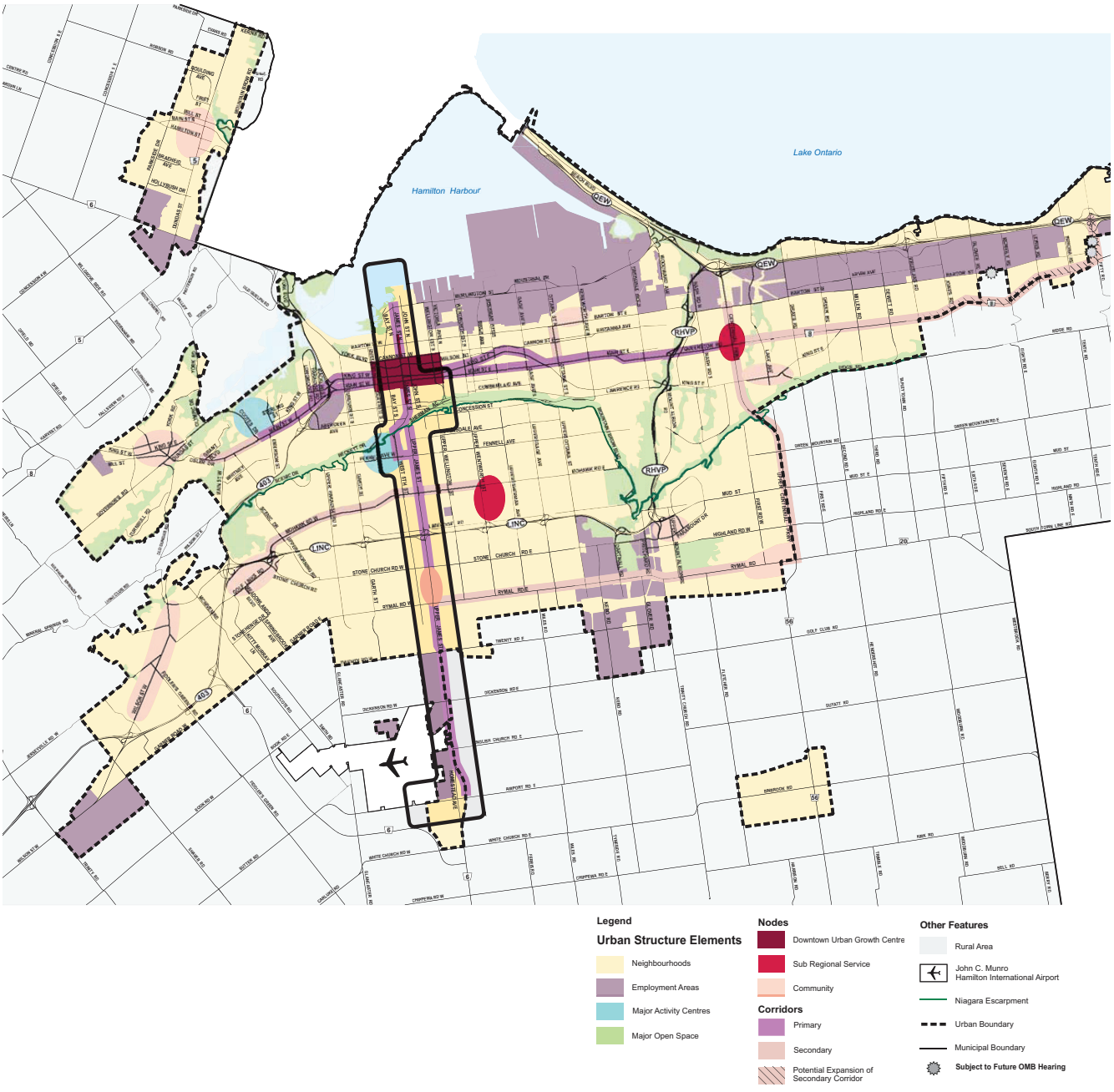


FIGURE 8: URBAN STRUCTURE PLAN, URBAN HAMILTON OFFICIAL PLAN, CITY OF HAMILTON

Urban corridors connect neighbourhoods and key destinations in the city and are important focal points for mobility and activity. The *Urban Hamilton Official Plan* seeks to enhance the mixed use character of the urban corridors, while recognizing that areas along the corridor will vary in function, form, and character. Urban corridors are to act as commercial spines that serve adjacent neighbourhood areas and are areas of focus for intensification. Built form along the urban corridor is envisioned to range from low-rise to mid-rise with higher density built form at strategic locations, such as nodes. The design of the corridors should be pedestrian-focused, respect the existing established built form of neighbourhoods and should contribute to the creation of attractive and comfortable pedestrian environments. The public realm should also enable effective connectivity from surrounding areas to the corridor to encourage active transportation.

Hamilton Transportation Master Plan (2007), City of Hamilton

The *Hamilton Transportation Master Plan* provides a comprehensive overview of the transportation provision in the City of Hamilton as well as the mode share and travel patterns of current transport use. The *Transportation Master Plan* states that overall, 71% of Hamilton residents are employed within the City. A large proportion of the residents employed elsewhere work in the Greater Toronto Area (23%) with small numbers working in other regions such as Niagara, Waterloo and Brant County. This suggests that Downtown Hamilton has a significant local employment market that attracts journeys from both within the City and outside. This also suggests that the strategic case for improvements to transit services may be stronger than in other cities which have a smaller proportion of journeys made for work purposes.

The majority of morning peak period trips are made by car. The mode share of transit has declined over the past twenty years from 12% to 6% with many of these journeys now being made by car or other modes. The key themes of the *Transportation Master Plan* are to reduce the number of journeys made by single-occupant cars, to increase the share of trips made by transit and walking or cycling, and to increase the overall patronage of city-wide transit. The Transportation Master Plan identifies two priority transit corridors: the east-west corridor linking McMaster University to Eastgate Square and a north-south corridor linking the Downtown core to Limeridge Mall located on Upper Wentworth Street.

The *Transportation Master Plan* has also identified both opportunities and constraints for the development of transportation in Hamilton. A summary of the opportunities and constraints is provided below.

Opportunities:

- **The development of a transit system will provide access to current and future employment lands.** This will help to act as a catalyst to future developments and tax investment to the City.
- **Promote Downtown Hamilton as a place to live and work and play.** A transit system would help to improve the urban realm on the downtown streets, encourage the increased reuse of vacant buildings and redevelopment of vacant lots, and promote the exploration of new recreation opportunities.
- **Consider all modes when evaluating service level in a corridor.** There are some locations on the periphery of the city which may be better served by an augmented transit system, such as Transcab, which provides taxi services to less populated areas from the existing transport network. While these areas currently cannot support a bus network, population and employment forecasts suggest that in the future these areas may be able to support a transit system. For locations where development is proposed, consideration of the future service frequency and capacity on these corridors may lead to them being recommended as part of a BRT/LRT network.
- **There are also opportunities to incrementally increase transit service levels in high demand corridors.** In some locations this capacity may be provided most effectively through BRT/LRT services, depending on the levels of demand on each corridor.
- **High transit mode share for journeys from Hamilton to Toronto** suggests that where transit options are available for longer distance journeys, they are well used.
- **Transit services outside the City of Hamilton are limited.** There are significant opportunities to improve transit connections to the Airport and other employment centres, such as Waterdown, Glanbrook and Ancaster.
- **There is already a comprehensive off and on road cycle network** within Hamilton, which could be linked with current or planned transit facilities and infrastructure.

Constraints:

- **The Niagara Escarpment forms a natural barrier** from the tip of the Bruce Peninsula, through Hamilton to Niagara Falls along the southern edge of Lake Ontario. The Niagara Escarpment cuts a 22 kilometre linear route through the City. This will cause a technical challenge to any proposed transit system the Niagara Escarpment is very steep, particularly LRT.
- **Existing distribution of population and employment are concentrated** within the City of Hamilton, with employment concentrations around the Downtown area and along the Waterfront and other designated employment areas. This existing distribution acts as both a constraint and an opportunity to developing a new transit system. Whilst the existing distribution provides the demand for the scheme, where new connections are provided by the transit scheme, this will facilitate further employment and population growth in areas outside of the current locations.

- **Low transit mode share for journeys within the City.** Between 1986 and 2001, the mode share of local transit fell from 12% of AM peak trips to 6%. The Transportation Master Plan cites an increase in car reliance as a result of development patterns as a significant factor in this mode shift. In particular, an increase in development on the periphery of the city, combined with a reduction in the number of jobs in the city centre has increased reliance on the car particularly for journeys to work. Areas on the periphery of the city are traditionally more difficult to serve by transit because of the low density nature of development and higher dependence on private automobile transportation.
- **Constraints on Hamilton Escarpment accesses** will likely be a problem for commuters crossing the Niagara Escarpment, who experience poor journey times as the Escarpment accesses are generally at capacity. Any on-street rapid transit route using Escarpment accesses will need to address these capacity constraints.

2.2.3 Secondary plans

Secondary Plans provide additional land use direction for specific good areas in the City and identify different street functions (Mobility, Traditional and Local Streets) and the levels and types of development and transport provision that are suitable for each type of street.

Downtown Hamilton Secondary Plan - Putting People First (2005), City of Hamilton

Putting People First is a land use plan for the Downtown core and forms part of the *Official Plan* for the City of Hamilton. The Plan focuses on the overall roles of the Downtown area (bounded by Queen Street, Hunter Street, Wellington and Cannon Street) and the physical form, with particular emphasis on the aspirations for future development and setting out the function of each street in terms of transport and mobility. The Plan also seeks to encourage mixed use development within the Downtown area.

Key transportation principles set out in the Downtown Plan relevant to this study include the following :

- New development and regeneration will be at a scale that supports public transit in the Downtown area. In particular, the Plan supports provision of transit through:
  - o Providing transit routes into and within Downtown Hamilton;
  - o Ensuring that transit accessibility is incorporated into street design;
  - o Providing direct access between buildings and the public streets to transit stops; and,
  - o Providing pedestrian scaled distances to transit stops within the Downtown area.
- Redevelopment in the Downtown area will be undertaken in conjunction with the implementation of an approved transit terminal site, together with the adoption of a roadway operations plan that includes appropriate priority measures at strategic locations.

The *Downtown Hamilton Secondary Plan* classifies different streets by their primary function. There are three main street categories that are included:

- **Mobility Streets:** Mobility streets provide mobility through traffic, freight and goods. They connect major activity centres within and to points outside of the region, with sufficient connections to neighbourhoods. Cyclists are permitted and are accommodated with wider curb lanes. On-street parking is limited to non-peak hours.
- **Traditional Streets:** Traditional streets are locally-oriented streets that serve local uses. Pedestrians are given priority with the provision of sidewalks on both sides of the street and a street that is designed for easy pedestrian crossing. The primary purpose is to provide access by residents, shoppers, employees, and to serve the balanced travel needs within the neighbourhood. Cyclists are encouraged and do not require special provisions due to low vehicular speeds. On-street parking is encouraged and generally two lanes are provided for travel.
- **Local Streets:** Local streets are all other streets not covered by the above classifications.

The designation of streets is useful as it helps to identify streets which may be suitable for transit. It is likely that any proposals for Rapid transit would result in additional streets being designated or alternatively an additional category developed to identify those streets where a Rapid transit system could be accommodated.

The Downtown Secondary Plan is currently being reviewed and the boundary area will be changing to follow the Urban Growth Centre boundaries outlined by the Province (North and South spines on James St.).

Downtown Mobility Streets Master Plan (2003), City of Hamilton

The *Downtown Mobility Streets Master Plan* was developed to:

- Guide public realm improvements within the city core;
- Assist with on-going and future streetscapes planning; and,
- Define specific streetscape implementation linkages and projects which can be realized through capital projects over the next 10 to 15 years

This plan seeks to use a comprehensive and integrated approach to streetscape design, supporting and building on the recommendations of the *Downtown Hamilton Secondary Plan*, the *Downtown Transportation Master Plan* (described below), and integrating community input. The *Downtown Mobility Streets Master Plan* establishes a vision and actions for five streets (James Street, John Street, Bay Street, Hunter Street, and Cannon Street) to make them comfortable, safe, attractive, green and pedestrian-friendly.

Downtown Transportation Master Plan, Five Year EA Review (2008), City of Hamilton

The City of Hamilton completed the *Downtown Transportation Master Plan* in 2001. The Master Plan makes a number of recommendations to address traffic movement and accessibility of the Downtown area. This includes improvements to the transit and cycle networks and conversion of several streets from one-way to two-way operation. The review of the Master Plan suggests that there are several proposals still to be implemented and several additional schemes that are recommended for inclusion as part of the Master Plan. These are as follows:

- **Two-way conversions** - York Boulevard/Wilson Street, Park Street, MacNab Street, Hughson Street, Hess Street, King Street, Rebecca Street.
- **Pedestrian improvements** - Jackson Street, Queen Street, Catharine Street, Mary Street, George Street, Gore Park (King Street South leg).
- **Cycling improvements** - Hunter Street cycle lanes, York Boulevard cycle lanes.

- **Implement pending the outcome of Rapid Transit and Gore Park studies** – King Street two-way conversion, Main Street pedestrian improvements.
- **Projects not included in original Master Plan to be implemented** – Caroline Street two-way conversion, Gore Park pedestrian pilot projects.

Two-way conversion of James and John Streets was proposed in the Downtown Transportation Master Plan and was implemented between 2002 and 2005. Two-way conversion of York Boulevard was also implemented in 2010. While the projects listed above affect some of the streets intersecting James Street, there are no additional changes proposed for the street itself. The review also assesses the impact on traffic, travel times and collisions that the two-way conversion of James and John Streets has had. If a transit system was developed, James and John Streets may have to be converted back to one way streets and therefore the impact that this might have on traffic, travel times and accidents would need to be considered. The Master Plan also sets out details of the new transit terminal on MacNab Street, between Main Street and King Street (opened in early 2011).

FIGURE 9: MOBILITY & TRADITIONAL STREETS IN THE DOWNTOWN AREA

The *Downtown Transportation Master Plan* review notes that all of the schemes listed above that have yet to be implemented should be considered in the light of proposals for rapid transit on the King/Main/Queenston and James/Upper James/Mohawk corridors. The review of the *Downtown Transportation Master Plan* found that there had been several key changes to transport and land use development since the 2001 Master Plan, including:

- Greater emphasis on environment, including air quality and climate change;
- Downtown Hamilton is now designated as an Urban Growth Centre by the Province of Ontario;
- Funding opportunities for rapid transit have arisen;
- Increased aspirations for pedestrian improvements;
- Major developments are now taking place; and,
- Increased transit ridership is evident from Hamilton Street Railway data.

Airport Employment Growth District Project (2007 – present), City of Hamilton

In 2007, the City of Hamilton initiated an *Airport Employment Growth District (AEGD) Study.* The *AEGD* is identified as "Special Policy Area C" in the Rural Hamilton Official Plan and is generally bounded by the existing urban boundary adjacent to Upper James Street to the east, White Church and Fiddler's Green Roads on the south, Garner Road on the west and Glancaster Road, and Twenty Road West on the north.

This project was initiated to respond to employment targets from *GRIDS* and the Province's *Places to Grow* policy document. Specifically, *Places to Grow* indicates that the City of Hamilton must reach 270,000 jobs by 2031. To meet this target, the City is seeking to designate lands for employment uses, including the *AEGD*. The *AEGD* area is 1,340 gross hectares in land area and includes the existing business park. It is important to note that not all of the land will be used for airport businesses, as some will be designated as heritage and natural areas.

The *AEGD* land breakdown is as follows:

- 122 gross ha. of the area is taken up by the existing Airport Business Park;
- 391 gross ha. is classified as non-developable areas (i.e. existing infrastructure, hydro corridor, natural areas, etc.); and
- 828 gross ha. is for urban expansion.

The majority of the *AEGD* that falls within the A-Line study area is designated Airport Business Park. The *AEGD* is currently under appeal at the OMB.

Setting Sail: Secondary Plan for West Harbour (2005), City of Hamilton

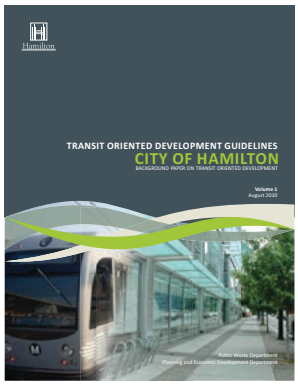
The *Secondary Plan for West Harbour* was created to provide area-specific planning directions for the West Harbour area, including lands bounded by Hamilton Harbour, Wellington Street, Cannon Street, and York Boulevard. This plan establishes a framework for public improvements and development to enhance the area as a community and recreational destination and directs detailed planning, zoning, and development, as well as identifies City's priorities for public funding. The plan identifies three areas for major change: the Waterfront; the area south of the CN rail yard (Barton-Tiffany); and the former industrial lands along Ferguson Avenue (Ferguson-Wellington Corridor). It also outlines directions for commercial and mixed use corridors in the West Harbour area. The Secondary Plan was approved by Council in 2005, but is currently under appeal.

Hamilton West Harbour Waterfront Recreation Master Plan (2010), City of Hamilton

The *Hamilton West Harbour Waterfront Recreation Master Plan* was created to define and clarify planning and urban design guidelines to direct and shape development of buildings and landscapes for the West Harbour. The Master Plan was initiated to fulfill the policies of Setting Sail: Secondary Plan for the West Harbour, and identifies a vision for the waterfront.

Mount Hope Secondary Plan, Volume 2, Chapter B – Glanbrook Secondary Plans, Hamilton Urban Official Plan (2009), City of Hamilton

The *Mount Hope Secondary Plan* was created in order to provide area-specific planning directions for this community. It establishes land uses and development standards that guide development of lands located in the *Mount Hope Secondary Plan* area, generally bounded by White Church Road West to the north, Upper James Street to the west, Airport Road West to the south and John C. Munro International Airport lands to the east.



Transit-Oriented Development Guidelines for Hamilton (2010), City of Hamilton

According to the *Transit-Oriented Development (TOD) Guidelines*, "TOD is characterized by compact, mixed-use development near transit facilities with high-quality walking environments. What sets transit-oriented development apart from traditional/regular development is an increased emphasis on providing access to transit through mixed use areas with higher density, the degree of activity and amenities. TOD encourages transit-supportive land use with the intent to provide more balanced transportation (e.g. walking, cycling, etc.), can be as viable an option as driving."

The City of Hamilton's recently approved *Transit-Oriented Development Guidelines* encourages transit-supportive and pedestrian-oriented land use, intensification and built form along transit corridors and throughout neighbourhoods. The City's *TOD Guidelines* include ten key principles to guide transit-oriented development and TOD typologies, and more specific guidelines for land use, built form, density, and public realm.

The City of Hamilton's Ten TOD Principles are as follows:

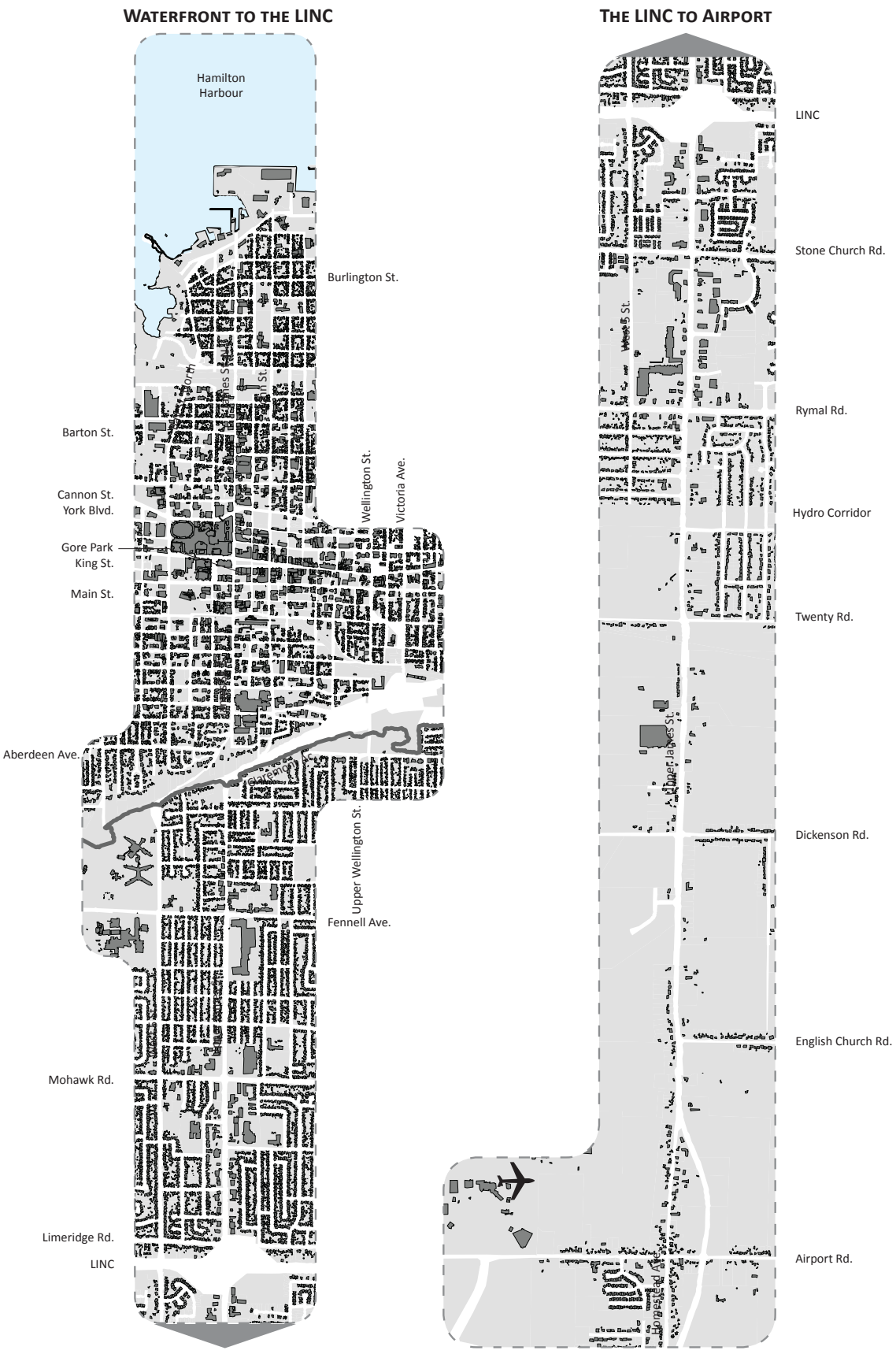
1. Promote Place-making: Create a Sense of Place
2. Ensure a Mix of Uses/Appropriate Land Uses
3. Require Density & Compact Urban Form
4. Focus on Urban Design
5. Create Pedestrian Environments
6. Address Parking Management
7. Respect Market Considerations
8. Take a Comprehensive Approach to Planning
9. Plan for Transit and Promote Connections (for all modes)
10. Promote Partnerships and Innovative Implementation

These principles help to form the transit-oriented development "lens" for the A-Line.

2.3 Existing Conditions along the A-Line Corridor

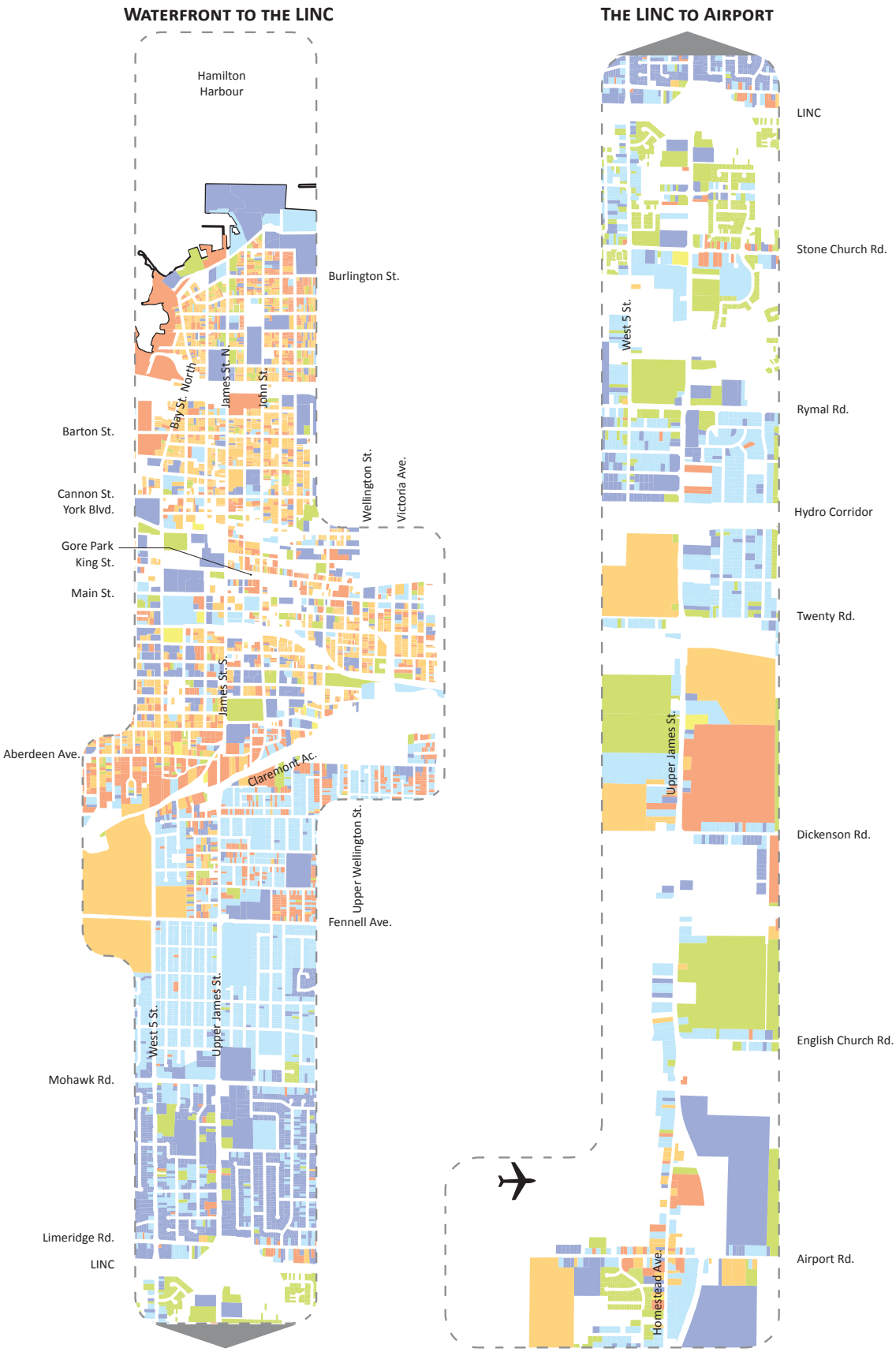
The following corridor maps were developed based on data from the City of Hamilton. These maps illustrate existing patterns and conditions along the A-Line.

EXISTING BUILT FORM



2.3.1 Built Form

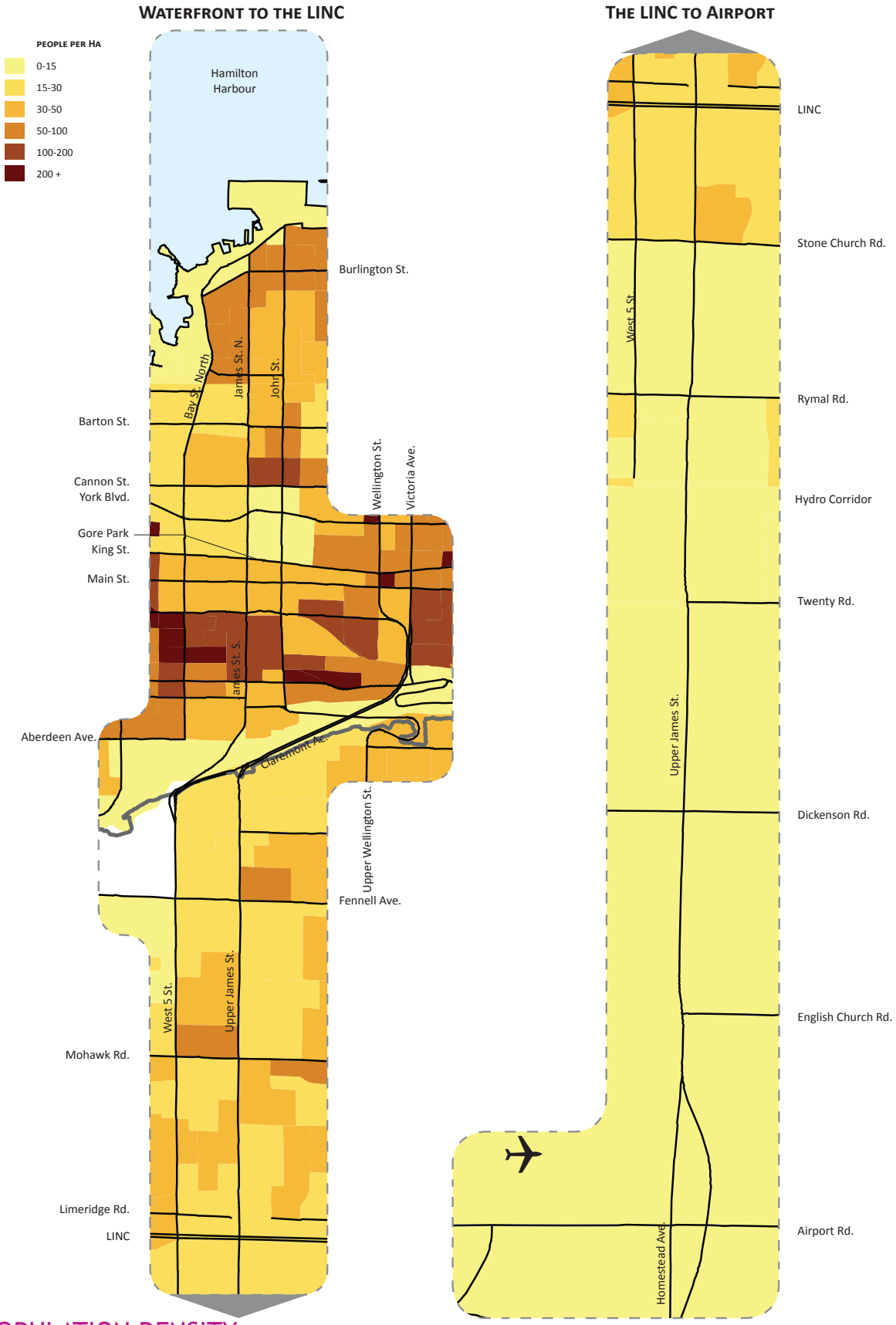
As illustrated in the existing built form map, there is a more compact and dense urban fabric made of short blocks below the Niagara Escarpment. There is generally a consistent street grid with a slight distortion along east-west streets between York Boulevard and King Street, where downtown renewal occurred in the 1960s. From the top of the Niagara Escarpment to Mohawk Road, the urban fabric consists of longer and less dense blocks reflecting a more suburban pattern of residential development. Beyond the Hydro Corridor between Rymal Road and Twenty Road, the urban fabric changes into a rural fabric.



BUILDING CONSTRUCTION DATES

2.3.2 Building Construction Dates

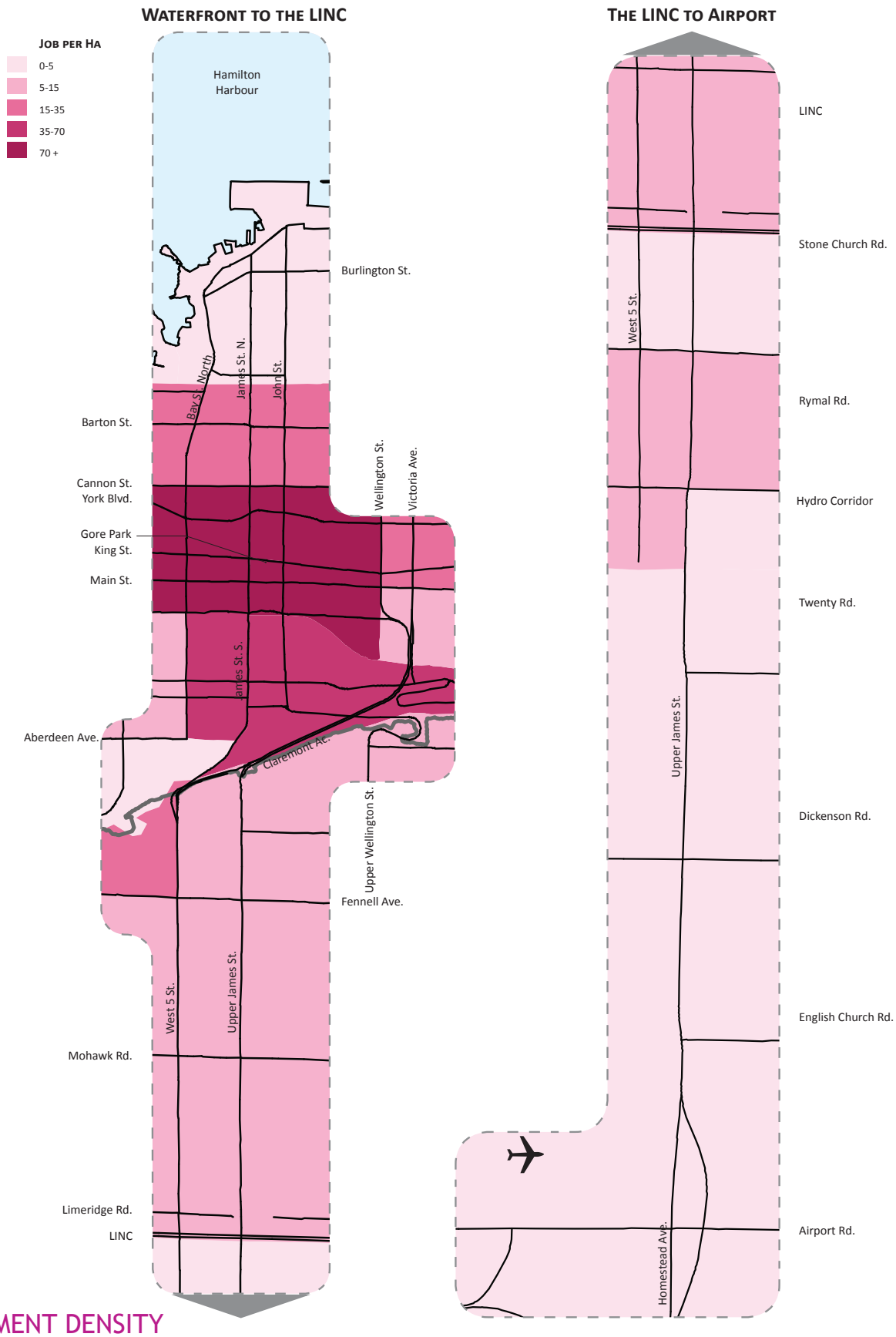
The building construction dates map illustrates the general construction dates of existing buildings along the corridor. Every area along the corridor has experienced different periods of development. There has also been adaptive re-use of older buildings, as well as renovations. Although the map does not show some of these nuances, it does show the overall patterns along the corridor. The older buildings are largely located below the Escarpment, corresponding to where the original communities established in Hamilton's early days. A few historic sites are also located above the Niagara Escarpment and a number of these correspond with tracts of farmland, as well as church sites (e.g. Barton Stone Church). Above the Niagara Escarpment, much of the built form was developed in the post-war period, with a significant amount of development occurring after 1980.



EXISTING POPULATION DENSITY

2.3.3 Existing Population Density

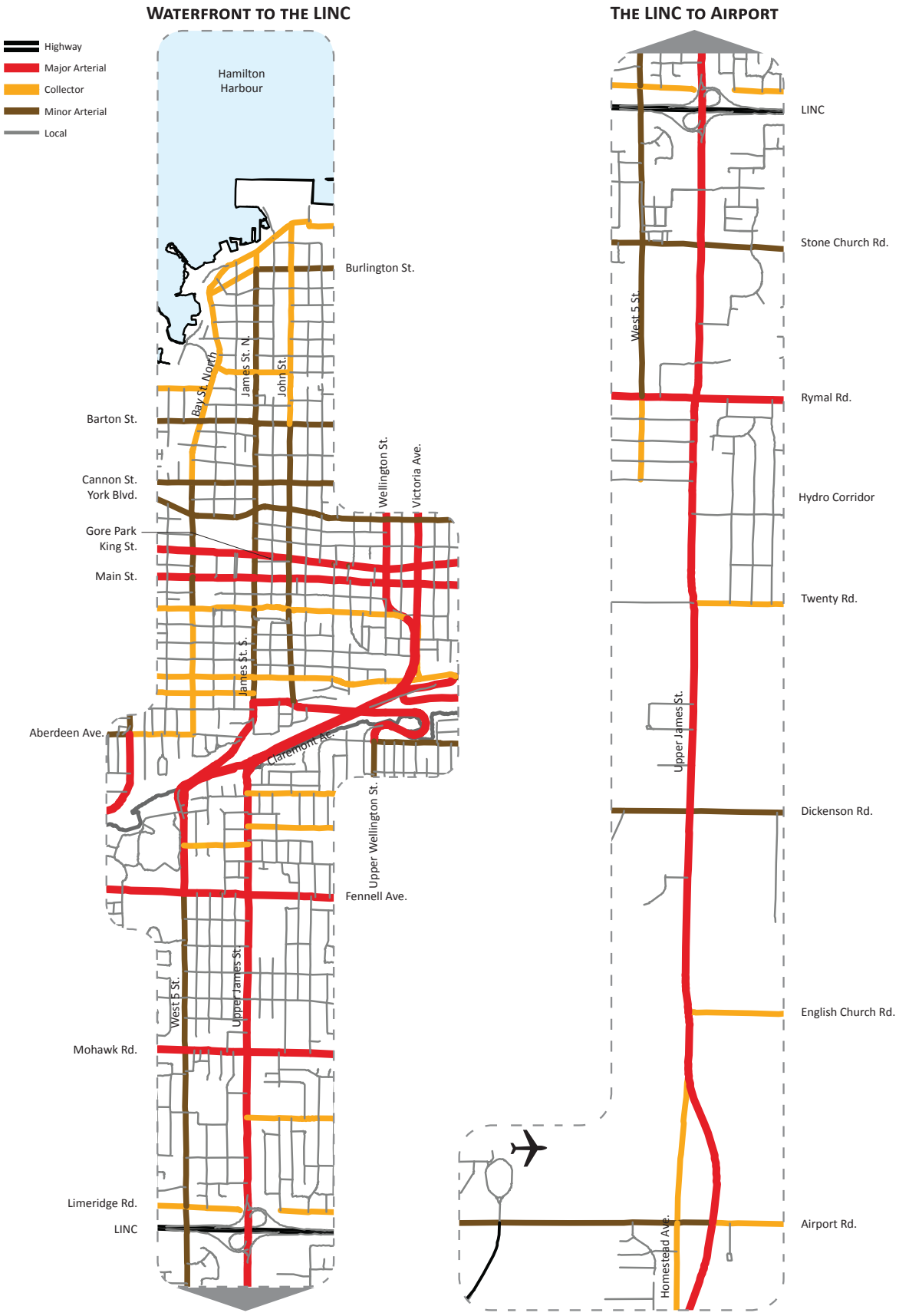
The corresponding existing population density map illustrates the number of people living in a per hectare area along the A-Line Corridor. As illustrated on the map, the greatest population density is located below the Niagara Escarpment, in the Downtown area, particularly east of John Street and south of King Street in the Durand and Corktown neighbourhoods. Significant population densities are also apparent around Cannon Street and along the waterfront. Above the Escarpment, population densities are generally low with a few small medium-density areas that may correspond to existing neighbourhoods that have seen some recent infill.



EXISTING EMPLOYMENT DENSITY

2.3.4 Existing Employment Density

The existing employment density map illustrates the number of people working in a per hectare area along the A-Line Corridor. The highest employment densities (70+ jobs/ha) correlate with the Downtown Commercial District, located between Cannon Street and Hunter Street. The area with the second highest employment densities (35-70 jobs/ha) is the area around James Street South from Hunter Street to the Escarpment, near the St. Joseph Hospital (Charlton Campus). The areas with the third highest employment densities (15-35 jobs/ha) are the areas around Barton Street, as well as the St. Joseph Hospital (Mountain Campus). The areas on the Mountain from the Escarpment to Stone Church Road and from Rymal Road to the Hydro Corridor have low employment densities (5-15 jobs/ha), with the lowest employment densities currently in the Waterfront area and south of the Hydro Corridor (0-5 jobs/ha).



ROAD HIERARCHY

2.3.5 Road Hierarchy

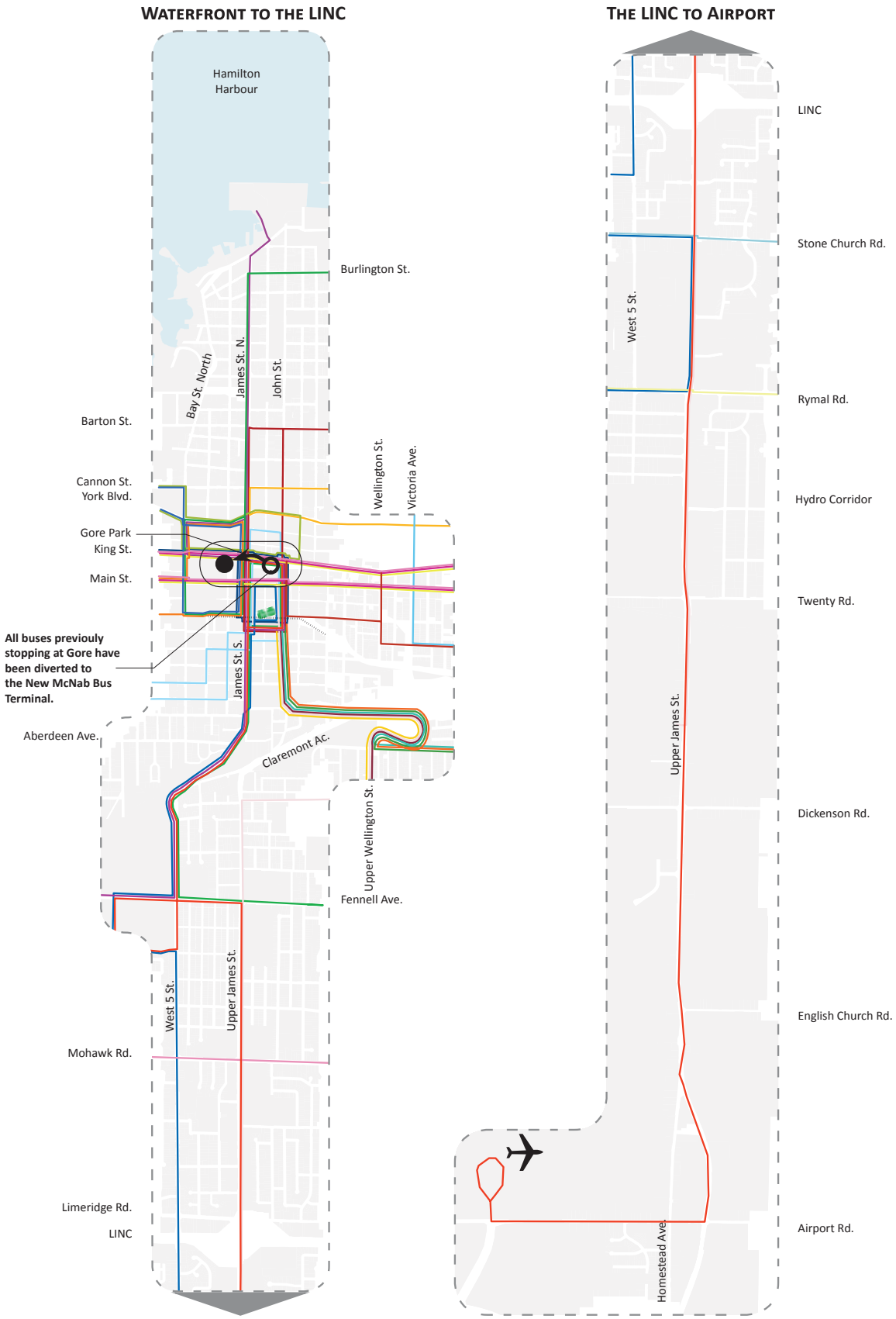
The map illustrates the overall road hierarchy in the corridor study area based on the road classifications in the Urban Hamilton Official Plan. 'The LINC' is Hamilton's main highway infrastructure within the City. QEW at the north end and planned route in south by airport. (Niagara to GTA Corridor).

Major arterials, which are to accommodate high volumes of intra-municipal and inter-regional traffic, include King Street, Main Street, Mohawk Road, Wellington Street, Victoria Avenue, James Mountain Road to West 5th Street (and Fennell Avenue), Claremont Access, Rymal Road, and Upper James Street.

Minor arterials, which are to accommodate moderate volumes of intra-municipal and inter-regional traffic, include Guise Street, Bay Street North, John Street (to Barton Street), Limeridge Road, Twenty Road, English Road, Airport Road, and Homestead Road.

Collector roads are to enable direct land accesses and the movement of moderate volumes of traffic within and through designated Employment or Neighbourhood Areas.

Local roads, primarily enable direct land accesses, and secondly, the movement of low volumes of traffic to collector roads.



EXISTING TRANSIT NETWORK

2.3.6 Existing Transit Network

The corresponding map illustrates that the transit network is more developed below the Escarpment than above. Transit service is currently centred around Downtown between York Boulevard and Hunter Street. The new MacNab Bus Terminal on MacNab Street between King Street and Main Street is a major bus station with a sheltered bus waiting area and multiple platforms. Many of the local buses now circulate through the MacNab Terminal. North of York Boulevard, transit service decreases significantly, with the only bus that goes directly to the waterfront operating in the summer months only. South of Hunter Station, there is a significant number of north-south transit routes that go up the Escarpment along James Street South. These buses divert to different routes south of Fennell Avenue. There is minimal servicing on Upper James Street with only one main bus route for most of the corridor to the airport.

2.3.7. Recreational Trails and Cycling Facilities

Shifting Gears 2009: Hamilton's Cycling Master Plan provides a proposed cycling network map, which illustrates the existing and proposed trails and bikeways network across the City. Trails and bikeways are defined as existing pedestrian and cycling facilities that connect to different areas in the city and have some level of public realm improvement. Off-street and on-street trails and bikeways form an important part of the pedestrian and cycling networks.

Existing and proposed bike facilities include bike lanes, signed bike routes, and multi-use paths. These cycling facilities are defined by the Cycling Master Plan as follows:

Reserved Bike Lanes (on-street, urban)

A portion of the roadway is dedicated to the exclusive use of cyclists through signing and pavement markings. Bike lanes are generally 1.5 to 1.8 m wide.

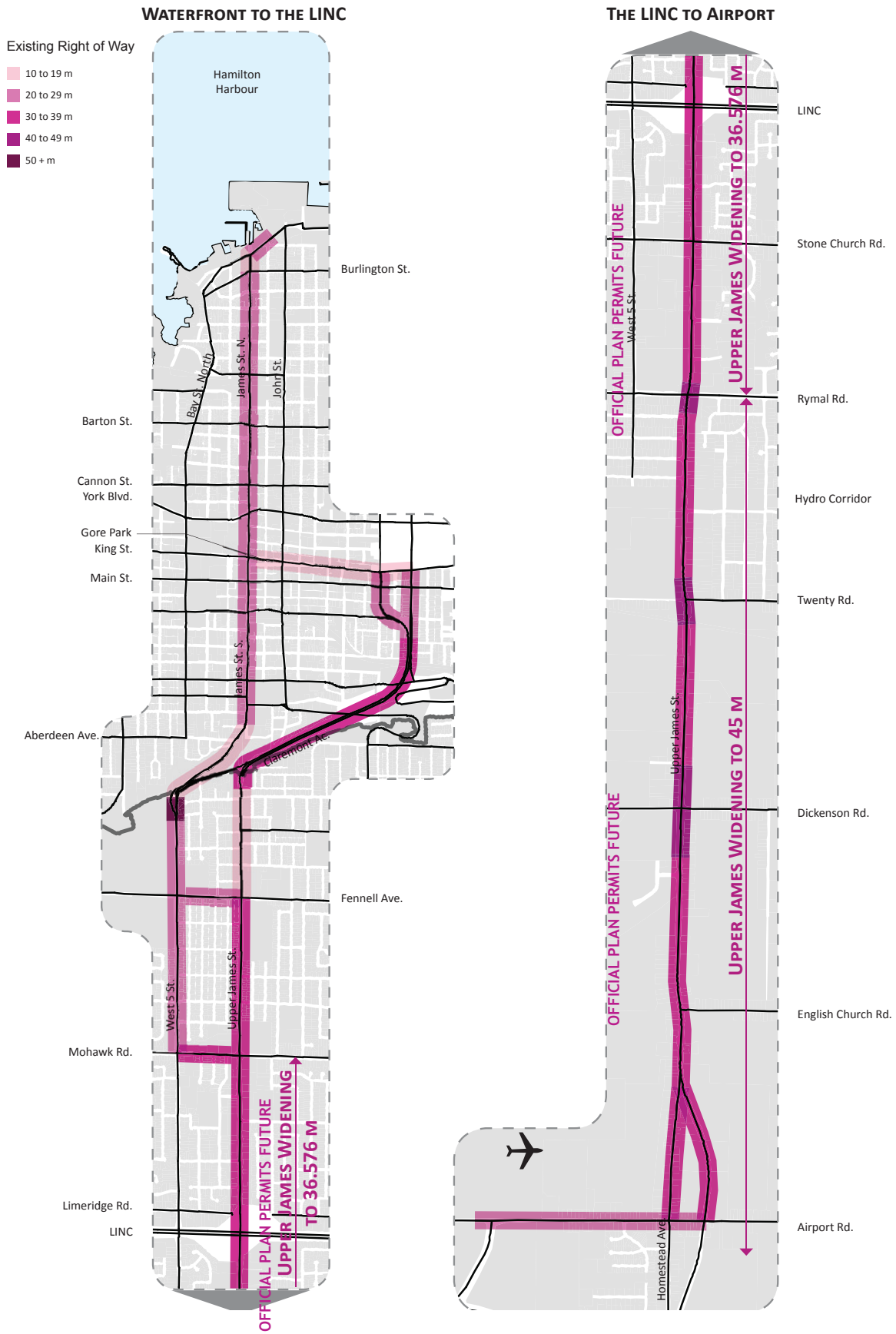
Signed Bike Routes (on-street, urban)

Signed Bike Routes are roadways that are to be shared-use (eg. mixed traffic) for cyclists and motorists that are normally designated by signage only.

Multi-use Recreational Trails (off-street, rural and urban)

A multi-use trail is physically separated from motorized traffic by an open space or barrier. Multi-use trails are typically shared by pedestrians and other non-motorized uses. As per Shifting Gears 2009, the preferred minimum width is 4.0 m, with up to 6.0 m considered on trails with larger volume of users.

Similar to the transit network, the existing cycling network is more developed below the Escarpment than above. A number of multi-use trails have been implemented along the waterfront. Additional multi-use trails have been proposed along Strachan Street by the CN Railway, up the Niagara Escarpment, and along the electrical transmission corridor south of Twenty Road. Although there are a number of existing and proposed east-west and north-south bike routes from the waterfront to the Escarpment, many of them are currently not continuous. Above the Niagara Escarpment, there are new signed bike route facilities proposed to connect to Mohawk College and St. Joseph Hospital at West 5th Street and Fennell Avenue. There are some planned and existing on-street bike lanes, such as along stretches of West 5th Street, Limeridge Road, Stone Church Road, Twenty Road, and Airport Road. However, the cycling network is not as of yet completely connected. There are currently no north-south facilities between Twenty Road and Airport Road, but a facility is planned along Upper James.

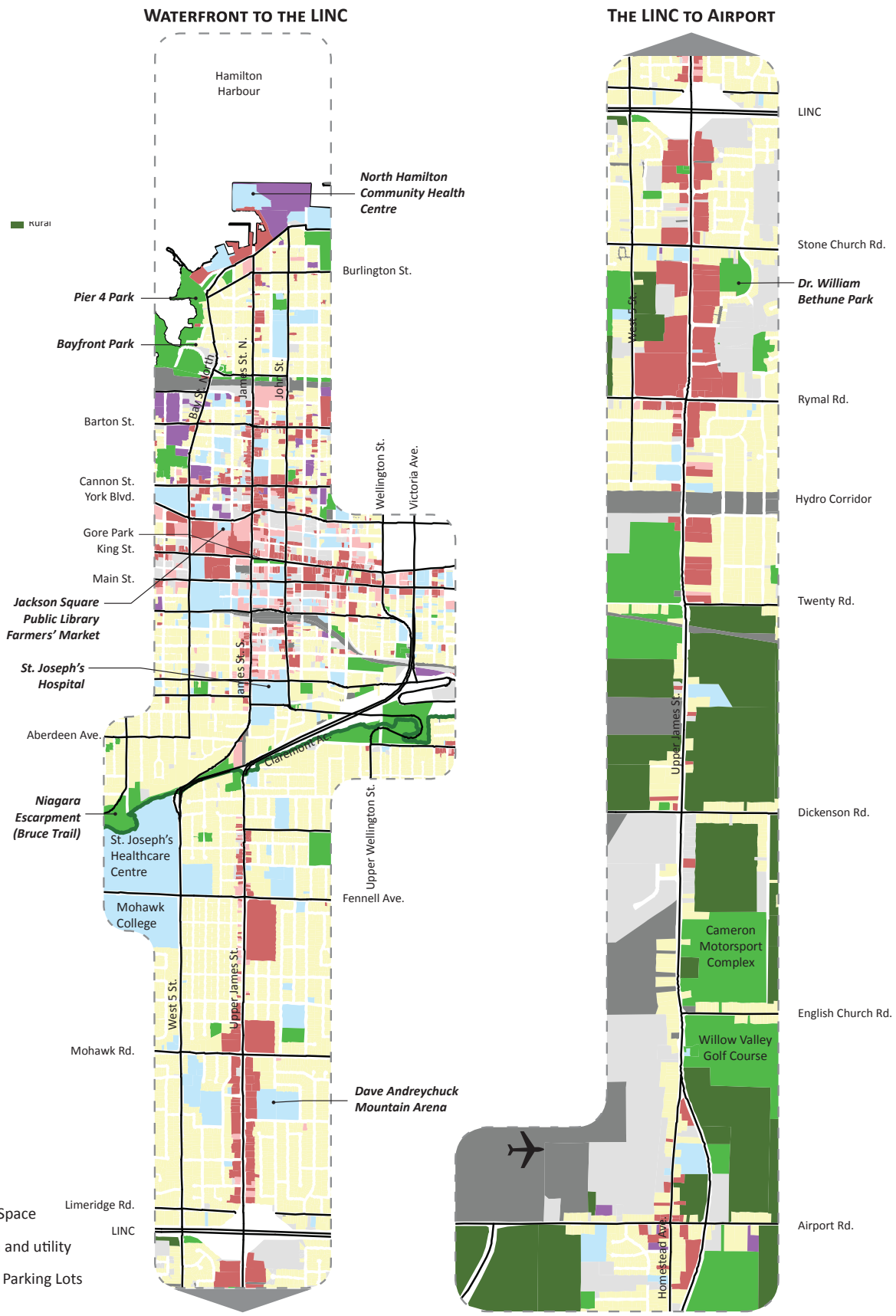


RIGHT OF WAY - EXISTING & POTENTIAL FUTURE WIDENING

2.3.8 Existing Right-of-way Widths and Potential Future Road Widening

The corresponding map illustrates the existing street right-of-way widths along the James Street and Upper James Corridor. Narrower right-of-ways are generally below the Escarpment where more urban conditions currently exist, with the narrowest conditions along a small section toward Guise Street and along James Mountain Road. Beyond Fennell Avenue, rights-of-way (ROW) are generally fairly wide (30 to 39 metres), with some small sections along Upper James Street that have been widened significantly near intersections (40 to 49m or 50+ metres).

The corresponding map also illustrates the right-of-way widths permitted along the corridor through future road widening under the Hamilton Urban Official Plan (2010). This road widening provision enables the City to undertake road-widening to make changes to the right-of-way along Upper James Street between Rymal Road and Airport Road. Some sections have already been widened for public works and transportation-related purposes. As a rapid transit route, future road widening along the A-Line should only occur if it is beneficial to pedestrian, cycling and transit environment. Refere to Schedule C of the Urban Hamilton Official Plan for more detailed information on ROW widths.



EXISTING LAND USES

2.3.9 Existing Land Uses

While land use varies significantly along the corridor, they are the most diverse and mixed below the Niagara Escarpment, most prominently in and around the Downtown core (from Barton Street to Main Street) where uses are mixed both horizontally (along the street) as well as vertically (within a building). The mix and variety of uses decrease substantially moving up the Escarpment where arterial commercial and large-format retail in the form of 'big box', car dealerships, and other forms of automobile-oriented retail dominate Upper James Street, surrounded by single-family residential areas and some institutional uses. Beyond Twenty Road, rural uses are dominant, with large areas on the west side of Upper James Street that are currently vacant or used for transportation and utility uses or surface parking lots. Along the Upper James Street, there is a small amount of commercial and institutional uses. There is also some residential, in particular, near Twenty Road and along Homestead Drive. The following is a more detailed description of the A-Line Corridor by land use.

Residential

Below the Niagara Escarpment, there are two main existing residential areas around James Street North (North End neighbourhood) and James Street South (Durand and Corktown neighbourhoods). In the Downtown, residential uses are mainly in the Central and Beasley neighbourhoods. However, commercial, retail, and institutional uses are the dominant uses. The Mountain area, from Queensdale Avenue to Twenty Road, has predominantly residential behind the commercial uses on Upper James Street. Beyond Twenty Road, there are a few more established residential areas; one near Twenty Road and another along Homestead Drive.

Commercial

Commercial uses are generally focused along the James Street/ Upper James Street Corridor and cross streets in the Downtown especially along King Street sections in International Village, but also along Barton Street, Cannon Street, and York Boulevard. There is also significant amount of retail along Upper James concentrated at key intersections between Fennell Avenue and Rymal Road. In contrast to the much finer-grained pedestrian-oriented commercial uses below the Escarpment, commercial uses along Upper James Street tends to be on larger parcels of land – reflective of more automobile-oriented uses. Some small scale retail also exists along Upper James Street south of Twenty Road. However, some of these commercial uses may be associated with the airport's operations.

Office

Office uses are almost entirely concentrated in the Downtown area, with small pockets along James Street North and James Street South, and a very small amount peppered along Upper James Street up to Twenty Road.

Institutional

There is a significant amount of institutional uses located along the A-Line corridor. Institutional uses include schools, colleges and other learning facilities, community facilities such as libraries, community centres, childcare centres, seniors' centres, hospitals, City Hall, the YWCA and YMCA, museums, and community-oriented uses that are both public and private. A variety of institutional uses are mixed with the commercial and office uses in the areas below the Niagara Escarpment. Above the Escarpment, there are a few prominent stand-alone institutional uses such as, St. Joseph Hospital, Mohawk College, and Mountain Arena, as well as some medium and small sized institutional facilities. In addition, south of the LINC, there are few institutional uses.

Industrial

Industrial uses are present north of York Boulevard, most significantly in the Bayfront Industrial Area, with smaller scale industrial uses in the areas around James Street North such as small-scale warehouse-type uses, workshops and studios. There are also some industrial uses near the Airport along Airport Road and planned industrial as part of the Hamilton Airport Employment Growth District (AEGD).

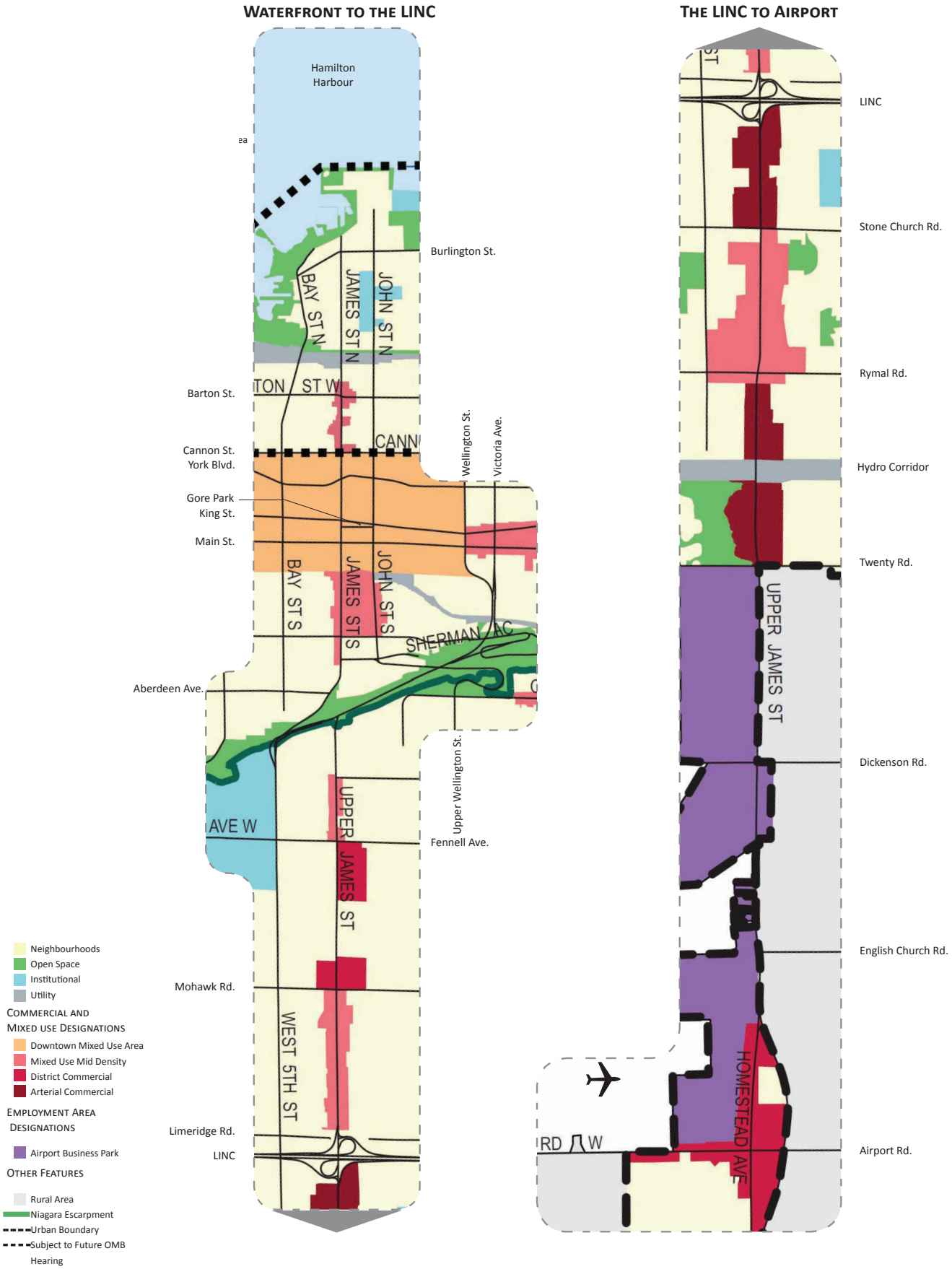
Transportation and Utility

Transportation and utility uses include the existing CN Rail north of Barton, the MacNab Bus Terminal on Main Street, the Go Train station and rail infrastructure on Hunter Street, and the hydro corridor between Rymal Road and Twenty Road. Beyond Twenty Road, there are a number of transportation and airport-related uses.

Vacant Sites

There are a variety of vacant sites along the corridor. They range from individual small parcels to larger lots or blocks and in many cases, these vacant sites are existing surface parking lots. Downtown has a large concentration of individual surface parking lots. There are some large surface parking lots along Upper James Street, above the Escarpment. Although there are fewer stand-alone surface parking lots as a single use on a site and therefore do not show up on the land use plan as vacant sites, the


ROOMS
LAUNDROM
VACANCY
Gate of India
EXOTIC INDIAN CUISINE
FULLY LICENSED RESTAURANT
OPEN
TILL 10
TODAY @ MULBERRY:
CURRIED SQUASH & APPLE SOUP!
FRESH BAKED MUFFINS
WE'VE ALSO GOT:
SMOOTHIES
CHAI LATTES
COOKIES
AND OF COURSE OUR DELICIOUS
COFFEE



PLANNED LAND USES IN URBAN HAMILTON OFFICIAL PLAN

arterial commercial uses along Upper James often include large surface parking lots, many of them fronting Upper James Street.

2.3.10 Planned Land Uses in Urban Hamilton Official Plan

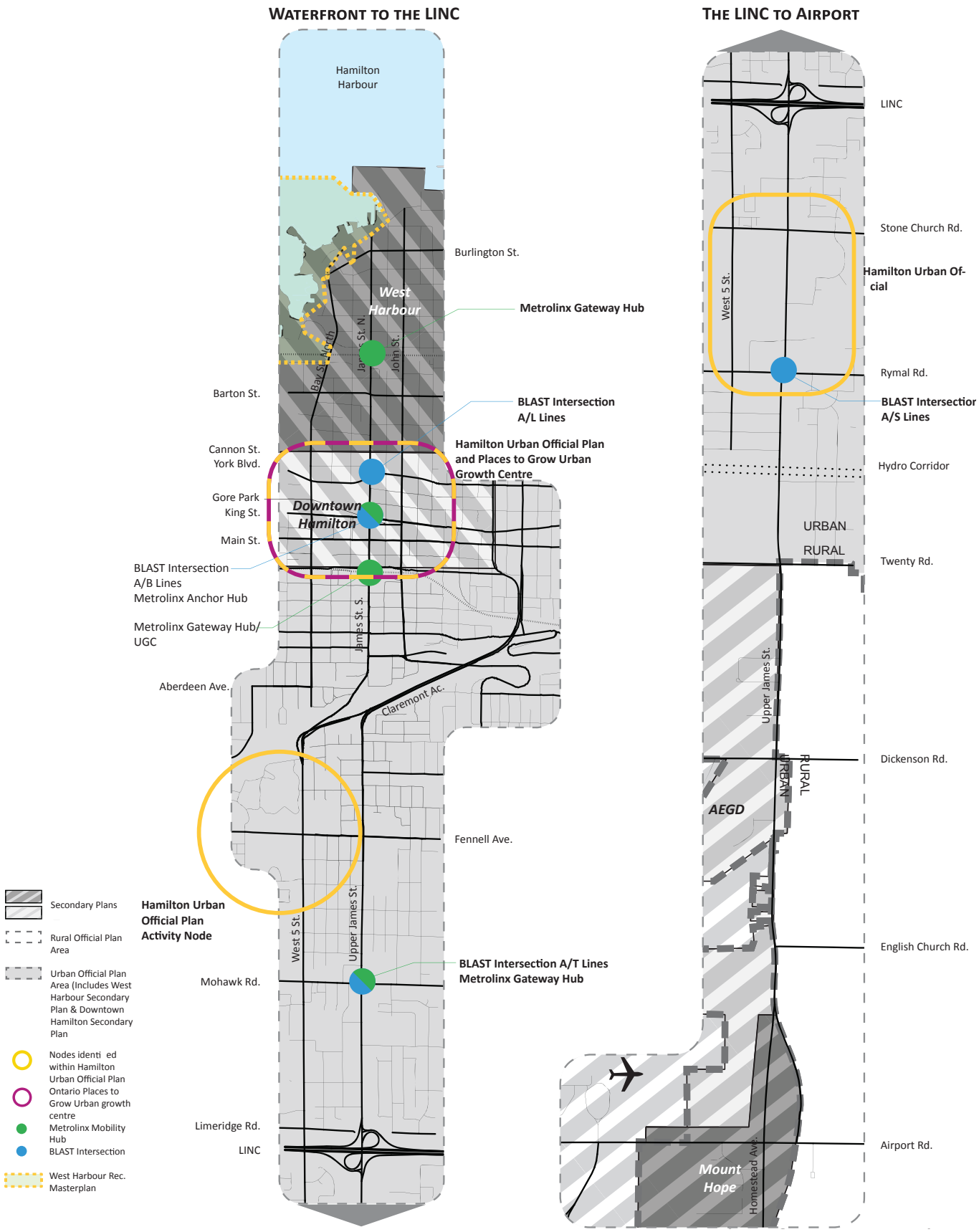
Future land uses for the A-Line Corridor are identified and defined in the Urban Hamilton Official Plan. These land use designations help to understand what land uses are envisioned along the corridor. Some of the areas along the Corridor have either existing or upcoming secondary plans that provide more specific land use parameters for those areas. Key land use designations along the corridor include:

- **Neighbourhoods:** Neighbourhoods include the largest proportion of the City, with a mix of low, medium, and high rise residential areas, diverse roads, parks, open spaces, commercial areas, and institutions. Neighbourhoods are generally bordered and bisected by Urban Corridors, which are a separate structure element but often a focal point and gathering place for neighbourhoods. Most residential neighbourhoods are stable in Hamilton but are anticipated to evolve, change physically, and intensify in such a way that is compatible to the specific neighbourhood context and character. Residential neighbourhoods are generally the dominant use surrounding the A-Line Corridor.
- **Major Open Space:** Major open spaces are the predominant natural and open space features that form part of a continuous system through the urban area. Features along the Corridor include the parks and open space areas along the waterfront, the Niagara Escarpment, and some larger park and open space between Stone Church Road and Twenty Road.
- **Downtown Mixed Use Area:** The Downtown Mixed Use area is intended to include a full range of retail, service, commercial, institutional, cultural, entertainment, office, and residential uses. This area includes the historic Downtown of Hamilton and relates to the boundaries of the Downtown Secondary Plan.
- **Mixed Use-Medium Density:** This designation is generally applied to Community Nodes, Urban Corridors, and Neighbourhoods as part of the City's urban structure. Mixed Use-Medium Density includes a full range of retail, service commercial, entertainment, and residential at a moderate scale. This designation recognizes traditional mixed use main streets in the City (outside of the


Metropolitan College International ESL School
Student-Centered Language Programs
146 James Street South
905.529.5000
www.metropolitancollege.com
OPEN
the Coffee House
Saigon SOUL FOOD
Andros

Downtown) and large commercial areas that service existing neighbourhoods and are intended to intensify into mixed use pedestrian-oriented areas. Mixed use-medium density uses are identified along James Street North from Barton Street to Cannon Street, along James Street South from Hunter Street to Charlton Avenue, and along Upper James Street from Queensdale Avenue to Fennell Avenue, Mohawk Road to the LINC, and from Stone Church Road to Rymal Road.

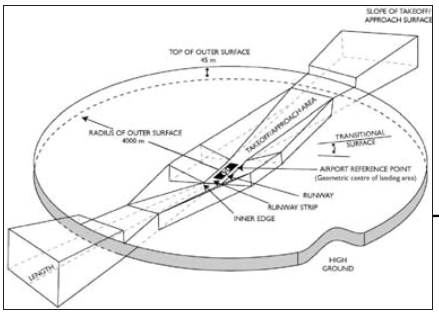
- **District Commercial:** This land use designation is intended to provide a range of retail and service commercial uses to the immediate neighbourhood that should cater to weekly and daily shopping needs of residents. District commercial may be clustered in a plaza or in new or redeveloped sites or could be street-oriented and placed at the edge of the street. Along the A-Line Corridor, district commercial is primarily located along Upper James Street between Fennell Avenue and Mohawk Road and around Homestead Avenue and Airport Road.
- **Arterial Commercial:** This land use designation is intended to provide for a range of uses that cater to the traveling or drive-by consumer and a limited range of land extensive retail stores that require outdoor storage or sales and cannot be accommodated in the other designations. Arterial commercial uses are contrary to transit-oriented development. This land use is currently identified for significant stretches along A-Line Corridor on Upper James Street from the LINC to Stone Church Road and from Rymal Road to Twenty Road.
- **Institutional:** This includes a wide range of institutional uses to serve the City's communities including public institutions in the form of a building or a group of buildings in institutional campuses. These campuses are an important part of the urban fabric and the City's land use. Institutional uses are often landmark buildings and are important to a City's quality of life and economy. Institutional uses are clustered in a small area near the waterfront and most dominantly at West 5th Street and Fennell Avenue – the location of St. Joseph Hospital (Mountain Campus) and Mohawk College.
- **Airport Business Park:** This land use is intended to support the creation of an employment area. Land use designations include airport-related industrial (e.g. transportation and cargo services, warehousing, waste processing, and research development), commercial, high technology (hotels, convention centres, restaurants, taxi terminals, etc.), office, and ancillary uses. Airport Business Park uses are identified in the areas on the east side of Upper James Street from Twenty Road to Airport Road, within the urban boundary.



POLICY & TERTIARY POLICY AREAS

2.3.11 Tertiary Policy Areas

The corresponding map illustrates existing tertiary policy areas along the A-Line Corridor. Tertiary policy areas are nodes, places, or areas that are directly identified and addressed by existing plans and policies including Places to Grow, The Big Move, and the Urban Hamilton Official Plan. The map identifies tertiary policy areas along the A-Line Corridor and where they overlap from one plan to another. It is also a "snapshot" of where policies may align or may not align. In some cases, overlap may occur as a subsequent plan builds on a higher order plan i.e. Places to Grow. Tertiary policy areas are important to note as they play a specific function and are anticipated to have a higher level of activity, and generally have specific directions established to guide how that area develops.



Study Area
Airport Boundary
Outer Surface 45 m Height Restriction
Approach Surface

All new/infill residential development and other sensitive uses prohibited
All new/infill residential development and other sensitive uses prohibited excep for applications approved prior to approval of the Hamilton official plan
All new/infill residential development and other sensitive uses shall submit a detailed noise study, noise mitigation measures and warning clauses

AIRPORT CONSTRAINTS

2.3.12 Airport Constraints

The Hamilton International Airport has been identified as an area where development constraints apply due to airport-related impacts, such as noise. Three different zones have been identified with varying scale of prohibitions and requirements for new/infill development and other sensitive uses. Areas impacted along the Corridor stretch from north of Rymal Road to Airport Road.

3

3.0 RECOMMENDATIONS

3.1 Corridor Opportunities and Constraints

This chapter assesses and identifies some corridor-wide directions and recommendations.

"WE ARE IN A MODE OF 'INTENSIFICATION'... RAPID TRANSIT WILL HELP TO BRING DEVELOPMENT AND HELP BUILD THIS CITY."

- STAKEHOLDER INTERVIEW PARTICIPANT

3.1.1 Corridor Profile: Sections

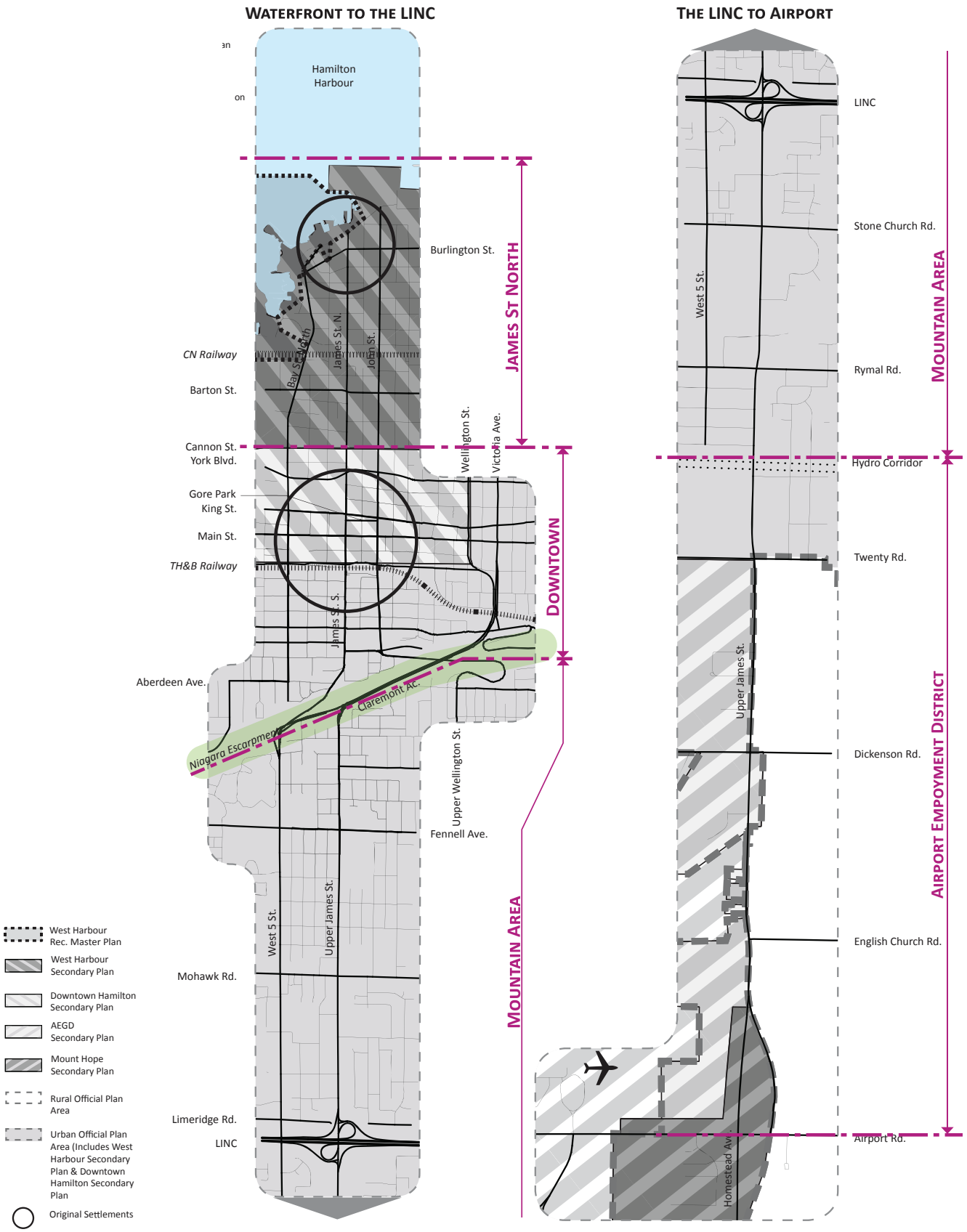
The A-Line rapid transit route is approximately 16 kilometres in length and passes through a number of diverse neighbourhoods, beginning at the waterfront in the north and terminating at the airport in the south.

Through analysis of current policy, history, land use, built form, geography, open space connections, and municipal wards, the A-Line was divided into four main sections: **James Street North**; **Downtown**; **Mountain**; and **Airport Employment District**. These four sections illustrated in the following diagram have provided a structure for this study's analysis.

Recognizing that there is significant diversity within these sections, "character areas" or areas and neighbourhoods with distinct qualities or characteristics, have been identified and assessed for opportunities and challenges.

James Street North Section

The James Street North Section includes the northern terminus of the proposed A-Line rapid transit route and stretches from the waterfront in the north to Cannon Street in the south. It is characterized by diverse land uses, built form, parks, and open space.


WATERFRONT TO THE LINC
THE LINC TO AIRPORT
Hamilton Harbour
Burlington St.
CN Railway
Barton St.
Cannon St.
York Blvd.
Gore Park
King St.
Main St.
TH&B Railway
Aberdeen Ave.
Claremont Ac.
Niagara Escarpment
Fennell Ave.
Mohawk Rd.
Limeridge Rd.
LINC
Bay St. South
James St. N.
John St.
Wellington St.
Victoria Ave.
James St. S.
Upper Wellington St.
West 5 St.
Upper James St.
JAMES ST NORTH
DOWNTOWN
MOUNTAIN AREA
LINC
Stone Church Rd.
Rymal Rd.
Hydro Corridor
Twenty Rd.
Dickenson Rd.
English Church Rd.
Airport Rd.
Homestead Ave
MOUNTAIN AREA
AIRPORT EMPOYMENT DISTRICT
West Harbour Rec. Master Plan
West Harbour Secondary Plan
Downtown Hamilton Secondary Plan
AEGD Secondary Plan
Mount Hope Secondary Plan
Rural Official Plan Area
Urban Official Plan Area (Includes West Harbour Secondary Plan & Downtown Hamilton Secondary Plan
Original Settlements

SECTIONS

Home to one of the earliest communities in Hamilton and generations of immigrants. The area has evolved into a diverse and stable residential community known as the North End, community/neighbours. James Street North is a historic retail Main Street that continues to the Downtown. In recent years, James Street North, between Murray Street and King William Street, has gained a strong arts focus, marked by the growing presence of artists, art galleries, museums, studios, arts and craft-related commercial uses, and a monthly community Arts Crawl event.[48] In *The Big Move*, Metrolinx has also identified a future GO Station along James Street North across from LIUNA station - this GO Station will play an important role as a Mobility (Gateway) Hub, accommodate regional transit service, and integrate with the A-Line. This section corresponds to, and falls within, the areas addressed in the *West Harbour Secondary Plan* and the *West Harbour Recreational Master Plan*.

Downtown Section

The Downtown Section stretches from Cannon Street in the north to the top of the Escarpment in the south. This Section includes Hamilton's Downtown Core, which transitions along James Street South to a more local-scale commercial and residential neighbourhood and a hospital precinct at St. Joseph Hospital - Charlton Campus before finally reaching the Niagara Escarpment – a major geographical feature and physical boundary that divides the Downtown Section from the Mountain Section. The study boundaries have been extended east up to Emerald Street in this section to include the potential LRT routing up the Escarpment which would focus on the Claremont Access.

The Downtown Section is home to one of Hamilton's earliest neighbourhoods, the "Gore" Community, which formed around Gore Park, and over time, developed into two distinct areas - James Street North, a primary commercial street in the Downtown Core, and James Street South, a commercial and residential neighbourhood.

An established civic, cultural, and commercial centre, the Downtown is characterized by the most diverse mix of uses and the highest concentration of higher-density office and residential uses along the corridor. Besides Gore Park, a major community gathering space, this area also includes some key civic and cultural buildings that have a regional draw such as City Hall, Copps Coliseum, the Art Gallery, the Central Library and the Farmers' Market.

48 http://www.jamesstreetnorth.ca

In *Places to Grow* and the *Urban Hamilton Official Plan*, the Downtown is identified as an Urban Growth Centre where there should be the greatest concentration of population and employment growth, supported by higher order transit. With the intersection of the A- and L-Lines at James Street and York Boulevard and the A- and B-Lines at James Street and King Street, Metrolinx in *The Big Move*, has identified the Downtown as a Mobility Hub that will serve a major multi-modal transit role and include a diverse mix of uses and amenities. The new MacNab Bus Terminal is an important interchange as part of the multi-modal transit centre in the Downtown. To mark the Downtown's high multi-modal transit profile, this area will likely include a significant flagship station at the intersection of the A- and B-Lines.

Mountain Section

The Mountain is the longest of all the sections, stretching from the top of the Escarpment in the north to the Hydro Corridor south of Rymal Road. This study area has been extended east to include the potential LRT routing via the Claremont Access and west to include the Major Activity Centre at St. Joseph Health Care (Mountain Campus) and Mohawk College.

The Mountain Section includes a number of areas and a range of uses. The section is largely characterized by suburban commercial (e.g. big box retail, commercial plazas and automobile dealerships) and residential areas with low-density built form and large lots. These areas tend to be more automobile-oriented rather than pedestrian or transit-oriented. However, there are significant opportunities for reurbanization/ redevelopment and infill. The Niagara Escarpment is a dominant geographical, parks, and open space feature, and recognized as a UNESCO World Biosphere Site. The LINC and hydro corridor are significant infrastructure structures.

The *Urban Hamilton Official Plan* identifies St. Joseph Hospital (Mountain Campus) and Mohawk College as a major activity centre – a significant mixed use nodal area that provides regional scale health and education services, has high levels of in-commuting, and generates a high level of employment. Redevelopment plans are underway for both sites. In the Official Plan, community nodes are associated with the downtowns of former municipalities and should evolve to include mixed uses to provide housing, employment, services and recreation close to each other and transit.

Ryckman's Corner, approximately located along present day Upper James Street between present day Stone Church Road and Rymal Road, is a historic neighbourhood named after Samuel Ryckman (1777-1846) who was a farmer and surveyor that originally established the neighbourhood initially through the construction of a log house and a barn. Ryckman's Corner, recognized in the Urban Hamilton Official Plan as community node, is to have an important urban structure role and include a range of uses to provide access to housing, employment, services, and recreation in close proximity to each other and to transit for residents and surrounding neighbourhoods in a mixed use environment.

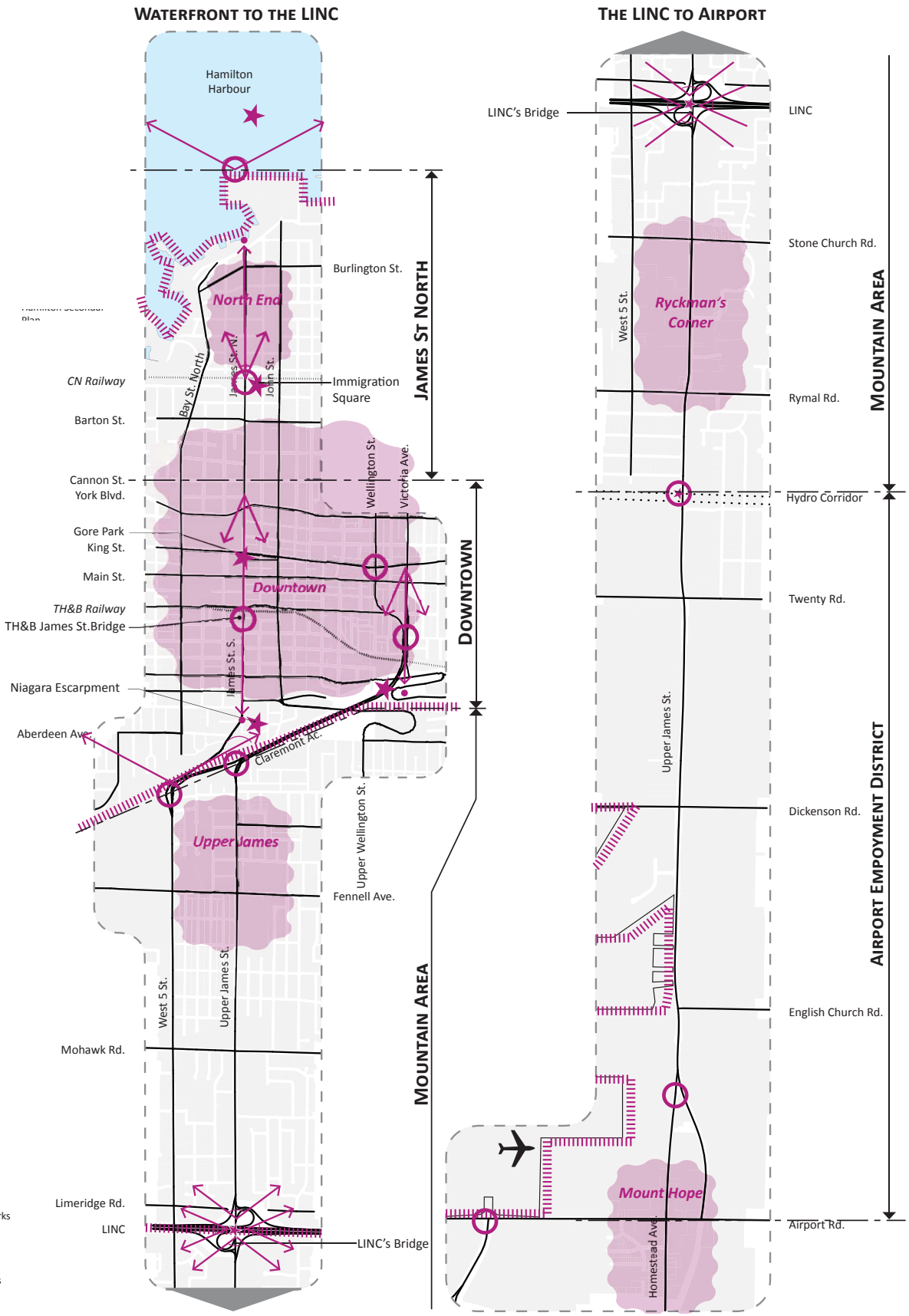
In *The Big Move*, Metrolinx identifies Mohawk Road and Upper James Street as the future intersection of the A- and T-Lines, the Mohawk Road and Upper James Street intersection is identified as a Mobility (Gateway) Hub. The Rymal Road and Upper James Street intersection, where the Ryckman's Corner community node is located, is also the intersection of the future A-and S-Lines.

Airport Employment Section

The Airport Employment Section stretches from the Hydro Corridor in the north to the Airport, the southern terminus of the A-Line. This section includes clusters of residential, commercial, and light industrial uses along Upper James Street. The hydro corridor marks a distinct transition to a strong rural fabric southward from Twenty Road.

The *Urban Hamilton Official Plan* applies to the area between the hydro corridor and Twenty Road. In this area, there are currently some natural open spaces as well as a small residential and commercial area established on the northeast side of Twenty Road and Upper James Street.

South of Twenty Road, the land west of Upper James Street largely corresponds with the Airport Employment Growth District (AEGD) identified in *Urban Hamilton Official Plan* and in the *Airport Employment Growth District Secondary Plan,* while the land east of Upper James Street is rural and included in the *Rural Hamilton Official Plan*. Airport business park uses are planned for much of the *AEGD* to reinforce this area's role as an airport-supportive, business and employment activity area with prestige business uses lining Upper James Street. Where the corridor splits into Homestead Drive and Upper James Street, marks the presence of the start of the Mount Hope community begins. This community developed along Homestead Drive in the 19th Century and is how it associated with the Airport.



PHYSICAL AND NATURAL FEATURES

"THERE IS NO REASON WHY HAMILTON SHOULD NOT BE ONE OF THE MOST DESIRED PLACES TO LIVE. FROM THE ESCARPMENT THAT WRAPS ITS BRANCHES TO THE LOWER CITY AND THE MANY BEAUTIFUL VIEWS..TO OUR HARBOUR.. A THRIVING ARTS COMMUNITY, AND SO MUCH MORE."

-LARRY PATTISON,
THE DAY OUR CITY JOINED HANDS
(FEB 10, 2011,
RAISE THE HAMMER)

3.1.2 Physical and Natural Features

Physical and natural features are one factor that informs the corridor's urban structure. Urban structure refers to the way that the different components that constitute a city, including both natural and built features in the environment are arranged, and affects how the corridor functions and is experienced. Various elements help to shape the urban structure of an area, define or hint at the existing or potential character of space. Besides physical and natural features, there are a number of other elements that inform the A-Line urban structure, such as proposed nodes, character areas, and transit-oriented development areas and corridors. These elements will be addressed in the later sections.

The following physical and natural features have been identified which may significantly impact the urban structure of the A-Line corridor. These have been informed by an analysis of the corridor, public and stakeholder engagement, and amongst others, the following policy plans: Setting Sail: West Harbour Secondary Plan; West Harbour Recreation Master Plan; Putting People First: Downtown Secondary Plan; and the Urban Hamilton Official Plan.

Opportunities and Constraints

There is generally a greater concentration of physical and natural urban structure elements below the Escarpment than above the Escarpment. This pattern may relate to that the fact that, until the 1960s, Hamilton's development was largely focused in the areas below the Escarpment. Many of the areas above the Escarpment developed in more recent years or (in the study area) remain undeveloped.

The urban structure of the A-Line Corridor is very much shaped by the dominant presence of the Waterfront, the Escarpment, and the Airport, which act as physical boundaries that limit and structure where development can happen. The urban structure elements identified include gateways, views, and landmarks, make the areas and communities along the A-Line unique and are proposed to be enhanced to reinforce the character of the neighbourhoods. Enhancements may include strategic use of landscape and ecological features, architectural landmarks, or public art. Major infrastructure elements (such as the CN Railway and TH&B bridges, the Hydro Corridor, and the LINC) are proposed to be enhanced or redesigned to contribute interest and aesthetics to the public realm. Major east-west arterials that intersect the A-Line play a role in structuring the Corridor, and are proposed or potential areas of focus for rapid transit and transit-oriented development.

The intended urban structure builds on concepts of reinforcing nodes and corridors and enhancing opportunities for TOD.

James Street North

In this Section, the water's edge creates a physical boundary that limits development on the north end of the city, below the Escarpment. The railway is also a physical boundary, although the presence of crossings on both sides of James Street enables some connectivity. The urban fabric or the pattern of streets, paths, trails and open space in an urban area, is generally quite compact and walkable in this section, as street blocks are short and land parcels are small to medium-size. Landmarks include the Hamilton Harbour, the future James North GO Station, LIUNA Station, and Immigration Square. Consistent with the West Harbour Secondary Plan, views in this study area are located at Pier 8 looking north toward the Harbour; at the bridge looking north over the railway. Gateways in this section include the water's edge at Pier 8 and the bridge over the CN Railway.

Downtown

Like the James Street North Section, the urban fabric of the Downtown is compact and walkable, due to the short street blocks, small to medium-sized land parcels, and the presence of pedestrian and cycling connections. There are many architecturally and historically-significant buildings and sites in this area, key landmarks being Gore Park and the Niagara Escarpment. The Niagara Escarpment Plan identifies the Escarpment as a major regional landmark that requires special attention for preservation and enhancement. The Escarpment also creates a physical boundary that limits and contains urban development below the mountain. A view corridor begins at Cannon Street looking south toward the Escarpment. The original TH&B (Toronto, Hamilton and Buffalo Railway) bridge structure, now associated with the Hunter GO Train Station, creates a gateway experience, transitioning from the Downtown core to a more local residential and commercial area around James Street South.

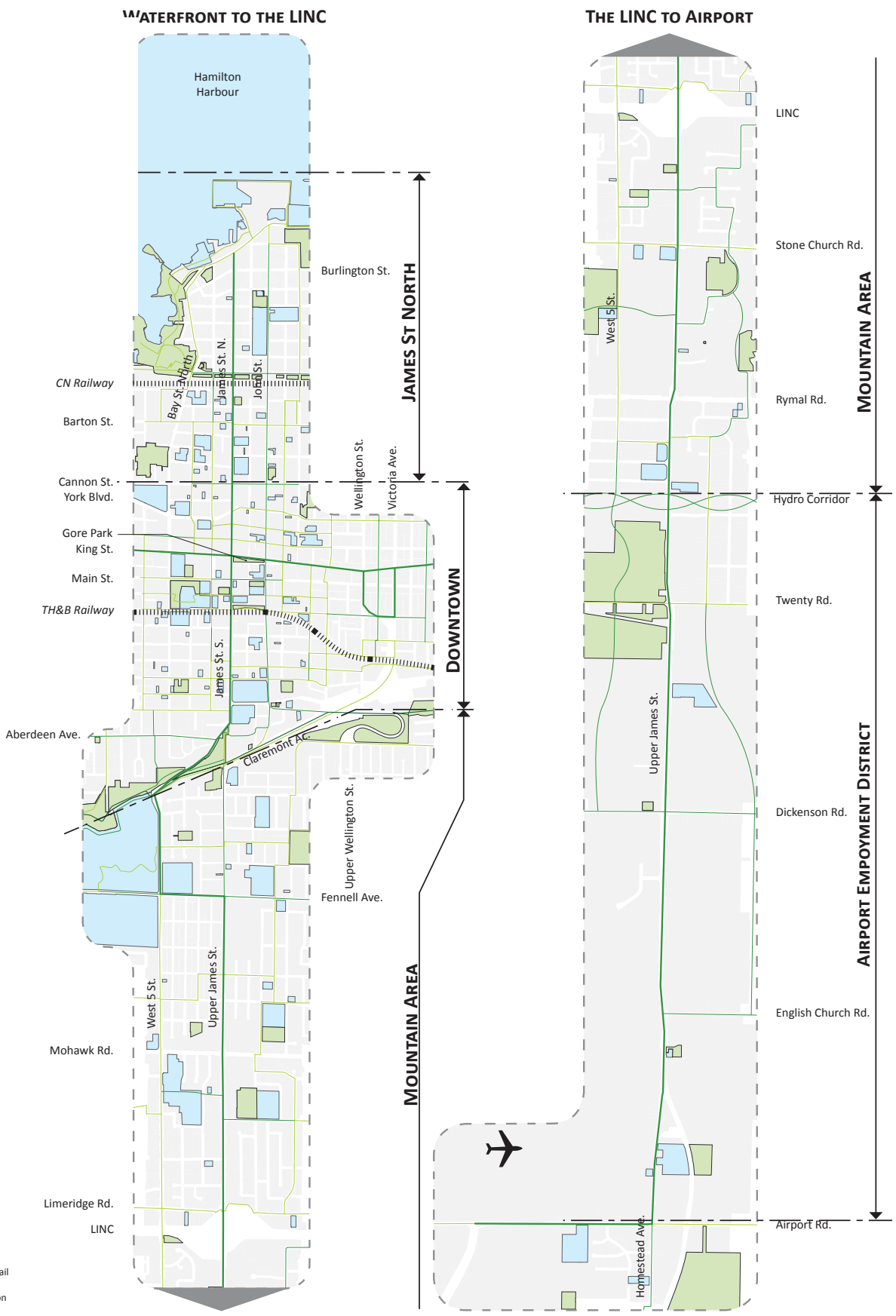
Mountain

In contrast to the Downtown, the blocks on the Mountain are generally longer, and the land parcels much larger, creating a less dense urban fabric, and a less walkable environment. As the Escarpment limits development on the south end of Downtown, it limits development on the north end of the Escarpment. The LINC and Hydro Corridor are secondary landmarks that stand out due to the spatial, architectural, and landscape conditions associated with them. While the LINC is a physical boundary, the Hydro Corridor is a gateway – the point of transition from a more developed urban area north of the Hydro Corridor to a more rural one south of the Hydro Corridor. The bridge and the LINC could be redesigned or enhanced in the future to enable better public realm treatment, improving the experience for those travelling along it.

Key views in this section are those at the top of the Escarpment looking over Hamilton's Downtown, and from the bridge over the LINC - the highest point in this section. Although there is significant potential for transit-oriented development on the Mountain, a challenge will be reconciling the existing Official Plan land use designation and zoning which currently support land extensive and automobile-oriented uses along major sections of the corridor.

Airport Employment District

In this section, south of the Hydro Corridor, the land fabric transitions from urban to rural, and agricultural uses and natural open space become dominant. Gateways in this section include the top of the Mountain; Twenty Road (where the built-up area ends); north end of Homestead Drive (which is an entry to the Mount Hope neighbourhood) and the entrance to the airport on Airport Road. The airport lands, due to its size, acts as an impermeable and physical barrier that disrupts the continuity of the street network.



PUBLIC REALM FRAMEWORK

"WE NEED TO DO THIS NOW. PEOPLE ARE STARTING TO LIVE IN THE CORE AGAIN, BUT THE INFRASTRUCTURE IS STILL NOT IN PLACE."

- STAKEHOLDER INTERVIEW PARTICIPANT

3.1.3 Public Realm Framework

The public realm is made up of a wide range of public spaces and amenities, including streets, sidewalks, parks, plazas, and other public open spaces. These public realm components are connected and interdependent, functioning as part of a network. Decisions related to public works, streetscape improvements, and private development (i.e. built form) affect the quality, character, and connectivity of the public realm. The following map illustrates the proposed public realm framework for the A-Line Corridor and the potential new pedestrian and cycling connections to improve the overall network.

The proposed A-Line Public Realm Framework is informed by analysis, public consultation and amongst others, the following policy plans: *Hamilton Recreational Trails Master Plan*; *Shifting Gears 2009 (Hamilton Cycling Master Plan); Downtown Mobility Streets Master Plan*; *Setting Sail: West Harbour Secondary Plan; Downtown Hamilton Secondary Plan; Urban Hamilton Official Plan*; and *Rural Hamilton Official Plan*. Due to the constraints of the available City data sources, and on-going implementation, there may be some overlap between existing and proposed trails in this document. Where there is overlap, proposed A-Line connections should be seen as reinforcing those already identified in the existing plans.

Opportunities and Constraints

The overall objective for the proposed Public Realm Framework is to prioritize walking, cycling, and transit in the A-Line Corridor, and improve connectivity to destinations, civic amenities, parks and open space and key residential, commercial, institutional, and employment areas in the city. The city's parks and open space network, illustrated on the map, is generally already in place. Civic uses have been included since they are destinations that are generally associated with some level of open space provision (e.g. schools, community centres).

The proposed connections help to "complete" and improve the existing pedestrian and cycling network in the A-Line study area.

The potential connections identified, as part of the proposed Public Realm Framework, reflect the following strategies:

- Enhance east-west on-street pedestrian infrastructure along the entire A-Line Corridor, enabling surrounding areas to connect to rapid transit and key destinations along the corridor.

- Ensure (or review) cycling connectivity including appropriate application of 'dismount & walk'.
- Create a public realm network by ensuring that there is always a north-south connection on both sides of James Street and Upper James Street integrating east-west trails, bikeways, and minor street pedestrian connections to RT stations. Create new or reinforce existing connections along major infrastructure features where possible (e.g. Strachan Street next to the CN railway, Hydro Corridor).
- Integrate other potential connections that will improve and help complete the existing pedestrian and cycling network.
- All potential connections should include public realm improvements with the highest level of treatment along the A-Line connection.

James Street North

The main north-south connection proposed in this section is James Street North, which is identified as one of the "mobility streets" [that enable safe pedestrian, cycling, transit, and vehicular access to Downtown and surrounding neighbourhoods] in the *Hamilton Downtown Mobility Streets Master Plan 2004*. The east-west multi-use trail proposed in the *Hamilton Recreational Trails Master Plan* along Strachan Street should provides a comfortable east-west connection to the future James Street North GO Station and A-Line rapid transit stop and "high order" recreation at Bayfront Park.

Downtown — James Street

While the trail and public realm network is fairly well connected Downtown with short blocks, this is less so above the Escarpment. Therefore, the proposed James Street North connections should continue through this area to the Escarpment to create two major continuous north-south routes. Aberdeen Avenue is also proposed to be a new east-west trail connection below the Escarpment. A number of other new, smaller east-west and north-south connections are also considered: extending the bike route along Main Street to Catherine Street; creating a north-south connection on MacNab Street from Strachan Street to Barton Street, and from Bold Street to Robinson Street; and completing the on-street trail along Catherine Street to Charlton Avenue. Multi-use trails proposed under the *Recreation Trails Master Plan* that fall within this area should be prioritized to enable better connectivity from the base to the top of the Escarpment.

Mountain — Upper James Street southerly to Rymal Road

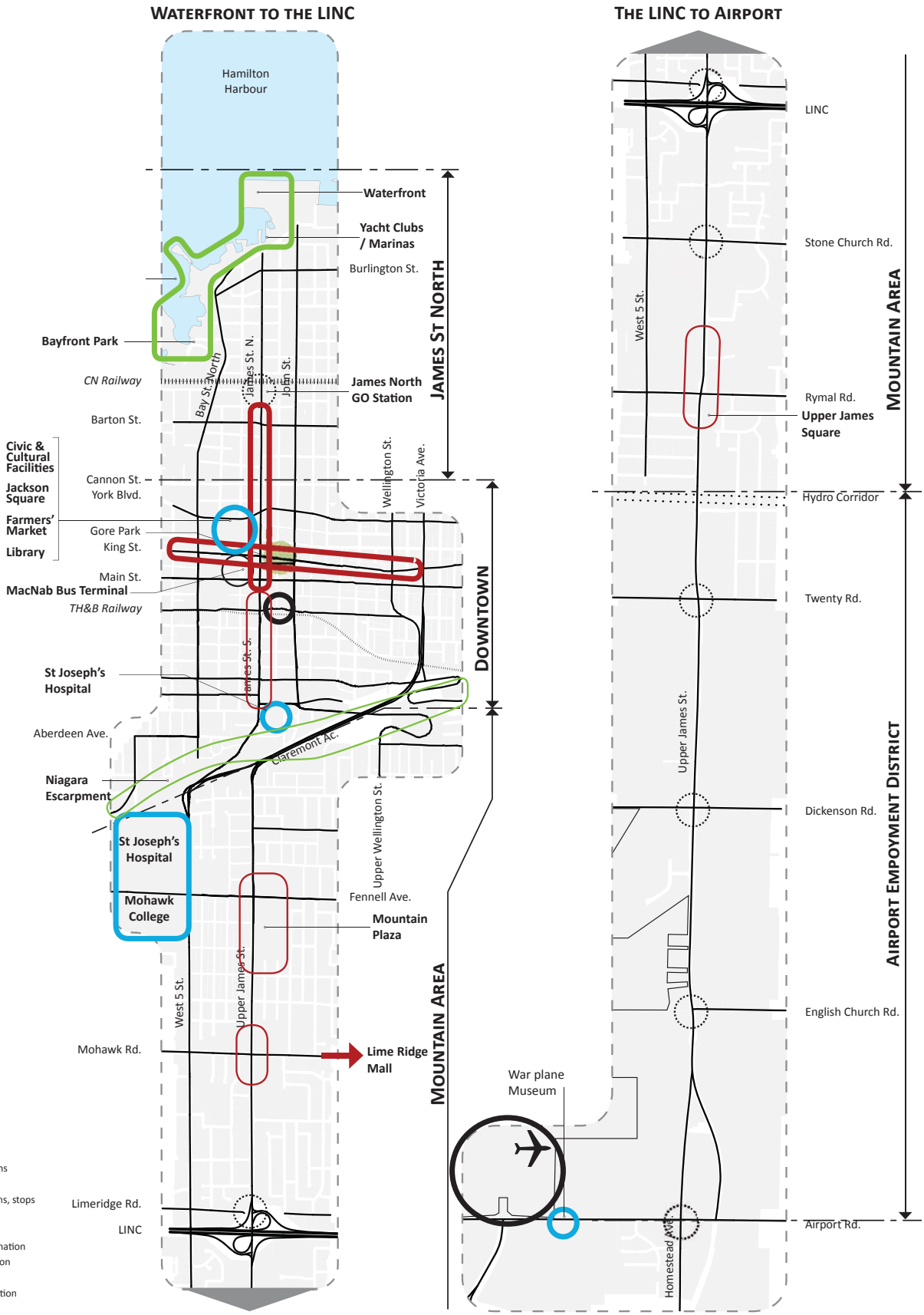
In the Mountain Section, the potential new north-south A-Line connection will follow the existing A-Line bus express routing and will likely run along a stretch of West 5th Street and Fennell Avenue. Both West 5th Street and Fennell Avenue are already proposed in the *Shifting Gears Hamilton Cycling Master Plan* to have bike lanes that enable connectivity to and from the major activity centre at St. Joseph Hospital and Mohawk College. These proposed connections should be prioritized and enhanced with the presence of rapid transit. Although there are many fewer connections on the Mountain, the public realm spine is already more or less present with an existing

north-south connection east of Upper James Street on West 5th Street, and another west of Upper James Street to Limeridge Road along, as well as some minor street and arterial east-west connections.

Beyond Limeridge Road, the public realm spine is proposed to extend through a potential north-south connection east of Upper James Street to the Hydro Corridor along with new proposed mid-block connections.

Airport Employment District — Upper James Street south of Rymal Road

As a major infrastructure feature marking the gateway to the *Airport Employment District Section*, the Hydro Corridor is proposed to be a significant east-west off-street connection, landscaped with a more naturalized treatment for cyclists and pedestrians. The north-south trail is proposed to extend along Upper James Street from Rymal Road to Homestead Drive (where Upper James Street diverges easterly. Airport Road is planned to include bike lanes westerly of the airport entrance. It would require public realm improvements. The public realm spine should continue through this section, with the West 5th Street connection extending to Dickenson Road, and the north-south connection east of Upper James Street (illustrated on the map) extending to English Church Road.



MAJOR DESTINATIONS

"WE NEED TO ALLOW PEOPLE TO LIVE CLOSER TO THE CORRIDOR TO START SUPPORTING THE KINDS OF AMENITIES PEOPLE WANT."

- STAKEHOLDER INTERVIEW PARTICIPANT

3.1.4 Destinations

Destinations are places that have a notable draw, and/or act as end points to people's journeys. They may include key civic places such as universities, colleges, the airport, regional shopping centres, hospitals, arenas, and arts centres. Destinations need to be well supported by the transportation network and, in turn, are critical to how the transportation network functions.

The adjacent map illustrates existing and future/potential future destinations along the A-Line Corridor with a local or regional draw. Destinations were identified through public consultation, as well as policy and land use analysis. Places and areas with a high level of activity or pedestrian volume were also identified. Destinations are informed by policy such as the *Setting Sail Secondary Plan for West Harbour (2005, currently under appeal)*, *Hamilton West Harbour Waterfront Recreation Master Plan (2010)*, and the *Putting People First: The New Land Use Plan for Downtown (2005)*.

Opportunities and Constraints

The A-Line is anchored at either end by two major regional destinations: the Waterfront area at the north terminus, and the Hamilton International Airport at the south terminus, with a variety of existing and future local and regional destinations in between. These destinations are areas with a specific local or regional draw. The presence of major destinations or clusters of destinations informs the location of A-Line rapid transit nodes and stops, as well as areas of focus for transit-oriented development. It is important that these existing destinations are reinforced to continue generating activity and ridership, and are well connected to future rapid transit improvements and the overall transportation network.

James Street North

Waterfront (regional)

The waterfront continues to grow as a major regional destination. The waterfront area included in the A-Line Corridor is owned by the City of Hamilton and Pier's 7 and 8 are currently leased to the Hamilton Port Authority, which has its own Land Use Plan that articulates a vision for the port lands. Although initially industrial, West Harbour has taken on a much stronger recreational focus since the redevelopment of the Bayfront Park in 1996.

The *West Harbour Secondary Plan* (2005) and the *West Harbour Recreation Master Plan* (2010) have since continued to support this area's development into a major waterfront destination and attraction for the entire region.

The Waterfront Section has seen significant recent improvements, which have been carried out as part of the implementation of the vision set out in the Plans noted above. These improvements include remediation of the water and enhanced ecological habitats, improved trails, landscape, and public realm infrastructure, new public art, and the introduction of cruise boats, a café and, an ice skating rink. These improvements complement the existing yacht club, sailing school, marina, and waterfront parks and open space system, which also help to reinforce the recreational role of the waterfront. The Waterfront Trust has a long-term lease on the former Parks Canada Discovery Centre on Pier 8, and is currently considering proposals for redevelopment that would potentially incorporate mixed uses including restaurants and businesses. As a regional destination, the waterfront currently attracts approximately 500,000 visitors each year. The Port of Hamilton has developed a major focus on business development including encouraging increased shipping activity, waterfront land development and property leasing. East of West Harbour, the Port of Hamilton is continuing to increase strategic cargo handling and leisure shipping services. Therefore, in addition to the growing activity due to the recreational focus and new development along the waterfront, there will continue to be a demand for public transport from Port and waterfront employees and waterfront patrons.

While the existing policy recognizes the need to strengthen transit access to and from Hamilton's waterfront, it does not yet take into consideration future rapid transit and its role in possibly reinforcing this area's growth potential, how rapid transit would integrate with this important northern terminus, and how future development along the waterfront will support its role as a rapid transit focal point.

Future James Street North GO Station (regional)

The Big Move has identified the future James Street North GO Station as a Gateway Hub – a key node in the regional transportation system where two or more rapid transit lines intersect and where significant passenger activity and potential employment opportunities are anticipated. GO Transit is currently developing proposals to extend the Lakeshore West GO Train service to Niagara Falls. Under these proposals, the existing peak hour service to the Hunter Street GO Centre (south of downtown) would be augmented by a new all day service running along the CN lines to the north of downtown. A new station would be constructed on James Street North, potentially across from the LIUNA station, and would ideally be integrated with the A-Line station. The A-Line would provide a link to the new regional train service from the Downtown and Mountain areas of Hamilton.

James Street North Art District (regional)

"Galleries and a little grit around the edges define the vibrant James Street North arts district." - Canadian Geographic, March 2008

An arts district is increasingly developing along James Street North, focused between Murray Street to King William Street, crossing both James Street North and Downtown Sections. This commercial area includes diverse arts and specialty stores, services, cafes and restaurants. "Go West, Young Artist" was the title in a Globe and Mail article in 2006 that focused on the growing art scene in Hamilton, noting James Street North as being an important focus . The monthly James North Art Crawl community event

"THERE'S A LOT OF HISTORY HERE AND HISTORICALLY-AESTHETIC BUILDINGS. IF WE SUCCEED JUST A LITTLE MORE, PEOPLE WILL START COMING. LOOK AT THE SUCCESS OF THE ART CRAWL ON JAMES STREET NORTH – NOBODY COMPLAINS ABOUT PARKING."

- STAKEHOLDER INTERVIEW PARTICIPANT

continues to grow in attendance, where participants can walk the street and experience art as well as enjoy goods from diverse cafes and restaurants in the area.

Downtown (regional)

The Downtown is the established commercial, civic and cultural centre of the city and a major regional destination. As the historic downtown core, the area has a significant amount of the city's heritage resources and includes a rich architectural building stock. The section includes some of the highest employment and residential densities along the corridor. The *Downtown Hamilton Secondary Plan* (under review), seeks to maintain and strengthen the character and vibrancy of this area. Rapid transit and transit-oriented development will help to continue revitalizing and enhancing the Downtown.

As the Urban Growth Centre and Downtown Mobility Hub, the Downtown core is envisioned to be a major multi-modal transit centre with vibrant mixed uses including retail, residential, and office, as well as civic and cultural amenities. This multi-modal transit area will include the integration of the A- , B-, and L-Lines for rapid transit, a potential flagship rapid transit stop, the MacNab Bus Terminal, the Hunter GO Station, local transit, cycling and pedestrian infrastructure. The Downtown Secondary Plan review process currently underway, as well as future A-Line planning should contribute to making the Downtown increasingly more vibrant.

Downtown Commercial: James Street North and King Street (regional)

James Street North and King Street are identified as the two Prime Retail Streets in the *Downtown Hamilton Secondary Plan*. The Downtown Hamilton Secondary Plan seeks to maintain a heritage character for this commercial area. The Downtown Business Improvement Area Association and the International Village Business Improvement Area Associations work with the City to implement improvements. Although the Downtown commercial area has seen some decline, the public consultation process confirms that it remains a destination, especially for those seeking more specialized shops and services, multicultural restaurants, and creative and cultural experiences.

The City is also continuing its revitalization in the Downtown core, providing incentives for development and businesses. The A- and B-Lines are significant opportunities to revitalize and improve this area.

Civic and Cultural Uses (regional)

The Downtown includes a number of regionally-significant important civic and cultural amenities such as Hamilton Place,

the Art Gallery of Hamilton, the Theatre Aquarius, Copps Coliseum, the City of Hamilton Building, the newly renovated Farmers' Market, and Central Public Library. The Central Library Branch alone sees a significant number of users daily. In a one-week sample in December 2010, there were approximately 4,000 patrons using the library on the busiest day of the week, and about 23,000 visitors in total for the entire week. The number of patrons and the amount of activity are expected to continue to grow. The new Farmers' Market has also quickly become a major destination, attracting a high level of pedestrian traffic during the four days that it is open for business weekly. In addition, Gore Park, the most significant civic gathering space and public open space in Downtown Hamilton, is located at the intersection of James Street North and King Street and continues to act as Hamilton's "Central Park".

MacNab Bus Terminal (regional)

Initially identified in the *Downtown Transportation Master Plan*, the MacNab Transit Terminal is a major multi-platform bus station that was recently completed in early 2011. The A-Line will enable transfers between this terminal and other areas of Hamilton.

Hunter GO Centre (regional)

The Hunter GO Centre is a GO Transit rail and bus station that also provides a terminal point for intercity coaches such as Greyhound and Coach Canada. The Centre is located on Hunter Street East and is the terminus for three local bus routes. The GO Centre is also the western terminus of the Lakeshore West GO Train service. The Hunter GO Station provides stability in the regional transportation system. It is also an important part of the major Downtown transit area and Urban Growth Centre and A-Line transfer point.

James Street South Retail (local)

James Street South between the Hunter GO Station and St. Joseph Hospital (Charlton Campus) is as a local shopping destination. Along this stretch of James Street, neighbourhood-scale commercial uses in the form of cafes, grocery stores, and small office uses, are generally located on the first and second floors of typically three-storey buildings. Much of the commercial use serves the significant number of existing residents living in the surrounding Durand and Corktown neighourhoods, GO Train patrons, and hospital employees.

St. Joseph Hospital - Charlton Campus (regional)

Established over 120 years ago, St. Joseph Hospital has four campuses with over 650 beds, and more than 4,000 full-time and part-time employees. Providing tertiary, secondary, and ambulatory healthcare services for the Hamilton-Niagara-Haldimand-Brant Local Health Integration Network, as well as the neighbouring regions of Halton, Kitchener-Waterloo, and Norfolk, St. Joseph Hospital continues to play a significant regional role with each of its campuses. With approximately 300 beds, the Charlton Campus is located at the intersection of James Street South and Charlton Avenue, and has links with both the McMaster University's Faculty of Health Sciences and Mohawk College.

"THIS IS TRULY A UNIQUE CORRIDOR - WE NEED TO BRING PEOPLE TO THE WATERFRONT AND GIVE PEOPLE A REASON TO GO DOWNTOWN."

- STAKEHOLDER INTERVIEW PARTICIPANT

Escarpment (local)

The Escarpment is the most prominent natural feature along the Corridor. The Bruce Trail, a regional attraction, runs along the top of the Escarpment. Within this study area, there are currently only a couple of access points to the Escarpment from below the Mountain area that are largely used by local residents.

Mountain

St. Joseph Hospital - Mountain Campus and Mohawk College (regional)

The Urban Hamilton Official Plan identifies these two major institutions – St. Joseph Hospital (Mountain Campus) and Mohawk College combined – as a major activity centre area that will generate significant employment and rapid transit ridership.

As one of four regionally-significant campuses, St. Joseph Hospital (Mountain Campus) on West 5th Street provides specialized tertiary mental health services for residents of the Central South Region in Ontario, operating specialized mental health beds and providing community services to thousands of outpatients.

Mohawk College, established in 1866 at West 5th Street and Fennell Avenue, is a regional destination located next to St. Joseph Hospital (Mountain Campus). The College recently completed its Campus Renewal Project, which included a 40,000 square foot library and e-learning centre, and is looking to expand the number of its full-time student population to 12,000 from the current 8,000, and to continue growing its part-time enrolment, which currently stands approximately at 20,000 students. Between 2005 and 2008, applications to the College rose by almost 20%. The newly renovated Mohawk College includes a theatre and gym that facilitate public use on weekends and after hours.

To accommodate growth and meet its sustainability priorities, the College will be seeking to develop additional student accommodations and to create an urban campus with eight development sites that will house college and community uses. The College has recently approved a student bus pass, and would like to see more frequent transit service to respond to the growing student population. With the A-Line rapid transit, the College hopes to see improved connections from lower

Hamilton to the Campus on the Escarpment and has plans to integrate a “multi-modal transit hub” with a mixed-use “transit hall” on site.

Retail Destinations (local)

In the Mountain Section, there are a number of major retail stores, commercial plazas, and commercial areas that are currently local-significant destinations for shopping and services. These commercial destinations include Mountain Plaza at Fennell Avenue and Upper James Street, and areas round Mohawk Road and Upper James Street and Ryckman’s Corner on Upper James Street between Rymal Road and Stone Church Road. These retail areas tend to, but do not exclusively, correspond with identified tertiary policy areas.

Future Transit Nodes (local, regional)

Future transit nodes have been identified at key intersections in the Mountain Section along Upper James Street where there currently is not a strong transit focus, but could potentially become A-Line rapid transit nodes. These nodes include the intersection of Upper James Street with Limeridge Road and Upper James Street with Stone Church Road.

Airport Employment District

Future Transit Nodes (local, regional)

As with the Mountain Section, future transit nodes have been identified along Upper James Street and Homestead Drive in the Airport Employment District at key intersections where there currently is not a strong transit focus but could potentially become A-Line rapid transit nodes. These nodes include Twenty Road, Dickenson Road, and English Church Road, and the intersection of Homestead Avenue and Airport Road.

Hamilton International Airport (regional)

Hamilton International Airport is a key location for growth in both passenger and cargo flights over the next 20 years. Passenger throughput at the airport is forecasted to increase from 1.2 million in 2007 to 4.7 million in 2027. This represents an almost fourfold increase in the number of passengers using the facility over the next two decades. It is further anticipated that cargo activity could increase by 5 to 10 per cent over the next few years, from a baseline of 93,000 tons that were moved through the airport in 2003.

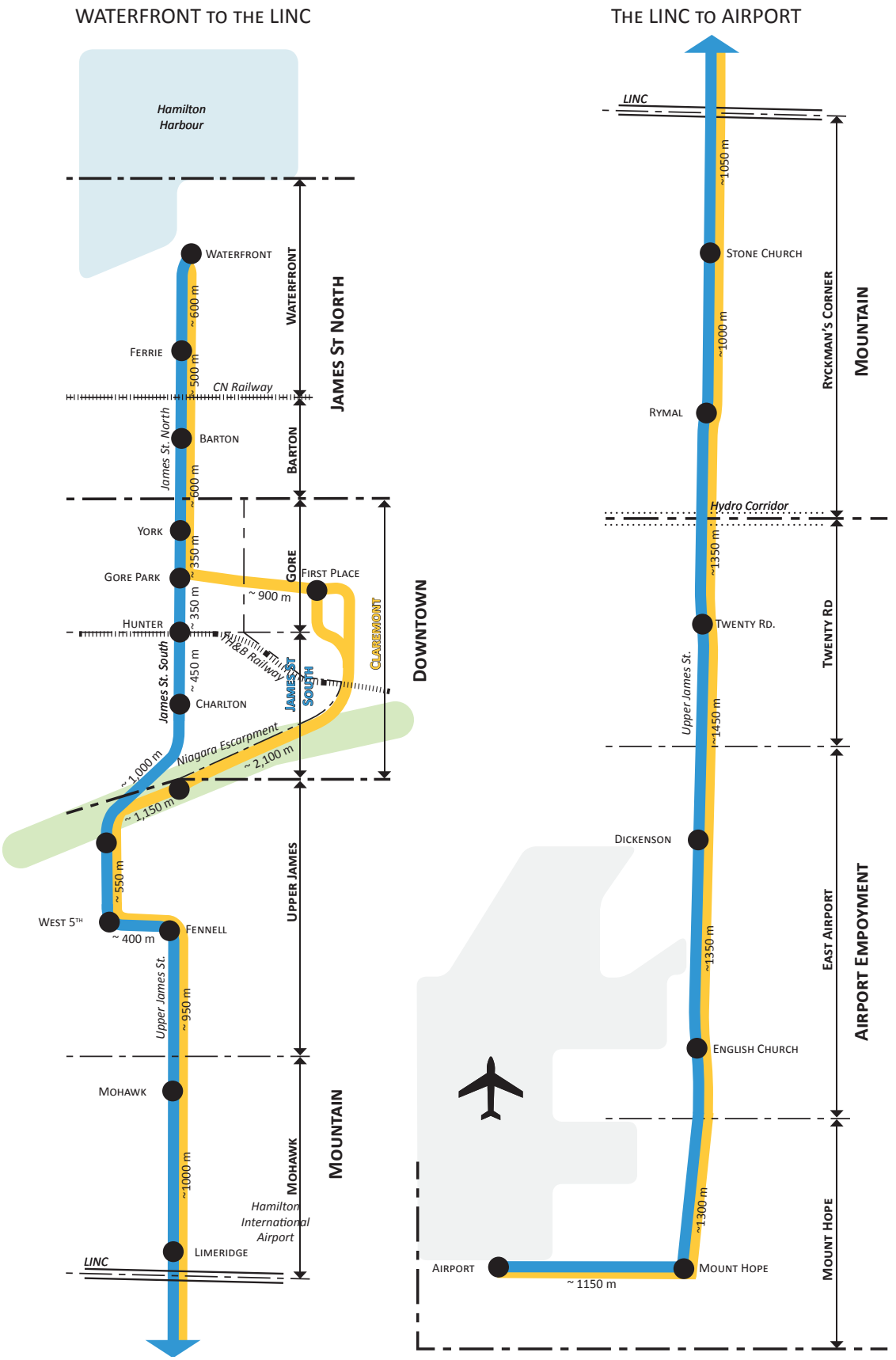
There are several factors that will help enable the airport to achieve this planned growth. One of the most significant of these is improved road access from the surrounding areas. Improvements to transit options serving the airport will also help to improve sustainable access without affecting levels of traffic and congestion on the highway network. In order to assist the continued growth of the airport, the airport asks the City of Hamilton to :

- Endorse the proposed Airport Master Plan Update and incorporate the key principles into planning policy, including GRIDS;
- Undertake the acquisition of adjoining lands to ensure the protection of future airport expansion plans;
- Provide a direct link between the new Highway 6 Airport Expressway and the Lincoln Alexander Parkway / Red Hill Creek Expressway intersection to ensure suitable road access to the airport;
- Provide access to the Golden Horseshoe Light Rail Transit Network; and,
- Ensure good transport links exist between the airport and the surrounding community, as well as other priority and emerging urban centres.

The *Hamilton Urban Official Plan* was approved and modified by the Ministry of Municipal Affairs and Housing in March 2011 to include the area from approximately Twenty Road to the airport as an *Airport Employment Growth District (AEGD)* within the urban boundary. In the long term, the AEGD is to be a major employment area with uses including commercial and light industrial uses to support the functions of the airport.

Canadian Warplane Heritage Museum (regional)

The Canadian Warplane Heritage Museum on Airport Road is a regional attraction. It showcases the aircrafts used by Canadians or Canada's Military from the beginning of World War II to the present. The Museum displays many aircraft models, and over 4,000 books, and has a 40,000 square foot hangar.



A-LINE CHARACTER AREAS & TRANSIT NODES

"WE CAN'T JUST STOP AT BUILDING RAPID TRANSIT. WE HAVE TO LEVERAGE IT TO BUILD THE CITY."

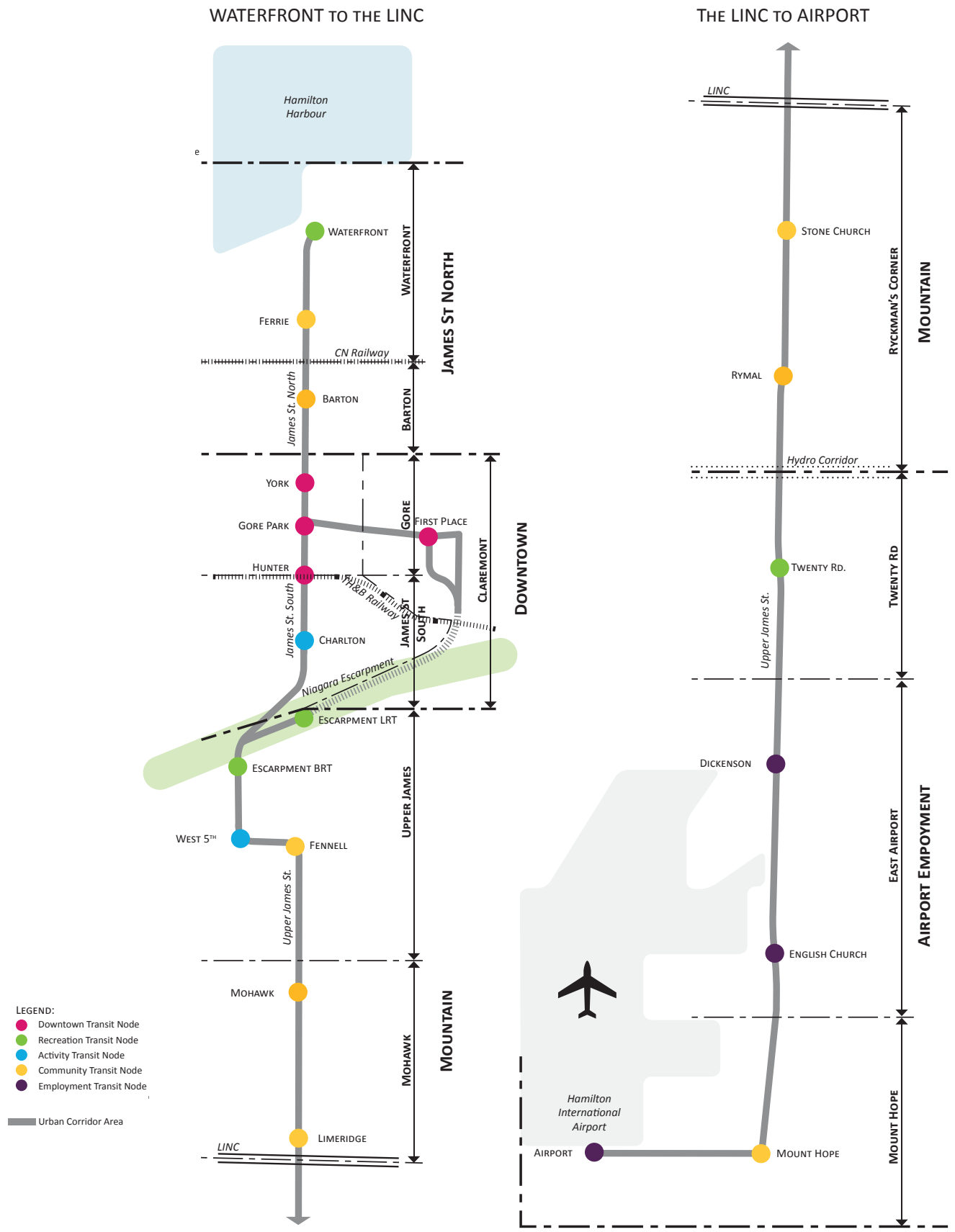
-STAKEHOLDER INTERVIEW PARTICIPANT

3.1.5 Character Areas and A-Line Transit Nodes

The existing policy and the proposed physical and natural features, public realm framework, and destinations, all help to define "character areas" and "transit nodes" along the A-Line. "Character areas" are areas that have identifiable qualities and may have a distinct identity, functions, geography, history or vision. A-Line "transit nodes" are focal points of transit activity and transit-oriented development. The location of the transit nodes may reflect the presence of existing as well as future and/or policy-supported communities, destinations, or activity in the. Transit nodes have an opportunity to provide unique functions and land uses, built form, and characteristics. A-Line Transit Nodes are the proposed locations of future A-Line rapid transit stops and station areas as well as focal points for TOD.

The Nodal Character Map classifies each A-Line transit node as one of the following: Downtown Transit Node, Recreation Transit Node, Major Activity Transit Node, Community Transit Node, or Employment Transit Node. While all A-Line transit nodes are to be transit-supportive and have mixed uses, they have been classified to further define the character, dominant use, function, and quality envisioned for each node.

The analysis is informed by public consultation and a number of policies: the *Setting Sail Secondary Plan for West Harbour; Hamilton West Harbour Waterfront Recreation Master Plan; Putting People First: The New Land Use Plan for Downtown;* the *Mount Hope Secondary Plan*, *The Big Move: Regional Transportation Master Plan*; *Draft Mobility Hub Guidelines*; the *Urban Hamilton Official Plan*; and the *Rural Hamilton Official Plan*.



NODAL CHARACTER PLAN

Opportunities and Constraints

- Character areas: A number of character areas have been identified along the A-Line. These should be reinforced and enhanced through policy, planning, and rapid transit initiatives. Section 3.2.3 provides a detailed study of each character area, their associated nodes, and the opportunities and challenges specific to them.
- A-Line transit nodes: Within the character areas, a number of distinct transit nodes have been identified along the A-Line. A-Line transit nodes are the focus of rapid transit activity and transit-oriented development along the A-Line Corridor. The proposed character and defining use of each A-Line transit node has been identified. The function and qualities of A-Line transit nodes should be reinforced through policy, planning and rapid transit initiatives. Where relevant higher order and approved policy exists, the character and function of proposed A-Line nodes should align with this policy.
- Stops: A-Line transit nodes are the proposed locations of future rapid transit stops and station areas. Due to existing conditions related to the urban fabric, and population and employment densities, stops are generally proposed to be about 500 meters apart (approximate 5-minute walk) below the Escarpment and 1000 to 1500 meters apart (approximate 10 to 15-minute walk) above the Escarpment. Further corridor planning and planning, design and engineering (PDE) work will determine the exact locations and design of the waterfront and airport termini, and the location and design of stops and station areas along the entire corridor.

3.1.6 Transit-Oriented Development

TOD includes land uses, built form, densities and a high quality public realm that are supportive of, and capitalize on, all forms of transit investment, with investment emphasis directed towards higher-order transit routes. The look, feel, and scale of TOD along the A-Line will vary depending on the character of the area and the transit node. Integrating a TOD approach is key to transforming the nodes/stops, the areas around them, and the entire corridor, in such a way that enables city-building, the revitalization of neighbourhoods, and the improvement of the environment, public realm, and ultimately, the quality of life of Hamiltonians.

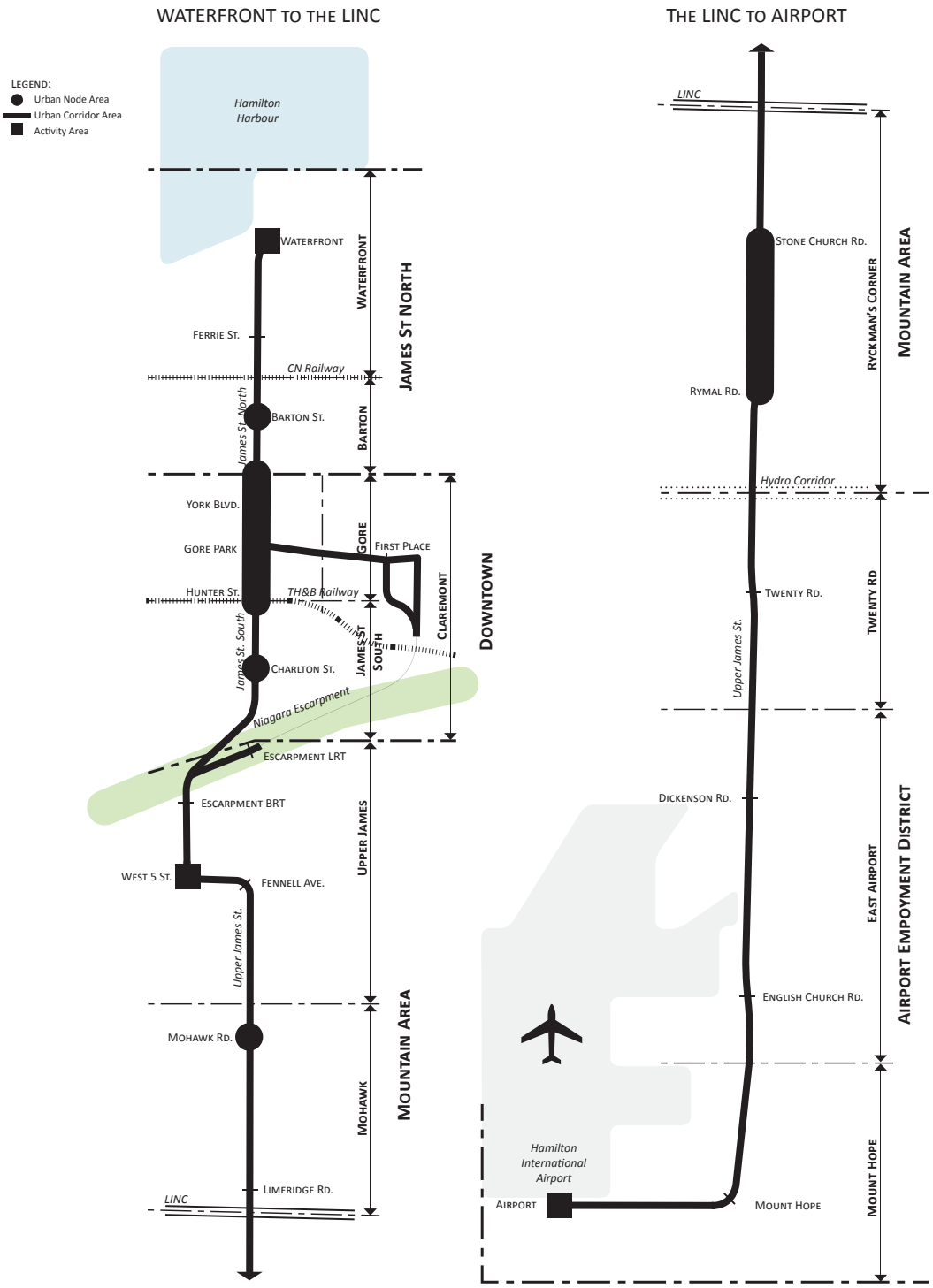
The proposed A-Line transit nodes should respond to the functions and characteristics assigned to them in existing policy, while reflecting the directions in the City of Hamilton Transit-Oriented Development Guidelines, including the ten TOD principles and the TOD typologies.

The following table from the TOD Guidelines identifies different typologies with varying scales and forms of TOD. The classifications were based on characteristics of different areas within Hamilton, and their planning function relates to the overall urban structure in the Hamilton Urban Official Plan.

	TOD Typology	General Characteristics
Urban Areas	Urban Node Areas: Downtown, Sub-Regional Node, Community Nodes *	• Node areas around corridor • Employment and residential functions as well as civic uses varying by scale of a node • Different levels of services for different types of nodes
	Urban Corridor Area	• Area with development potential along RT corridor
Suburban Areas	Suburban Primary Corridor Area	• Mixed use area but may be constrained by poor pedestrian connections
	Suburban Arterial Road Area	• Good potential area for greyfield intensification • Potential to facilitate bus travel
Greenfield Node	Greenfield Node	• Undeveloped area identified as a community node • New areas to be built around transit • Will evolve over time to have the same characteristics and similar functions as an urban node *
	Greenfield Neighbourhood	• A node in the neighbourhood context incorporating residential and local scale commercial supported by local transit
Other	Major Activity Centre e.g. Universities, Colleges, Hospitals, etc.	• High level of institutional uses, with significant transit ridership

Table 3: TOD Typologies

*It is noted in the TOD Guidelines that these typologies should not be systematically applied to all areas of the city, but rather, should be sensitively applied based on the policy, existing context, and future vision of each area in question. It is also understood that an area may evolve from one typology to another. The ten TOD principles will apply to all types of transit nodes and areas at a variety of scales of development. The application of the principles will also vary between TOD typologies. All TOD nodes are intended to be mixed use nodes with varying land uses, built form, densities, and character.



USING THE CITY OF HAMILTON'S TOD TYPOLOGIES, THE FOLLOWING MAP ILLUSTRATES THE PROPOSED TOD STRUCTURE ALONG THE A-LINE CORRIDOR.

Urban Corridor & Nodes TOD Structure

Higher level TOD areas include key nodes and corridors planned for rapid transit lines. These areas should receive the most intense application of the principles and Guidelines.

- City of Hamilton TOD Guidelines

An "urban corridor and nodes" approach is the proposed TOD strategy for the A-Line. While some sections along the Corridor currently reflect more suburban and greenfield typologies, these sections are envisioned to transform over the next 20 years to reflect an urban corridor area TOD typology. While some built form recommendations have been proposed for the entire corridor in the previous section, specific built form parameters for TOD should be further studied through secondary planning and review of existing policies.

The "urban corridor area" TOD typology is proposed for the entire A-Line Corridor. Along this urban corridor area, "urban node areas" are proposed at specific locations that generally relate to the Downtown, community nodes, and Mobility Hubs. Other TOD typologies that apply along the urban corridor area are the "special activity area" at the waterfront and airport and the "major activity centre" at West 5th Street and Fennell Avenue. The urban node areas, the activity areas, and major activity centre are proposed to have the highest intensity of uses, built form, and amenities.

As shown in the following pages, some urban node areas overlap with each other, including the Gore Character Area and between Stone Church Road and Rymal Road in the Ryckman's Corner Character Area. Other A-Line transit nodes have not been identified as urban node areas, they may evolve in the long term to become urban node areas.

Waterfront

Waterfront	As the northern terminus of the A-Line and a major regional destination, an Activity Area TOD typology is proposed.
Ferrie	The Urban Corridor Area typology is proposed due to the existing and potential future community presence there. A more community-oriented TOD scale is proposed for this node, recognizing that in the long-term it may have the potential to evolve into an urban node area.
Barton	This node includes the Mobility (Gateway) Hub at the future James Street North GO Station and is proposed to be an Urban Node Area.

Gore

York	As part of the Downtown Urban Growth Centre and Mobility Hub, as well as the intersection of the future A- and L-Lines, an Urban Node Area typology is proposed.
Gore	At the centre of the Downtown Urban Growth Centre and Mobility Hub, and the intersection of the future A- and B-Lines, an Urban Node Area typology is proposed.

James Street South

Hunter	As part of the Downtown Urban Growth Centre and Mobility (Anchor) Hub, an Urban Node Area typology is proposed.
Charlton	The Charlton Node is located along James Street South and is currently not included in the *Downtown Secondary Plan*. However, the Charlton Node will be included in the forthcoming revised *Downtown Secondary Plan* boundary, and has been incorporated in the Downtown Section of this study. Due to the presence of St. Joseph Hospital and a strong local retail and residential community, this node serves an employment, residential, and civic function and is proposed as an Activity Area TOD typology.

Escarpment

Upper James

Escarpment	An Urban Corridor Area typology is proposed to facilitate a more community-scale of TOD – development should reflect TOD objectives and respect the Escarpment buffer. This node enables access to the top of the Escarpment and Bruce Trail.
West 5th	This is a proposed Major Activity Centre TOD typology to reflect its role in the urban structure included in the Hamilton Official Plan. Due to the presence of St. Joseph Hospital and Mohawk College, this major activity centre TOD is anticipated to generate high rapid transit ridership. Specific TOD parameters should be developed to reinforce this unique TOD area.
Fennell	An Urban Corridor Area typology is proposed for this node. In keeping with the character of the area, a more community-oriented scale of TOD is proposed, recognizing that this Node could evolve into an Urban Node Area in the long-term.

Mohawk

Mohawk	Identified as a Mobility (Gateway) Hub and the intersection of the future A- and T-Lines, an Urban Node Area TOD typology is proposed.
Limeridge	An Urban Corridor Area Typology is proposed for this node. In keeping with the character of the area, a more community-oriented scale of TOD is proposed, recognizing that this Node could evolve into an Urban Node Area in the long-term.

Ryckman's Corner

Stone Church	This A-Line transit node is part of the Ryckman's Corner Community Node and is envisioned to transform over time to include commercial uses that will serve the adjacent neighbourhoods. An Urban Node Area is proposed.
Rymal Road	As part of the Ryckman's Corner Community Node and the intersection of the A- and S-Lines, an Urban Node Area is proposed.

Airport Employment District

Twenty Road

Twenty Road	The Urban Corridor Area typology is proposed for this A-Line transit node, which is adjacent to an existing residential community. A more community-oriented TOD scale is proposed for this node, while recognizing that in the long-term it may have the potential to evolve into an urban node area.

East Airport

Dickenson	An Urban Corridor Area Typology is proposed for this A-Line transit node and future destination.
English Church Road	An Urban Corridor Area Typology is proposed for this A-Line transit node and future destination.

Mount Hope

Mount Hope	The Urban Corridor Area typology is proposed for this A-Line transit node in the Mount Hope neighbourhood. A more community-oriented TOD scale is proposed for this node, recognizing that in the long-term it may have the potential to evolve into an Urban Node Area.
Airport	An Activity Area TOD typology is proposed for this regional destination, recognizing the significant ridership potential it will generate through its day to day activities.

CHARACTER AREA	TRANSIT STOP	KEY EXISTING/PENDING CITY POLICY	NODAL CHARACTER
James Street North Section			
Waterfront	1. Waterfront	City of Hamilton: *Urban Hamilton Official Plan, Setting Sail Secondary Plan for West Harbour, Hamilton West Harbour Waterfront Recreation Master Plan*	Recreation
	2. Ferrie	City of Hamilton: *Urban Hamilton Official Plan, Setting Sail Secondary Plan for West Harbour*	Community
Barton	3. Barton	City of Hamilton: *Urban Hamilton Official Plan, West Harbour Secondary Plan* Metrolinx: *The Big Move* - James St. N. GO Station as a Mobility (Gateway) Hub	Community
Downtown Section			
Gore	4. York	City of Hamilton: *Urban Hamilton Official Plan* - Urban Growth Centre, *Downtown Secondary Plan* (under review) Metrolinx: *The Big Move* - Downtown Mobility Hub and BLAST intersection (A- & L-Lines)	Downtown
	5. Gore	City of Hamilton: *Urban Hamilton Official Plan* - Urban Growth Centre, *Downtown Secondary Plan* (under review) Metrolinx: *The Big Move* - Downtown Mobility Hub and BLAST intersection (A- & B-Lines)	Downtown
	6. Hunter	City of Hamilton: *Urban Hamilton Official Plan* - Urban Growth Centre, *Downtown Secondary Plan* (under review) Metrolinx: *The Big Move* - James St. N. GO Centre as a Mobility (Anchor) Hub	Downtown
IF BRT: James Street S.	7. Charlton	City of Hamilton: *Urban Hamilton Official Plan*	Activity
IF LRT: Claremont	7. First Place	City of Hamilton: *Urban Hamilton Official Plan, Downtown Secondary Plan (under review)*	Downtown
Mountain Section			
Upper James	8. Escarpment	City of Hamilton: *Urban Hamilton Official Plan* Niagara Escarpment Commission: *Niagara Escarpment Plan*	Recreation
	9. West 5th	City of Hamilton: *Urban Hamilton Official Plan* - Major Activity Centre	Activity
	10. Fennell	City of Hamilton: *Urban Hamilton Official Plan*	Community
Mohawk	11. Mohawk	City of Hamilton: *Urban Hamilton Official Plan* Metrolinx: *The Big Move* - Mohawk as Mobility (Gateway) Hub and BLAST intersection (A- & T-Lines)	Community
	12. Limeridge	City of Hamilton: *Urban Hamilton Official Plan*	Community
Ryckman's Corner	13. Stone Church	City of Hamilton: *Urban Hamilton Official Plan* - Ryckman's Corner Community Node	Community
	14. Rymal Road	City of Hamilton: *Urban Hamilton Official Plan* - Ryckman's Corner Community Node Metrolinx: *The Big Move* - BLAST Intersection (A & S-Lines)	Community
Airport Employment Section			
Twenty Road	15. Twenty Road	City of Hamilton: *Urban and Rural Hamilton Official Plans, Airport Employment Growth District Secondary Plan*	Recreation
East Airport	16. Dickenson	City of Hamilton: *Urban and Rural Hamilton Official Plans, Airport Employment Growth District Secondary Plan, Urban and Rural Hamilton Official Plans*	Employment
	17. English Church	City of Hamilton: *Urban and Rural Hamilton Official Plans, Airport Employment Growth District Secondary Plan*	Employment
Mt. Hope	18. Mt. Hope	City of Hamilton: *Urban and Rural Hamilton Official Plans, Mount Hope Secondary Plan, Airport Employment Growth District Secondary Plan*	Community
	19. Airport	City of Hamilton: *Urban and Rural Hamilton Official Plans, Airport Employment Growth District Secondary Plan*	Employment

Table 4: TOD Typologies and the A-Line Corridor

3.2 Character Area Opportunities and Constraints

In this section, opportunities and constraints are assessed in each of the character areas, moving from north to south along the corridor.

3.2.1 General Approach

The general approach to the analysis is shaped by the City's existing policies, including the City of Hamilton's TOD Guidelines, the corridor opportunities and constraints identified in the previous section, and other character area-specific considerations. The following summarizes the general approach for the character area opportunities and challenges analysis:

- Focus on Nodes and Corridors: The character area analysis focuses on the entire urban corridor with special attention to development opportunities within the primary transit area (400 meters) around the proposed A-Line transit nodes, where highest scale of TOD (mixed uses, height, and built form) is proposed.
- Encourage TOD-Compatible Development: Discourage land uses and built form that are contradictory to TOD, such as arterial commercial, surface-parking lots, and other forms of low-density land extensive and automobile-oriented uses and built form along the corridor. Support opportunities to develop more pedestrian, transit, and street-oriented mixed used developments. Transforming the current suburban typologies to more transit supportive environments may be perceived as a complex issue, and as such, the value needs to be well understood and communicated.
- Create an Urban and Pedestrian-Friendly Corridor: A key goal is to make the corridor pedestrian and cycling friendly throughout, improving access and multi-modal connections to rapid transit, key destinations, and amenities. The A-Line should reflect high quality urban design in the public realm and built form. Built form should be pedestrian and street-oriented.
- Recognize diversity and embrace place-making: Respect and strengthen the diverse character areas, including historic and existing communities, neighbourhoods, and other distinct areas along the corridor through station area design, and in the built form and public realm, so as to reflect the unique qualities of each. Strengthen and enhance the existing urban structure and create a strong sense of place along the corridor. Place-making may entail enhancing existing natural elements (e.g. waterfront, Escarpment, parks, and open space), heritage resources, and leveraging infrastructure elements (e.g. bridges, hydro corridor) along the corridor.

- Align with TOD-Supportive Policy: Reinforce Downtown as the Urban Growth Centre and Multi-modal Mobility Hub. Nodes with specific policy relevant to them (i.e. Mobility Hubs, major activity centres, community nodes) should be reinforced accordingly.
- Embrace Partnerships and Innovative Implementation: Explore potential partnerships with Business Improvement Areas (BIAs), major institutions, property owners, residents, developers, and other organizations with a stake in corridor planning, station area planning and TOD.

3.2.2 Built Form and Public Realm Recommendations

The following built form recommendations are intended to achieve a pedestrian and transit-oriented environment along the A-Line Corridor.

Land Use:

James Street/Upper James Street as a Primary Corridor should have the greatest amount of retail and diversity in mixed use forms. The mixed use development will range in form, scale, function, and character along the Corridor. Land uses should include both daytime and evening uses where possible and be clustered near the future transit stops. Sites in station areas should incorporate mixed uses (vertically or horizontally) with residential, where permitted. Low-density and automobile-oriented uses such as warehouses and large format commercial should not be located along the corridor. Absorption rates for retail should be considered along Upper James Street and may entail focusing retail along the nodes with convertible (typically interim residential with the ability to convert to retail) uses in between the nodes. The vicinity of transit nodes are generally a good location for uses that attract higher volumes of public use such as institutions and civic buildings.

Building Heights:

Require a minimum of 3 storeys and 10 meters building height for the entire A-Line Corridor.

While existing built form below the Escarpment largely already achieves this minimum, and greater heights are anticipated to be achieved along those sections, this standard could transform the mountain and airport employment district areas. The Official Plan envisions low to mid-rise forms with some areas permitted to accommodate high density through high rise built form along this corridor. For Urban Node Areas, the TOD Guidelines suggests a target range of 6 to 12 storeys. Requiring a minimum of 3 storeys in the areas above the Escarpment would enable those areas along the corridor to intensify over time with higher and more intense forms of development.

Set-backs:

Maximum set-backs are recommended to create an urban streetscape. The proposed set-backs are as follows:

- Zero lot-line for commercial uses
- 3 metres for residential uses

"STOP THE IDEA OF TRUCKS GETTING TO THE HIGHWAY, THAT IS A DIMINISHING ECONOMY . . THE NEW ECONOMY HAS TO BE CENTRED ON DOWNTOWN AND NURTURING THE CREATIVE INDUSTRIES . . . TO USHER THE NEW ECONOMY, DESIGN IS ESSENTIAL."

- STAKEHOLDER INTERVIEW PARTICIPANT

Street Frontage:

The street frontage should reflect an urban condition and contribute to a strong sense of place. As such the following should be required:

- Commercial uses should locate at grade.
- Buildings should effectively address the street through good design with doors and windows oriented toward the street to create visual interest, and appropriate facades and articulation of streetwall. Blank walls are to be avoided.
- Development should be located along a minimum of 70% of the street frontage to create a continuous street frontage and street level animation.

Building Transition and Adjacency:

Development should address building transition with tallest buildings along the corridor and built form stepping down from the street. Adjacency issues (shadows, light exposure, heritage, compatibility etc.) should also be considered.

Public Realm:

The public realm should be designed to achieve a pedestrian-oriented environment along the corridor.

- Sidewalks should be wide - achieving 4.5 metres wherever possible (to include a minimum 2.5 metre walking zone and 2 metre furnishing and landscaping zone).
- Development should reflect a high degree of focus on creating a sense of place through use of public art, landscaping and other public realm features within TOD areas.
- Create compact, walkable blocks along a grid-pattern with a high level of connectivity.

Rapid Transit Stops:

Development at nodes should be integrated with stop area design.

- The transit stop should be a prominent feature easily accessible from all directions.
- Create "transit villages" - develop nodes as a villages focused around transit.


HAMILTON
FARMERS'

3.2.3 Character Area Profiles

For each character area, existing conditions are assessed and a proposed TOD Vision and strategy, potential rapid transit stops, and opportunities and challenges are identified. The opportunities that have been identified should be reviewed by both the City and the public and will be assessed in greater detail in the next stages of planning.

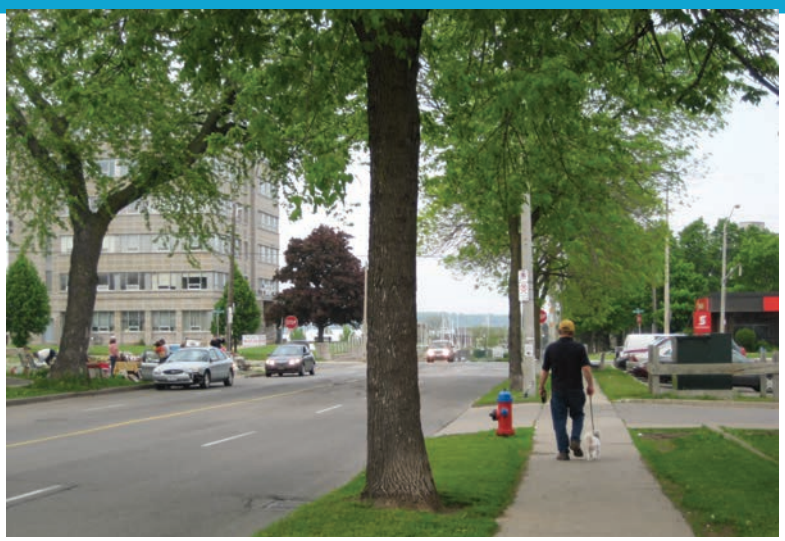
JAMES STREET NORTH

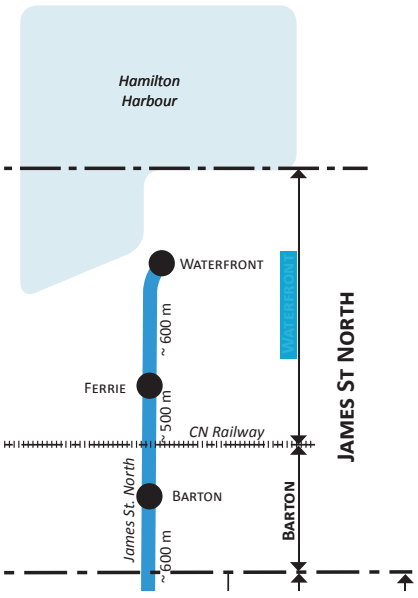
The James St. N section stretches from the waterfront (north) to Cannon Street (south) and falls within the Setting Sail: Secondary Plan for West Harbour. Key character areas in this Section include the Waterfront and Barton.

PROFILE

JAMES STREET NORTH

WATERFRONT





Existing Characteristics

Extent:

The Waterfront character area extends from the Waterfront (north) to the CN Railway (south). It falls within the Setting Sail: Secondary Plan for West Harbour and adjacent to the Hamilton West Harbour Waterfront Recreation Master Plan.

History:

The waterfront has played an important role throughout Hamilton's history. James Street was the first arterial connection to water from the rest of the city. In the early 19th Century, it supported port industrial and transportation activities, and facilitated the establishment of the early Port community. The existence of the industrial port lands to the north, coupled with the completion of the CN railway tracks to the south in 1854, made the Port's residential community somewhat separate from the Downtown. This waterfront residential area became home to a large number of Port employees and immigrants and has evolved with time and is now known as the Hamilton North End neighbourhood.

The waterfront shoreline has been significantly altered by the Hamilton Port Authority (which is the dominant landowner in the area) through artificial landfill that has enabled a variety of uses at the water's edge (e.g. parks, boat slips, etc.). The City of Hamilton owns Piers 3 to 8. Although the waterfront has a strong history of industrial uses, heavy industrial activities have now largely moved out of this western waterfront section and into the more eastern areas. As noted, in recent years, this section of the waterfront has developed a much stronger recreational focus. The *Setting Sail: Secondary Plan for West Harbour* and *Hamilton West Harbour Waterfront Recreation Master Plan* provide policy direction to manage future growth and development in this area.

Land Use:

The Waterfront includes water-oriented commercial, institutional, industrial, and parks and open space uses. Main civic uses include the marina and yacht centre. Parks and open spaces (including Pier 8 and Pier 4 parks) are integrated with and connected by recreational and multi-use trails.

The North End neighbourhood is comprised of predominantly residential uses along with some institutional and commercial uses. The neighbourhood is surrounded by waterfront parks which are large open space amenities. There are a few vacant sites as well as some medium to large under-developed sites along James Street North.

Future Land Use:

The *Setting Sail: Secondary Plan for West Harbour* identifies the waterfront as an "area of major change". North of Guise Street, the *Secondary Plan* calls for neighbourhood parks and general open space along the edge of the Waterfront, as well as institutional, medium to high density residential, medium density and prime retail, and other mixed uses. Guise Street includes low, medium, and high density residential, as well as mixed use-medium density uses. Mixed use-medium density uses are envisioned for a large stretch of the corridor, with prime retail identified for the James Street and Burlington Street intersection. A few large sites in the area, including the existing social housing site north of Strachan Street, are identified for medium density residential. Low density residential is intended as part of the North End Neighbourhood.

Urban Fabric and Built Form:

Currently, most buildings along the waterfront are single-storey structures. The waterfront's land fabric is reflective of its past industrial and transportation heritage, years of filling the land, and infill development. South of the water, the North End neighbourhood is characterized by a grid pattern composed of short blocks. This area includes predominantly single-family houses, two-storey retail buildings, and schools, with some higher density residential forms (low-rise, mid-rise, and high-rise) located around Guise Street.

West Harbour Port lands, Looking North

James St. N. and Guise St.

Neighbourhood Amenities along James St. N.

Social Housing Site by Ferrie St.

Heritage:

There are a few heritage-designated sites along Bay Street North. Specific heritage resources have been identified in the Setting Sail: Secondary Plan for West Harbour.

Transportation:

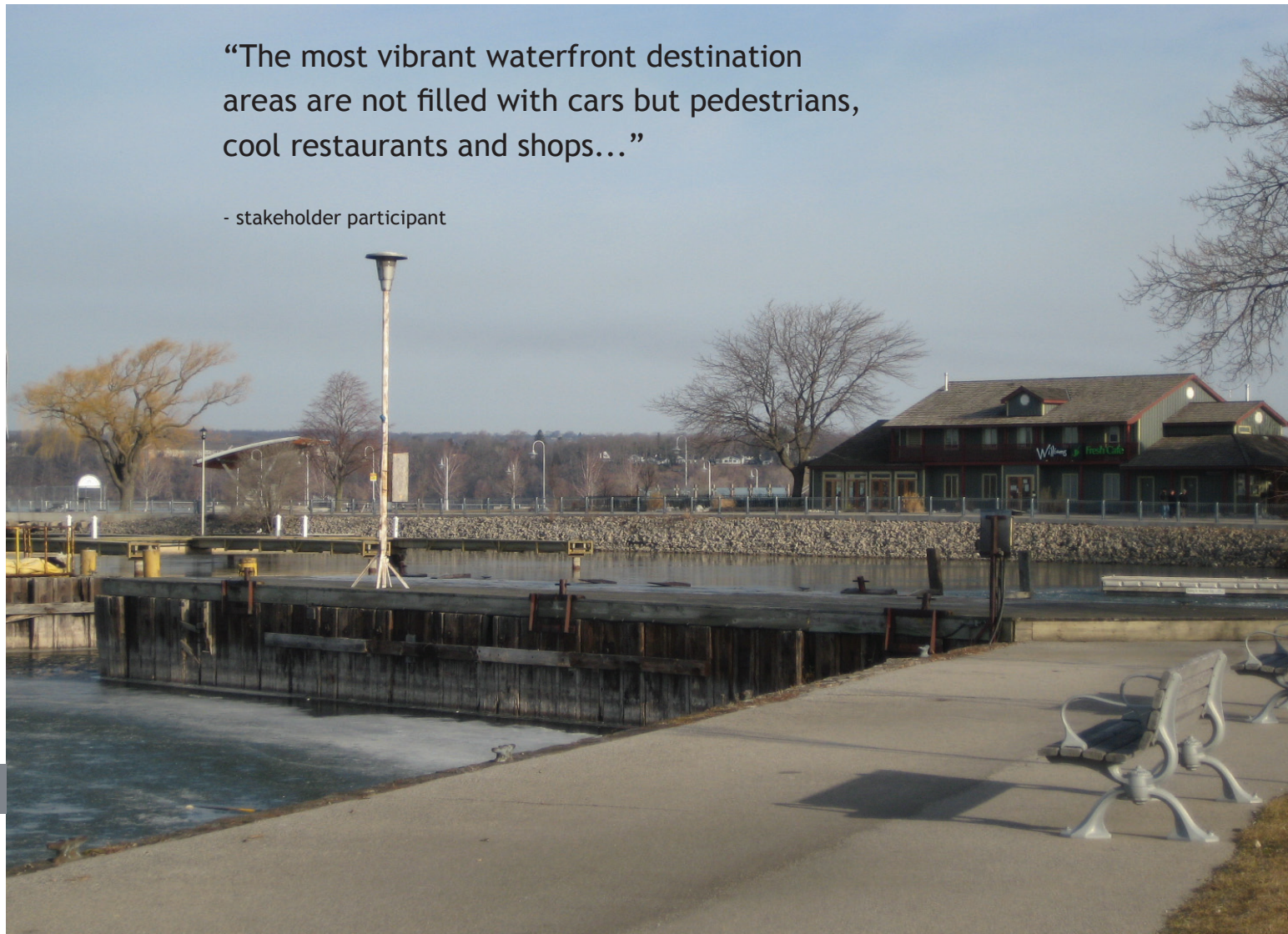
James Street North and Burlington Street are identified as Primary Mobility Streets. These enable movement of through traffic, people and goods and connect areas within West Harbour, Downtown and other key areas outside the corridor. James Street North is a neighbourhood precinct mobility street and should reflect a more neighbourhood character. South of Burlington Street, primary vehicular circulation occurs on Strachan Street, Bay Street, and John Street. Existing north-south transit service is very limited, with a waterfront shuttle that only operates in the summer. Bus route 4 runs on James Street North and turns eastward on Burlington Street. There is currently no direct access from James Street North to the Waterfront. The closest access is located on Discovery Drive via Guise Street East. However, recreational trails are proposed in the *Hamilton West Harbour Waterfront Recreation Master Plan* to enable improved connections from Guise Street to the water. There is also a well connected cycling network along the waterfront and numerous pedestrian connections over the railway tracks.

Pedestrian Environment:

There is generally a very good pedestrian environment in this area, particularly along the waterfront where there have been significant public realm improvements; and along James Street North and John Street. Pedestrian connections over the rail tracks already exist. The blocks in this area are short and walkable. Future connections would improve connectivity between the waterfront, the A-Line, Downtown, and other surrounding areas.

Transit-Oriented Environment Assessment:

Although the Waterfront is and will continue to grow as a major recreation and mixed use destination, there is currently inadequate transit servicing in this area. Plans for the area envision a vibrant waterfront with a mix of uses and densities, and a public realm that is supportive of transit. The A-Line will significantly improve transit service and bring public realm improvements thus enabling pedestrians and cyclists to easily access rapid transit and this area. In terms of TOD, there are some existing and varied higher-density residential forms present on Guise Street, but there is also significant untapped potential for infill along the waterfront, along Guise Street, and along James Street North for intensification and the introduction of much higher levels of mixed use. The A-Line will encourage TOD, making this area more vibrant and easily accessible by active forms of transportation and transit.



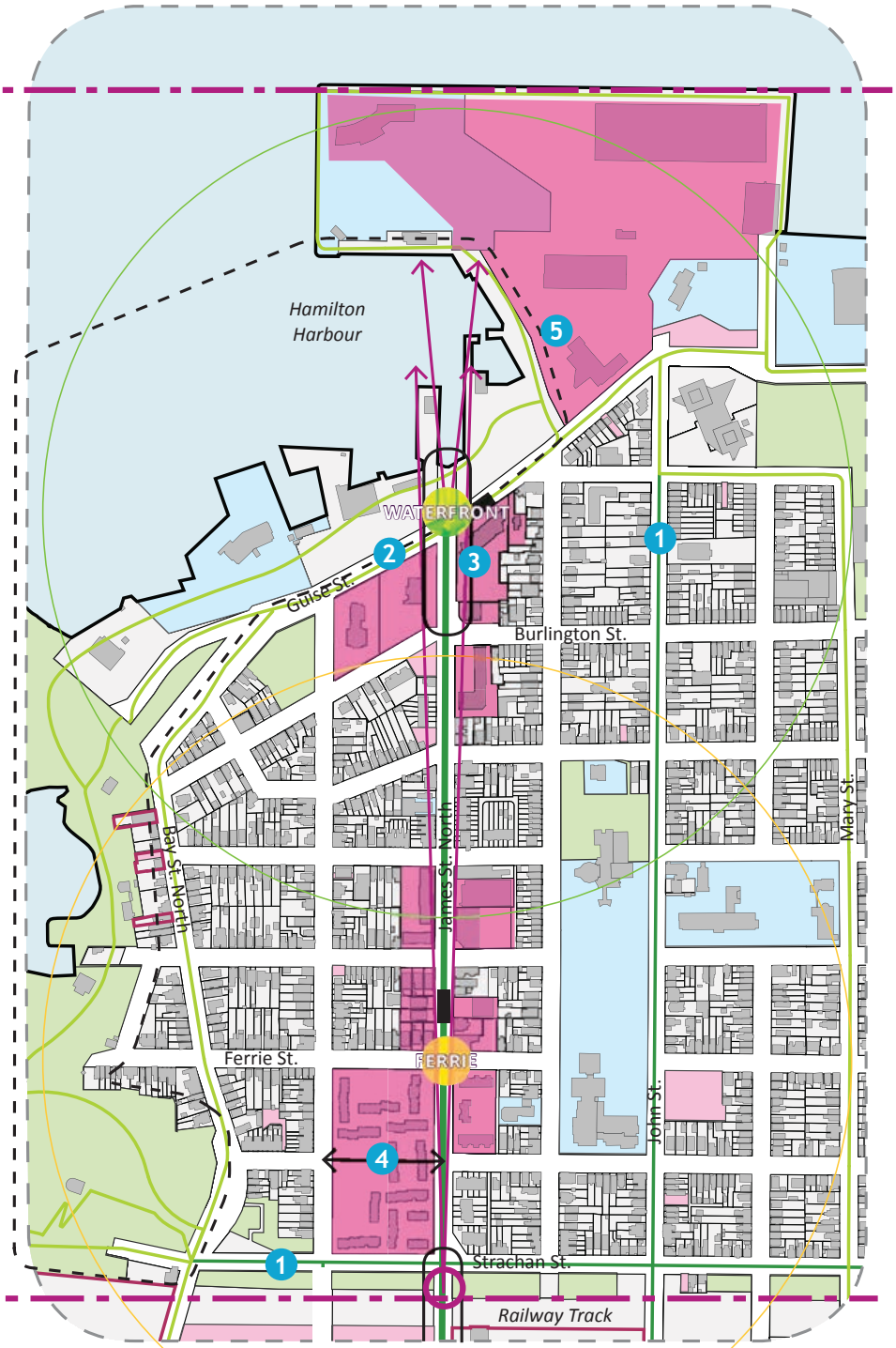
VISION

JAMES STREET NORTH

WATERFRONT

PRECEDENT: ATLANTA, GEORGIA

The Waterfront Area will be a vibrant, year-round regional recreational destination anchored by a strong waterfront residential community. This area will reflect the city's heritage and include a variety of parks and open spaces and mixed uses. The Waterfront Area will be accessible to surrounding areas, the Downtown, and key areas of the city by foot, bicycle, and transit.



- Landmarks
- Gateways
- Views
- Character Areas
- Planned Public Realm Improvements
- Heritage
- Vacant Lot
- Existing Parks
- Existing Institutional Use
- Existing Rural Area
- Existing Recreational Trail / Cycling Route
- Stream Flow
- Potential Rapit Transit Stops Location
- Potential Redevelopment/Infill Sites
- Potential Special Pedestrian Area
- Potential Future Landmark
- Potential Improved Pedestrian / Cycling Connection
- Potential New Park
- Potential Pedestrian Connection
- Recreation Node
- Community Node
- Downtown Node
- Activity Node
- Employment Node
- 400 m Circle Around Node

JAMES ST. NORTH - WATERFRONT

PROPOSED TOD STRATEGY

Focus most-intensive transit-oriented development around the Waterfront and Ferrie stops and build-up the Urban Corridor Area.

STOP CONSIDERATIONS

WATERFRONT – RECREATION NODE (URBAN CORRIDOR AREA - ACTIVITY AREA)-The future rapid transit stop within this node could be located at a number of locations: close to the water, on Guise Street, or somewhere in between. The location and design of the stop at this terminus should be further studied in order to enable improved access to the waterfront, surrounding amenities, and Guise Street.

Ferrie – Community Node (Urban Corridor Area)– The future rapid transit stop within this node could be located south of Ferrie Street in order to shorten the distance to the Barton Node.

OPPORTUNITIES

Opportunities based on existing conditions include:

1. The many recently implemented or proposed public realm improvements support a pedestrian-oriented environment
2. Existing diverse and higher-density residential built forms on Guise Street
   - Existing policy supports mixed use development along the waterfront
   - A stable and fairly dense residential population already exists in the immediate area
3. Significant development potential along the waterfront, Guise Street and James Street North
4. James Street North includes a few potential large redevelopment/infill sites on James as well as several large institutional sites
   - The draw of the Waterfront as a recreational destination
   - The existing view of the harbour from the corridor
5. Future mixed-use development on Pier 8

Further opportunities exist to:

- Build on existing and recently-developed policy plans (Secondary Plan and Recreation Master Plan) for the area
- Reinforce the Waterfront as a major amenity area and destination that is attractive for development and investment
- The A-Line will provide the area with a much stronger transit focus than currently exists
- Intensify local retail uses along James Street North and destination retail along Waterfront
- Improve trail connections from the waterfront to the Downtown, including a major connection along James Street North and new connections on John and Strachan Streets
- Introduce a potential pedestrian connection along Simcoe Street through a large site that also has redevelopment/in-fill potential
- Create special pedestrian areas on James Street North from Burlington Street to the Waterfront, and from Strachan southward in order to improve pedestrian access to the Waterfront and to the future James Street North GO Station and Immigration Square
- Take advantage of the position of the waterfront as the northern terminus of the A-Line to create a multi-modal transit hub

CONSTRAINTS

- A greater emphasis on “TOD” should be included in existing policy
- Some poor public perception of the Waterfront in the past that may have affected investment and development
- A physical grade separation of the land from Guise Street to the Waterfront
- The potential difficulties associated with land assembly that may be required to redevelop smaller properties
- Narrow right-of-way conditions

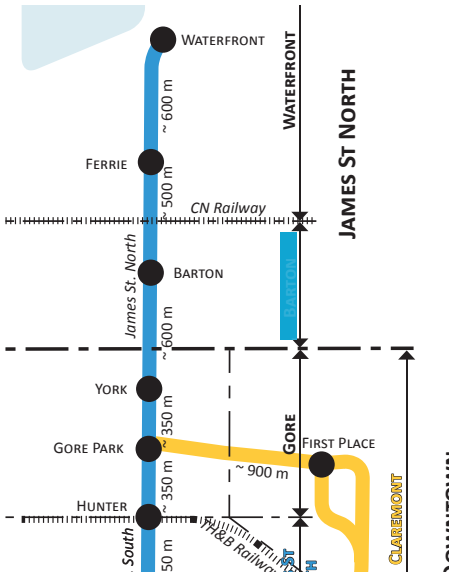
"We need to create attractive walking, cycling, and transit environments to encourage healthier and more sustainable lifestyles - we can be that kind of place here."

- stakeholder participant

PROFILE

JAMES STREET NORTH

BARTON



Existing Characteristics

Extent:

This character area extends from the CN railway (north) to Cannon Street (south) and is located in the West Harbour Secondary Plan.

History:

Barton developed in conjunction with the Downtown in the 1800s, initially housing people employed in the city's bustling port, and later, generations of immigrants who arrived at the Canadian National Railway station (now LIUNA station) located on James Street North. The area remains very diverse and multicultural, and is made up of two neighbourhoods - Central and Beasley. In addition, James Street North, from Murray Street to Wilson Street, was branded "Jamesville" by the Jamesville Business Improvement Area Association (BIA). Although the BIA has since been disbanded, many of the historic signs remain along this section of the corridor hinting at the area's rich history and character.

Land Use:

James Street North transitions from being a mobility street in a neighbourhood precinct (further north) to a commercial precinct. This area features land uses and built form that are reflective of the Downtown commercial area but at a lesser intensity. The existing land uses include commercial, residential, institutional, and light industrial. There are a few vacant sites. The area also includes the LIUNA station and Immigration Square.

James Street North is characterized by a growing arts district and diverse commercial area with an increasing number of street-level commercial units associated with the arts (e.g. art stores, studios, and galleries) mixed with other retail uses such as ethnic grocery stores, restaurants and coffee shops. This area is also associated with a diverse and multicultural residential community. In comparison to the Downtown, civic uses in the Barton area are more in keeping with a neighbourhood scale, and include churches, community centres, missions organizations, and schools. There are also a few neighbourhood parks and parkettes.

Future Land Use:

The *Setting Sail: Secondary Plan for West Harbour* identifies prime retail and mixed use-medium density as the main uses along this section of James Street North, with local commercial at the LIUNA station and medium-density residential on the site located on the west side of James Street North (currently proposed for the future James Street North GO Station). The *Secondary Plan* also cites the importance of maintaining the existing stable, single-family residential area. As a Mobility (Gateway) Hub, the future GO Station, is envisioned to play a major role in the regional transportation system, but also include services and amenities for patrons and those who live, work and visit this area.

LIUNA Station (Former CN Railway Station)

Immigration Square

Retail along James St. N.

Urban Fabric and Built Form:

This neighbourhood is characterized by a grid pattern composed of short blocks. The built form generally includes two to three-storey buildings along James Street North and single-family homes in the surrounding residential areas. There are some larger medium-sized lots at various locations in the Barton area. Immigration Square is a major public open space.

Heritage:

There are several designated heritage sites in this area, in particular, the LIUNA station and Immigration Square. A few institutional sites have also been identified, including the Armoury and the Royal Hamilton Light Infantry Heritage Museum.

Transportation:

The key streets in this area are Barton Street, James Street and Cannon Street. James Street North and Cannon Street are identified as mobility streets in a commercial precinct. Although there is existing transit servicing on all three streets, buses on Barton Street and Cannon Street only service the areas east of James Street North. The *Shifting Gears Hamilton Cycling Master Plan* proposes a well-connected cycling network, however, a number of existing routes are currently discontinuous. Although a minor arterial, Cannon Street is a one-way street with four lanes of traffic moving west and the proposed location for a continuous east-west cycling route. This area is the home to the proposed future James Street North GO Station. Integrated with the A-Line, the new GO Station will be a significant multi-modal transportation hub.

Pedestrian Environment:

The pedestrian and transit-oriented environment is fairly good in this area with short walkable blocks, particularly along James Street North where streetscape improvements have been implemented in recent years. This area is also fairly well connected by cycling facilities; However, there are some more challenged areas such as along Cannon Street where one-way street conditions create a challenged pedestrian environment.

Transit-Oriented Environment Assessment:

The Barton Area plays an important role in linking two major destination areas – the Waterfront and the Downtown. As such, there should be a highly permeable and connected transportation network – pedestrian and cycling connections should be introduced where necessary, including along a number of routes that are currently discontinuous. Similar to the Waterfront area, there are currently lower levels of transit service and varying quality of supportive public realm infrastructure. The new James Street North GO Transit Station would ideally be integrated with the A-Line stop and this area would see public realm improvements to ensure that there is good connectivity to this integrated station by walking, cycling and transit. The main development and infill potential in this area is around the future GO Station, Immigration Square and along James Street North around the proposed Barton node. There is also development potential on existing underdeveloped and vacant lots along Cannon Street and a few other sites in the neighbourhood. Intensifying some of these areas through higher density forms and mixed use will help to create a more transit-oriented environment, with additional ridership for the A-Line and future regional transit service.

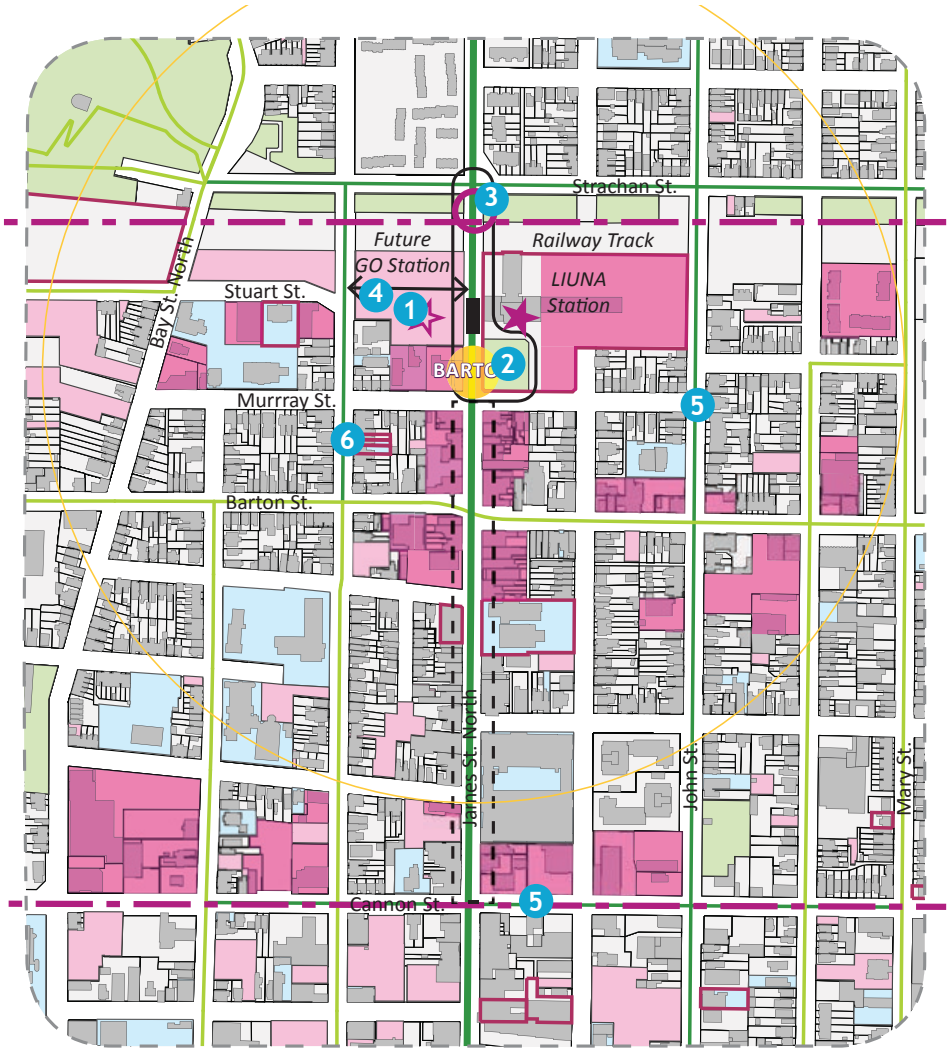
VISION

JAMES STREET NORTH

BARTON

PRECEDENT: SANTA CLARA, CALIFORNIA

The Barton Area will be the northern gateway into Hamilton's Downtown and the southern gateway to the Waterfront area. It will be a diverse and transit-oriented complete community, characterized by a strong mixed-use commercial precinct anchored by major landmarks at the GO and LIUNA Stations and a vibrant arts district focused on James Street North.



- Landmarks
- Gateways
- Views
- Character Areas
- Planned Public Realm Improvements
- Heritage
- Vacant Lot
- Existing Parks
- Existing Institutional Use
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- Recreation Node
- Community Node
- Downtown Node
- Activity Node
- Employment Node
- 400 m Circle Around Node

JAMES ST. NORTH - BARTON

PROPOSED TOD STRATEGY	Focus most intensive transit-oriented development around the Barton stop and build-up this Urban Corridor Area.
STOP CONSIDERATIONS	**BARTON NODE – COMMUNITY NODE (URBAN CORRIDOR AREA)** The Barton Area is a Mobility (Gateway) Hub. The rapid transit stop within this node would potentially be integrated with the future James Street North GO station to create a multi-modal hub.
OPPORTUNITIES	*Opportunities based on existing conditions include:* • The growing draw of the developing arts district along James Street North • Spin-off effects related to the commercial precinct being linked to the Downtown core • A strong existing street wall along James Street North • A significant number of local civic amenities currently service the area's neighbourhoods • The presence of a significantly populated residential area within the Beasley neighbourhood (east of James Street) that provides some existing transit ridership. *Further opportunities exist to:* • Build on existing Secondary Plan that already exist for the area 1 • Design the future James Street North GO Station as a multi-modal station with a signature building, complementing the LIUNA station and Immigration Square as landmarks 2 • Recognize the potential to enhance Immigration Square as a significant amenity and public open space for visitors and transit users by integrating mixed uses along its perimeter. Square is privately owned and opportunities will require a private initiative 3 • Extend the public realm improvements on James Street North northward up to and including the bridge over the CN railway, to enhance pedestrian connections • Redesign the bridge over the CN Railway as an important gateway with a strong pedestrian realm 4 • Introduce a pedestrian connection through the future GO Station site to Immigration Square 5 • Introduce on-street bike lane connections on Cannon Street, John Street, and MacNab Street that will complete the existing network 6 • Consider infill development on some of the existing low-density, medium-sized sites
CONSTRAINTS	• A "TOD lens" is missing in existing policy • The character on James Street North should be reinforced as distinct from the Downtown Core • Promoting infill/redevelopment around the Barton node may be more challenging due to the small narrow lots and the existing lower-density built form • Narrow right-of-way conditions • There is an active rail line near the station area • The challenging pedestrian environment along Cannon Street • Transition zones should be created from James Street North to existing stable low density residential neighbourhoods adjacent to the Corridor • Land assembly may be required to develop small and in some cases irregular lots

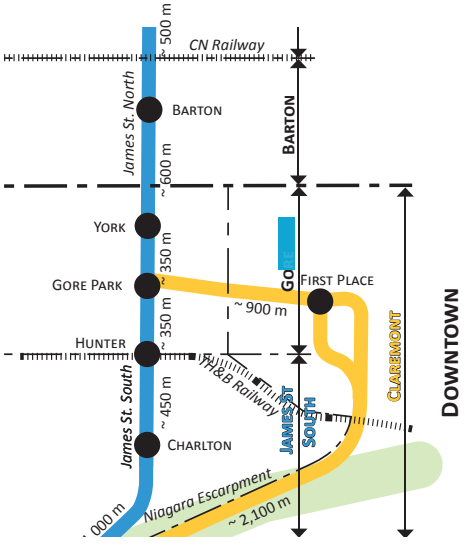
DOWNTOWN

This section extends from Cannon Street (north) to the top of the Escarpment (south). It includes the Downtown Secondary Plan policy area to Hunter Street, James Street South, and the Escarpment. Character areas in this section include Gore and James Street South.

PROFILE

DOWNTOWN

GORE



Existing Characteristics

Extent:

This character area extends from Cannon Street (north) to the railway south of Hunter Street (south).

History:

The area, which is home to many prominent civic, commercial, and cultural buildings, correlates with the original community that established around Gore Park and the historic Downtown core, which began to develop as early as the 19th Century. The first roads and street car lines were established along James Street North through this area. In the 1960s, downtown renewal projects significantly transformed street patterns and resulted in the development of the indoor mall known as Jackson Square and a number of major civic buildings to the area. Despite decades of change, this area still functions as the Downtown Core of Hamilton today, and continues to feature a number of historic buildings and sites, including Gore Park, a central gathering place and public open space in Downtown Hamilton.

Land Use:

This character area contains the greatest mix and intensity of uses along the entire corridor, which is reflective of the fact that the Gore Area is a component of Hamilton's Central Business District, and plays a major employment function. The existing land uses are predominantly commercial, retail, civic/institutional, and residential. Residences in this area generally consist of smaller-scale housing (mixed use buildings, single-family homes) along with a few high-rise residential buildings that have been converted from office spaces through adaptive re-use (e.g. the Pigott building and Core Lofts).

James Street North is generally well-lined with pedestrian-oriented, commercial retail located units, with a commercial plaza by York Boulevard. Jackson Square and the Hamilton City Centre stretch along James Street North between King Street and York Boulevard are large indoor mall and commercial complexes with a significant amount of retail, office, and institutional uses built-in and also includes a hotel. The newly renovated Hamilton Central Public Library and the new Farmers' Market are integrated into the York Boulevard side of Jackson Square and are major attractions to this area. Typical of Downtowns, there is a significant concentration of locally and regionally significant civic amenities such as City Hall, the Provincial courts, commercial recreational uses including Copps Coliseum and the Canadian Football Hall of Fame, and cultural facilities such as Hamilton Place and the Art Gallery of Hamilton in the downtown area. Other institutional uses include schools (e.g. Sir John Macdonald Secondary and McMasters University - Downtown Campus) as well as some prominent churches that have high heritage value. Besides Gore Park, there are a few small parks and open spaces south of King Street. A significant number of parking lots and vacant sites in this area represent infill and development opportunities.

Future Land Use:

The Gore area, from Cannon to Hunter Street, is addressed by the Downtown Hamilton Secondary Plan. In that Plan, James Street North and King Street are identified as prime retail streets with a focus on pedestrian-oriented retail at grade and residential or office uses above. West of James Street North, the designated land use is predominantly Central Business District, which calls for the highest commercial development densities within Downtown and is the primary location for new office development in the city. Specific land uses are envisioned for the sub-areas within the Central Business District that include mixed uses, medium-density residential, low-density residential, and local commercial. As the Downtown Mobility Hub, and the intersection of the A- and B-Lines, this area is identified to be a major multi-modal transit area, with a high level of supporting uses and amenities.

James St. N (by Colbourne St.) - Looking North

York Blvd. (by Farmers' Market) - Looking East

James St. (at Gore Park) - Looking North

James St. (at Main St.) - Looking North

Urban Fabric and Built Form:

The urban fabric in this area is characterized by a slightly-distorted grid pattern with small blocks and parcels. This grid pattern is highly permeable and generates a number of plazas and parkettes. Jackson Square, which has a very large building footprint, has a number of pedestrian routes through the mall and are accessible during public hours. The urban fabric is interrupted by a significant number of surface parking lots and low density commercial plazas. Buildings along James Street from Cannon Street to King Street are generally low-rise buildings (three to four storeys) with taller office and residential buildings located between King Street and Main Street.

Heritage:

As one of the earliest established communities in addition to being the City's historic Downtown, the Gore area contains many designated heritage buildings and significant sites – many of which are commercial, mixed use, residential or institutional buildings (existing uses, previous uses, or both).

Transportation:

As the centre of Downtown, the Gore area should include a flagship A-Line station, potentially integrated with the B-Line. This area is identified as the Downtown multi-modal transit hub with the future A-, B-, and L-Lines, the MacNab Bus Terminal, and the Hunter GO Train Station all within the same vicinity. There is currently good transit service in this area in both the north-south and east-west directions. The MacNab Terminal is currently the main Downtown transit hub and interchange for local buses. There are limited cycling routes in this area and many of the existing routes are not continuous. Jackson Street and MacNab Street are identified as signed bicycle routes through Downtown and King Street is an unsigned bike route. The Shifting Gears Hamilton Cycling Master Plan proposes bike lanes along Bay Street, Cannon Street, and York Boulevard.

King Street is identified as the B-Line light rail transit corridor in the Downtown Section. As in the previous areas, James Street is identified as a primary mobility street in a commercial precinct. Main Street, currently with five lanes of one way traffic, is identified in the Downtown Transportation Master Plan to remain as a primary arterial road with access to the highway from both east and west of Downtown. Cannon Street, with four lanes of traffic moving west is also identified to remain as a primary arterial road. A portion of York Boulevard/Wilson Street was recently converted to a two-way street.

Pedestrian Environment:

There is excellent pedestrian connectivity in this area due to the short blocks and tight grid urban fabric. Despite the large building footprint of the Jackson Square and Hamilton City Centre Complex, it currently accommodates pedestrian circulation through the internal mall during hours of operation. The area generally features wide sidewalks and a pleasant pedestrian realm, with good landscaping and recent public improvements. As a Primary Mobility Street, retail on James Street North is generally street and pedestrian-oriented and provides visual interest; however, there are some areas where improvements are necessary. Unfortunately, there are number of buildings, including sections along Jackson Square/ Hamilton City Centre, which have blank walls that do not interact with the street. There is also a significant number of blank spaces including vacant lots and surface parking lots that front onto James Street. Cannon Street and Main Street are major one-way, vehicular thoroughfares that act as pedestrian barriers and have more challenging walking environments.

Gore Park, next to which the future transit stop may locate, adds to the pedestrian experience of the area and is heavily used year-round as park space but also as a pedestrian route to other parts of Downtown. A Gore Park Master Plan project is currently underway, and there is a pilot project to consider the square's potential. Besides Gore Park, there are a variety of other small parks and open spaces in this character area that offer pedestrian relief and opportunities for gathering. The rich heritage resources in the area create a strong sense of place and make streets and spaces interesting to walk through.

Transit-Oriented Environment Assessment:

The Gore Area has historically been, and continues to function as, Hamilton's Downtown and has the highest level of transit activity in the City. Existing pedestrian, cycling, and local and regional transit facilities are fairly well connected, and the newly-constructed MacNab Bus Terminal enables a comfortable transit waiting area. As the Downtown Multi-Modal Mobility Hub, higher transit infrastructure and public realm standards should be implemented in the Gore area to reflect its role and function. Special attention is required to enhance the pedestrian realm along James Street and Main Street. While this area has some higher density built forms and continues to have the highest employment rates along the corridor, there is significant development and infill potential largely through intensification of under-developed sites and the higher percentage of vacant sites and surface parking lots. There is currently a limited amount of residential uses in the area. Furthermore, some existing perceptions about safety may affect the level of night-time pedestrian activities, where people choose to live, and potentially, the level of investment in the area in terms of businesses and new development. Recent City initiatives such as public realm improvements, transportation improvements, and planning initiatives including the renovated Farmers' Market and the renovated Central Public Library may improve these perceptions.

The introduction of rapid transit and continued revitalization and planning efforts, will help bring investment and transit-oriented development including new businesses investment, housing, and mixed use, enhancing the vibrancy of Downtown and reinforcing the area's role as the City's commercial, employment, and civic hub.

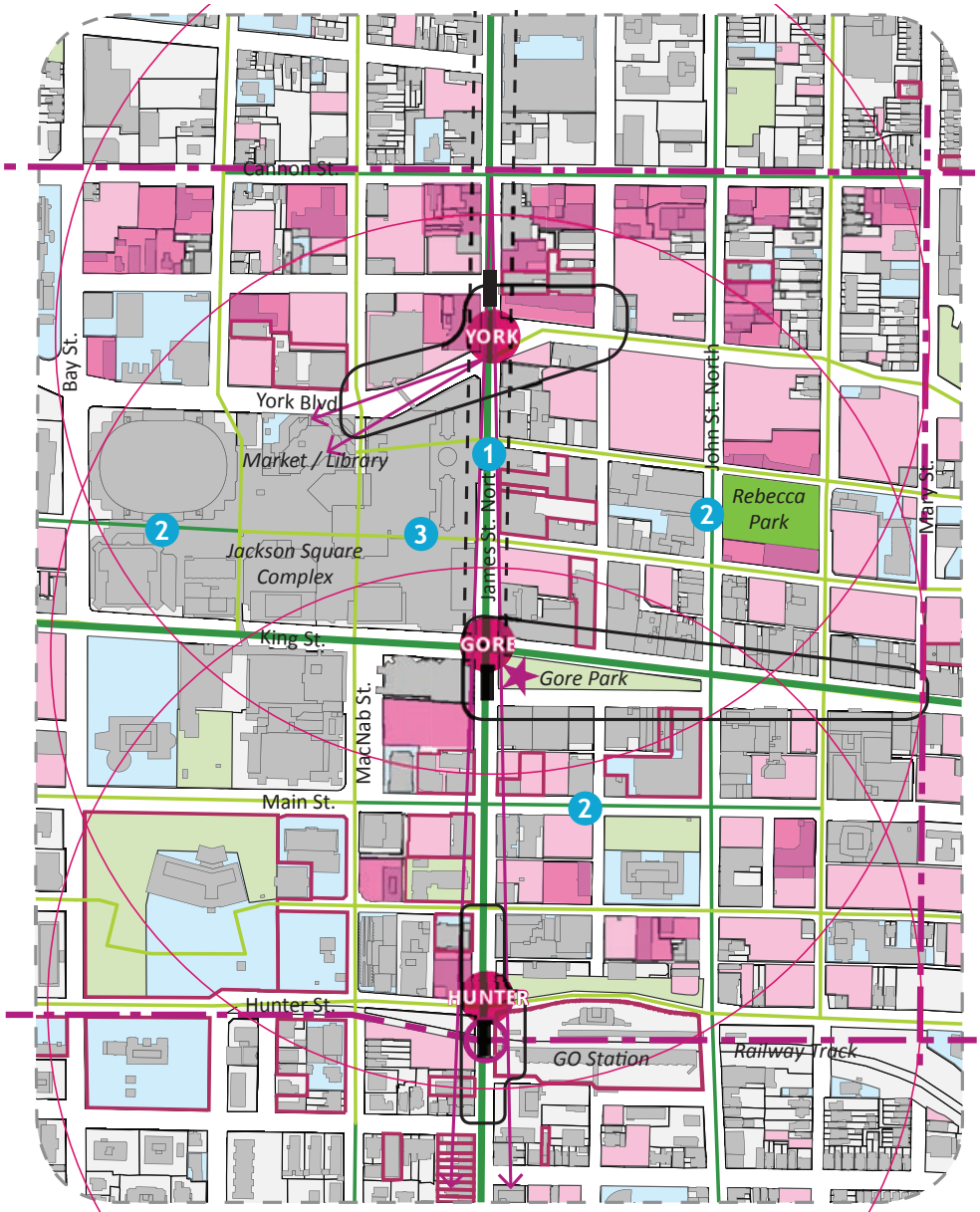
VISION

DOWNTOWN

GORE

The Gore Area is and will remain a vibrant and lively Downtown Centre where people want to live, work, shop, play, and visit. It will have a variety of residential options and feature access to vibrant commercial, retail, and civic uses accessible by foot, bicycle, and transit.

GORE / Proposed Directions



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- Community Node
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- Activity Node
- Employment Node
- 400 m Circle Around Node

PROPOSED TOD STRATEGY

Encourage the most-intensive transit-oriented development along the A-Line in the area, especially around the York, Gore, and Hunter stops as part of this Urban Corridor Area.

STOP CONSIDERATIONS

YORK – DOWNTOWN NODE (URBAN CORRIDOR AREA - URBAN NODE AREA)

A potential stop could be located north of York Boulevard , centrally positioned between the Barton and Gore nodes.

GORE – DOWNTOWN NODE (URBAN CORRIDOR AREA - URBAN NODE AREA)

At the centre of Downtown, this A-Line flagship stop could potentially locate adjacent to Gore Park and connect with a B-Line stop.

HUNTER – DOWNTOWN NODE (URBAN CORRIDOR AREA - URBAN NODE AREA)

A rapid transit stop could be integrated with the Hunter GO Station, potentially on James Street South.

OPPORTUNITIES

Opportunities based on existing conditions include:

- Continued private and municipal investment and revitalization efforts Downtown that will support rapid transit
- The rich historic resources in the area reinforce Downtown's character
- This is the most walkable station area with many shops, services, and amenities
- The renovated Farmers' Market and Central Public Library are major redevelopments in terms of community attractions that can be further leveraged
- The area has the highest employment densities along the entire corridor
- Existing views looking south towards the Escarpment
- A significant amount of infill development potential due to the many existing underdeveloped sites, vacant sites, and parking lots

Further opportunities exist to:

1. Integrate rapid transit planning and TOD-supportive policies in the Secondary Plan review
2. Utilize City-owned under-developed/vacant lands to catalyze TOD
3. Improve and introduce new trail connections to the B-Line, Hunter GO Station, and MacNab Terminal to create a multi-modal Mobility Hub
4. Encourage mixed-uses and residential development to increase the residential critical mass and activity in the area
5. Intensify existing commercial uses along James Street
6. Improve Jackson Square as a civic and commercial centre, further connecting to public realm and supporting adjacent urban context
7. Consider higher density street-fronting built form including mid-rise forms along James Street North and high-rise forms at strategic locations, and continue to promote the existing higher-density and varied residential built form in the Durand and Corktown neighbourhoods
8. Maintain the existing street wall and pedestrian realm along James Street North from Cannon Street to King Street
9. Incorporate street improvements along Main Street to enhance pedestrian movement

OPPORTUNITIES (CONT.)

- Consider creating pedestrian areas in these areas:
  - York Boulevard: Improve this future intersection of A- and L-Lines as well as pedestrian connections to the Farmers' Market and Public Library
  - Gore Park: The Master Plan process and Pilot project underway may help to reinforce the area as a pedestrian-priority area
  - James Street North (north and south of the TH&B Bridge): Improve pedestrian connections to the Hunter GO Station
- Introduce structured parking and a parking strategy to support transit-oriented development

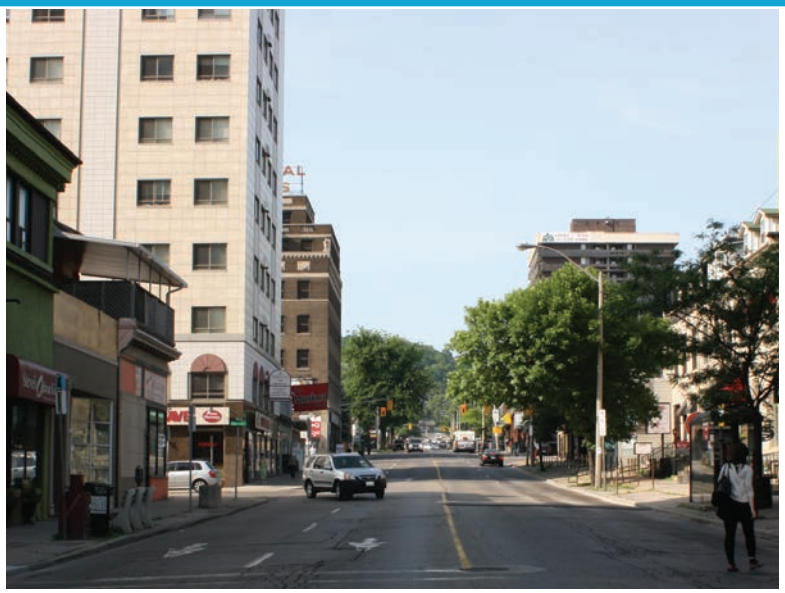
CONSTRAINTS

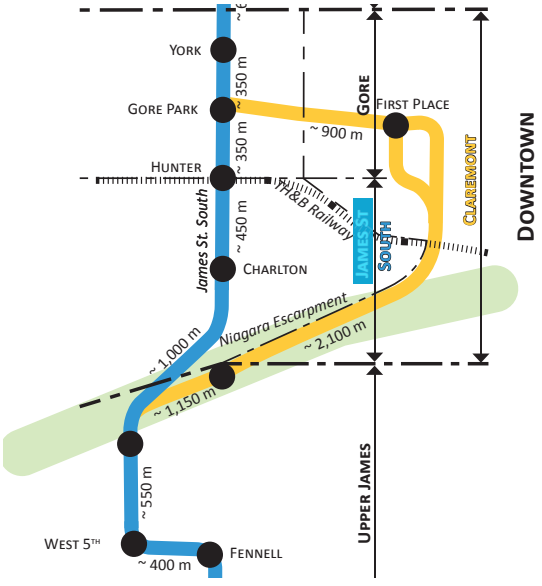
- Pedestrian comfort and safety on one-way streets (Main and Cannon)
- Overpass on York Boulevard and the need for pedestrians to change grades negatively impacts pedestrian experience
- Blank walls along James Street (York Blvd to King William St.) and along York Boulevard detract from the pedestrian environment
- Presence of heritage resources require sensitive design of new development
- Perceptions that Downtown is unsafe
- Large supply of parking Downtown is contrary to TOD
- Narrow-right-of-way conditions

PROFILE

DOWNTOWN

JAMES STREET SOUTH





Existing Characteristics

Extent:

This character area extends from the CP railway (north) to the Escarpment (south).

History:

This area was surveyed and significantly developed between the second half the 19th Century to the 1920s as the “Undermount Area”. In 1890, St. Joseph Hospital opened at the corner of James Street South and Charlton Avenue. Shortly after, the Toronto, Hamilton and Buffalo (TH&B) Railway line was completed in 1895 running south of Hunter Street and a landmark railway station at James Street and Hunter Street was completed by 1932. GO Transit acquired the station from TH&B and began service in 1996.

The establishment of the hospital and completion of the TH&B railway station were accompanied by residential development in this area through the 1800s and early 1900s. This historic residential area has seen years of residential in-fill as well as adaptive re-use, and the newer residential development has included low-rise, mid-rise, and high-rise buildings. This area includes the Durand and Corktown neighbourhoods.

Land Use:

This area has a strong residential character, with defining features including the Hunter GO Station, St. Joseph Hospital (Charlton Campus), and the Niagara Escarpment. Although outside of the boundaries of the Downtown Secondary Plan, the James Street South Area has the highest residential densities along the A-Line Corridor, providing the greatest amount and diversity of housing stock (both market and rental) in the Downtown section. This area includes residential, neighbourhood-scale retail and office, and some institutional and related uses. The hospital plays an important function as a major regional civic institution and employer, thus, generating high employment rates in this study area, second to the Gore area, reinforcing its role as part of the Downtown section. The area also includes some small-scale institutional and offices uses with local retail largely focused in small-scale mixed use buildings on James Street South and John Street. The dominant park and open space feature is the Escarpment, which is complemented by a few small neighbourhood parks such as Durand Park.

Future Land Use:

The Urban Hamilton Official Plan identifies mixed use-medium density uses on both sides of James Street South and John Street, from Hunter Street to Charleton Street, and on the west side of James Street South, from Charlton Street to Markland Street. Residential neighbourhoods are identified in the surrounding areas. The Hunter GO Station is also identified as a Mobility (Anchor) Hub – as such, besides playing a regional transportation role, it should develop to include mixed uses, services and amenities as part of the station area.

Urban Fabric and Built Form:

The urban fabric is characterized by a grid pattern with small blocks and parcels that are highly permeable. Moving toward the Escarpment's natural topography, this grid pattern becomes slightly distorted. Besides single-family housing, this area also includes low-rise, mid-rise, and high-rise residential buildings. Some buildings in this area have gone through adaptive re-use and have been converted to multi-family dwellings or medical offices. Commercial and mixed uses along James Street South largely take the form of three-storey buildings with retail at grade.

James St. S. - TH&B Bridge and GO bus access

James St. S. - Neighbourhood Amenities

Heritage Building at Markland Street

James St. S. - Looking South Toward Escarpment

Heritage:

There are significant historic residential and commercial building stocks in this area, particularly on the west side of James Street. A number of heritage-designated buildings and sites are located around Markland Street and James Street South. There are also a number of buildings and sites with heritage value that have gone through a process of adaptive re-use.

Transportation:

James Street South and John Street are identified as Primary Mobility Streets that are part of commercial precincts, and both play important roles in connecting key areas and enabling the movement of people, goods, and traffic. The Hunter GO Station is identified as a Mobility (Anchor) Hub that will not only continue to enable regional service and local bus transfers, but it will also intersect with the A-Line and be part of the Downtown Multi-modal transit area. Currently, there is better (as compared to other areas in Hamilton) transit service from this area north to Downtown and south up the Escarpment. Despite the area's neighbourhood residential character and James Street South's function as a minor arterial, there is fairly high vehicular traffic flow along James Street South as it is a main access route to the Escarpment. There are a few east-west bike lanes, but very limited north-south options, except for a signed route on Walnut St. Under the Shifting Gears Hamilton Cycling Master Plan, a new bike lane is proposed along Bay Street to Aberdeen Avenue and east-west along Hunter Street as well. Opportunities exist for a bike lane connection along Arkledun Avenue and a new multi-use path at the Claremont Access to connect from the base to the top of the Escarpment.

Pedestrian Environment:

Due to the quality of the urban fabric and the existence of short blocks, the James Street South character area is generally very walkable, although the TH&B bridge structure and blank walls on both sides of James Street at Hunter Street create a compromised pedestrian environment that should be addressed. Although the main GO Station entry is off of Hunter Street, a number of pedestrians enter the station and platforms from the bus entry behind the station or via stairways under the bridge off James Street South. The blank wall condition continues from the overpass structure to the Chateau Royale Condominium Building on the east side of James Street. On the west side, a stairway addresses the grade difference between the street and the existing buildings but also creates a long continuous wall and a very narrow sidewalk.

South of the GO Station, both James Street South and John Street are pedestrian-oriented with a good rhythm of three-storey commercial and mixed use buildings that are generally street-oriented and provide visual interest. That being said, pedestrian connections to the rear of the GO Station could still benefit from additional improvements. In contrast to the Gore Area, recent pedestrian realm improvements in this area have been more modest, despite significant traffic volumes along James Street South. Although not very accessible, a set of stairs currently enables pedestrian connection up the Escarpment from James Mountain Road to the Claremont Access at the top.

Transit-Oriented Environment Assessment:

This area generally has a good transit-oriented environment with a residential population that is supported by a good supply of housing, some level of neighbourhood scale retail, as well as significant employment opportunities from the hospital. The Hunter GO Train Station provides good regional transit access. There is the potential for intensification in this area in the residential areas and along James Street South, especially around the GO Train Station, to reflect the vision set out in the Official Plan for a mixed-use-medium density community. Such a community would help to reinforce the position of this A-Line node, as well as the GO Train station located within it, as an important transit hub.

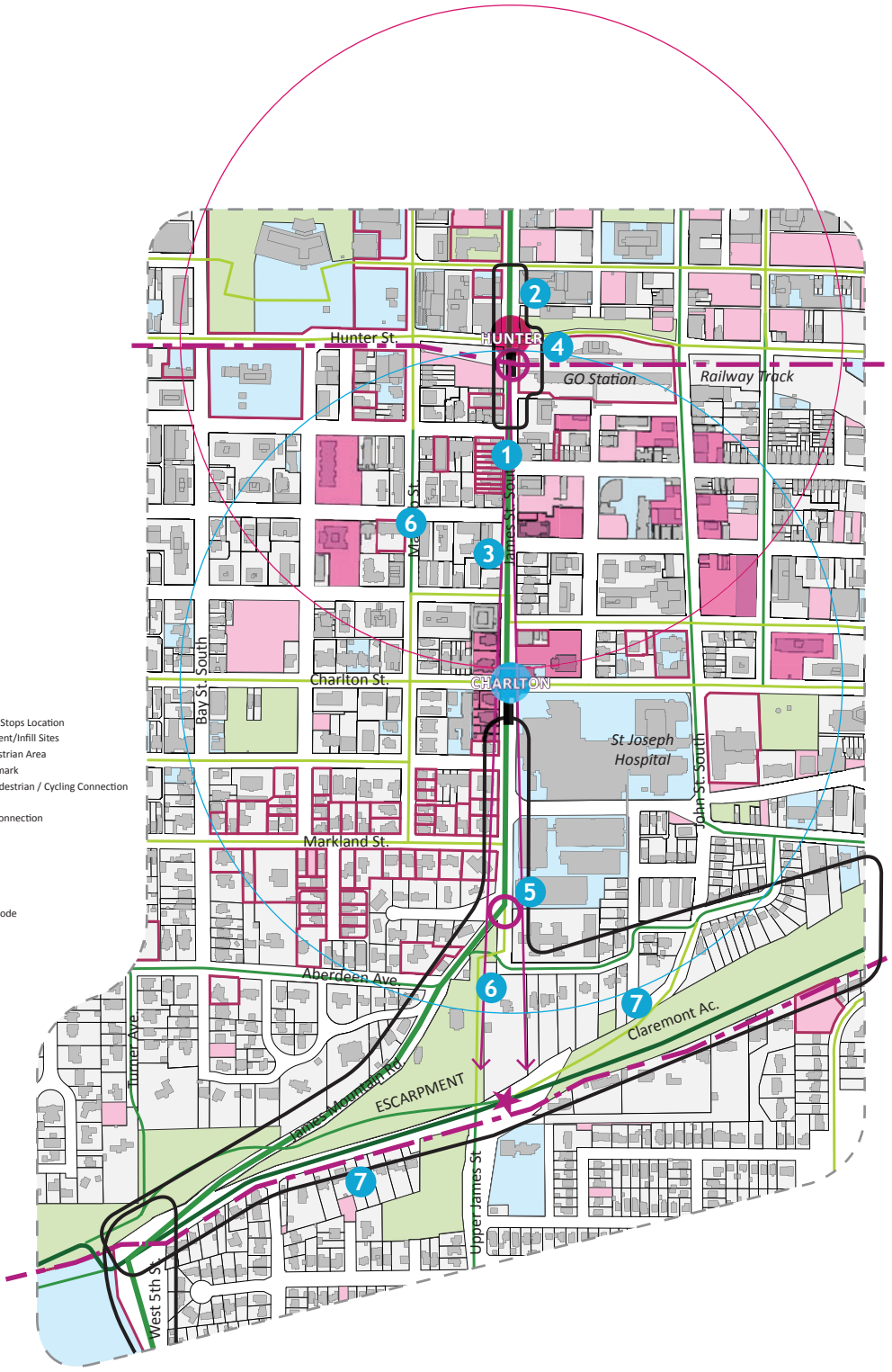
VISION

DOWNTOWN

JAMES STREET SOUTH

Shaped by its relationship to the Escarpment, the James Street South area will continue to have a strong neighbourhood character and be a vibrant transit-oriented residential, local commercial, and employment area that supports the Downtown.

JAMES STREET SOUTH / Proposed Directions



- Landmarks
- Gateways
- Views
- Character Areas
- Planned Public Realm Improvements
- Heritage
- Vacant Lot
- Existing Parks
- Existing Institutional Use
- Existing Rural Area
- Existing Recreational Trail / Cycling Route
- Stream Flow
- Potential Rapit Transit Stops Location
- Potential Redevelopment/Infill Sites
- Potential Special Pedestrian Area
- Potential Future Landmark
- Potential Improved Pedestrian / Cycling Connection
- Potential New Park
- Potential Pedestrian Connection
- Recreation Node
- Community Node
- Downtown Node
- Activity Node
- Employment Node
- 400 m Circle Around Node

DOWNTOWN - JAMES STREET SOUTH

PROPOSED TOD STRATEGY

Focus most-intensive transit-oriented development around the Charlton stop and build-up this Urban Corridor Area.

STOP CONSIDERATIONS

CHARLTON- ACTIVITY NODE (URBAN CORRIDOR AREA - ACTIVITY AREA)

A rapid transit stop could be located south of Charlton Avenue.

OPPORTUNITIES

Opportunities based on existing conditions include:

- The rich heritage resources in this area create a strong neighbourhood character and should be maintained through adaptive re-use
- The potential benefits of spin-off effects from the Downtown Core/Gore area for commercial areas along James Street South and John Street
- The existing view from the corridor looking south toward the Escarpment

Further opportunities exist to:

1. Continue intensifying existing residential areas and commercial/mixed-use areas on James Street South to reflect mixed use-medium density. Intensify existing commercial and parking lots as potential redevelopment/ intensification sites.
- Integrate the future A-Line stop with the Hunter GO Station
2. Create a special pedestrian area between Jackson Street and Hunter to improve pedestrian and cycling circulation to the Hunter GO Station, and between Downtown and the Escarpment
3. Enhance the pedestrian realm along James Street South to reinforce retail and improve connections to the GO Station, St. Joseph Hospital, and the Escarpment. James Street South could be intensively landscaped to symbolize and reflect an extension of the Escarpment and to create a green gateway to Downtown
4. Enhance the TH&B Bridge as a gateway that creates an “arrival” experience approaching the Escarpment from the Downtown
- Follow-through on the opportunities identified in the Hamilton Recreational Trails Master Plan to introduce new, and improve existing, pedestrian access and connections, as well as the public realm treatment towards, and up, the Escarpment
5. Improve east-west connections and introduce new north-south on-street connections to the Escarpment along James Street South and John Street, and along James Mountain Road to the top of the Escarpment as well as new trail connections along Walnut Street and MacNab Street. Potential connections would introduce new trails to the Escarpment on Turner Avenue, on James Mountain Road and on Arkledun Avenue
6. Enhance the Bruce Trail between Upper James Street and West 5th Street.

CONSTRAINTS

- The TH&B Bridge creates some physical challenges for the pedestrian realm as well as station design
- Poor accessibility, sidewalk conditions and blank walls around the GO Station detract from the pedestrian environment
7. Poor existing north-south and east-west pedestrian connections at the base of the Escarpment
- Poor existing pedestrian and cycling connectivity and environment up the Escarpment
- Tight right-of-way conditions along James Street South and James Mountain Road
- The presence of significant heritage resources will require sensitive design of new development

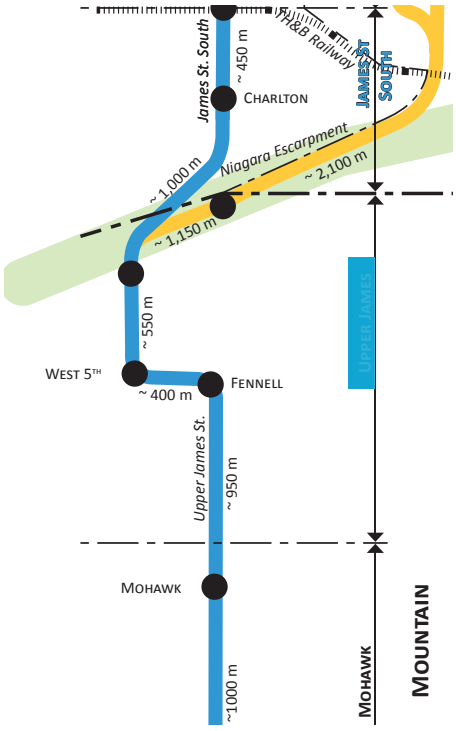
MOUNTAIN

The Mountain section stretches from the top of the Escarpment (north) to the hydro corridor (south), and is characterized largely by suburban development. The character areas in this section include Upper James, Mohawk and Ryckman's Corner.

PROFILE

MOUNTAIN

UPPER JAMES



Existing Characteristics

Extent:

Upper James is the first character area above the Escarpment. It extends from the top of the Escarpment (north) to Richwill Road (south), and is the most urbanized area along the corridor above the Escarpment and includes West 5th Street and Fennell Avenue.

History:

The St. Joseph Hospital Mountain Campus, formerly Hamilton Psychiatric Hospital, was built in the second half of the 19th Century. Residential development occurred around Upper James Street with the completion of the James Street Incline Railway in 1892. A significant portion of the residential neighbourhood areas were built in the 1940s and developed/matured over a twenty-year period.

Land Use:

The dominant land uses in the Upper James Area include residential, institutional and commercial. Commercial uses take the form of commercial retail units and commercial plazas along Upper James Street (Queensdale area) with a large-scale commercial plaza (Mountain Plaza) at Fennell Avenue. Residential is the primary use in this area with single-family housing as the dominant form as well as a few high-rise buildings, outside the properties fronting the Corridor. Mohawk College and St. Joseph Hospital Mountain Campus, are the major institutional uses. Both institutions have redevelopment plans in place. The renovated Mohawk College includes a theatre and gym that facilitate public use after hours and on weekends. There are also a couple of local schools including Queensdale Elementary. The Escarpment is the major attraction and open space feature in this area. Besides the Escarpment, there are few parks and open spaces (Richwill Park, Arcade Park, and Southam Park). The Escarpment, St. Joseph Hospital - Mountain Campus, Mohawk College, and Mountain Plaza are key destinations in this area.

Future Land Use:

The *Urban Hamilton Official Plan* identifies St. Joseph Hospital - Mountain Campus and Mohawk College as a Major Activity Centre – a node that will generate significant activity, employment and transit ridership. Mixed use-medium density is identified for Upper James Street from Queensdale Avenue to Fennell Avenue. District Commercial is identified south of Fennell Avenue to approximately Wembley Road. District Commercial includes retail and service commercial uses that cater to the weekly and daily shopping needs of surrounding residential areas. New and redeveloped District Commercial centres are intended to build street character and to improve the pedestrian experience. Residential neighbourhoods are identified in the surrounding areas. Existing redevelopment plans will guide future uses on the St. Joseph Hospital - Mountain Campus, Mohawk College and the Auchmar Estate sites.

Heritage:

The main properties with heritage designation in this area include the St. Joseph Hospital - Mountain Campus, Mohawk College, and Auchmar Estate. The Auchmar Estate is recognized as a provincially-significant landscape. Building construction in the area dates back as far as the 1850s, but the majority of the area was developed in the post-World War II period.

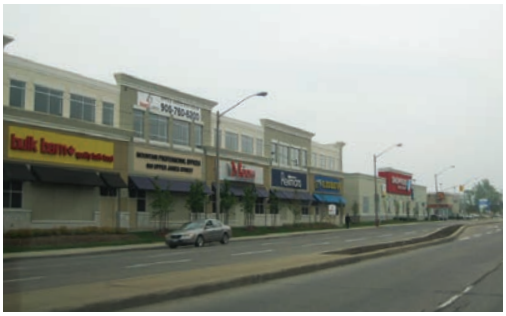
Urban Fabric and Built Form:

The urban fabric of Upper James reflects a pre-World War II, well-connected grid pattern with a particularly rhythmic pattern of short and permeable rectangular blocks south of Fennell Avenue. This grid pattern is made of single family housing on smaller, tighter lots. Although an urban street grid exists, this area tends to reflect lower-density built form with one or two-storey commercial buildings and automobile-oriented commercial plazas on Upper James Street and largely one to two-storey residential in the neighbourhoods. There has been some redevelopment on the Mohawk College site and infill at some locations such as Mountain Plaza.

Mohawk College - new learning exchange / library

Residential Areas on Fennell Ave.

Commercial on Upper James St. (at Fennell Ave.)



Mountain Plaza, Upper James St. - blank walls/ facades

Transportation:

There are significant traffic volumes in this area as it is the point of entry to the rest of the character areas above the Escarpment from James Mountain Road and Claremont Access. There is fairly high public transit usage on West 5th Street largely due to heavy ridership generated by the major activity centre at St. Joseph Hospital and Mohawk College. This activity centre is currently serviced by several bus routes. The College would like to see more frequent servicing as it seeks to become a more multi-modal transit-oriented campus. Beyond Fennell Avenue, Upper James Character Area is serviced by two additional main north-south bus routes on West 5th Street and Upper James Street. Bike infrastructure in this character area consists of a bike lane on West 5th Street which currently serves the hospital and college and a signed route on the east side of Upper James Street, with east-west connections mid-block. The A-Line rapid transit route has been assumed through previous work and policy, to travel along West 5th Street and to connect to Upper James Street via Fennell Avenue. An alternate route option would see the A-Line rapid transit continue further south on West 5th Street until Mohawk Road where the route would continue east along Mohawk Road and connect to Upper James Street.

Pedestrian Environment:

Blocks in the Upper James Area are fairly short and permeable, enabling fairly good pedestrian circulation. However, pedestrian improvements are required along Upper James Street and in particular, West 5th Street, where there are currently poor pedestrian environments.

Transit Oriented Environment Assessment:

Although Upper James is the most urban character area above the Escarpment, it has a poor transit-oriented environment overall due to inconsistent pedestrian environments and low-densities. For example, despite high transit usage at St. Joseph Hospital and Mohawk College, continuous, comfortable and safe sidewalks along West 5th Street are lacking and transit facilities are minimal. Along Upper James Street, the sidewalk conditions and transit facilities improve. The development potential around West 5th Street is somewhat limited due to redevelopment plans that are already in place for St. Joseph Hospital, Mohawk College, and the Auchmar Estate, and because of the existing and extensive stable single-family residential areas in the surrounding neighourhoods. Along Upper James Street, there are some infill and redevelopment opportunities around the Fennell node. Building-up the mixed use-medium density zone and intensifying the district commercial uses along Upper James Street would help to support rapid transit.

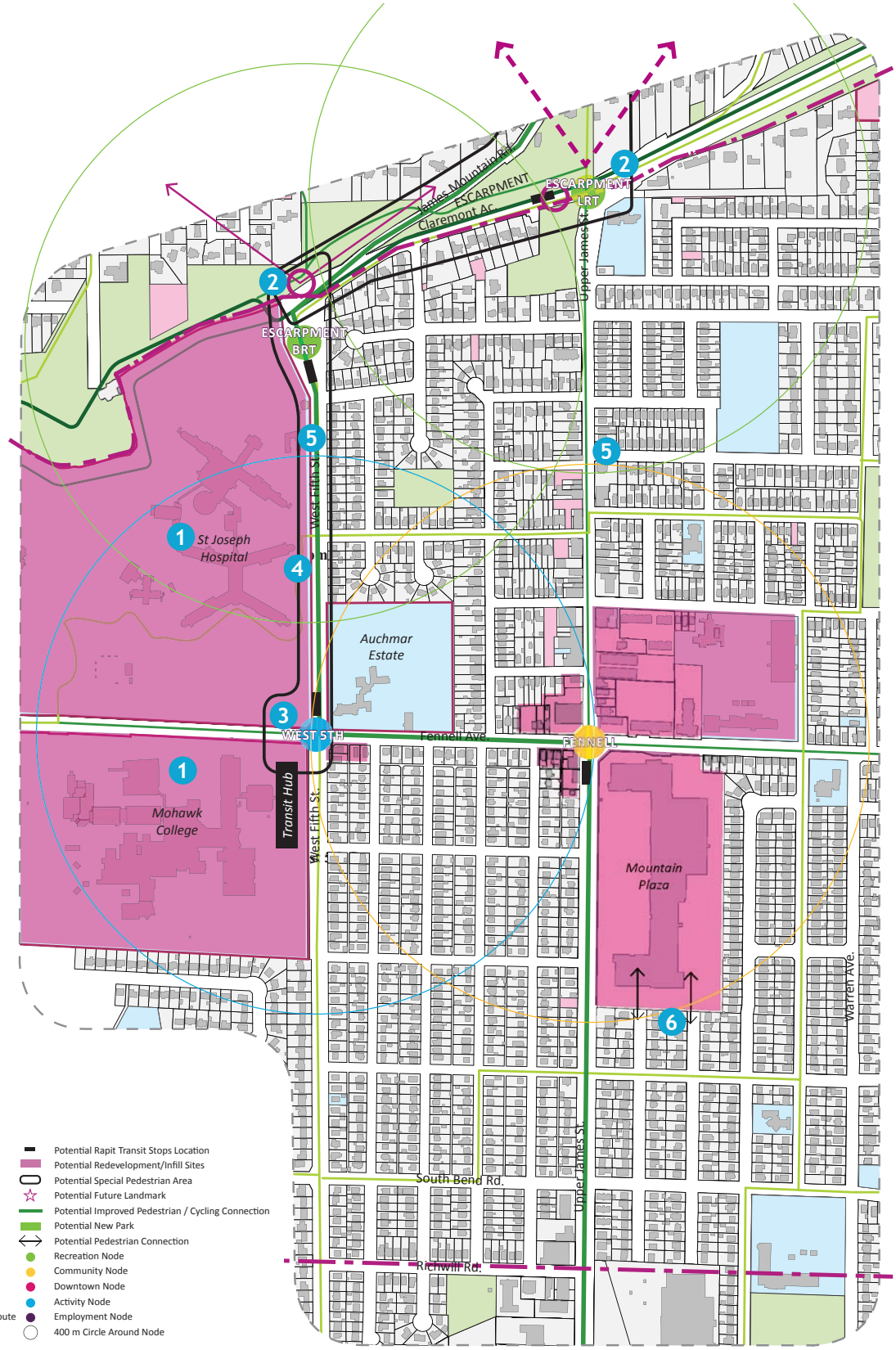
VISION

MOUNTAIN

UPPER JAMES

Upper James, the northern gateway to the Escarpment area, will be defined by the Escarpment, the civic nature established by the presence of the major activity node, and a transit-oriented and complete community.

UPPER JAMES / Proposed Directions



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- Employment Node
- 400 m Circle Around Node

MOUNTAIN - UPPER JAMES

PROPOSED TOD STRATEGY

Focus most intensive transit-oriented development around the West 5th stop and Fennell stop, and to a less intensive level, the Mountain stop (at either of the alternative locations), building-up this Urban Corridor Area, with West 5th having an employment focus and Fennell having a mixed use/community focus.

STOP CONSIDERATIONS

ESCARPMENT – RECREATION NODE (URBAN CORRIDOR AREA) - A rapid transit stop could be located close to the Escarpment.

WEST 5TH – ACTIVITY NODE (URBAN CORRIDOR AREA - MAJOR ACTIVITY CENTRE)- The rapid transit stop could locate north of Fennell Avenue. For the alternate route option (where rapid transit continues along West 5th Street to Mohawk Road), the stop could potentially be integrated into the Mohawk College campus.

FENNELL - COMMUNITY NODE (URBAN CORRIDOR AREA) The rapid transit stop within this node could potentially locate on Upper James Street, south of Fennell Avenue.

OPPORTUNITIES

Opportunities based on existing conditions include:

1. *St. Joseph Hospital and Mohawk College provide a strong civic presence and will generate significant ridership for the A-Line*
- *The Official Plan already designates mixed use-medium-density and district commercial along the corridor – these uses could support transit ridership, and enhance the area as a complete community*
2. *The view of the city from the Escarpment*

Further opportunities exist to:

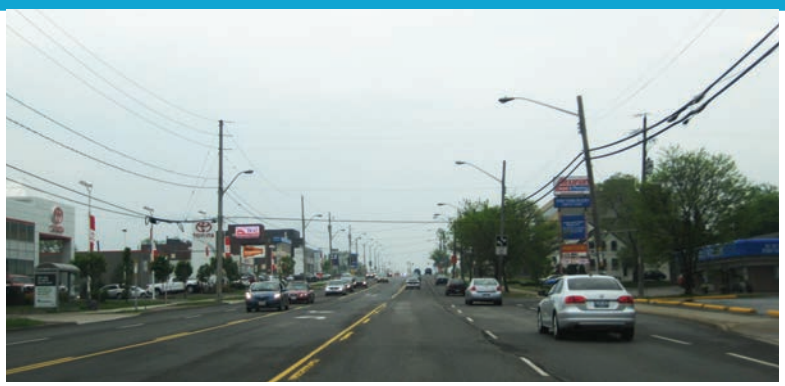
4. Create a special pedestrian area with public realm features, parks, and open spaces, at the top of the Escarpment along West 5th Street to reinforce the area as the gateway to the rest of the Escarpment
- Increase pedestrian and street-oriented retail along Upper James Street, as well as at the West 5th node
- Introduce pedestrian and cycling connections along West 5th Street, Fennell Avenue, and Upper James Street
1. 3. Leverage current redevelopment plans for the St. Joseph Hospital, Mohawk College, and Auchmar Estate sites to enhance the character and activities in the area
5. Leverage the infill potential around the Fennell node, including that of Mountain Plaza
6. Introduce north-south pedestrian connections through the Mountain Plaza site to make it more permeable

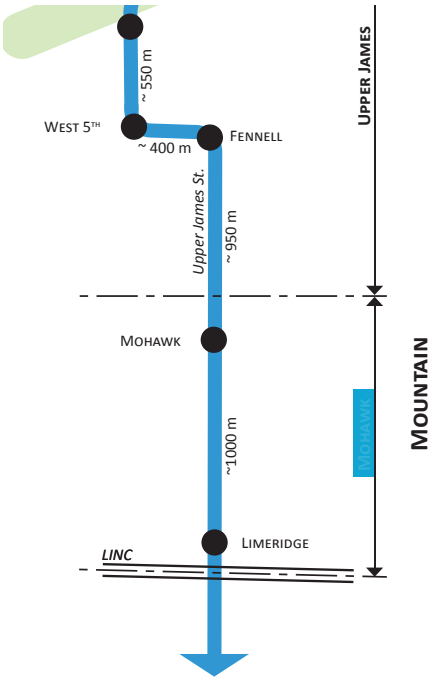
CONSTRAINTS

- Poor pedestrian realm along West 5th Street
- The existence of few civic amenities in the area outside of St. Joseph Hospital and Mohawk College
- Mohawk College does not have a master plan, presenting challenges to integrate rapid transit
- The lack of public open space and other gathering spaces along the corridor in this area
- The continued interest on the part of private developers in constructing automobile-oriented developments on Upper James Street
- Limited new development potential around West 5th Street due to existing redevelopment plans in place for St. Joseph Hospital, Mohawk College and the Auchmar Estate as well as the presence of stable single-family residential areas
- The predominant single-family neighbourhoods and small residential lots make it challenging to achieve residential densities generally associated with TOD

PROFILE

MOUNTAIN MOHAWK





Existing Characteristics

Extent:

The Mohawk Character area extends from Richwill Road (north) to the LINC (south).

History:

Mohawk Road was a historical Aboriginal trail that linked Aboriginal villages with waterways, hunting and fishing grounds and settlements. This trail served as an early corridor of travel, communications and trade. The Mohawk area as existing today, developed largely in the 1960s to 1970s, with the Mountain Arena completed in 1966. The LINC, a major transportation infrastructure in this area, was completed in 1997.

Land Use:

This area includes a range of uses including residential, office, institutional, parks, and retail. All of the retail is focused along Upper James Street. Large format retail is focused at the Mohawk Road and Upper James Street intersection. Additional retail is also included on smaller lots along the rest of the corridor. The residential built form consists largely of single-

family homes. There are some higher density residential buildings, such as three-storey apartments, as well as a few high-rise residential buildings located on both sides of Mohawk Road. Key institutional and recreational uses are located south of Mohawk Road and include the Mountain Arena and Mountain Secondary school as well as other small-scale community facilities and schools. There are a few parks north of Hester Street, but none between Hester Street and the LINC.

Future Land Use:

The *Urban Hamilton Official Plan* identifies some district commercial uses on Upper James Street immediately north of Mohawk Road. From Mohawk Road to Limeridge Road, mixed use-medium density is identified on both sides of Upper James Street. Residential neighbourhoods are identified in the surrounding areas. As a Mobility (Gateway) Hub, the Mohawk Road and Upper James Street intersection is envisioned to be a major transit station with high development potential and permitting a range of land uses and amenities.

Heritage:

The Mohawk character area was largely built-up in the post-war period, and there are no designated heritage sites in this area.

Urban Fabric and Built Form:

The urban fabric in this character area reflects a post-World War II period pattern, with a generally low-density, suburban character. There are long blocks on the east side of Upper James Street and shorter blocks on the west side of Upper James Street. Many of the existing residential streets end in cul-de-sacs and do not connect to the corridor. In addition, the LINC creates a major disruption to the urban fabric at Limeridge Road.

Transportation:

As the future intersection of the A- and T-Lines, Mohawk Road and Upper James Street is identified as a Mobility (Gateway) Hub in the Regional Transportation Master Plan. Because Upper James Street has a parkway entrance to the LINC, there are significant traffic volumes in the area. There are currently three transit routes in this area including the A-Line Express on Upper James Street, Route 35 on West 5th Road (which connects to Mohawk College), and Route 41 on Mohawk Road. There is currently a bike lane on West 5th Street, a signed route on the east side of Upper James Street, and an east-west signed route on Limeridge Road.

Upper James St. & Mohawk Rd.

Upper James St. & Mohawk Rd.

Pedestrian Environment:

Because of the predominant suburban pattern of development, this area is largely automobile-oriented than pedestrian-oriented. The pedestrian environment is challenged by long blocks and few pedestrian connections from the surrounding areas to Upper James Street. Pedestrian improvements are required along the corridor, especially near the nodes, the LINC, and areas where minimal public realm standards are currently in place, related to sidewalk width, street furniture, and treatment. Future road widening along sections of Upper James Street is identified in the *Official Plan* – road widening should occur to benefit the pedestrian realm rather than to add additional width to the existing vehicular roadway.

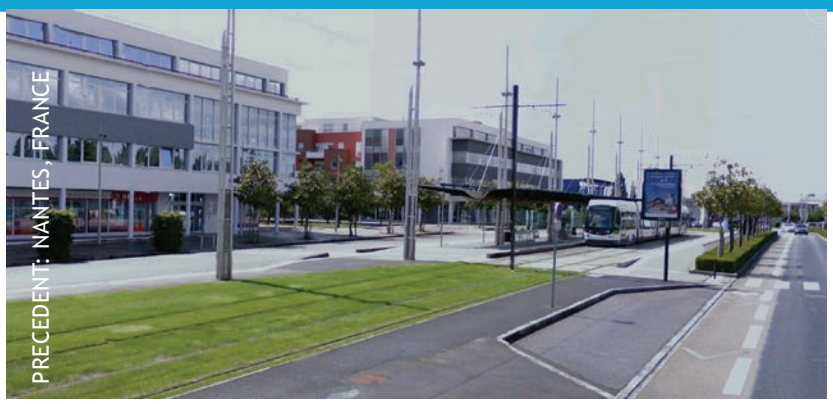
Transit-Oriented Environment Assessment:

Generally this area is not transit-oriented as it is saved by varying levels of transit facilities and pedestrian realm conditions. The area is predominant characterized by low-density built form. Conditions improve slightly at Mohawk Road, where two existing transit lines intersect and there has been more recent development. Identified as a Mobility (Gateway) Hub, there is significant development potential for infill. To reinforce this area as a major transit station area, a higher quality public realm should be considered, including improved pedestrian and cycling connections. The introduction of the A-Line, together with the existing *Official Plan* designation of district commercial and mixed use-medium density uses along Upper James Street, the City's *TOD Guidelines* and the *Nodes and Corridors Strategy*, should help to facilitate more transit-oriented development in the future. Opportunities to increase the allowable development intensity in existing policies should be considered.

VISION

MOUNTAIN

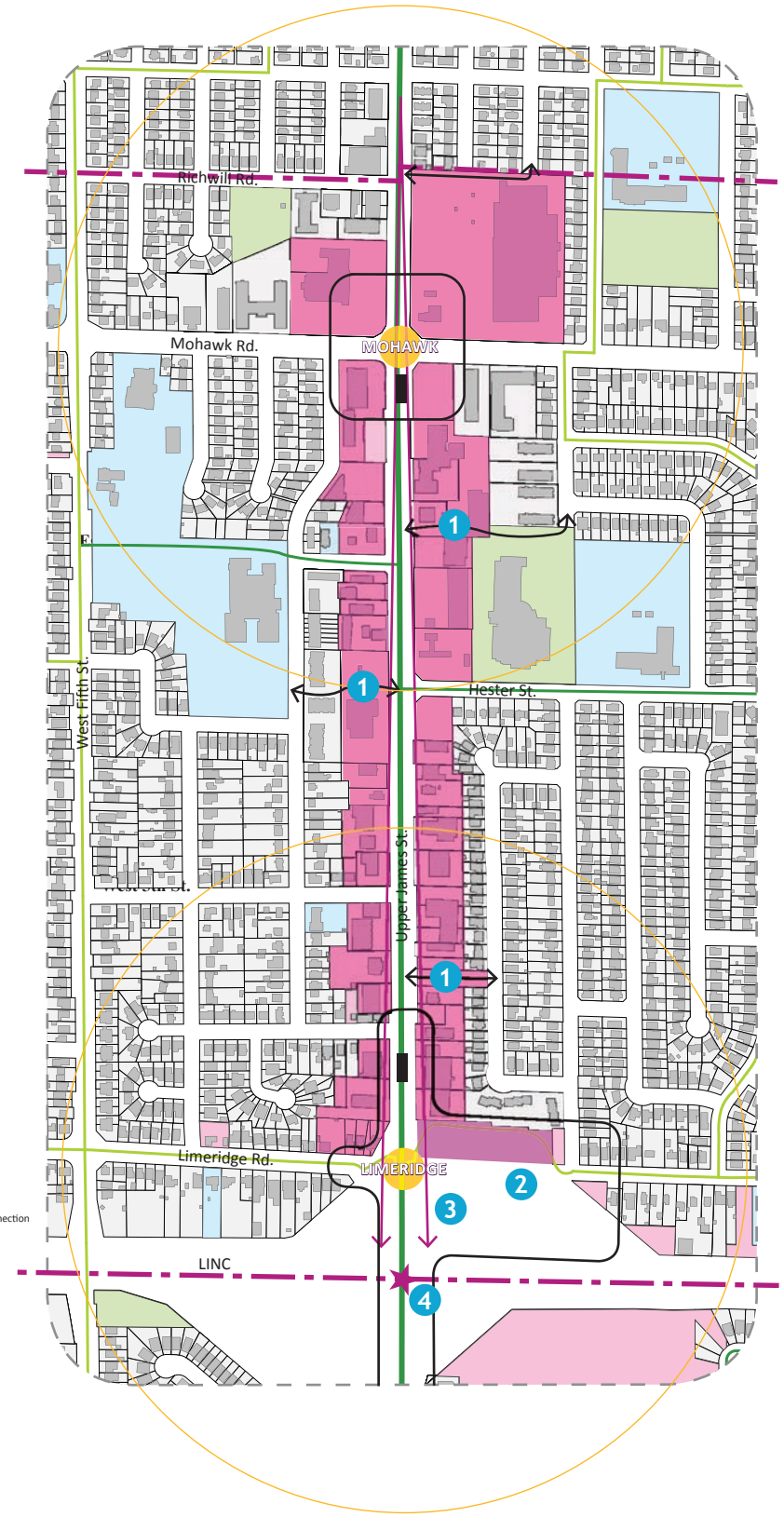
MOHAWK



PRECEDENT: NANTES, FRANCE

The Mohawk Area will be a mixed use pedestrian and transit-oriented neighbourhood with good connections to rapid transit and amenities along Upper James Street.

MOHAWK / Proposed Directions



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- Recreation Node
- Community Node
- Downtown Node
- Activity Node
- Employment Node
- 400 m Circle Around Node

PROPOSED TOD STRATEGY	Focus most intensive transit-oriented development around the Mohawk stop, and to a less intensive level, the Limeridge stop, building up this Urban Corridor Area
STOP CONSIDERATIONS	**MOHAWK - COMMUNITY NODE (URBAN CORRIDOR AREA - URBAN NODE AREA)** A rapid transit stop could be located on the south side of Mohawk Road to be closer to existing community facilities and to shorten the distance to the Limeridge node. **LIMERIDGE - COMMUNITY NODE (URBAN CORRIDOR AREA)** A rapid transit stop could be centrally located on the north side of Limeridge Road between the Mohawk and Stone Church nodes

OPPORTUNITIES

Opportunities based on existing conditions include:

- The Official Plan mixed use-medium density and district commercial designations identified along Upper James Street could enable more TOD
- Significant development and infill opportunities along the entire stretch of Upper James Street in the form of existing low-density commercial sites that are large and deep
- There are a number of civic amenities including Mountain Arena in the area
- Good accessibility from the highway/LINC

Further opportunities exist to:

1. Introduce east-west pedestrian connections from residential neighbourhoods to Upper James Street to enhance block permeability
1. Introduce pedestrian and cycling connections along Upper James Street and improve pedestrian access to the commercial corridors through mid-block crossings
2. Enable improved pedestrian circulation, at the Limeridge Road and Upper James Street intersection
3. Potential to create a special pedestrian area stretching from the area north and south of the LINC and around the Limeridge node to create a more pedestrian-friendly environment
4. Enhance and beautify the bridge over the LINC to transform it into a landmark

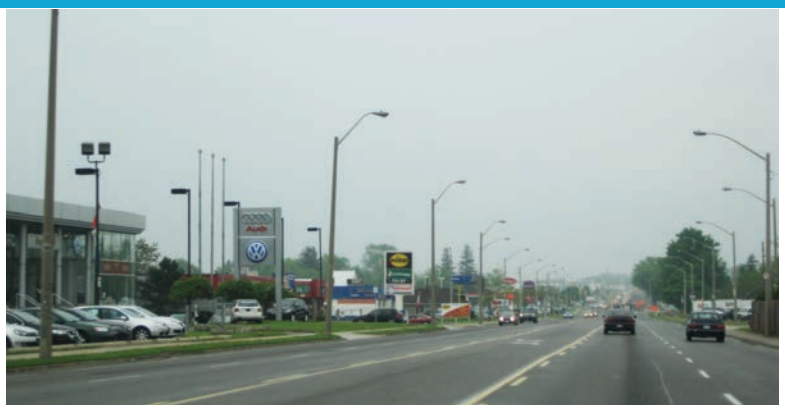
CONSTRAINTS

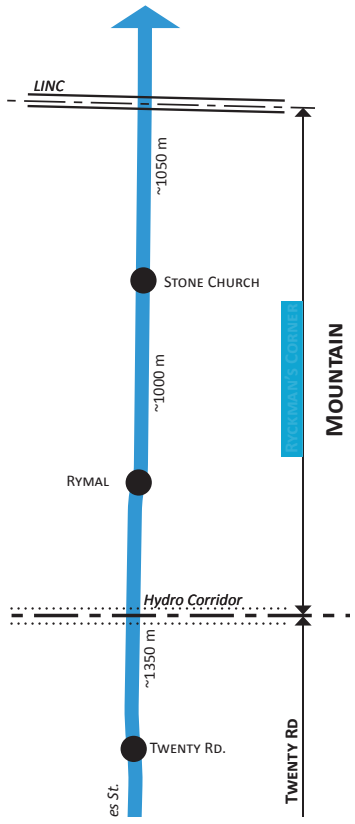
- Poor pedestrian environment around the LINC, which is a physical as well as a visual barrier
- Potential connections would likely require acquiring land at various locations
- Long blocks and cul-de-sacs
- Many residential streets currently do not connect to Upper James Street
- Predominant single-family neighbourhoods and small residential lots make it challenging to achieve residential densities appropriate for TOD
- Continued interest on the part of developers in constructing automobile-oriented developments on Upper James Street

PROFILE

MOUNTAIN

RYCKMAN'S CORNER





Existing Characteristics

Extent:

The Ryckman's Corner area extends from the LINC (north) to the north side of the hydro corridor (south).

History:

There are three main periods of development represented in this area: the original community established around Stone Church Road in the early 1900s, the first greenfield development area south of Rymal Road, from around the World War II period, and ongoing suburban development from the 1980s to the present day.

Land Use:

The dominant use along the entire stretch of Upper James Street in this area is arterial commercial in the form of large format automobile-oriented retail, such as big box stores and automobile dealerships. Low-density residential characterize the surrounding neighbourhood areas. There are several institutional uses such as churches and smaller schools south of Rymal Road, as well as several parks and open spaces including Dr. William Bethune Park and the cemetery.

Future Land Use:

The *Urban Hamilton Official Plan* identifies arterial commercial land uses along Upper James Street from Limeridge Road to Stone Church Road and mixed use-medium density from Stone Church Road to Rymal Road. The *Official Plan* also identifies the area between Stone Church Road and Rymal Road as a community node. Community nodes are to evolve to include a range of community-scale uses to provide access to housing, employment, services, and recreation close to each other and transit within the node. Where possible, they are to be linked to higher order transit, and are intended to function as vibrant mixed use areas with a range of housing opportunities, including affordable housing and housing with supports, and diverse built forms.

Arterial commercial designation permits retail uses which are land extensive, require outdoor storage, or have a warehouse-type character as well as services catering to the traveling or drive-by consumer. This form of use is recognized in the Official Plan as contrary to transit-oriented development and will need to be addressed as part of the A-Line planning process.

Heritage:

The the Barton Stone Church, built in the early 1900s at Stone Church Road and Upper James Street, is a prominent heritage-designated site in the area. There is also a heritage-designated site along West 5th Street by Stone Church Road.

Urban Fabric and Built Form:

The urban fabric strongly relates to the history of development in this area. Reflecting the dominant arterial commercial use, commercial lots are very large and deep, especially between the LINC to Rymal Road, forming long continuous blocks with very poor permeability. Although there are recently implemented pedestrian connections through the blocks, most of the surrounding residential areas reflect a suburban cul-de-sac pattern of development with very few connections to Upper James Street. An exception is the area southwest of Rymal Road and Upper James Street where a more grid-like street pattern is present. This residential “pocket” was developed in the immediate post-war period (1940s to 1960s), whereas the areas around it were developed more recently. The built form along Upper James Street is automobile-oriented rather street-oriented and takes the form of big box retail set back from the street. It features blank walls, and large areas of surface parking fronting the street. In the neighbourhood areas, single family homes transition from smaller and tighter lots in the area between the LINC and Stone Church Road to very long and large lots with low density built form between Stone Church Road and the Hydro Corridor.

Barton Stone Church

Automobile dealerships on Upper James St.

Suburban Commercial Plaza Frontage

Residential Buildings used for light Industrial/ Office

Transportation:

The Rymal node is the location of the future intersection of the A- and S-Lines. Currently, there is some level of transit-servicing. The main north-south transit route is the A-Line Express on Upper James Street and the east-west routes are on Stone Church Road and Rymal Road. As this corridor has a highway entrance to the LINC, there are significant traffic volumes in the area. There is an existing bike lane on West 5th Street which connects to Upper James Street, east-west to Allison Crescent, and then north-south on Aldercrest Avenue to Twenty Road. Stone Church Road is an existing east-west trail connection.

Pedestrian Environment:

The Ryckman's Corner character area exhibits a poor pedestrian environment due to the suburban development patterns, dominant large format automobile-oriented uses, and poor connectivity. The built form is set-back from the street and often includes blank walls and/or street front surface parking areas. There is no visual interest or significant areas for pedestrians to gather. The area between Stone Church Road and Rymal Road has no connections to Upper James Street from the residential areas on the west side and arterial commercial uses take up large tracks of land. Sidewalks are continuous along most of Upper James Street, but disappear south of Rymal Road. The streetscape lacks seating, shelter, and trees.

Transit Oriented Environment:

Ryckkman's Corner is not a transit-oriented environment due to the automobile-oriented urban fabric and dominant arterial commercial uses along Upper James Street. The existing arterial commercial uses create long and impenetrable blocks with very few connections. As noted, the sidewalks on Upper James Street disappear south of Rymal Road. The commercial built form is very low-density, set-back from the street, and includes blank walls as well as large street-fronting surface parking areas. The neighbourhoods are low-density and suburban with little connectivity to Upper James Street. The area currently does not include the mix of uses, built form, densities or public realm required to support rapid transit.

To support the A-Line, the existing Official Plan policy and zoning by-law which currently permit arterial commercial uses need to be changed and aligned with the TOD Guidelines to enable mixed uses and higher density development that contributes to a more urban and pedestrian-friendly and transit-oriented environment. Between Stone Church Road and Rymal Road, where mixed use-medium density is identified, transit-oriented development will also need to reflect community node objectives.

VISION

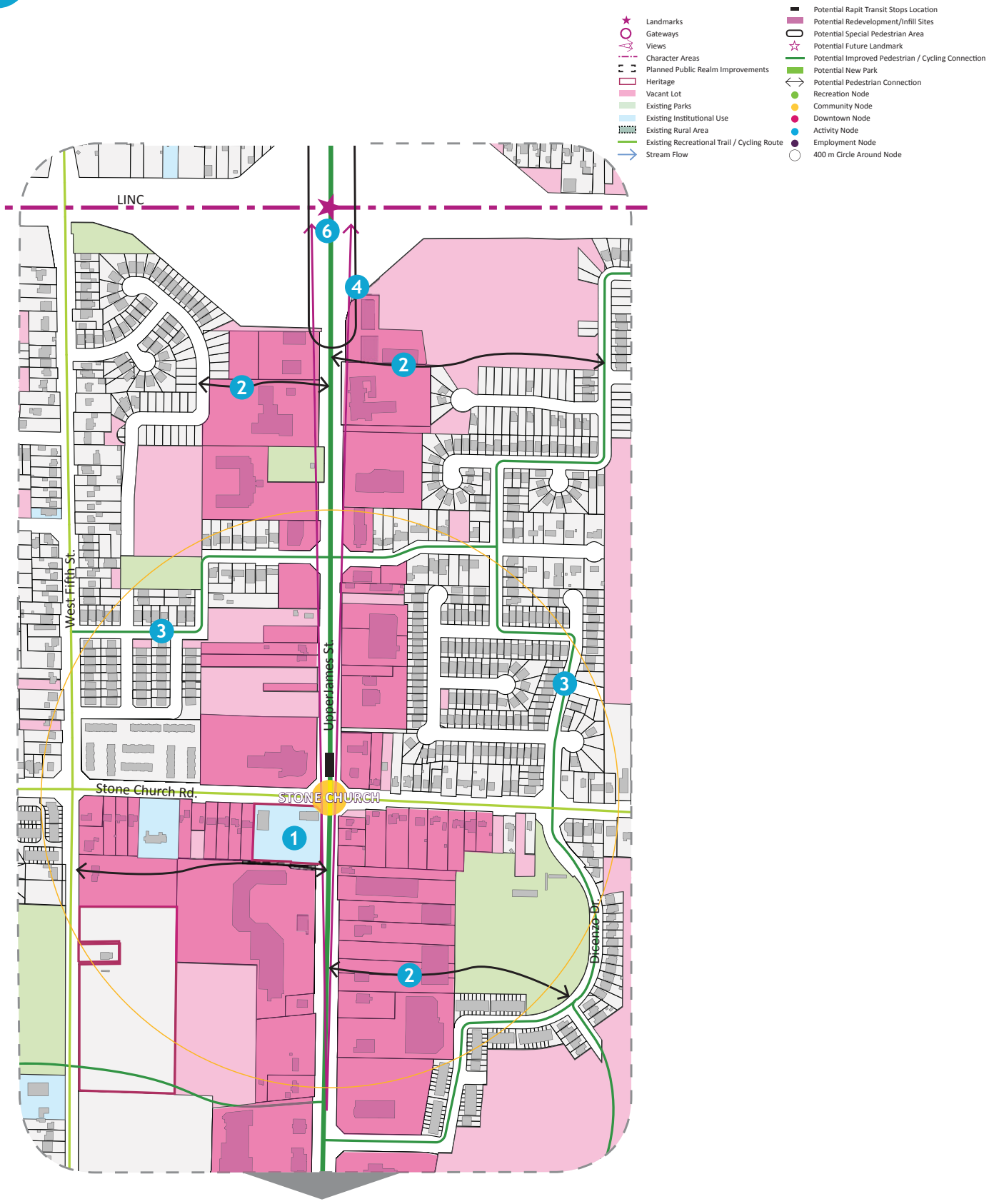
MOUNTAIN

RYCKMAN'S CORNER

Ryckman's Corner will be the first urban transit-oriented development community north of the Airport Employment District. Its character will be shaped by its historic role and its strong pedestrian and transit-oriented focus.

"Whereas Downtown will require TLC, Upper James will require 180 degrees transformation to achieve TOD."

- stakeholder participant



MOUNTAIN - RYCKMAN'S CORNER NORTH

RYCKMAN'S CORNER 2 / Proposed Directions

- Landmarks
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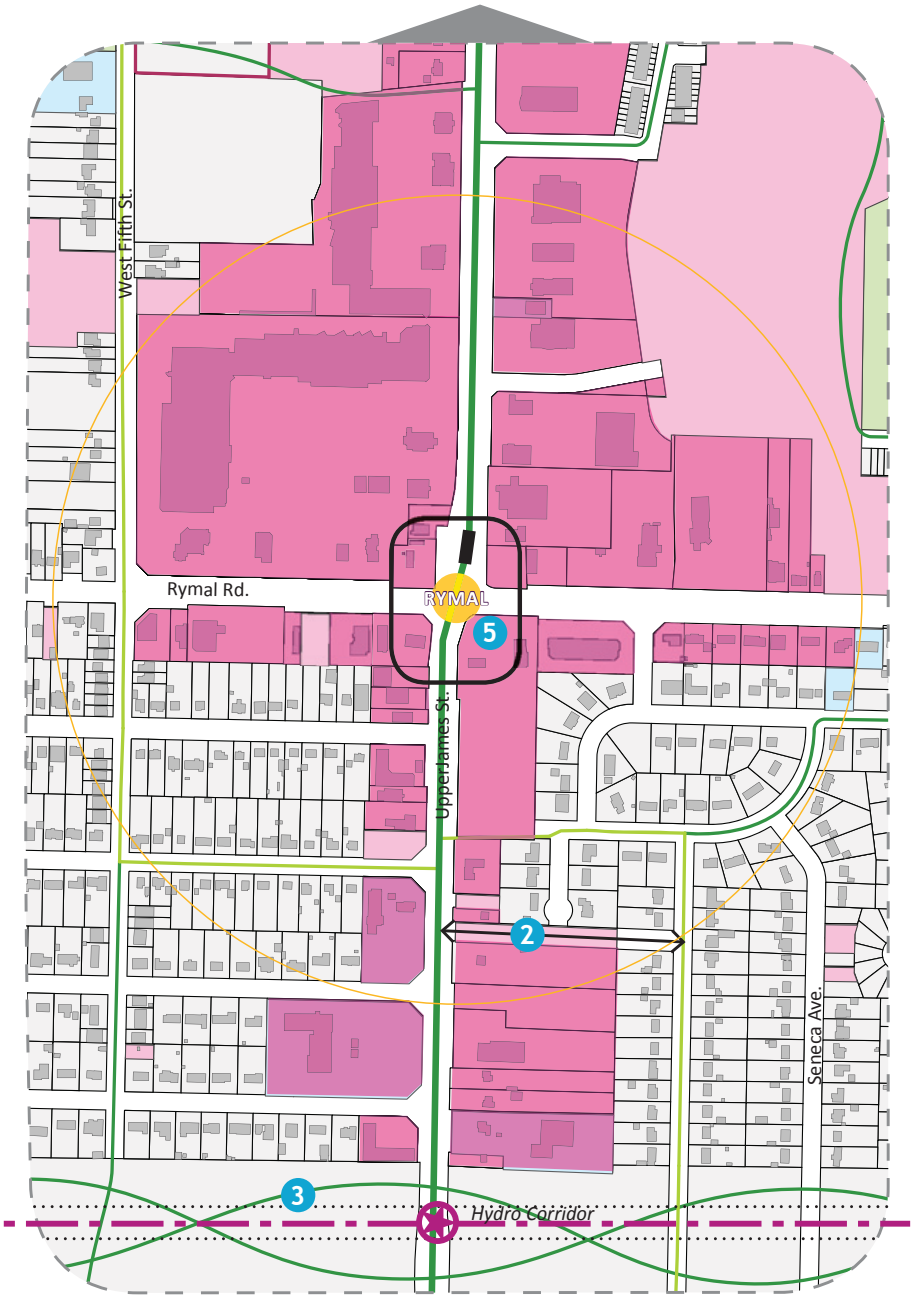
- Potential Rapit Transit Stops Location
- Potential Redevelopment/Infill Sites
- Potential Special Pedestrian Area
- Potential Future Landmark
- Potential Improved Pedestrian / Cycling Connection
- Potential New Park
- Potential Pedestrian Connection
- Recreation Node
- Community Node
- Downtown Node
- Activity Node
- Employment Node
- 400 m Circle Around Node



MOUNTAIN - RYCKMAN'S CORNER SOUTH

PROPOSED TOD STRATEGY	Focus most intensive transit-oriented development around the Rymal Road stop, and to a less degree, the Stone Church stop in this Urban Corridor Area.
STOP CONSIDERATIONS	**STONE CHURCH – COMMUNITY NODE (URBAN CORRIDOR AREA)** A potential rapid transit stop could locate north of Stone Church Road to minimize the impact on the historically-designated Barton Stone Church site. **RYMAL – COMMUNITY NODE (URBAN CORRIDOR AREA)-** A rapid transit stop could be located on the north side of Rymal Road to shorten the distance between this node and the Stone Church node as well as to capitalize on the availability of space in the existing right-of-way.
OPPORTUNITIES	***Opportunities based on existing conditions include:*** • The Official Plan identifies a community node and mixed use-medium density area along Upper James Street between Stone Church Road and Rymal Road • The Rymal node will be a major transit station and focus for TOD as the future intersection of the A- and S-Lines • A large amount of low-density commercial lots that are large and deep are located along Upper James Street and also between West 5th Street, Stone Church Road, and Rymanl Road. • Good accessibility from the highway/LINC 1 • Barton Stone Church is a significant heritage resource that lends character to the Stone Church node • Some level of recent interest in mixed residential redevelopment and infill in this area ***Further opportunities exist to:*** • Review the existing Official Plan policies and zoning by-law to replace existing arterial commercial designation with higher density mixed use to align with the TOD Guidelines • Develop transit-oriented developments on sites facing the nodes and the corridor • Add civic amenities to this area • Create more public open space such as plazas and other gathering spaces 2 • Create new pedestrian connections and mid-block connections from surrounding residential neighbourhoods to Upper James Street 3 • Introduce north-south trail connections along Upper James Street and east of Upper James Street, as well as an east-west connection along the hydro corridor, such as a trail with enhanced open space 4 • Create a potential special pedestrian area before and after the LINC and along the bridge to create a more pedestrian-friendly environment. Improvements should help create a seamless transition from the Mohawk area to Ryckman's Corner 5 • Create a potential special pedestrian area at the Rymal node – consideration to integrate an urban plaza to enhance community node 6 • Enhance and beautify the bridge over the LINC to turn it into a landmark
CONSTRAINTS	• The existing arterial commercial designation along Upper James Street from the LINC to Stone Church Road • An existing lack of civic amenities in the area • A lack of public open space along the Upper James Street • Existing zoning and parking by-laws allow large surface parking • areas to persist • The large amount of land currently used for large format retail and automobile-oriented uses in the area • Continued interest in constructing automobile-oriented developments on Upper James Street • Poor pedestrian and cycling connectivity from existing neighbourhoods • Sidewalks disappear south of Rymal Road • This is the furthest urban character area from Downtown, which makes it challenging to build up to the TOD density levels envisioned • The predominant single-family residential in surrounding neighbourhoods make it challenging to achieve TOD residential densities • All new development/infill and sensitive uses must comply with the Airport's development parameters (AEGD)

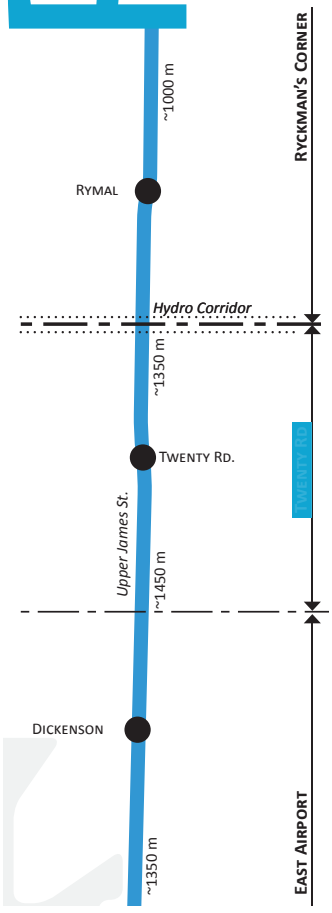
AIRPORT EMPLOYMENT

This section stretches from south from the hydro corridor (north) to the airport (south). Character areas in this section include Twenty Road, East Airport, and Mount Hope.

PROFILE

AIRPORT EMPLOYMENT

TWENTY ROAD



1. TWENTY ROAD

Existing Characteristics

Extent:

The Airport Employment District character area extends from the hydro corridor to approximately mid-way between Twenty Road and Dickenson Road (including Christ Church on the Rock). The areas on the east side of Upper James Street are included in the urban boundary, while the areas on the west side of Upper James Street are generally rural.

History:

Development in the area is largely from the end of World War II to the 1980s, with a few large areas/tracts of historic farmland that were established from 1850 to 1900. There has been some recent development activity, including the Hamilton Street Railway Mountain Transit Centre.

Land Use:

The existing land use is largely rural and includes a significant amount of open space. There is a single-family residential area established northeast of Twenty Road and commercial uses on the east side of Upper James Street between the hydro corridor and Twenty Road. Christ Church on the Rock is the only existing institutional use.

Future Land Use:

The *Urban Hamilton Official Plan* identifies most of the area in the urban boundary south of Twenty Road up to Homestead Drive for airport business park use. This designation includes airport-related industrial and commercial uses, high technology industry, office, and ancillary uses. The airport business park area corresponds to the AEGD boundaries. The pending Secondary Plan for the AEGD will identify more specific land use designations and development parameters for this area. The areas outside of the AEGD are rural and subjected to the *Rural Hamilton Official Plan* and are anticipated to remain rural.

Urban Fabric:

This area is characterized by a rural fabric with large agricultural and natural spaces and a limited amount of development. Specific features include the hydro corridor and the two streams that flow south-west into the rural area, intersecting Twenty Road and Upper James Street. The only urban fabric that exists is that corresponding to the residential community on the northeast side of Twenty Road. There are currently no connections from this residential community to Upper James Street.

Transportation:

There is very limited local transit service in this area with only the A-Line Express bus running on Upper James Street to the airport. There is an east-west pedestrian and cycling trail on Twenty Road, beyond which there are no bike facilities until Airport Road.

Pedestrian:

Development in the Airport Employment District is not pedestrian-oriented and generally reflects the rural character of the area. Except for a couple of trails running through the area, there are almost no pedestrian or cycling facilities. There are no sidewalks along Upper James Street.

Transit-Oriented Environment Assessment:

This area's poor pedestrian environment also lends itself to being a poor transit-oriented environment. There is very little transit infrastructure in the area. Densities are low, with only small pockets of development and no mixed uses. Pending policies for the AEGD will help to generate employment, activity, and ridership. Focusing transit-oriented development around the nodes will help to facilitate higher densities in strategic locations. In principle, this has been shown to work elsewhere, but there is a minimum threshold of land use density and activity required to sustain the case for rapid transit investment. This will be an important consideration in the development of a business case for funding options for this section of the A-Line.

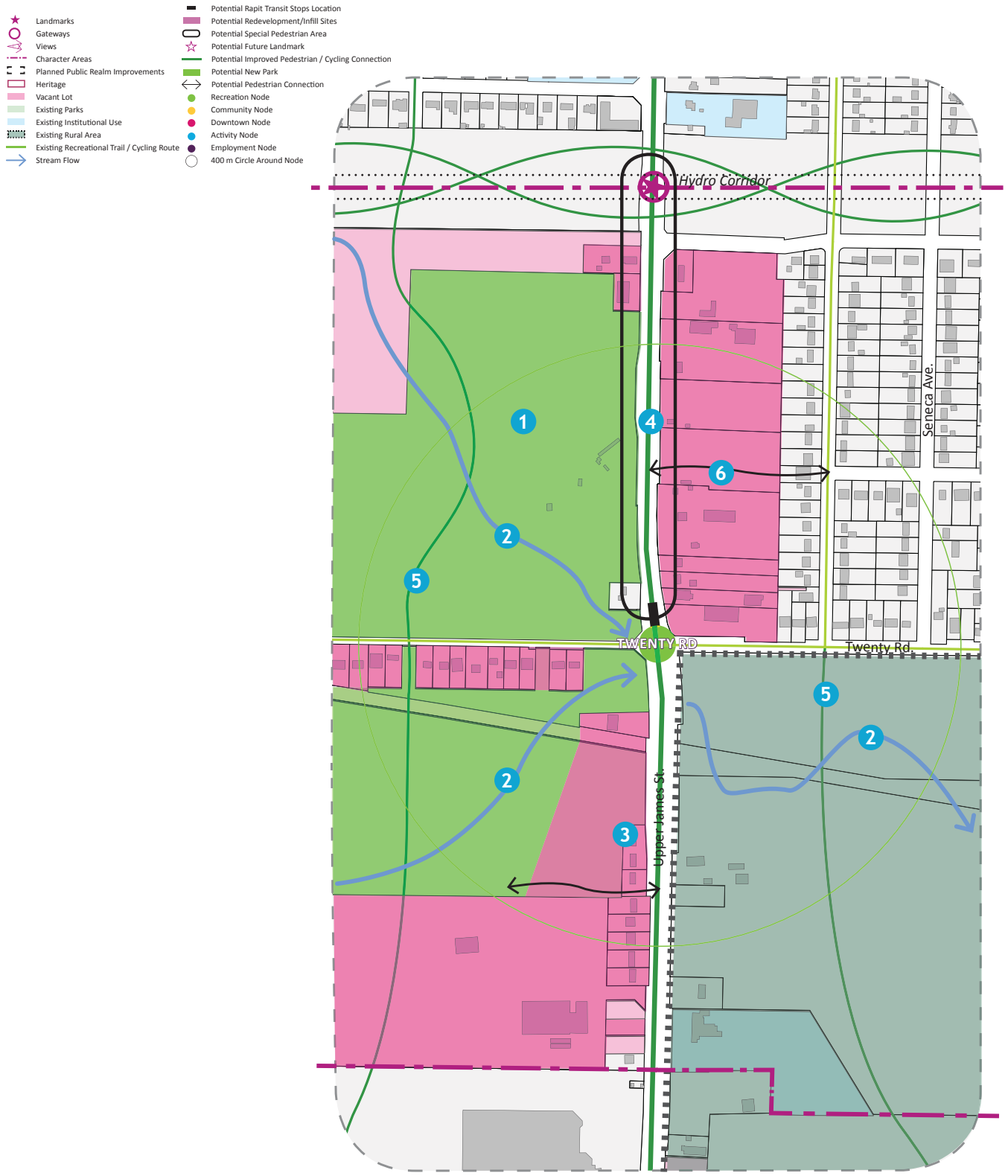
VISION

AIRPORT EMPLOYMENT

TWENTY ROAD

Twenty Road will be a gateway transitioning from the Mountain to the Airport Employment District. It will be a recreational node reinforced through enhanced natural features, pedestrian improvements, and uses that support the existing community and Airport Employment Growth District.

TWENTY ROAD / Proposed Directions



AIRPORT EMPLOYMENT SECTION - TWENTY ROAD

PROPOSED TOD STRATEGY	Focus most intensive transit-oriented development around the Twenty Road stop in this Urban Corridor Area
STOP CONSIDERATIONS	**TWENTY ROAD – RECREATION NODE (URBAN CORRIDOR AREA) The rapid transit stop could be located on the north side of Twenty Road to shorten the distance to the Rymal node and to better serve the existing community and potential future parks and open space.**

OPPORTUNITIES

Opportunities based on existing conditions include:

- A Secondary Plan for the AEGD is pending
- Development and infill potential in the AEGD area and on existing and underdeveloped sites along Upper James Street and Twenty Road within the urban boundary
- The potential of the AEGD to generate significant activity and employment densities that will help to achieve GRIDs employment targets for the city as well as A-Line ridership
- Provincially Significant Wetlands (PSWS) exist on the NW, SW and SE portions of the intersection of Twenty Road and Upper James Street

Further opportunities exist to:

- Emphasize the recreational character of Twenty Road by enhancing existing natural features
- 1 Create an urban streetscape along Upper James Street as per built form and public realm recommendations
- 6 Introduce a mid-block connection from the residential community to Upper James Street, and from the park to Upper James Street
- Create a major park/open space to the northwest of Twenty Road along the A-Line Corridor for recreation and wildlife preservation. Open space could be consolidated on the three existing undeveloped areas around the node, or partially consolidated on one or two of the areas, and could enable connections with a potential trail along the hydro corridor
- 2 Create a protected green corridor along the streams and PSWS located south-west and north-west of the Twenty Road node, with a 30 metre buffer
- 4 Develop a potential north-south on-street trail connection along Upper James Street in this area to enhance connectivity and create a special pedestrian area with significant improvements along Upper James Street from the hydro corridor to Twenty Road to compliment the future recreational uses and the existing residential community
- 5 Introduce two potential north-south off-street trail connections on either side of Upper James Street; one to the east of Upper James Street, extending the existing trail on Aldercrest Avenue south through the rural area; and the second to the west of Upper James Street, extending from West 5th Street through the AEGD

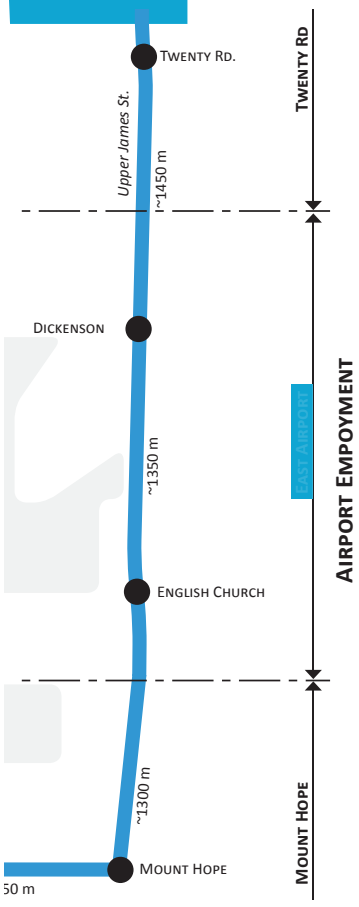
CONSTRAINTS

- Existing low densities associated with the rural area make rapid transit servicing challenging
- 3 All new and infill residential development and other sensitive uses are limited and must comply with the Airport's development parameters
- Land acquisition, which would be required in order for the City to develop any potential parks or open space, may be constrained by the existing ownership and value of the land
- No development or site alteration is permitted within PSWS

PROFILE

AIRPORT EMPLOYMENT

EAST AIRPORT



Existing Characteristics

Extent:

The East Airport character area extends south from mid-way between Twenty Road and Dickenson Road, south of Christ Church on the Rock (south) to the intersection of Homestead Drive and Upper James Street (north). The areas to the east of Upper James Street and a small section to the west of Upper James Street and south of Dickenson Road are included in the urban boundary. The areas to the west side of Upper James Street are generally rural and addressed in the *Rural Hamilton Official Plan*.

History:

Development within this character area has largely occurred since the 1940s to the present. A few sites remain that were developed between 1850 and 1900, and some former farmland immediately to the south of Christ Church on the Rock dates back to the early 1800s.

Land Use:

This area includes largely rural uses, open space, and airport-related parking, transportation, and utility uses, as well as some vacant lots. There is some low-density residential development in the area, dispersed mostly along the west side of Upper James Street. There is also a small amount of industrial, commercial, and civic uses. On the east side of Upper James Street, the land is predominantly rural and includes open space currently used for recreation, including a motorsport complex and golf course, as well as agriculture uses.

Future Land Use:

The *Urban Hamilton Official Plan* identifies most of the area in the urban boundary as airport business park and identifies specific land uses permitted as part of that designation. These include airport-related industrial and commercial uses, high technology industry, office, and ancillary uses. The airport business park area corresponds to the AEGD boundaries. The pending Secondary Plan for the AEGD will identify more specific land use designations and development parameters for this area. Lands outside the Urban boundary are included in the Rural Hamilton Official Plan and are anticipated to remain rural.

Rural Fabric:

This area is characterized by a predominantly rural fabric with a pastoral character. It has very little public realm infrastructure and features large open spaces for agriculture, recreation, and airport-related transportation, utility, and parking. There is a small amount of existing low-density development.

Countryside Character along Upper James St.

Rural Residential along Upper James St.

Transportation:

There is limited local transit service in this area with only the A-Line express bus running on Upper James Street. There are no bike facilities in this area.

Pedestrian Environment:

East Airport is not pedestrian-oriented. There are no existing pedestrian or cycling facilities and no sidewalks along Upper James Street.

Transit-Oriented Environment Assessment:

Similar to the Twenty Road Area, the East Airport Area currently reflects a rural character, and has little pedestrian and transit-related infrastructure. This area has the lowest population and employment densities along the corridor with only small pockets of development and no mixed uses. Potential development and intensification in the Airport Business Park area in the AEGD will help to generate employment, activity, and ridership. Focusing the highest scale of transit-oriented development around the nodes and facilitating a strong street frontage along the corridor will help to facilitate higher densities in strategic locations to support rapid transit while maintaining a pastoral character in this area.

VISION

AIRPORT EMPLOYMENT

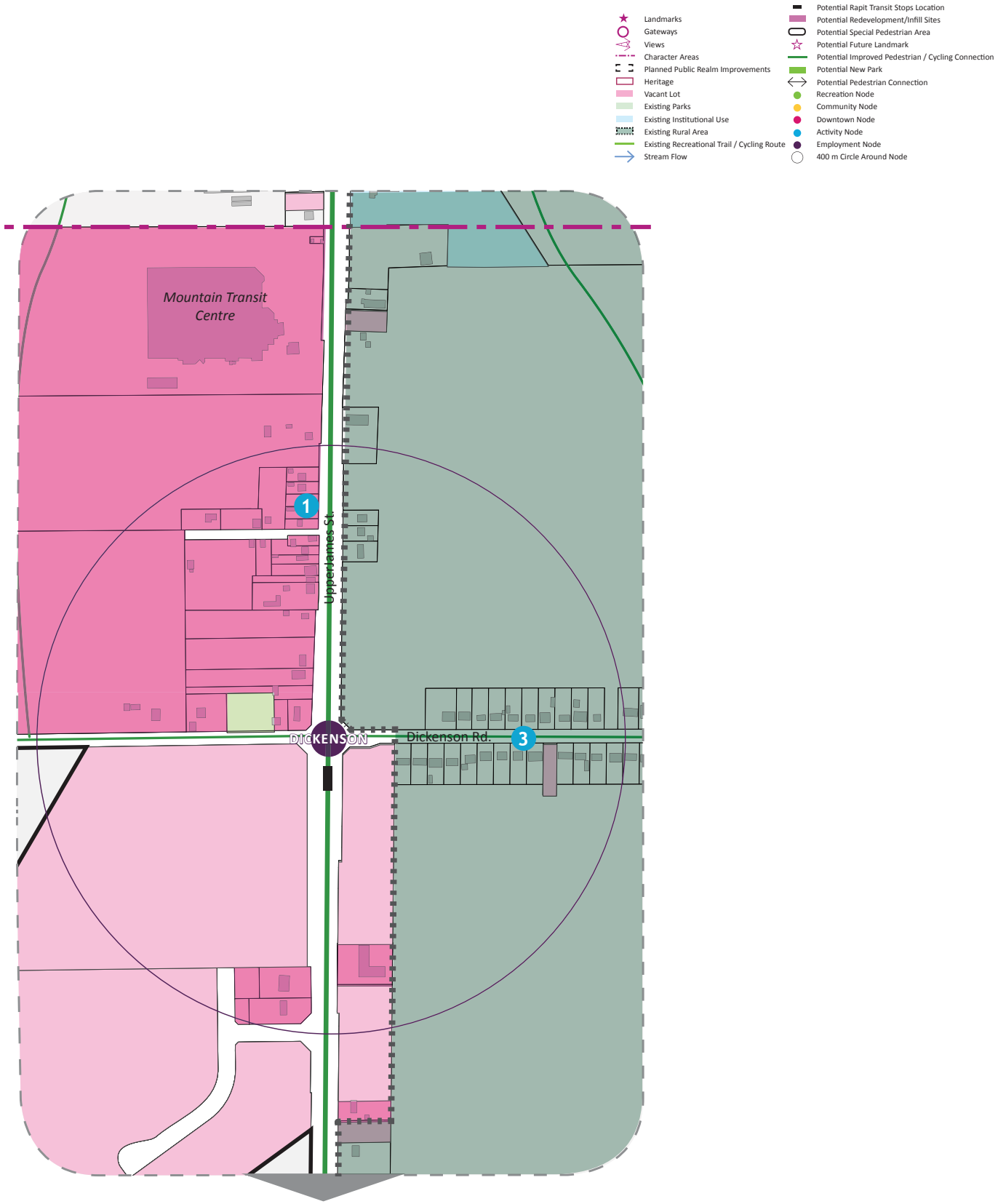
EAST AIRPORT

PRECEDENT: BORDEAUX, FRANCE

East Airport will be an area that includes various uses in the urban boundary to support the airport's functions as well as its role as part of the Airport Employment Growth District (AEGD). The development levels envisaged in AEGD are unlikely to generate sufficient ridership to justify rapid transit.


NEWS
COFFEE
MINERALS

EAST AIRPORT 1 / Proposed Directions



AIRPORT EMPLOYMENT SECTION - EAST AIRPORT NORTH

AIRPORT EMPLOYMENT SECTION - EAST AIRPORT SOUTH

PROPOSED TOD STRATEGY

Focus most intensive transit-oriented development around the Dickenson Road and English Church Road stops in this section of the Urban Corridor Area

STOP CONSIDERATIONS

DICKENSON ROAD – EMPLOYMENT NODE (URBAN CORRIDOR AREA) **The future rapid transit stop could be located on the south side of Dickenson Road to shorten the distance to the English Church stop.**

ENGLISH CHURCH ROAD –EMPLOYMENT NODE (URBAN CORRIDOR AREA) The future rapid transit stop could be located on the south side of English Church Road to shorten the distance to the Mount Hope stop.

OPPORTUNITIES

Opportunities based on existing conditions include:

- A Secondary Plan for the AEGD is pending
- Development and infill potential through the AEGD area on existing vacant and underdeveloped sites along Upper James Street within the urban boundary
- The potential of the AEGD to generate significant activity and employment densities that will help to achieve GRIDs employment targets for the city as well as A-Line ridership

Further opportunities exist to:

- Emphasize the recreational character (e.g. existing golf course) of East Airport by enhancing existing natural features
- Create an urban streetscape along Upper James Street as per built form and public realm recommendations
- 1 Introduce a potential north-south on-street trail connection along Upper James Street that would include sidewalks and improved treatment to facilitate a better walking and cycling environment and improved connectivity
- Create small, compact and walkable blocks as the area develops
- Intensify the existing Mountain Transit Centre site
- 3 Incorporate east-west on-street trails along Dickenson Road and English Church Road to improve connectivity, especially to the future rapid transit stops
- Future industrial development presents opportunity for increasing ridership

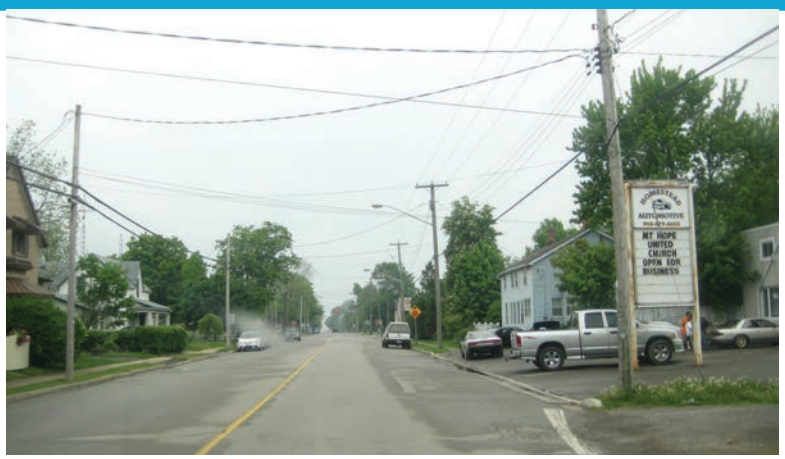
CONSTRAINTS

- 2 The low densities associated with the existing rural area make rapid transit servicing a challenge
- All new/infill residential development and other sensitive uses are limited and must comply with the Airport's NEF development parameters
- A lack of pedestrian and cycling facilities
- The large amount of land associated with the airport creates a physical boundary and an area with limited connectivity

PROFILE

AIRPORT EMPLOYMENT

MOUNT HOPE



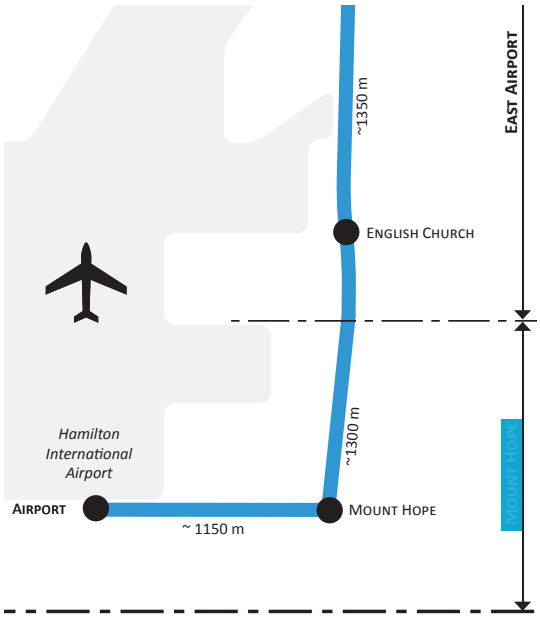
Existing Characteristics

Extent:

The Mount Hope character area extends from the intersection of Homestead Drive and Upper James Street (north) to the airport (south).

History:

Mount Hope is a historic community that first established as part of Glanbrook, a former rural township that was surveyed in the 1790s. After being deforested by pioneer settlers, Glanbrook became an attractive area for grain cultivation and mixed agriculture. During World War II, the Royal Canadian Air Force (RCAF) built an airfield in Glanford Township as part of the British Commonwealth Air Training Plan. After the war, the RCAF Station at Mount Hope was no longer required and converted for civil aviation in 1963, eventually developing into the John C. Munro Hamilton International Airport.



When the municipal amalgamation process began in 1974, the townships of Glanford and Binbrook were amalgamated to form the Township of Glanbrook, and in 2000, they were amalgamated in to the new and expanded City of Hamilton. Mount Hope remains an existing community associated with the airport and includes built form from various time periods.

Land Use:

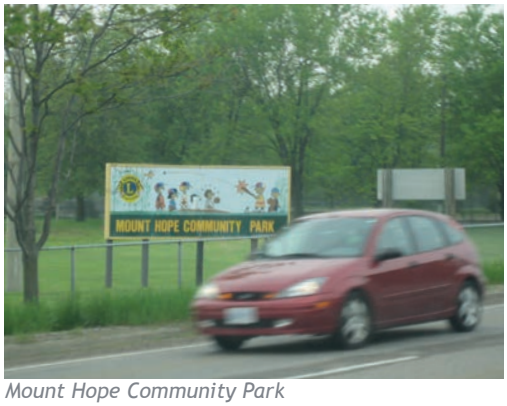
Existing land uses in this area include residential, commercial, civic, and light industrial. Residential uses are largely focused along Homestead Drive, Airport Road, and around Marion Street, a local street off Airport Road. Neighbourhood-scale commercial uses, parks, open spaces, and civic uses such as the Mount Hope Public School, childcare facilities, churches, and post offices are also located within Mount Hope. On the west side of Homestead Drive is the airport and airport-related uses such as parking, transportation, and utility facilities, as well as vacant lots. A small amount of industrial uses associated with the airport are located near Airport Road. Rural land is located on the east side of Upper James Street (and is open space used for recreational and agricultural activities) as well as on the south side of Airport Road, opposite to the airport. The Canadian Warplane Heritage Museum, located next to the airport, is a regional destination.

Future Land Use:

The *Urban Hamilton Official Plan* identifies airport business park uses for the area east of Homestead Drive and north of Airport Road, a significant amount of district commercial focused on the area around Homestead Drive and Airport Road, and neighbourhood uses north and south of Airport Road. The *Mount Hope Secondary Plan* provides more specific land use and development parameters for residential, district commercial, institutional, parks and open space, transportation, and utility designations, as well as policy related to infrastructure and the impact of the airport on the surrounding community.

Heritage:

The John C. Munro Hamilton International Airport is a prominent heritage-designated site in this area.



Mount Hope Community Park


Agricultural field across from the Airport


Warplane Heritage Museum

Urban Fabric:

This area has a predominantly rural fabric with a greater concentration of built forms in the Mount Hope residential areas along key streets. The key streets structuring this area include Upper James Street, Homestead Drive, and Airport Road. Existing development is focused along Homestead Drive and Airport Road, with all four corners developed at the Homestead node. There is a cul-de-sac residential pattern of development consisting of single-family homes around Marion Street. The airport and airport-related lands east of Homestead Drive form an expansive area that is currently disconnected from the street network. The areas east of Upper James Street are predominantly large open spaces.

Transportation:

There are some significant entry points and streets that link to the Mount Hope area including Homestead Drive, Airport Road, the Upper James Street by-pass, and the recently completed link to Highway 6. While Upper James is a major arterial street, Homestead Drive is a minor arterial street and Airport Road is a local street. There is very limited local transit service in this area with only the A-Line Express route running on Upper James Street. Besides an on-street bike route on Airport Road, there are no cycling facilities or trails. The A-Line rapid transit route is assumed to run along Homestead Drive in this area to better service the existing Mount Hope community.

Pedestrian Environment:

Despite this neighbourhood's long establishment, the pedestrian environment in Mount Hope is generally poor due to a lack of connectivity in the rural fabric, as well as an absence of trails, with the exception of the one along Airport Road. Upper James Street, much like other areas in this section, does not have sidewalks.

The pedestrian environment improves somewhat along Homestead Drive as the street is narrower, has less traffic, buildings are closer to the street, and although discontinuous, there are long sections of sidewalk, particularly along the east side of the street. Airport Road has a better pedestrian environment due to the presence of continuous sidewalks along the south side of the street. However, these sidewalks disappear about 500 metres before reaching the airport's main entry.

Transit-Oriented Environment Assessment:

There is an existing rural fabric in this area and there is very little in the way of pedestrian, cycling and transit infrastructure. This area has fairly low densities, mainly focused around key streets and in the Mount Hope community. There are no mixed uses. The existing Secondary Plan for Mount Hope and pending policies for the AEGD should help to generate greater activity and employment, higher densities, and future ridership for the A-Line. Focusing TOD around the nodes, in the Mount Hope neighbourhood, as well as on the potential redevelopment and infill sites around the airport and AEGD will help support rapid transit in this area.

Airport Entry and Frontage along Airport Road

VISION

AIRPORT EMPLOYMENT

MOUNT HOPE

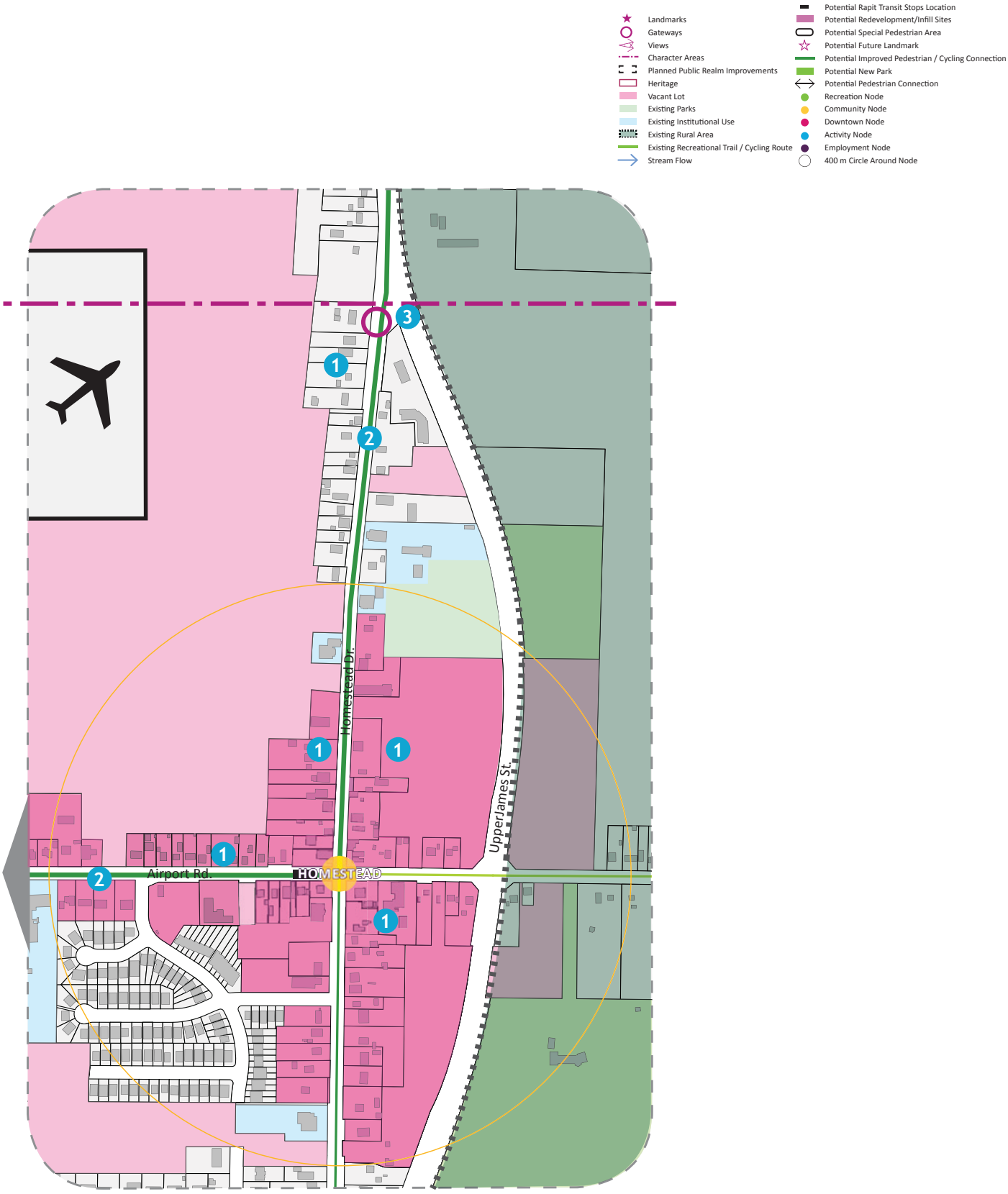
PRECEDENT: STRASBOURG, FRANCE

Mount Hope will be a pedestrian, cycling, and transit-oriented complete community, that is supportive of, and complementary to the airport.

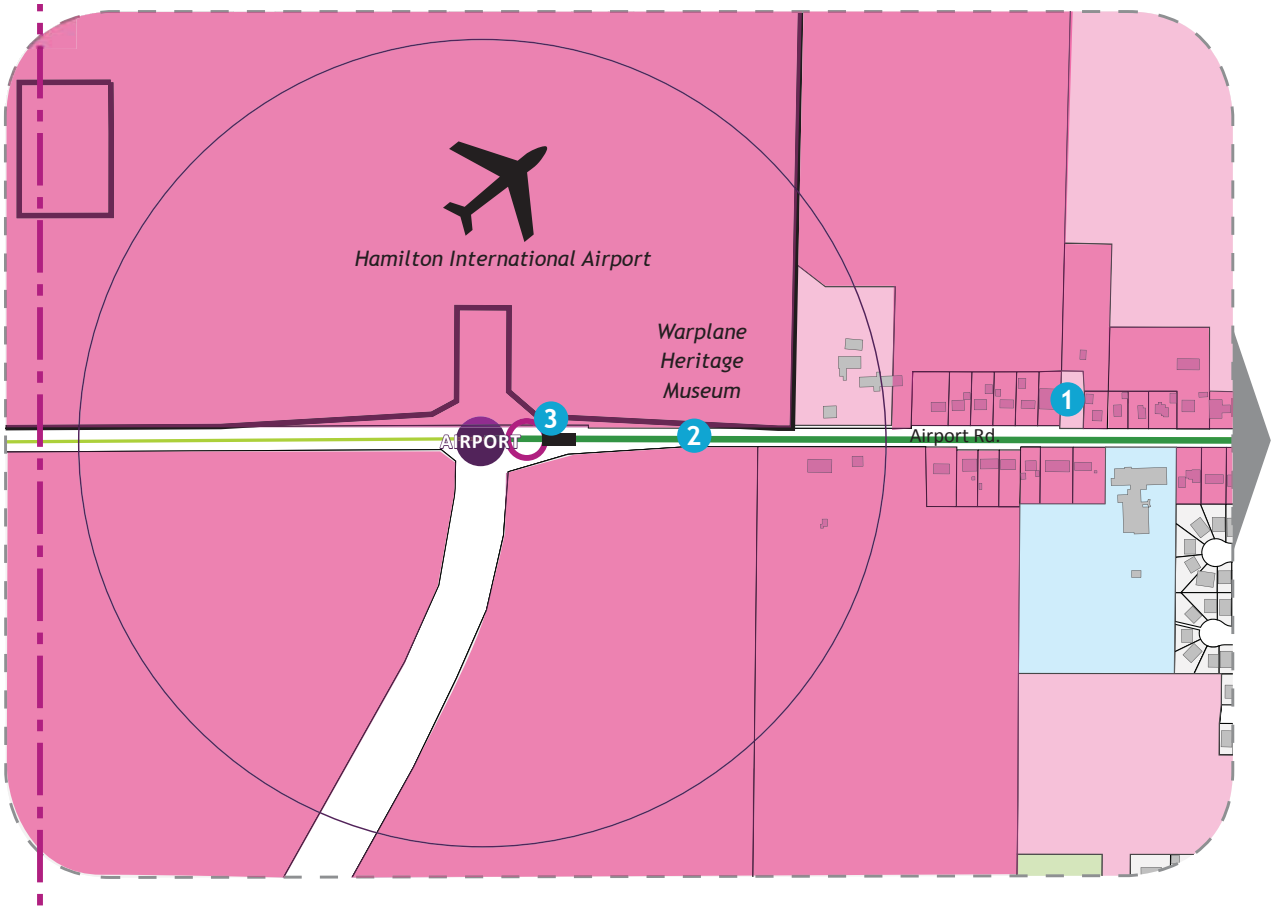
"This is truly a great opportunity for the airport."

- stakeholder participant

MOUNT HOPE 1 / Proposed Directions



AIRPORT EMPLOYMENT SECTION - MOUNT HOPE EAST



- Landmarks
- Gateways
- Views
- Character Areas
- Planned Public Realm Improvements
- Heritage
- Vacant Lot
- Existing Parks
- Existing Institutional Use
- Existing Rural Area
- Existing Recreational Trail / Cycling Route
- Stream Flow
- Potential Rapit Transit Stops Location
- Potential Redevelopment/Infill Sites
- Potential Special Pedestrian Area
- Potential Future Landmark
- Potential Improved Pedestrian / Cycling Connection
- Potential New Park
- Potential Pedestrian Connection
- Recreation Node
- Community Node
- Downtown Node
- Activity Node
- Employment Node
- 400 m Circle Around Node

AIRPORT EMPLOYMENT SECTION - MOUNT HOPE WEST

PROPOSED TOD STRATEGY

Focus most intensive transit-oriented development around the Mount Hope and Airport stops in this Urban Corridor Area.

STOP CONSIDERATIONS

MOUNT HOPE – COMMUNITY NODE (URBAN CORRIDOR AREA) A potential rapid transit stop could be located on the west side of Homestead.

AIRPORT – EMPLOYMENT NODE (URBAN CORRIDOR AREA - ACTIVITY AREA) A potential rapid transit stop could be located right by the main entrance to the airport on public land.

OPPORTUNITIES

Opportunities based on existing conditions include:

1
- A Secondary Plan for the AEGD is pending
- Easy access from the highway
- The airport is a major activity node and destination that is anticipated to continue to grow with increasing freight and passenger flights and activities over the long-term
- Infill potential in the AEGD area and on existing vacant and underdeveloped sites around Upper James Street, Homestead Drive, and Airport Road
- The potential of the AEGD to generate significant activity and employment densities that will help to achieve GRIDs employment targets for the city as provincial targets. A-Line ridership will also increase

Further opportunities exist to:

- Create an urban streetscape along Upper James Street as per built form and public realm recommendations
- Integrate sidewalks and improve the public realm treatment along Homestead Drive to create a walkable complete community that is well connected to transit and is transit-oriented
- Intensify and diversify the uses in the already established Mount Hope community

2
- Incorporate a north-south trail on Homestead Drive and an enhanced east-west trail along Airport Road to improve connectivity, especially to a future rapid transit stop and to the airport

3
- Enhance the Mount Hope village character by maintaining residential uses (despite airport development restrictions), incorporating public realm improvements, and strengthening gateways at Homestead Drive and the entry to the airport on Airport Road through excellent architecture and landscaping, special public realm treatment, and decorative features

CONSTRAINTS

- The low densities associated with the existing rural area make rapid transit servicing a challenge
- All new/infill residential development and other sensitive uses are limited and must comply with the airport's NEF development parameters
- A lack of pedestrian and cycling facilities
- The narrow right of way on Homestead Drive may be potentially challenging for rapid transit
- The large amount of land associated with the airport creates a physical boundary and an area with limited connectivity
- Lots of Natural features in proximity (PSWS to the south of the airport)

3.3 Existing Transit Provision

Hamilton has a network of transit routes that utilise bus, rail, taxi-cab and suburban rail to provide links to and from key regional and local destinations. There are two main corridors where medium frequency and express transit services are currently provided: the B-Line, running between McMaster University and Eastgate Square, and the A-Line which runs between the Downtown and Hamilton International Airport.

The existing transit network is centered on several 'hubs' where transfer between services and modes is provided. The Hunter Street GO Centre station provides long distance links from Toronto to Hamilton via the GO Rail network. Proposals to introduce an all-day GO service that would serve the new GO Centre station on James Street North would greatly improve the commuter rail services between Hamilton and Toronto. Transfer to local bus and coach links which serve Downtown Hamilton and surrounding settlements can also be accessed from the GO Centre station. Construction of the MacNab transit terminal has recently been completed and provides a Downtown hub for the Hamilton Street Railway routes. The terminal is adjacent to the proposed B- and A-Line routes and will make transfer between routes in this part of the Downtown easier.

The Mountain area to the south of Downtown Hamilton is served by Transcab (a municipal taxi service) which provides links from destinations not served by transit, into Mountain Plaza, where transfer to HSR transit services is provided.

3.4 Transit Routes Relevant to A-Line Corridor

There are several key transit routes that follow the James Street corridor for all or part of their route and provide a north/south link along a similar route to the A-Line corridors proposed. These routes are included in Table 5. The route that most closely follows the previously identified preferred alignment of the A-Line corridor on James Street is route 27.

The A-Line express service was introduced in September 2009 to serve the A-Line corridor. In addition to the A-Line express service, Trans-Cab (shared taxi ride services) provides links from the existing Hamilton Street Railway terminal at the Mountain Transit Centre to pick up/drop off to areas within the Trans-Cab service zone south of Rymal Road . The service relevant to the A-Line corridor operates as an extension of routes 27 (Upper James) and 35 (College).

Route	Type	Origin	Destination
6 - Aberdeen	Radial loop	MacNab Street	James Street
7 – Locke	Radial loop	Bay Street	James Street
8 – York	Radial loop	Bay Street	James Street
20 – A-Line Express	Radial	Jackson Square	Hamilton International AiTrport
21 – Upper Kenilworth	Radial	James Street	Limeridge Road
22 – Upper Ottawa	Radial	James Street	Pritchard Road
24 – Upper Sherman	Radial	James Street	Rymal Road
25 – Upper Wentworth	Radial loop	James Street	Rymal Road
26 – Upper Wellington	Radial loop	James Street	Rymal Road
27 – Upper James	Mainline	James Street	Mountain Transit Centre
33 – Sanatorium	Radial	James Street	Chedoke Hospital
35 - College	Radial loop	John Street	St Elizabeth Village

TABLE 5: KEY BUS ROUTES RELEVANT TO THE A-LINE CORRIDOR

3.5 Existing Transit Provision Demand Forecast for Rapid Transit

Rapid Transit demand on the A-Line has been assessed for both Bus Rapid Transit (BRT) and Light Rail Transit (LRT) options. Full details of these are contained in the A-Line Benefits Case Assessment (BCA) Report 2011 and summarized in Figure 10 to Figure 11 below.

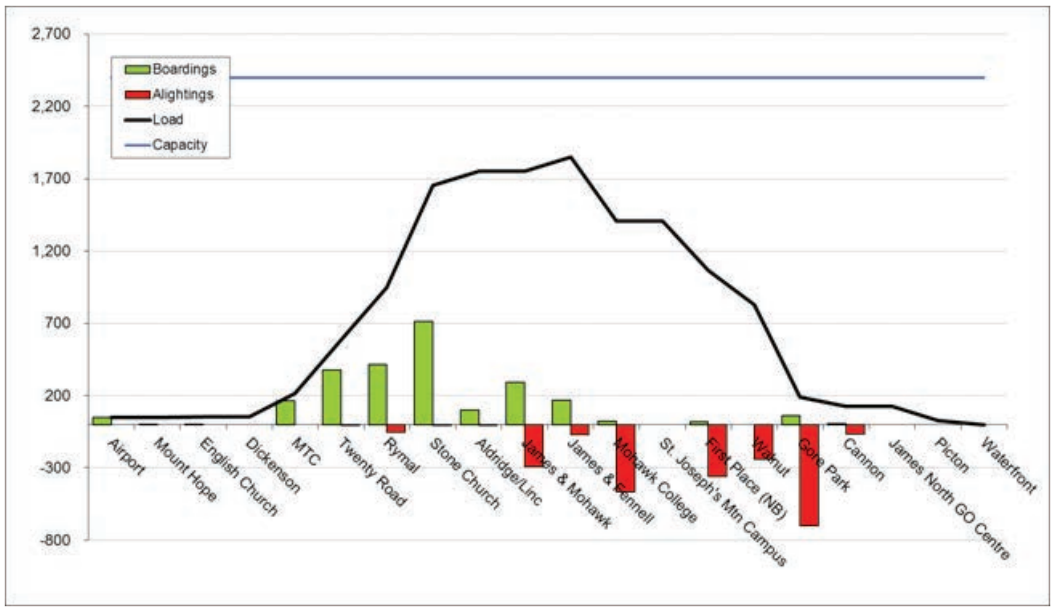


FIGURE 10: FORECAST LRT LOAD PROFILE- NORTHBOUND IN THE 2031 AM PEAK HOUR

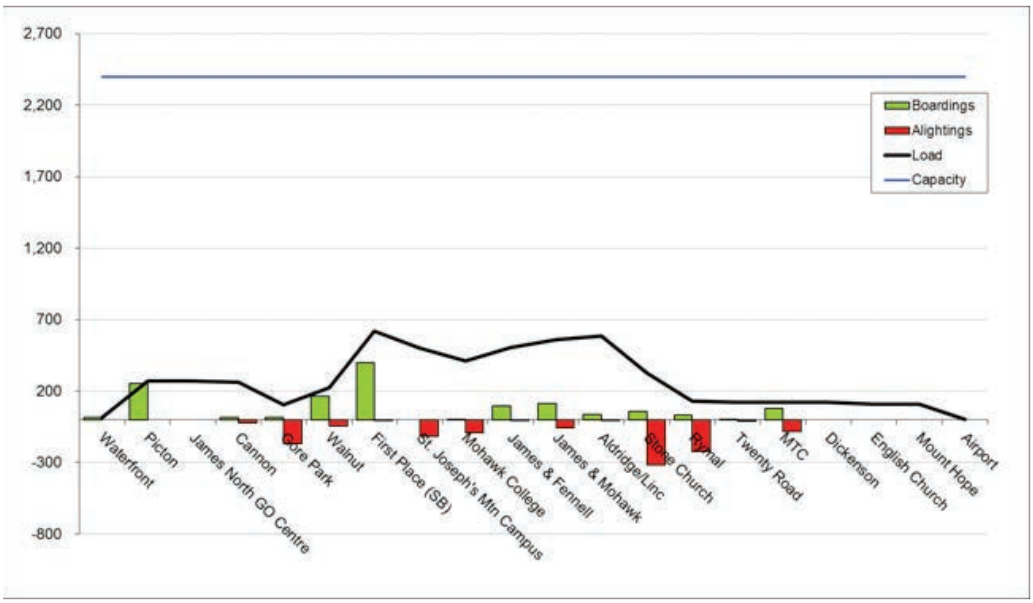


FIGURE 11: FORECAST LRT LOAD PROFILE- SOUTHBOUND IN THE 2031 AM PEAK HOUR

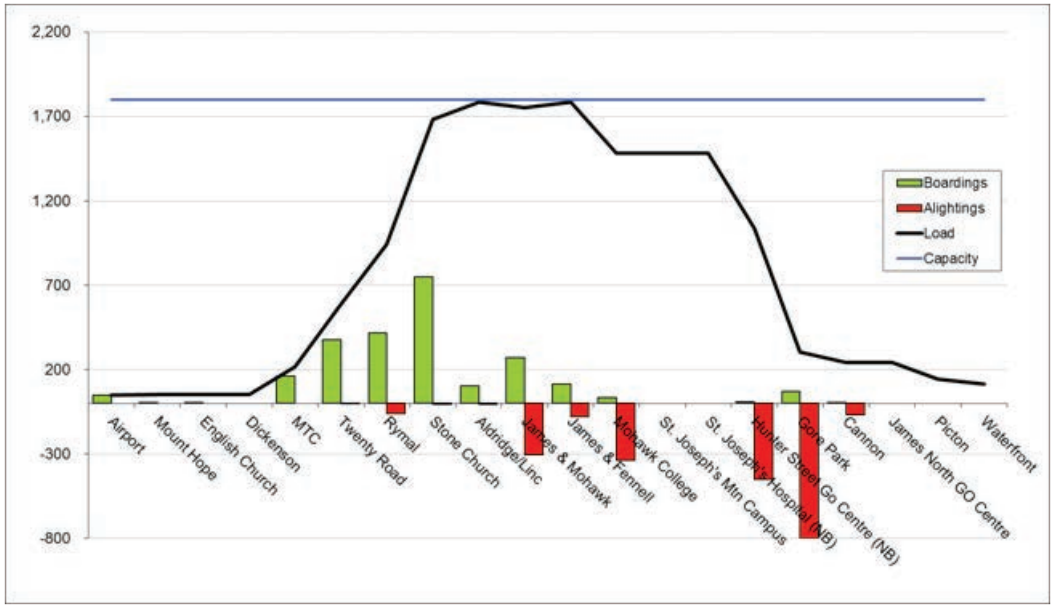


FIGURE 12: FORECAST BRT LOAD PROFILE – NORTHBOUND IN THE 2031 AM PEAK HOUR

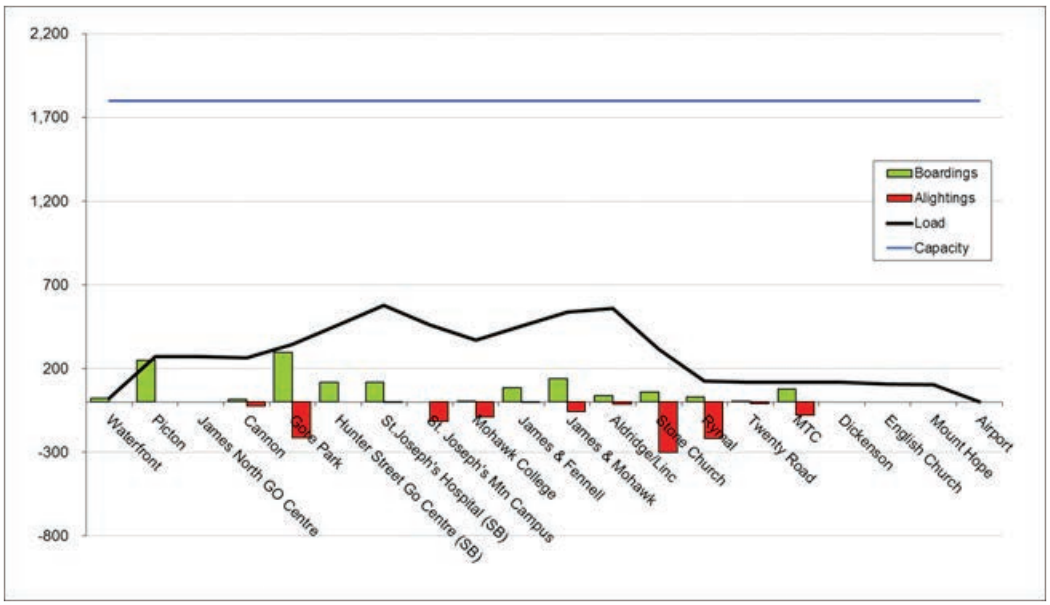


FIGURE 13: FORECAST BRT LOAD PROFILE –SOUTHBOUND IN THE 2031 AM PEAK HOUR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4.0 ROUTE AND TECHNOLOGY

This chapter examines the route options available for the A-Line LRT and BRT options. The various alignment and mode options are evaluated with regards to technical feasibility and the extent to which they serve the key destinations identified in Chapter 3. Information on LRT and BRT technology options is also provided in Appendix A of this report.

4.1 Technology Options

Although Light Rail Transit (LRT) has been selected as the preferred technology for the B-Line, both LRT and Bus Rapid Transit (BRT) are under consideration for the A-Line.

LRT systems (example shown in Figure 14) are electrically powered from overhead lines, and feature vehicles with steel wheels running on steel rails. The technology primarily runs on segregated alignments and modern low floor systems are integrated into urban areas to provide easy and direct connections for passengers and local communities.

BRT systems (example shown in Figure 15) aim to emulate LRT levels of capacity, speed and service quality, but at lower cost, by using bus technology. Improvements in the level of service and capacity over conventional bus services are achieved by adding a series of measures to improve the performance and quality of service, offering faster and more reliable journey times and improved facilities for passengers.

More information on LRT and BRT technology options is given in Appendix A.

FIGURE 14: LRT – LYON, FRANCE

FIGURE 15: BRT – NANTES, FRANCE

4.2 A-Line Route Options under Consideration

The A-Line serves the Waterfront area and then continues southwards through the Downtown, where it connects with the B-Line, then climbing the Escarpment to serve the upper parts of the City and continuing to Hamilton International Airport.

In this chapter the route is considered in three sections:

- **Northern section** - Waterfront to Downtown
- **Central Section** - Downtown to Rymal Road
- **Southern Section** - Rymal Road to Hamilton International Airport

4.2.1 Key Attractions by Section

***Northern section* (Waterfront to Downtown)**

Key attractions in the northern section are:

- Hamilton Waterfront;
- Proposed GO Transit Station in James Street North;
- MacNab Transit Terminal; and
- Downtown.

Central section (Downtown to Rymal Road)

The central section of the route serves the main downtown area of Hamilton, together with established built up areas south of the Escarpment. Specific attractions on this section include:

- Downtown;
- GO Centre on Hunter Street;
- St Joseph's Healthcare Charlton Campus;
- St Joseph's Healthcare Mountain Campus; and
- Mohawk College.

Southern section (Rymal Road to Hamilton International Airport)

The primary attractions in the southern section of the route are:

- Hamilton International Airport
- Canadian Warplane Heritage Museum

The route also serves existing communities and the proposed development areas south of Rymal Road.

4.2.2 Route Options by Section

Northern Section (Waterfront to Downtown)

The key corridor which could be used for the northern section of route, between the Harbour and the Downtown is James Street. Other options for this section of the route have been considered as part of the A-Line BRT Feasibility Study Report including John Street and summer time loops to provide links to the Waterfront via Barton Street and Downtown loops utilizing John Street, James Street and MacNab Street. Within this report, James Street is considered as the core route option to serve the Waterfront, proposed James Street North GO Station and Downtown areas. James Street is suitable for both LRT and BRT. A terminus and loop (for BRT) facility would be provided at the Waterfront.

The proposed stops on this section of the route are:

- Waterfront
- Picton
- James Street North GO Station (proposed)
- Cannon Street

It was determined that the provision of segregated LRT or BRT lanes on James Street would displace some of the existing traffic capacity. John Street and MacNab Street would carry the majority of the displaced traffic. An area wide traffic management plan would be required to outline access arrangements for businesses and to identify locations for disabled and other on street parking facilities.

Central Section (Downtown to Rymal Road)

Due to the presence of the Escarpment and associated gradient constraints, several options have been identified for the section of the route between the Downtown (King Street) and Mohawk Road. A separate assessment of LRT feasibility up the Escarpment was undertaken for the City in 2010. In considering rapid transit route options this report includes the options considered in the feasibility assessment

Options for the Central Section include use of the three current road routes up the Escarpment in the corridor - together with alternatives such as a route using the lower section of Arkledun Avenue and the upper section of the Claremont Access, or a tunnel through the Escarpment. Options considered are as follows:

- Option 1: James Mountain Road
- Option 2: Arkledun Avenue / Jolley Cut
- Option 3a: Claremont Access via Wellington Street Victoria Avenue and West 5th Street
- Option 3b:Claremont Access via Hunter Street East and West 5th Street
- Option 4: Arkledun Avenue / Claremont Access and West 5th Street
- Option 5: Tunnel
- Option 6: St. Joseph's Drive / Claremont Access
- Option 7: Claremont Access via Wellington Street/Victoria Avenue and Mountain Plaza

These options are summarized in Figure 16. From Mohawk road to Rymal Road the options would follow a common route along Upper James Street.

The proposed stop locations on this section of route are:

- King Street / Gore Park (for B-Line LRT and MacNab Bus Terminal transfer)
- GO Centre (Hunter Street)
- Charlton Avenue / St Joseph's Healthcare (Charlton Campus
- Gateview Drive / St Joseph's Healthcare (Mountain Campus
- Fennell Avenue / Mohawk College
- Fennell Avenue / Upper James Street
- Mohawk Avenue
- Aldridge Street / The Linc
- Stone Church Road

In this section a number of route options for the A-Line between the Downtown and Mohawk Road, along Upper James Street, are set out.

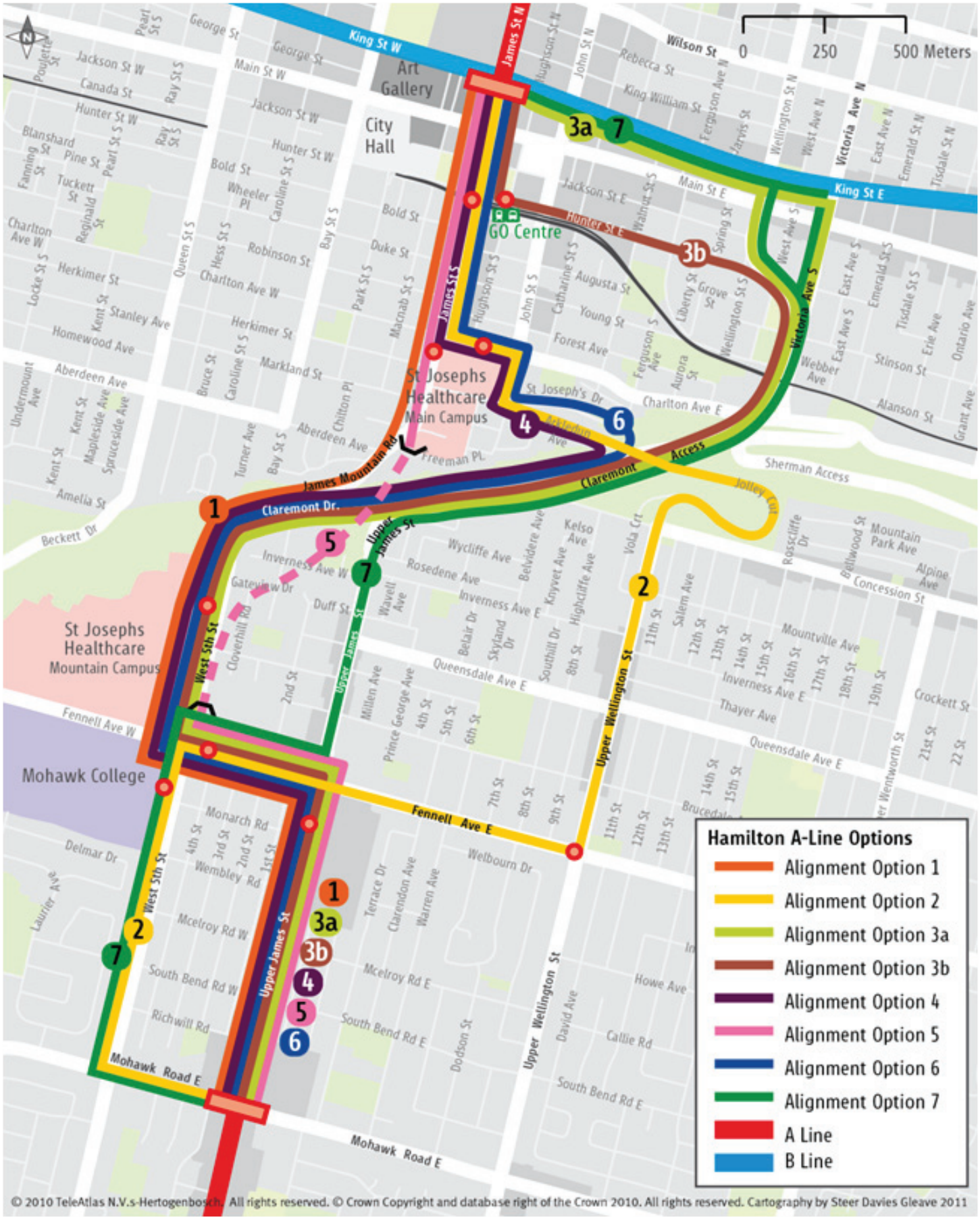

FIGURE 16: A LINE ROUTE OPTIONS BETWEEN GO CENTRE AND FENNELL AVENUE

James Street South Options:

Options 1, 2, 4, 5 and 6 described below are all shown as running on James Street South between King Street and the foot of the Escarpment. James Street South is generally a four lane road over this section. South of Hunter Street, James Street South crosses beneath the TH&B railway. The road dips down sharply under the railway, with restricted headroom (signed as 3.9 metres). The bridge has four spans, with a central row of supporting columns between the north bound and southbound traffic lanes, and further columns between each sidewalk and the traffic lanes.

Although marked as two lanes in each direction, the lane widths through the bridge are very narrow, and it is observed that vehicles tend to adopt a 'staggered' formation when passing through the bridge. In the southbound direction buses entering the GO Centre turn left immediately south of the bridge, and in order to make the turn they tend to occupy much of the available road width.

There is a similar arrangement at the bridge on John Street South. Here, buses leaving the GO Centre turn north onto John Street South. Since the GO Centre is one of the key points to be served on the A-Line, a stop here is required to provide interchange with bus services and GO Rail services.

Within this section a number of LRT and BRT options were explored.

LRT Options

The LRT options will require the provision of 40 metre long stop platforms in locations which provide good passenger transfer, and can be accommodated between side road intersections and other local constraints. The only section of road where this could be accommodated close to the GO Centre is beneath the TH&B railway bridge. However, given the limited widths and headroom and the dipped road profile beneath the bridge this layout is not straightforward.

One possible layout, shown in Figure 17, is to provide a segregated southbound LRT route on the East side of James Street, with LRT using the eastern span of the bridge under the railway, and southbound road traffic continuing to use the west span (as at present). A similar but mirrored arrangement would be used for northbound LRT in John Street.

By locating the LRT track in the centre of the existing northbound traffic span, the sidewalk can be extended out into the existing traffic lanes to form a stop platform, with sufficient clearance between the platform edge and the side columns.

This would have the advantage of providing direct passenger access between the southbound LRT platform and the western access staircase to the GO Train platform, as well as to the bus stops. There would be similar direct access to the bus stops only at John Street, access to the GO Train platform being via the GO Station main concourse.

This layout would require James Street South and John Street South to be made one way southbound and northbound respectively for all traffic - at least between Hunter Street and south of the railway. Wider analysis of traffic movements would be required to determine the length over which this one way working would be required - it might be necessary for it to extend from King Street or Main Street as far south as Charlton Street or St Joseph's Drive.

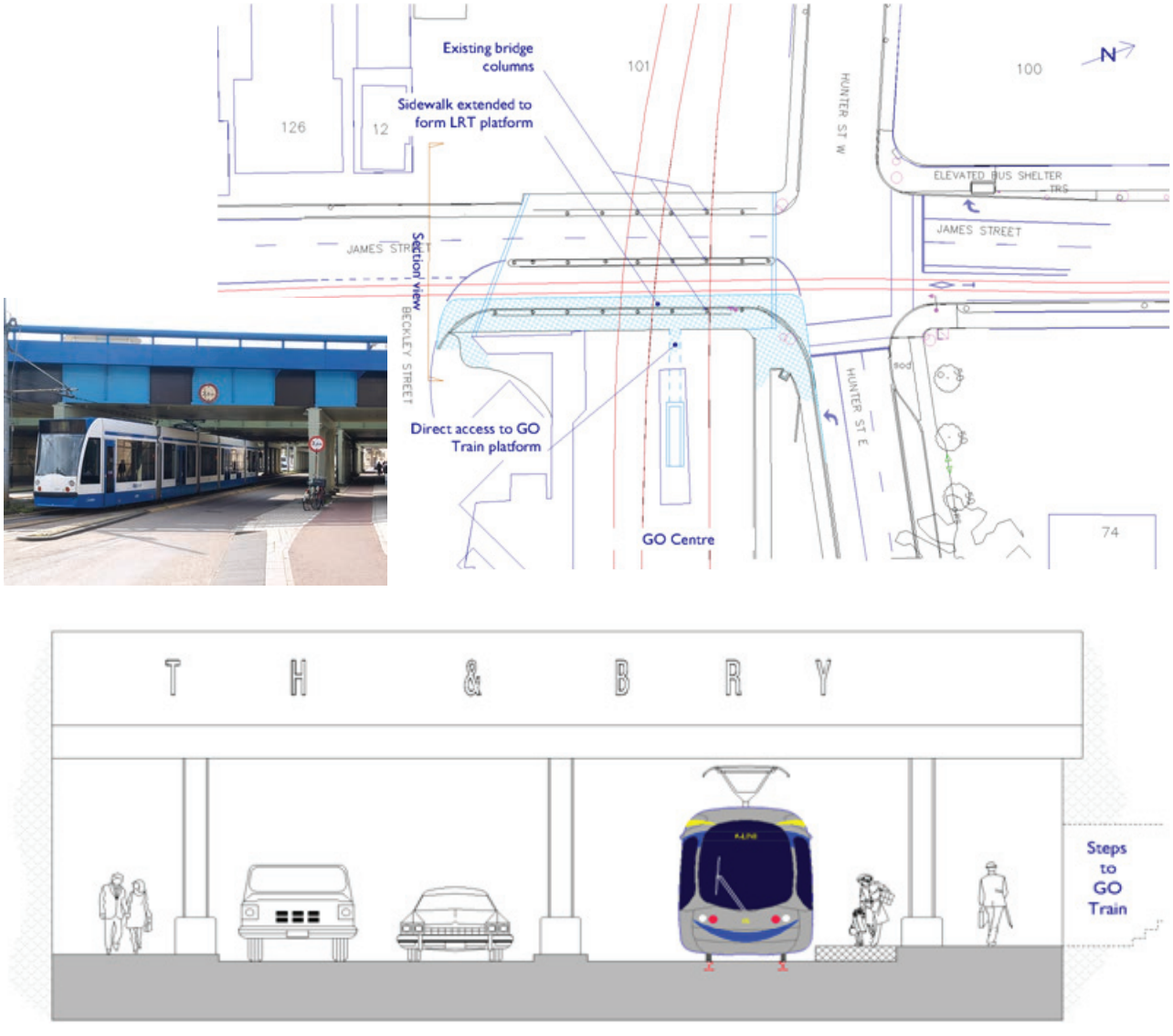

FIGURE 17: SOUTHBOUND LRT STOP BENEATH TH&B BRIDGE ON JAMES STREET

This arrangement would need to be developed in detail to confirm its feasibility. Issues to be addressed would include the relationship between the north and south ends of the platform with turning traffic and pedestrian crosswalks at either end.

At the St Joseph's Healthcare Main Campus James Street and John Street are both on a slope rising towards the foot of the main Escarpment. Stop platforms can be located on this gradient, but it would be preferable for the route to run via Charlton Street, where direct level access to the main hospital entrance can be provided. This would particularly benefit those passengers who are wheelchair or mobility scooter users.

BRT Options

Since BRT would normally operate with a maximum vehicle length of around 18m , there is more flexibility in the location of BRT stops.

At the GO Centre a similar arrangement to that set out above for LRT could be provided. Alternatively BRT services from James Street could be routed via Hunter Street, John Street and the GO Centre, with stops in the GO Centre bus terminal and/or in Hunter Street in front of the main GO Centre entrance.

Similarly at St Joseph's, locating the stop platforms on Charlton Street would be preferable.

FIGURE 18: OPTION 1 – JAMES MOUNTAIN ROAD

Option 1: James Mountain Road

Option 1 via James Mountain Road is the most direct route, and serves all the key attractors listed in the corridor.

James Mountain Road is a two-lane road, with an existing gradient of approximately 10.8%. This gradient precludes the use of LRT on this option, but it would be suitable for BRT.

It is not considered feasible to widen the existing road, so this section of route would either have to be fully shared running (which is not consistent with the rapid transit design approach), or closed to other traffic (which may not be acceptable in terms of traffic impacts).

FIGURE 19: OPTION 2 - ARKLEDUN AVENUE / JOLLEY CUT

Option 2: Arkledun Avenue / Jolley Cut

Option 2 via Arkledun Avenue and Jolley Cut serves the GO Centre and St Joseph's Healthcare Charlton campus. From St Joseph's the route continues on Upper Wellington Street and Fennell Avenue, where a stop would be located to serve the intersection at Mountain Plaza, to Mohawk College. The route would then continue via West Fifth Street and Mohawk Avenue to rejoin the upper James Street route. The route serves St Joseph's Healthcare Mountain Campus only from the Mohawk College stop.

The gradient is generally about 6%, but is steeper locally, with fairly tight radius horizontal curves, particularly at the upper end.

This is a four lane road. Two segregated rapid transit lanes could be provided over most of the length, however shared running may be required as the road width cannot accommodate two rapid transit lanes and two traffic lanes with the necessary curve widening on the tighter curves. This would not be consistent with the rapid transit design approach of providing full segregation.

The gradient and curvature on this route are at the limits of normal LRT criteria. Further more detailed alignment development would be required to confirm that an acceptable LRT alignment can be provided. Thus this route is not recommended for LRT unless no other route can be found.

This option is acceptable for BRT.

FIGURE 20: OPTION 3A - CLAREMONT ACCESS VIA WELLINGTON STREET/VICTORIA AVENUE

Option 3: Claremont Access

The Claremont Access road was constructed in the 1970s, and unlike the James Mountain Road and Arkledun Avenue / Jolley Cut routes, it was designed to a consistent engineering standard to provide an easier route up the Escarpment. The gradient is 6%, and the road alignment has more generous horizontal curve radii. The road is 6-7 lanes wide, so a segregated rapid transit alignment can be provided with a moderate impact on the road capacity (compared with Option 1 impact on James Mountain Road).

There are two sub-options for connecting the lower end of the Claremont Access route to the downtown, the B-Line and the A-Line route to the Waterfront. In turn these connections determine the rapid transit track/lane location on the main section of the Claremont Access.

Option 3a: Claremont Access via Wellington Street/Victoria Avenue and West 5th Street

Option 3a via Wellington Street/Victoria Avenue would connect with the B-Line on King Street East at Wellington Street and/or Victoria Avenue, with common running of A-Line and B-Line services on King Street East between this point and James Street.

At the lower end of the route the two transit lanes would follow the existing traffic circulation, with the southbound route on the east side of Wellington Street and the northbound on the west side of Victoria Avenue. The route would then continue along the centre of the Claremont Access, with the two tracks/lanes passing either side of the central pier at the Arkledun Avenue overbridge.

The rapid transit would then cross the westbound (uphill) traffic lanes under traffic signal control to run along the two lane ramp to West 5th Street which would be closed to other traffic. The route would then continue in the grassed area within the St Joseph's Healthcare Mountain Campus site along the west side of West 5th Street to Fennell Avenue and Mohawk College.

The route does not serve the GO Centre or St Joseph’s Healthcare Charlton campus, but does serve St Joseph’s Healthcare Mountain Campus and Mohawk College.

This alignment is suitable for LRT and BRT.

FIGURE 21: OPTION 3B - CLAREMONT ACCESS VIA HUNTER STREET EAST

Option 3b: Claremont Access via Hunter Street East and West 5th Street

In Option 3b the route from Downtown runs via James Street, Hunter Street East, serving the GO Centre, then continues along Hunter Street East to the Claremont Access.

The eastern part of Hunter Street is relatively narrow, and with residential frontages. It is likely therefore that some or all of this section of the route would need to be shared running with other traffic.

This option would be most suited to a route on the north side of the Claremont Access, as the route could then turn off directly into both Hunter Street and the ramp to West 5th Street. On the main Claremont Access section this arrangement would require the central barrier to be realigned. The detailed arrangements at the Arkledun Avenue bridge would need to be developed further.

The segregated route on the ramp to West 5th Street and along the west side of West 5th Street to Fennell Avenue would be as for Option 3a.

This route would serve all the key attractors in the corridor except St Joseph's Healthcare Charlton campus.

This alignment is suitable for LRT and BRT.

FIGURE 22: OPTION 4 - ARKLEDUN AVENUE / CLAREMONT ACCESS

Option 4: Arkledun Avenue / Claremont Access

Option 4 is a composite of Options 2 and 3b. From Downtown to Arkledun Avenue this route is as Option 2. Just west of the bridge over the Claremont Access the route turns, passing through a wooded area, to join the Option 3b route on Claremont Access.

This option serves the GO Centre, St Joseph's Healthcare Charlton and Mountain Campuses and Mohawk College.

The gradient is generally about 6%, but is steeper locally at the bottom of Arkledun Avenue. There is a tight horizontal curve from Arkledun Avenue to Claremont Access at the mid-point of the route. Initial engineering feasibility assessment of this section of the route suggests that the 6% gradient on Arkledun Avenue would need to continue around the curve and onto the Claremont Access, resulting in a 30m horizontal curve radius combined with an approximately 6% gradient.

Partially shared running may be required on the Arkledun Avenue section, with a segregated alignment on the north side of Claremont Access provided as for Option 3b, and using the ramp to West 5th Street.

The combination of 6 % gradient and 30 m radius curvature is unlikely to be able to accommodate light rail vehicles, and the acceptability in safety terms of having a sharp radius turn part way down a maximum gradient is also questionable. For these reasons this route option is not considered suitable for LRT. It is acceptable, although not particularly desirable, for BRT.


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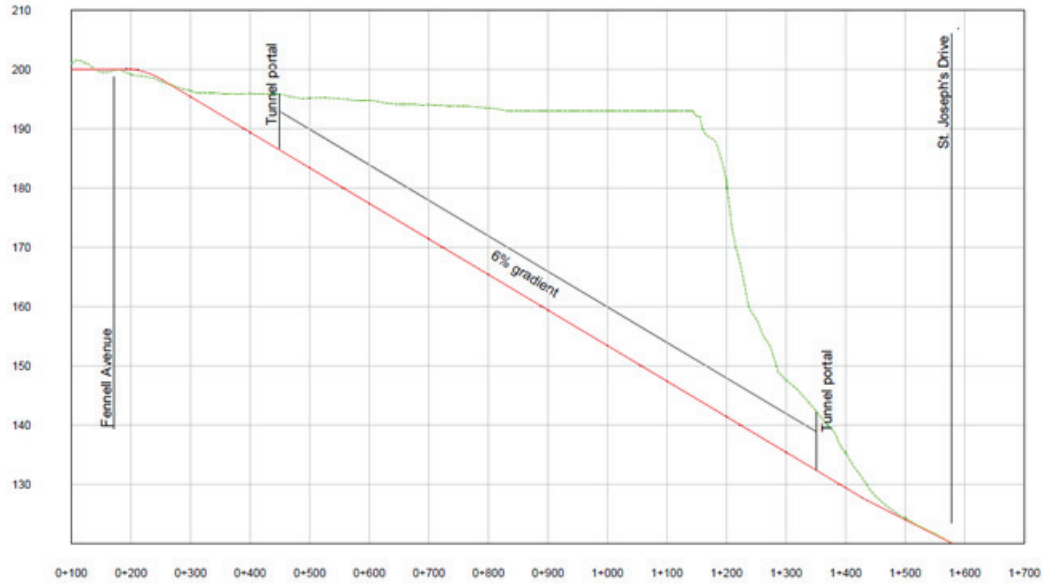

FIGURE 23: OPTION 5 - TUNNEL – VERTICAL ALIGNMENT

Option 5: Tunnel

Option 5 is a tunnelled route alternative to using existing road routes to ascend the Escarpment. It has been developed primarily for the LRT option in order to keep the gradient within the capability of standard LRT vehicles, without the need for tight curves on the gradient section, but also would have less impact on traffic capacity on the existing Escarpment road routes. Since most of the gradient section would be in tunnel and protected from the weather, this option could provide more reliable operation in winter. Use of a tunnel for (diesel) BRT would raise additional issues in relation to ventilation. For this reason, along with the much higher capital cost, this option is not proposed for BRT.

The detailed tunnel alignment would need to be investigated, but a tunnel of approximately 1km length could be provided running from James Street/Aberdeen Avenue, beneath the Escarpment, and surfacing at West 5th Street / Fennell Avenue. The alignment show in Figure 4.9 is a fairly direct route, with large radius curves. However if there is a need to minimize the amount of property under which the tunnel passes, then a route more closely following the alignment of James Mountain Road may be possible.

On the alignment shown, at its deepest point, the tunnel crown would be some 40m below ground level. This (and the presence of buildings above) would preclude construction by cut and cover means, and a bored tunnel would be required. The maximum depth would be reduced by an alternative alignment more closely following the route of James Mountain Road, but the depths would still be too deep for cut and cover construction.

FIGURE 24: OPTION 5 – TUNNEL

Option 5 would serve the GO Centre, St Joseph's Healthcare Charlton campus and Mohawk College. St Joseph's Healthcare Mountain Campus would be served by the Mohawk College stop only. The maximum gradient would be approximately 6%.

This route is suitable for LRT only.

This option would incur substantial additional capital cost for the tunnel works. However, compared with the other options these may be partly offset by lower costs of track and other infrastructure resulting from a shorter more direct route, avoidance of utility diversions and simpler consequential changes to road traffic layouts. In addition the benefits case would be improved by faster and more reliable journey times, and the reduced impact on other traffic.

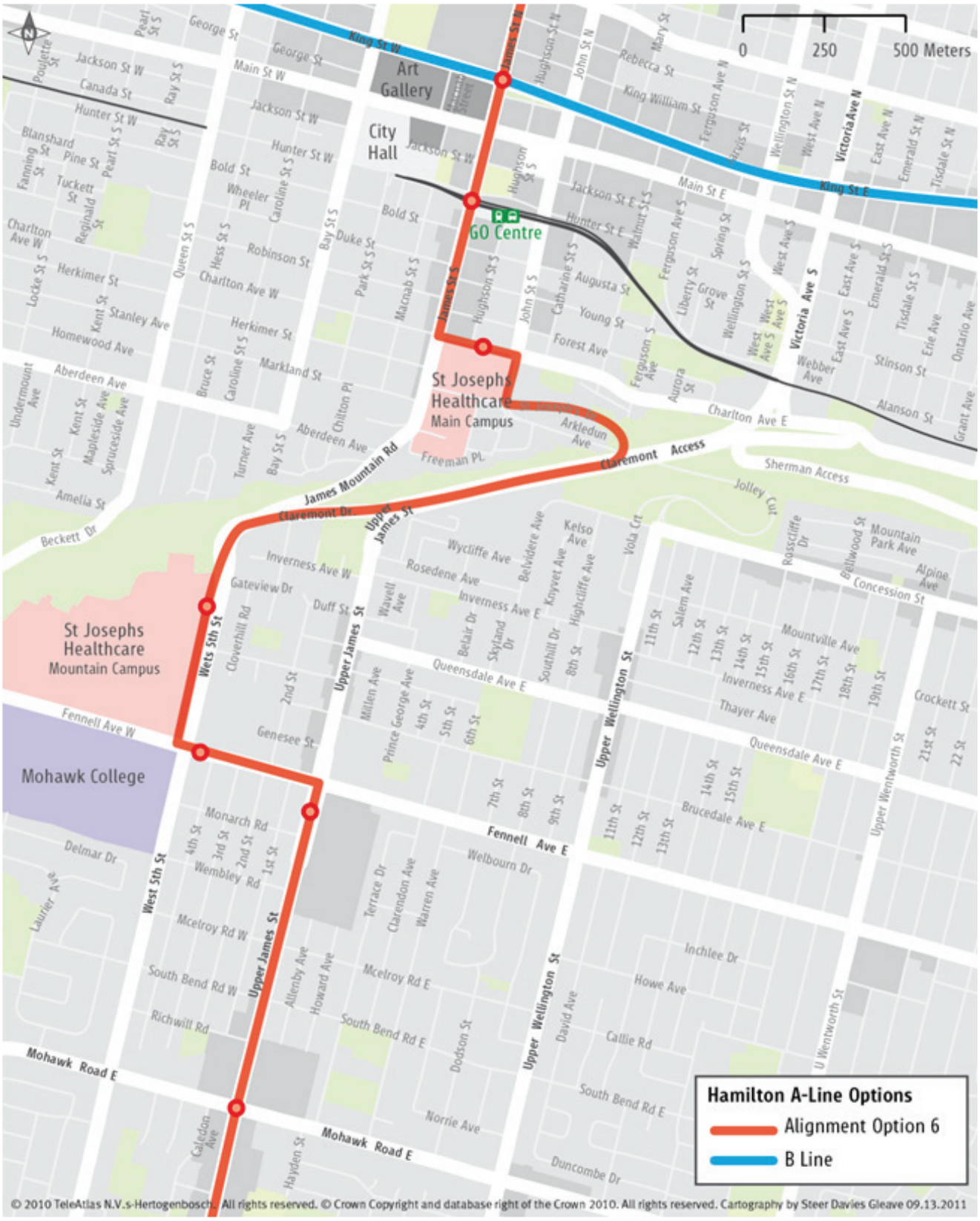

FIGURE 25: OPTION 6 - ST JOSEPH'S DRIVE / CLAREMONT ACCESS

Option 6

Option 6 is similar to Option 4, but runs along St Joseph's Drive instead of Arkledun Avenue.

From downtown to John Street/St Joseph's Drive this route is as Options 2 and 4. The route then turns to run east along St Joseph's Drive. At the end of the existing road the route continues, broadly following the former line of St Joseph's Drive (closed when the Claremont Access was constructed), then turns sharply to join the Option 3 route on Claremont Access, immediately to the north of the Arkledun Avenue bridge.

This option serves the GO Centre, St Joseph's Healthcare Charlton and Mountain Campuses and Mohawk College.

There is a tight radius curve from John Street onto St Joseph's Drive. An alternative option via James Street and the western section of St Joseph's Drive might ameliorate this. A shared running alignment along St Joseph's Drive would probably be required to maintain access to frontage properties.

Initial engineering feasibility assessment of the horizontal curve from St Joseph's Drive to Claremont Access suggests that a continuous 6% gradient would be required around the 30m radius curve. Also, parts of the section would be some 8-10 m above existing ground levels, requiring the use of viaduct or substantial retaining walls.

The upper part of the route on Claremont Access to West 5th Street would be as for Options 3 and 4.

As for Option 4, the combination of 6 % gradient and 30 metres radius curvature is unlikely to be able to accommodate light rail vehicles, and the acceptability in safety terms of having a sharp radius turn part way down a maximum gradient is also questionable. For these reasons this route option is also not considered suitable for LRT. It is acceptable, although not particularly desirable, for BRT.

FIGURE 26: OPTION 7 - CLAREMONT ACCESS VIA WELLINGTON STREET/VICTORIA AVENUE AND MOUNTAIN PLAZA

Option 7 - Claremont Access via Wellington Street/Victoria Avenue and Mountain Plaza

Option 7 is a variant of Option 3a. In this option, the rapid transit alignment would run in the centre of Claremont Access throughout, linking to King Street via Wellington Street and Victoria Avenue as set out in paragraph 4.41.

At the Upper end of the Claremont Access the route would continue in the centre of the road into Upper James Street, where a stop would be located to serve the intersection at Mountain Plaza, and then run via Fennell Avenue and West 5th Street to Mohawk College. The route would then continue via West Fifth Street and Mohawk Avenue to rejoin the upper James Street route.

This route serves Mountain Plaza and Mohawk College. St Joseph's Healthcare Mountain Campus is served from the Mohawk College stop. The route does not serve the GO Centre or St Joseph's Healthcare Charlton campus and as a result is less desirable because of the lower catchment population served compared with the other route options.

This route is suitable for LRT and BRT.

Mohawk College to Rymal Road

From Mohawk College, route options 1, 3a, 3b, 4, 5 and 6 follow a common route via Fennell Avenue and Upper James Street, with stops at Fennell Avenue (for Mohawk College) and Fennell/Upper James (for Mountain Plaza). Options 2 and 7 serve Mountain Plaza between the Escarpment and Mohawk College, and then continue via West Fifth Street and Mohawk Road to Upper James Street.

Southern Section (Rymal Road to Hamilton International Airport)

The route between Rymal Road and Hamilton International Airport is served by Upper James Street, which provides links between the neighbourhoods of Kennedy and Allison, Mount Hope, the Canadian Warplane Heritage Museum and Hamilton International Airport.

A single route option along Upper James Street has been identified since other options such as Miles Road and Glancaster Road would be very indirect routes to serve Hamilton International Airport whilst linking with routes proposed to the Downtown area.

The locations of stops on this section of the route should be developed to fit with emerging development proposals for the Airport area and for the undeveloped areas between the Airport and the existing built up area. For the purposes of this study indicative stop locations are:

- Rymal Road;
- Twenty Road;
- Mountain Transit Centre;
- Dickenson Road;
- English Church Road;
- Mount Hope (Homestead Drive);
- Warplane Museum; and
- Hamilton International Airport.

Mode Options

BRT systems typically have a capacity of 500-3,500 passengers per hour per direction and LRT systems have a capacity of 1,200-15,000 passengers per hour per direction (as set out in Appendix A).

Initial estimates suggest that over the central part of the A-Line route, patronage would lie within both of these ranges, and so either BRT or LRT may be the appropriate mode choice.

Option Assessment

The following option assessment uses a Multiple Account Evaluation (MAE) methodology. The MAE includes a number of different evaluation accounts. The accounts most relevant to this project are as follows:

- Technical Feasibility (LRT and BRT);
- Transportation User Benefits;
- Financial Impacts;
- Environmental Impacts;
- Economic Development Impacts; and
- Social and Community Impacts.

These accounts are considered below. Given the early development stage of the A-Line, the assessments are intended to be indicative and to demonstrate the anticipated relative performance of the options and identify where trade-offs arise. As the project develops, more detailed assessments of the accounts can be undertaken against baseline figures at the appropriate time.

Technical Feasibility

The feasibility of the various route options for LRT and BRT modes has been set out in the preceding section.

Transportation User Benefits

This account considers the incremental benefit to transport users of the A-Line. In particular, these benefits will be quantified through journey time savings, automobile operating cost savings and reduction in accidents as a result of declining automobile usage. Quantitative user benefits are also considered in terms of improvements to passenger comfort, reliability and accessibility.

The A-Line will make a positive contribution towards transport user benefits, especially in terms of improving accessibility, journey times and the reduction in congestion as a result of people travelling by transit instead of car. In addition, the route will provide access to destinations not currently served by transit including Hamilton International Airport. The North and South route sections serve all the key destinations in these parts of the A-Line corridor. For the central section (Downtown to Rymal Road) each route option has been assessed in terms of the key destinations that it would serve. A summary of this assessment is included in Table 6.

Financial Impacts

Capital and operating and maintenance costs have been estimated for the preferred route options as part of the Benefits Case for the A-Line. In general, the costs for the different options vary principally in respect of the different route length for each option, although there will be significantly higher costs for the Option 5 Tunnel route, compared with the on-street options.

Corridor / Destinations served	MacNab Transit Terminal	Downtown and Passenger Transfer with B-Line	GO Centre	St Joseph's Healthcare (Charlton Campus)	St Joseph's Healthcare (Mountain Campus)	Mohawk College
1. James Mountain Road	✓	✓	✓	✓	✓	✓
2. Arkledun Avenue/Jolley Cut	✓	✓	✓	✓	(✓)	✓
3a. Claremont Access via Wellington Street/Victoria Avenue and West 5th Street	✓	✓	x	x	✓	✓
3b. Claremont Access via Hunter Street East and West 5th Street	✓	✓	✓	x	✓	✓
4. Arkledun Avenue/Claremont Access and West 5th Street	✓	✓	✓	✓	✓	✓
5. Tunnel	✓	✓	✓	✓	(✓)	✓
6. St Joseph's Drive/Claremont Access and West 5th Street	✓	✓	✓	✓	✓	✓
7. Claremont Access via Wellington Street/Victoria Avenue and Mountain Plaza	✓	✓	x	x	(✓)	✓

- Key: ✓ - serves destination; (✓) serves destination via Mohawk College stop; x does not serve destination

TABLE 6 CENTRAL SECTION (DOWNTOWN TO RYMAL ROAD) - ASSESSMENT AGAINST KEY DESTINATIONS SERVED

Environmental Impacts

All of the route options have been developed to be accommodated largely within existing road rights of way and areas zoned for development. At the Escarpment, the options follow the existing road corridors, although there are short lengths of off-road route associated with Option 4 (turn from Arkledun Avenue to Claremont Access), Option 5 (lower tunnel approach) and Option 6 (turn from St Joseph's Drive to Claremont Access) where impacts on the Escarpment area may be more significant.

The major environmental impact in terms of rapid transit is the ability of the A-Line proposals to reduce levels of greenhouse gas emissions as a result of reductions in automobile usage.

Economic Development Impacts

The economic development benefits of the A-Line occur in several different areas including contributions to productivity through improved journey times for workers, agglomeration benefits as a result of improved transit access to key employment hubs and also improvements to the competitiveness of Hamilton when attracting new businesses. In particular, the A-Line proposals will help to encourage TOD and higher density development along the route. There are several locations in the Downtown area where regeneration is planned. Transit improvements would act as a catalyst and help to accelerate this regeneration.

An investment in rapid transit, made in conjunction with supportive planning and other initiatives, is a key component to the realization of land use intensification plans and property value uplift. There is evidence from a number of different jurisdictions around the world that investment in rapid transit can have a positive impact on property values in the general area of a new rapid transit line and particularly within close proximity to station areas.

This evidence also suggests that the specific rapid transit technology is also a determining factor in the degree to which property values may be influenced. For example, a more permanent, rail-based, higher capacity technology such as LRT will typically capture a larger area of property within their area of influence than lower capacity bus-based transit facilities. The technology choice for the A-Line will therefore play an important part in determining the level of land value uplift that could be achieved.

Social and Community Impacts

This account examines each option from the anticipated perspective of residents and community members along the Corridor, with specific consideration given to the ability of each option to enhance the quality of life within a local community. The City of Hamilton has been identified as one of the most deprived areas in the Greater Toronto region. The social and community impacts of the A-Line will include improvements to:

- Accessibility for some of the most deprived communities within Hamilton including to employment, training and education opportunities;
- Localized air quality as the levels of congestion will be reduced, especially in the Downtown area;
- Improved personal safety through a reduction in accident levels; and
- Access to healthcare and other services, especially St Joseph's Healthcare campuses.

4.2.3 Discussion

A summary of the Multiple Account Evaluation undertaken is included in Table 7.

Northern Section (Waterfront to Downtown)

For this section a single route via James Street North has been identified.

Central Section (Downtown to Rymal Road)

For this section eight alternative route options have been considered, for LRT and BRT. These are considered separately for each mode.

LRT

Route Options 1, 4 and 6 are not considered suitable for LRT due to the gradient or gradient/curvature issues as noted previously. Similarly, the feasibility of Option 2 is marginal. Since this route is also indirect, and therefore would result in longer journey times, it is not considered further.

Options 3a and 3b use the Claremont Access to provide a 6% maximum gradient route up the Escarpment. Option 3a uses the B-Line alignment between James Street and Wellington Street / Victoria Avenue, and so serves the international Village area, not served by the James Street South route options, but does not serve the GO Centre or St. Joseph's Healthcare Charlton Campus. Option 3b provides a connection to the GO centre by running along Hunter Street East. However it would be difficult to provide segregation on the hunter Street section, and there are some potentially significant impacts on residential frontages and local parking here. For these reasons Option 3a is preferred to Option 3b.

Option 7 is similar to Option 3a, except in the routing between the Claremont Access, Mohawk College and Upper James Street. Option 7 can only serve the St Joseph's Healthcare Mountain Campus from the Mohawk College stop. West 5th Street between Fennell Avenue and Mohawk Road is narrower than the corresponding section of Upper James Street, and it will be more difficult to accommodate the LRT route here (although this route would allow for the Mohawk College stop to be located on the eastern edge of the College campus). Thus Option 3a is preferred to Option 7.

Option 5 provides a tunnelled route beneath the Escarpment. This route is direct, serves all the key destinations, and provides a gradient suitable for LRT, with minimal environmental impacts on the Escarpment area. However the cost would be substantial, and so for this reason this option is not preferred. It does however represent the best option to meet the other objectives of the A-Line, and should therefore continue to be considered as a potential route option if it can be funded.

Therefore Option 3a is the preferred option for LRT.

Route Section / Option	Technical Feasibility - LRT	Technical Feasibility - BRT	Transportation User Benefits	Financial Impacts	Environmental Impacts	Economic Development Impacts	Social and Community Impacts
Northern Section (Waterfront to Downtown)							
James Street North	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Central Section (Downtown to Rymal Road)							
1. James Mountain Road		✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
2. Arkledun Avenue/Jolley Cut	✓	✓✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓✓
3a. Claremont Access via Wellington Street/Victoria Avenue and West 5th Street	✓✓✓	✓✓✓	✓	✓✓	✓✓✓	✓✓	✓✓✓
3b. Claremont Access via Hunter Street East and West 5th Street	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓✓
4. Arkledun Avenue/ Claremont Access and West 5th Street		✓	✓✓✓	✓✓	✓✓	✓✓	✓✓✓
5. Tunnel	✓✓		✓✓	✓	✓✓	✓✓	✓✓✓
6. St Joseph's Drive/ Claremont Access and West 5th Street		✓	✓✓✓	✓✓	✓	✓✓	✓✓✓
7. Claremont Access via Wellington Street/Victoria Avenue and Mountain Plaza	✓✓✓	✓✓✓		✓✓	✓✓✓	✓✓	✓✓✓
Southern Section (Rymal Road to Hamilton International Airport)							
Upper James Street	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓

- Key: ✓ - some contribution made towards objective; ✓✓ moderate contribution made towards objective; ✓✓✓ strong positive contribution made towards objective

TABLE 7: MULTIPLE ACCOUNT EVALUATION

BRT

For BRT most of the options are feasible, although the ventilation and safety options associated with diesel bus operation in tunnel, together with the cost impacts rule out Option 5.

Option 1 provides the most direct route, serves all the key destinations, and the steep gradient on the James Mountain Road section is nevertheless acceptable for buses.

Route Options 4 and 6 are similar routes which both provide lower gradient alternatives to Option 1, and which still serve the key locations. Option 6 requires a viaduct or substantial retaining walls on the section between St Joseph's Drive and the Claremont Access, and so has no benefit over Option 4.

All of the other routes (Options 2, 3a, 3b, 4 and 7) are acceptable for BRT, but all of these routes are longer than Option 1 and some have greater environmental impacts. Also, Options 3a, 3b and 7 do not serve St Joseph's Healthcare Charlton Campus. And options 3a and 7 do not serve the GO Centre. Option 3b would raise the same issues on Hunter Street East as for LRT. These three options are therefore not preferred.

Option 1 is therefore the preferred option, although Options 2, 3a, 3b, 4 and 7 are also feasible.

South Section (Rymal Road to Hamilton International Airport)

For this section a single route via Upper James Street and Airport Road West has been identified.

4.2.4 Recommended LRT and BRT Alignments:

Table 8 summarizes the recommended route options to be taken forward as part of the A-Line work programme. Additional options have also been identified, which may be considered as alternatives should the recommended routes not be acceptable

The recommended routes are indicated in Figure 27. More detail is shown on the Illustrative Design Workbook 1 drawings in Appendix C, and described below.

Waterfront to James Street/King Street

- This section is common to both the LRT and BRT recommended routes.
- The Waterfront stop is located to the north of Guise Street, east of James Street. For the LRT option a single central island platform is provided, with crossovers located west of the stop to allow LRVs to enter and leave both platforms.
- For the BRT option two side platforms are provided. A turning loop would be located east of the stop.
- On James Street North LRT and BRT would run on street in segregated lanes where there is sufficient space. Provision of two segregated rapid transit lanes and two traffic lanes will have a significant impact on the availability of on-street parking and loading space, and so as the alignment design is further developed, some shared running may be required, and the tradeoffs between

loss of segregated running and provision of parking/servicing will need to be considered.
- Stops are located at Picton, the proposed James Street North GO Station and Cannon Street.

James Street/King Street to West 5th Street – LRT

- From James Street the preferred LRT route follows the B-Line alignment along King Street East to Wellington Street / Victoria Avenue. At the James Street/King Street intersection the A-Line tracks turn east to join the B-Line. A full delta junction could also be provided (i.e. with tracks from James Street North linking onto King Street East and King Street West). This would allow other LRT services to run also, such as McMaster to Waterfront, although these do not form part of the current A- and B-Line proposals.
- An additional stop (Gore Park) is provided on King Street East immediately east of the intersection, to allow A-Line services to stop in the heart of the downtown, and to allow easy transfer for passengers between the A-Line and B-Line services towards McMaster.
- The A-Line route then continues along the B-Line tracks, through the Walnut Stop and through International Village. This route is fully segregated on the south side of King Street from James Street to Mary Street, restricted to LRVs only through the Walnut Stop, then shared running with local access traffic from Walnut Street to Wellington Street.
- The southbound track then turns to run on a segregated alignment along the east side of Wellington Street South, with a southbound only First Place stop platform located between King and Main. The northbound track continues through the B-Line First Place stop, then turns south to run on a segregated alignment along the west side of Victoria Avenue.
- The two tracks follow the road alignment then continue as a segregated double track alignment in the centre of the Claremont Access, separating slightly to pass either side of the central pier supporting the Arkledun Avenue bridge.
- Towards the top of the Claremont Access the tracks cross the eastbound roadway under traffic signal control to follow the ramp to West 5th Street. This is currently 2 lanes westbound, but would be closed to general traffic to allow the two LRT tracks to run on a segregated alignment.
- The LRT tracks then continue on segregated alignment on the west side of West 5th Street.

James Street/King Street to West 5th Street – BRT

- From James/King the BRT option would continue on street in segregated lanes, located on the east side of James Street South. A stop would be provided at Gore Park to serve the downtown area and provide for transfer to B-Line services and other buses using the MacNab terminal.
- South of Hunter Street and the TH&B rail bridge it is proposed that southbound LRT services would then run through the GO Centre, and then return to James

Street South via John Street and Charlton Avenue. This is compatible with the existing GO Centre traffic circulation, and would allow for better transfer for southbound BRT services. Northbound services would remain on James Street South, and in further design development, options retaining both directions on James Street may also be considered.

- Stops are provided at the GO Centre and at Charlton Avenue for St Joseph's Hospital.
- Both BRT lanes continue in segregated lanes on James Street South and onto James Mountain Road. It is proposed that between James Place/Freeman Place and Gateview Avenue, James Mountain Road should become a dedicated Transit Way, used by BRT, other bus services and emergency vehicles, but closed to general traffic. This will maximise BRT reliability over this section, and will also result in reductions in traffic on James Street South which in turn enable the provision of segregated BRT lanes. Nevertheless the option of allowing this section to remain open to all traffic could be considered in further design development.
- There is then a short section of shared running with southbound traffic from the ramp from the Claremont Access and local traffic at Gateview Avenue, before the route crosses to the segregated reserve on the west side of West 5th Street.

Route Option	LRT	BRT
Northern Section (Waterfront to Downtown)		
James Street	✓✓✓	✓✓✓
Central Section (Downtown to Rymal Road)		
1. James Mountain Road	X	✓✓✓
2. Arkledun Avenue/Jolley Cut	X	✓
3a. Claremont Access via Wellington Street/Victoria Avenue and West 5th Street	✓✓✓	✓
3b. Claremont Access via Hunter Street East and West 5th Street	X	✓
4. Arkledun Avenue/ Claremont Access and West 5th Street	X	✓
5. Tunnel	✓✓✓*	X
6. St Joseph's Drive/ Claremont Access and West 5th Street	X	X
7. Claremont Access via Wellington Street/Victoria Avenue and Mountain Plaza	✓	✓
Southern Section (Rymal Road to Hamilton International Airport)		
Upper James Street	✓✓✓	✓✓✓

- ✓✓✓ denotes recommended option
- ✓denotes other feasible route option
- X denotes route option not feasible / acceptable
- * denotes identified cost feasibility issue

TABLE 8: RECOMMENDED LRT AND BRT ROUTES

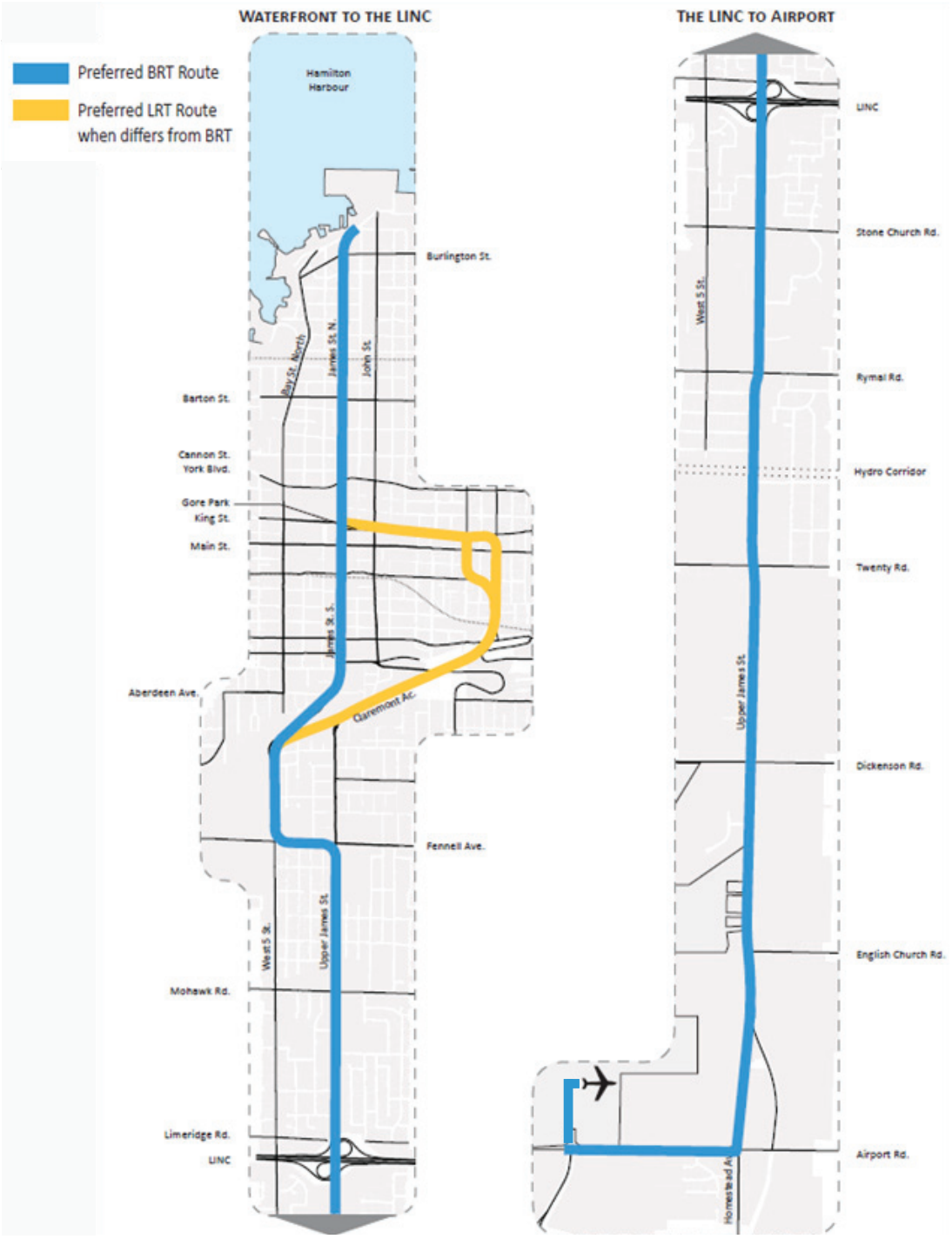

FIGURE 27 PROPOSED A-LINE CORRIDOR - PREFERRED ROUTES

West 5th Street to Airport

- The Rapid Transit runs on segregated alignment on the west side of West 5th Street with stops near Gateview Drive (for St Joseph's Mountain Campus) and north of Fennell Avenue (for Mohawk College).
- The route then turns east to run along the centre of Fennell Avenue West in segregated lanes to Upper James Street.
- The Upper James Street right of way is generally wider, and so on this section it is proposed to provide a new fully segregated alignment in the centre of the road. Stops are proposed at James & Fennell, James & Mohawk, Aldridge/Linc, Stone Church and Rymal.
- South of Rymal the corridor is much less developed, and so it is proposed to provide a fully segregated roadside alignment along the west side of Upper James Street from south of Christopher Drive to Homestead Drive. This would minimise impacts on traffic and buried utilities. Continuation of the central alignment is an alternative which could also be considered for this section. Stops are provided at Twenty Road, Mountain Transit Centre, Dickenson and English Church.
- The route continues as shared running on Homestead Drive, then turns west along Airport Road. A stop would serve Mount Hope.
- For LRT the final section to the Airport would be constructed as a segregated alignment, terminating in front of the main Airport terminal building. BRT would remain on street on Airport Road, then follow the existing airport access road one way loop circulation. Both options would provide stops at the Warplane Museum and at the Airport terminal building.

4.2.5 Traffic Impacts

The City of Hamilton EMME model, which covers 2016, 2021 and 2031, was used to estimate the traffic impacts for the A-Line. EMME is a multi-modal strategic model covering the entire City of Hamilton and surrounding areas for the AM peak hour. The A-line Economic Uplift Report and the A-Line Benefits Case Analysis used 2025 as the opening year, as agreed with the City of Hamilton, to reflect delivery towards the end of the 15 year period identified in The Big Move.

This preliminary analysis has been done to a lesser level of detail than the B-Line assessment which involved corridor VISSIM/VISUM/Synchro models and development of AM and PM peak hour models. As the A-Line project is pursued further, similar more detailed analysis will be required.

Reference is made to the BAU (Business As Usual). This is the scenario in which Rapid Transit is not implemented in the A-Line corridor, and forms the baseline against which the BRT and LRT options are compared, to provide an indication of the BRT and LRT traffic impacts.

Corridor Traffic Forecasts

Forecasts were developed for the corridor for the years 2021 (as the proxy for project opening date, which correlates with the years that have been modelled in EMME) and 2031. The former have been used as input into the preliminary assessment of noise and air quality impacts.

A sample of traffic flows for the 'common' road links between all options (Burlington Street to King Street in the north and Fennell Avenue to the Airport in the south) are summarized in Table 9 below.

Section	BAU	BRT	Diff.	LRT	Diff.
North (Burlington to King)	6,350	5,230	-18%	5,910	-7%
South (Fennell to Airport)	47,140	30,160	-36%	33,530	-29%
Total	53,490	35,390	-34%	39,260	-27%

TABLE 9: TRAFFIC IMPACTS (2021 AM PEAK HOUR, VEHICLES)

The table shows a considerable reduction in corridor traffic for both the LRT and BRT options. This is a result of the reduction in road capacity introduced by both options. The southern portion of the route has more traffic (and it is also longer) and shows a larger impact with traffic flows reducing by around 30% for both options. Furthermore the closure of James Mountain Road to non-bus traffic for the BRT option leads to more reassignment and this is shown by the larger reduction in traffic for the BRT case.

The reduction in road capacity leads to a reduction in traffic as discussed above, but also to a slight reduction in corridor speeds as shown in Table 10, suggesting that the impact of removal of traffic does not completely 'compensate' for the reduction in road capacity.

Section	BAU	BRT	Diff.	LRT	Diff.
North (Burlington to King)	34.3	32.1	-6%	32.8	-4%
South (Fennell to Airport)	39.3	36.6	-7%	36.2	-8%
Total	38.0	35.4	-7%	35.3	-7%

TABLE 10: SPEED IMPACTS (2012 AM PEAK HOUR, KP/H)

Network Traffic Impacts

In addition to the corridor analysis it is important to review the wider network impacts. This was done using the City's EMME model and was undertaken for the 2021 and 2031 AM peak hours, the two forecast scenarios available. The traffic impacts are summarized in Figure 28 to Figure 31.

The figures show the following:

- All the figures show (in green) the reduction in traffic in the corridor as identified in the previous section
- Largest increases in traffic (shown in red) are located on Upper Wellington Street south of Fennell Avenue and in the downtown core near the GO Centre although the increases are spread through the network as traffic re-routes;
- The closure of James Mountain Road to car traffic (Figure 29 and Figure 31) shows as one of the largest impacts for the BRT options; and
- There is an increase in re-routed traffic in 2031 over 2021, reflecting the additional traffic in the network.

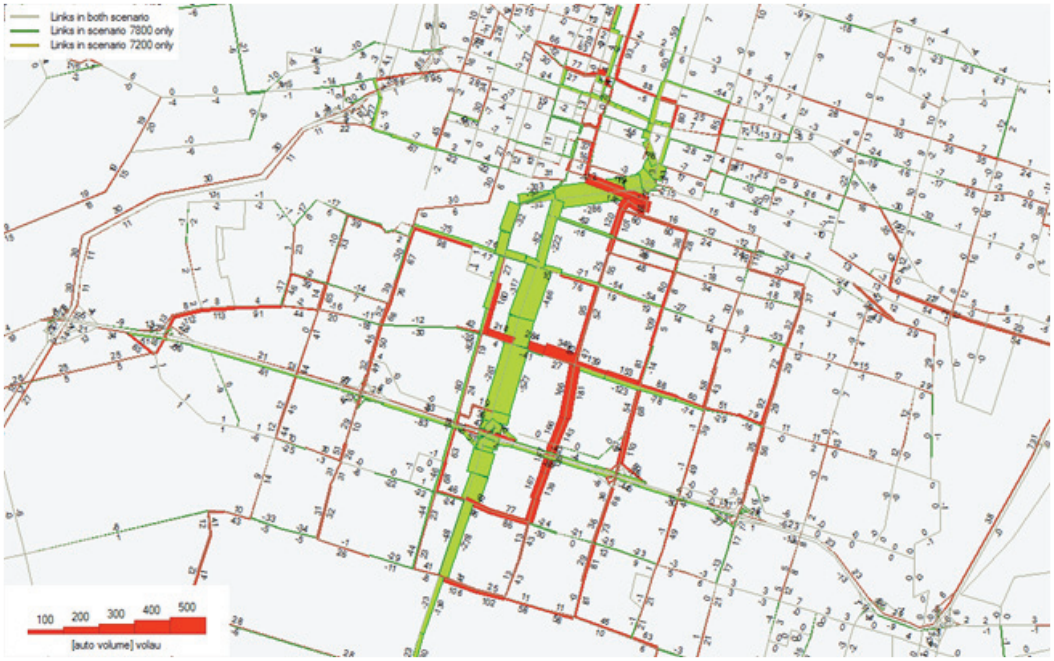

FIGURE 28: LRT TRAFFIC IMPACTS (2021 AM PEAK, VEHICLES)

NOTE: Red shows traffic increases compared to the BAU while green represents a decrease in traffic

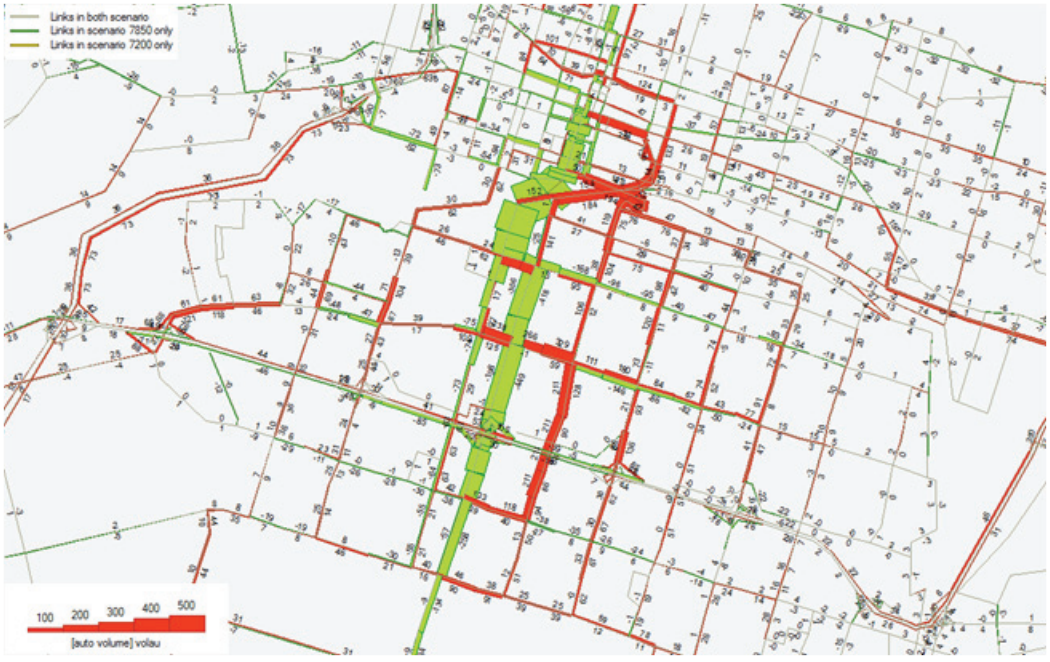

FIGURE 29: BRT TRAFFIC IMPACTS (2021 AM PEAK, VEHICLES)

NOTE: Red shows traffic increases compared to the BAU while green represents a decrease in traffic

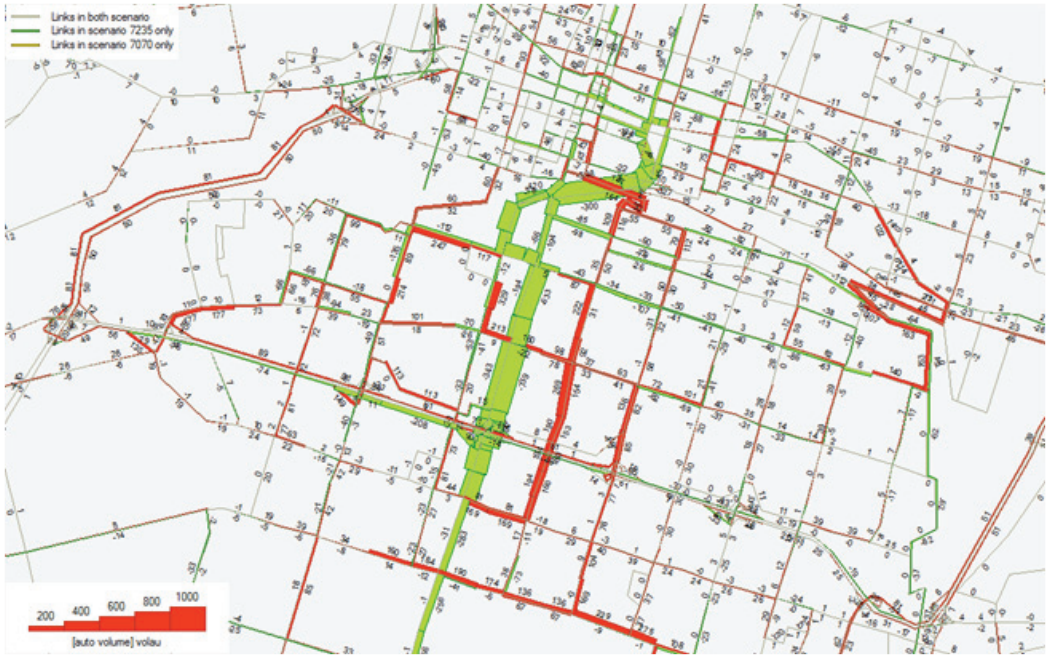

FIGURE 30: LRT TRAFFIC IMPACTS (2031 AM PEAK, VEHICLES)

NOTE: Red shows traffic increases compared to the BAU while green represents a decrease in traffic

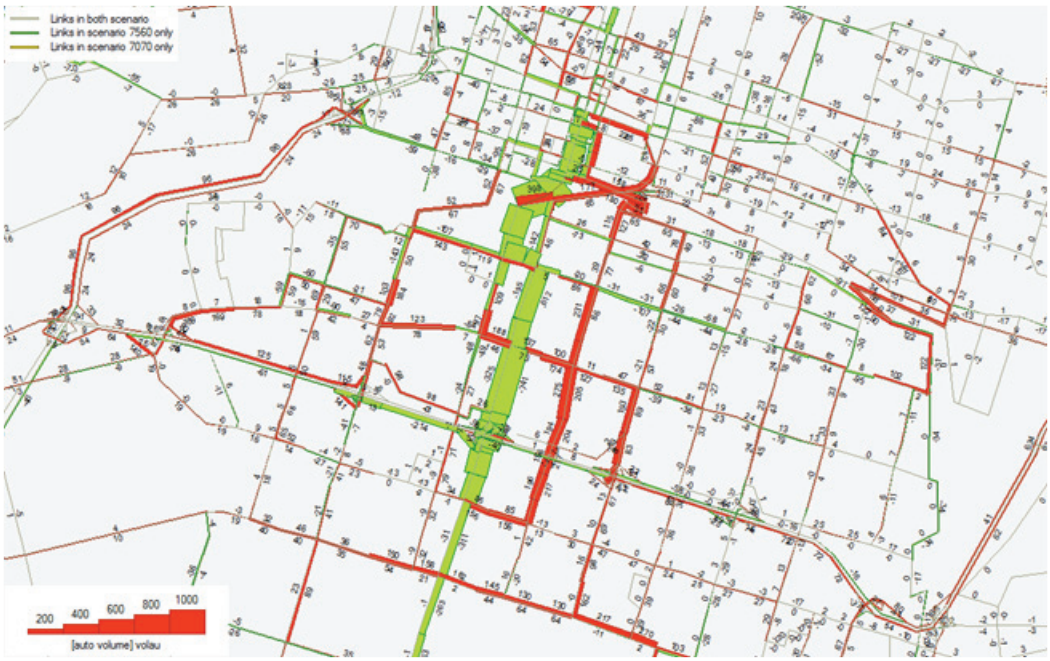

FIGURE 31: BRT TRAFFIC IMPACTS (2031 AM PEAK, VEHICLES)

NOTE: Red shows traffic increases compared to the BAU while green represents a decrease in traffic

4.2.6 Capital, Operating and Maintenance Costs

The capital costs of the A-Line LRT and BRT options have been estimated on the same basis as for the B-Line Benefits Case, and are presented in Table 11 and Table 12 Costs are given for the possible two phase construction:

- Phase 1 – Waterfront to Mountain Transit Centre
- Phase 2 – Mountain Transit Centre to Airport

Note that in the phased option it is assumed that all the vehicles would be purchased in the first phase, as it would not be economic to acquire the small numbers of vehicles required for the second phase separately.

Cost Component ($M 2010 Prices)	Waterfront to MTC	MTC to Airport	Total - Watefront to Airport
Preparatory Works	32.5	13.3	45.8
Roadworks and Guideway	95.6	27.3	122.9
Completion Works	7.5	0.2	7.7
LRT Stops	7.6	2.5	10.1
Trackwork	43.8	15.3	59.0
Power Supply, Signalling, Revenue Collection and Communications Systems	70.7	26.8	97.4
Provision of Additional Facilities at B-Line Maintenance Facility	23.9	-	23.9
Light Rail Vehicles (17 No. additional to the B-Line fleet)*	92.7	-	92.7
Total Construction	**374.2**	**85.4**	**459.6**
Design and Management	89.8	21.7	111.5
Property Allowance	16.0	4.0	20.0
Total before Contingencies	**480.0**	**111.1**	**591.1**
Contingencies	88.3	26.7	115.0
Total including Contingencies	**568.3**	**137.8**	**706.1**

TABLE 11: A-LINE CAPITAL COST - LRT OPTION

** Fleet requirement based on the lower level of service assumed for the Benefits Case Analysis, rather than the higher frequency used for the operational analysis in the Integrated Transit Systems Operations Plan (ITSOP) - ITSOP paragraph 6.13 refers.*

Cost Component ($M 2010 Prices)	Waterfront to MTC	MTC to Airport	Total - Waterfront to Airport
Preparatory Works	17.1	5.5	22.6
Roadworks and Guideway	48.7	10.2	58.9
Completion Works	8.0	2.3	10.2
BRT Stops	5.1	1.5	6.6
Revenue Collection and Communications Systems	5.7	2.0	7.6
Provision of Additional Facilities at Mountain Transit Centre Maintenance Facility	3.4	-	3.4
BRT Vehicles (28 No. including spares)*	**42.0**	**-**	**42.0**
Total Construction	129.9	21.5	151.4
Design and Management	28.0	9.7	37.7
Property Allowance	**16.0**	**4.0**	**20.0**
Total before Contingencies	173.9	35.2	209.1
Contingencies	**27.3**	**7.7**	**35.0**
Total including Contingencies	**201.2**	**42.9**	**244.1**

TABLE 12: A-LINE CAPITAL COST - BRT OPTION

** Fleet requirement based on the lower level of service assumed for the Benefits Case Analysis, rather than the higher frequency used for the operational analysis in the Integrated Transit Systems Operations Plan (ITSOP) - ITSOP paragraph 6.13 refers.*

The A-Line operating and maintenances costs have been estimated on the same basis as the B-Line Benefits Case and are given in Table 5. The A-Line Benefits Case Analysis and the A-Line Economic Uplift Reports both used 2025 as the project opening date, as agreed with the City of Hamilton, to reflect delivery at the end of the Metrolinx 15 year program. For consistency therefore, operating and maintenance costs are stated for 2025.

Over time the operating cost of the diesel powered BRT is expected to increase at 1% per annum above the general rate of inflation due to real increases in the cost of fossil fuels. The operating costs of the electrically power LRT option are assumed to remain constant in real terms.

With the implementation of LRT or BRT, the existing Route 20 bus service would be removed resulting in savings in bus operating costs. As with BRT, the real value of the bus operating cost saving will increase over time.

Cost ($M 2010 Prices)	LRT Option		BRT Option	
Year	**2025**	**2031**	**2025**	**2031**
Annual A-Line O&M Cost	12.9	12.9	15.1	16.0
Incremental annual bus operating cost	-1.2	-1.3	-1.2	-1.3
Net O & M Cost	**11.7**	**11.7**	**13.9**	**14.7**

TABLE 13: A-LINE OPERATING AND MAINTENANCE COSTS

Note: A negative sign indicates a cost saving

4.2.7 Summary

A single alignment is proposed for the northern and southern sections of the A-Line route, running on James Street North from the Waterfront to King Street, and on Upper James Street between Mohawk Road and Hamilton International Airport. A number of route options have been identified for the central section between King Street and Mohawk Road, which includes the ascent of the Niagara Escarpment. LRT and BRT options, as they may be implemented in the A-Line corridor in Hamilton, would both be constructed largely within the existing road right of way (although for both modes there is opportunity to create a separate off-road right of way for the section of route from south of Rymal Road to Hamilton International Airport).

The key constraint on the A-Line route is the gradient of the Niagara Escarpment. There are three existing road routes up the Escarpment in the vicinity of the A-Line corridor, with gradients of up to 11%. The two steeper of these routes are used by bus services at present, and so all three routes are also be usable by BRT. The proposed Escarpment route option(s) to be taken forward for LRT would need to be confirmed with prospective vehicle suppliers in order to ensure that suitable vehicles can be provided for the A-Line.

There are several criteria which need to be taken into account when considering whether BRT or LRT will be a suitable mode choice. The main consideration is the likely level of current and future demand on the corridor, both in terms of population and employment. Existing population and employment density are highest on the A-Line corridor between the Waterfront and Rymal Road whilst both employment and population density are lower between Rymal Road and the Airport.

An assessment of the A-Line options has been undertaken using a Multiple Account Evaluation (MAE) methodology. The accounts most relevant to this project are the transportation user benefits, financial impacts, environmental impacts, economic and social and community impacts. The A-Line will make a positive contribution towards transport user benefits, especially in terms of improving accessibility, journey times and the reduction in congestion as a result of modal shift. The A-Line will have a significant positive impact on the levels of greenhouse gas emissions. The economic development benefits of the A-Line will occur in several different areas including contributions to productivity through improved journey times for workers, agglomeration benefits as a result of improved transit access to key employment sites and improvements to the competitiveness of Hamilton when attracting new businesses. The A-Line proposals will help to encourage Transit Oriented Development (TOD) and higher density along the route, particularly in the Downtown area. Transit improvements would also help to accelerate planned regeneration in the Downtown.

The social and community impacts of the A-Line will include improvements to accessibility for some of the most deprived communities within Hamilton, improved personal safety through a reduction in accident levels, improved access to healthcare and localized air quality improvements.

5

5.0 IMPLEMENTATION

In light of the opportunities and challenges of the A-Line Corridor, the following section provides recommendations in terms of approach and potential next steps in capitalizing on the opportunities.

5.1 Land Use

1. Take a nodes and corridors approach to phasing

This study has built on the city's nodes and corridors urban structure. Transit-oriented development is proposed to occur along the entire urban corridor area identified from the waterfront to the hydro corridor, with the greatest intensity in the Downtown and along key transit nodes along the A-Line. From the hydro corridor to the airport, transit-oriented development and transit servicing can be incentivized to initially focus greatest intensity at the nodes to support rapid transit, while encouraging development in the existing built-up areas north of the hydro corridor. As such, the urban corridor along the existing urban area is envisioned to build-up in the short to medium terms, with the corridor in the greenfield areas building-up in the long-term, within the urban boundary.

This TOD phasing approach has been developed as a potential strategy to direct growth to support rapid transit along the entire A-Line Corridor and should be further studied as part of the further development of the A-Line project.

2. Improve the public realm

As part of implementing rapid transit and encouraging transit-oriented development, public realm improvements should be incorporated along the entire A-Line Corridor and key areas to improve multi-modal connectivity and the experience of walking, cycling, and taking transit as well as to create attractive and comfortable environments conducive to development, living, working and playing. New public realm or streetscape design plans should be considered especially where "special pedestrian areas" have been identified in this study, incorporating public realm improvements as investments that complement the rapid transit infrastructure.

3. Align and build-on existing TOD-supportive policies and review existing City processes

The City of Hamilton has developed a strong policy foundation for the A-Line Corridor, including plans and guidelines that facilitate rapid transit and progressive and sustainable urban land uses, built form, intensification, and public realm design. The City of Hamilton's new *Transit-Oriented Development Guidelines* have provided a "TOD lens", in terms of the application of TOD principles and typologies, in this study. The TOD Guidelines should be reinforced as guiding document, ensuring that the principles transfer to the different levels of implementation. Existing land use and transportation policy plans (e.g. *Urban Hamilton Official Plan*, *Shifting Gears Hamilton Cycling Master Plan*, *Transportation Master Plan, Downtown Secondary Plan*), the Zoning by-law, parking by-law, should be evaluated and updated using the *TOD Guidelines* as a "lens" to ensure that they are aligned and collectively supportive of rapid transit and transit-oriented development for the Corridor. The City may also want to evaluate the existing corporate, planning and development processes to ensure that policies translate down to the level of capital planning and development permit review.

4. Conduct Further A-Line Studies and Update/Develop New Secondary and Corridor Plans

The opportunities and challenges identified demonstrate that TOD necessarily will take on different scales, forms, and characteristics in different areas. There is a need to infuse TOD principles to the level of area-specific policies along the corridor. Further studies as part of the next phase of land use and rapid transit planning for the A-Line should assess the opportunities and challenges identified in this initial study in greater detail. This study can help to advance secondary planning for the areas along the A-Line Corridor, potentially leading to new secondary plans or updates to existing secondary plans. Secondary plans should uphold rapid transit and TOD as central to the areas' planning and development in terms of land use, built form, densities, transportation, public realm and urban design.

Secondary planning should build on the corridor's Official Plan designation of the A-Line as a primary corridor with transit-supportive uses and the identified urban structure

including key nodes and communities along the Corridor, as well as recommend amendments where necessary. Secondary planning should prioritize areas where greatest change is anticipated due to rapid transit and where currently policies are contradictory to rapid transit investment. For example, the Mountain section's existing arterial commercial uses, currently supported by the Official Plan land use designation, are land intensive automobile-oriented uses that contradict the corridor's rapid transit and transit-oriented development vision. As such, this area would benefit from a prioritized secondary planning process and likely amendments to the *Official Plan* and zoning by-law to change the existing land use designation to one more supportive of rapid transit. In addition, secondary planning processes should consider whether there is greater intensification potential than envisioned in the Official Plan along the transit nodes and key areas identified in this study and whether they warrant potential amendments. Secondary plans should also include form-based policies and minimum and maximum standards (e.g. minimum 3-storey height for properties fronting the corridor).

A couple of secondary plan processes are currently underway including the *Downtown Secondary Plan* review and the *Airport Employment Growth District (AEGD)* secondary planning process. These processes must address and incorporate rapid transit and transit-oriented development directions. The *Downtown Secondary Plan* should directly reinforce the area as a major multi-modal transit station area and Mobility Hub. As part of the secondary plan review for the Downtown, a parking management strategy should be reviewed. The AEGD's comprehensive review and secondary planning process should also carefully consider how this area will support rapid transit and develop in a sustainable way while generating employment and business activity.

The other existing secondary plans including the *West Harbour Secondary Plan* and the *Mount Hope Secondary Plan* would also benefit from a review of the existing policies to strengthen their transit focus.

As a major natural feature in the area, the Escarpment and its preservation should be considered in secondary planning processes for the Downtown and Mountain sections. Planning within or adjacent to the Escarpment should have due regard for environmental features and natural systems, and the PSWS.

5. Develop alignment plans to confirm feasibility of BRT/LRT

The Illustrative Design Workbook 1 plans in Appendix C set out the concept alignment for the LRT and BRT options. In the next stage, and for the selected mode, the rapid transit alignment, together with associated changes to the street layout, will need to be developed in more detail. This will include more precise definition of the rapid transit lanes, the extent of segregated and shared running with other traffic, the number and width of traffic lanes, curb realignments, stop locations including pedestrian access to platforms, details of intersections and impacts on private accesses etc. This will also inform the more detailed traffic modelling to be carried out to assess wider traffic impacts and as an input to updating the Benefits Case.

6. Develop stop area plans

As part of recognizing the diversity along the Corridor and the unique functions and qualities of the nodes, potential rapid transit stops, and areas identified, the development of stop area plans are recommended. Stop area planning should address the unique needs, opportunities and challenges in each of the areas that fall within the primary transit area (400m) of the stop and engage those who live and work within that stop area. Stop area plans and secondary plans should align and work collectively to address key sites and station requirements, including design of the station, transit servicing, land uses, built form, public realm and amenities.

7. Explore other planning tools

Consider using other planning tools in advance of secondary planning to ensure that TOD principles are applied to any new developments and the public realm change along the corridor in the interim. Developing an interim rezoning policy, pre-zoning and advanced permitting are a few ways of ensuring that transit-oriented development principles and guidelines can be applied in the onset to capture any potential TOD opportunities and to set TOD precedents along the Corridor.

8. Other studies and initiatives

The opportunities and challenges identified in this study may point to additional planning, urban design and transportation studies and initiatives. The City's existing heritage data may not include all potential heritage resources. A cultural heritage landscapes study should be initiated to identify the rich heritage resources along this corridor. In the process of conducting this study, it was identified that besides heritage, some of City's data resources for the corridor should be updated and aligned to reflect adopted plans and data should be kept up-to-date to reflect any implementation that has occurred (e.g. proposed trails and bike facilities that have been built). This would help to provide a more accurate picture of what has been proposed, what has been implemented, and what improvements or changes are potentially required.

5.2 Transportation

5.2.1 Potential Phasing

The A-Line Corridor can be constructed either in full from the Waterfront to Hamilton International Airport, or its implementation could be phased.

The preliminary demand forecasts show that the busiest section of the route is between Downtown and Stone Church Road, with demand falling to the edge of the current built out area near Mountain Transit Centre. There is moderate demand on the section from Downtown to the Waterfront. The current forecasts do not specifically include any demand relating to passengers interchanging with the proposed GO Train services at James Street North station, and so in practice demand on this section may be somewhat higher. South of Mountain Transit Centre, the demand is much lower, reflecting the largely undeveloped nature of this area. The scale and timing of demand on this section will be dependent on the development of the Airport Employment Growth District.

This suggests that for a phased implementation, the options for the northern extent of the first phase to be constructed might be:

- Downtown (King Street and B-Line transfer)
- James Street North GO Station
- Waterfront

With the introduction of GO Train service proposed earlier than the implementation of the A-Line, it would seem appropriate that a first phase A-Line should extend at least as far as the James Street North GO Station.

Similarly the southern extent of the first phase could be:

- Mountain Transit Centre
- Hamilton International Airport

The current full route for LRT and BRT incorporates turnback facilities at the Waterfront and Airport. If the corridor is developed in phases, then additional (possibly temporary) turnback facilities will be required at the first phase route termini. For the LRT option, this will require additional crossover(s), and the interim terminal stop layout will need to accommodate vehicles reversing in a safe manner, and not conflicting with pedestrian or other traffic movements. For the BRT option, a temporary turnback loop would

be required. However, this could use existing local streets if necessary.

Similarly, a first phase would need to be suitably connected to the Maintenance and Storage Facility (MSF). For the LRT option, the A-Line fleet would be based at the B-Line MSF, and therefore a running connection with the B-Line is required. All of the suggested phasing options would provide this. It is currently assumed that the BRT option would operate from the existing HSR Mountain Transit Centre (MTC). Since the BRT vehicles can operate beyond the rapid transit route, it is not necessary for the first phase to run as far as MTC, but terminating a first phase here would enable the route to cover the full (existing) built out area, would facilitate operations (e.g. crew changes), and would also provide staff based at MTC with a high quality rapid transit service.

These factors suggest the following phasing scenarios may be appropriate:

Phase 1 - Waterfront to Airport

Or

Phase 1 - Waterfront to Mountain Transit Centre

Phase 2 - MTC to Airport

Or

Phase 1 - James Street North to Mountain Transit Centre

Phase 2 - Waterfront to James Street North

Phase 3 - MTC to Airport

If a phased implementation approach is adopted, then the case for constructing the subsequent phases would need to be considered in more detail at that time, taking into account the ongoing development of the City and the changes in transport patterns which have taken place, including those arising from the presence of the A-Line first phase.

6

6.0 DEFINITIONS

Activity Transit Node: A proposed A-Line transit node at a location where the presence of a hospital or educational facility generates significant activity and employment.

A-Line Connection: Proposed major north-south on-street pedestrian and cycling trail along the entire A-Line route.

Community: An area with a distinct character and qualities resulting from the people that live, work or play in it.

Community Transit Node: A proposed A-Line transit node where the presence of an existing or future community or communities forms the dominant character.

Downtown Transit Node: A proposed A-Line transit node located in the Downtown.

Employment Transit Node: A proposed A-Line transit node where there are uses (not related to hospitals or educational facilities) that generate significant employment.

Existing trails: Existing pedestrian and cycling facilities that connect to different areas in the city. Existing trails include both on-street and off-street trails identified in the Hamilton Recreational Trails Master Plan and the Hamilton Cycling Master Plan.

Future Destination: Places or areas that will become a destination based on policy, planning and rapid transit initiatives, and private investments.

Gateway: Visually prominent sites located at the entry of the city, local communities, or specific areas or districts, and which serve to enhance community identity. As such, gateways are the location where a significant change of character occurs in the public space and built form.

Heritage: These are resources that the City of Hamilton has listed, registered, or designated as heritage sites. It is important to note that there are a number of additional buildings, structures, and landscapes that have cultural heritage significance but have not been included in this list.

Key intersections: The location where major east-west arterials intersect the A-Line.

Landmark: A major architectural, infrastructure or natural feature that standsout in the landscape or streetscape. Primary landmarks are features that have a more dominant and aesthetic presence.

Local Destination: Existing places or areas that tend to attract those who live and work in Hamilton.

Physical Boundary: A physical geographical barrier or feature that constrains movement or accessibility.

Potential new trail connections: Proposed trail connections to improve the pedestrian and cycling network. Potential new trail connections should include street improvements.

Proposed Pedestrian Connections: These are typically proposed pedestrian paths that will be introduced through existing lots (outside of the trail network) to improve walkability in the immediate neighbourhood.

Potential Redevelopment- Infill Site: Any site within a 400-metre walking diameter around a node that does not respond to the proposed vision for the character area in which it is located, is vacant, or is otherwise under-developed and offers a particular opportunity for intensification and TOD.

Proposed Trails Connections: These are proposed trails identified as beneficial for improving and/or completing the existing trails network. Proposed trail connections should include public realm and/or street improvements.

Proposed Transit Node: A proposed A-Line transit node which may be one of five classifications:

- **Proposed Transit Node with Existing Policy:** A proposed A-Line transit node that falls within a tertiary policy area.
- **Recreation Transit Node:** A proposed A-Line transit node with a strong recreational focus.
- **Regional Destination:** Existing places or areas that tend to attract visitors or patrons both from within Hamilton as well as those in the region.

Special Pedestrian Area: A proposed area where particular attention should be given to the urban design of the public realm to enhance and reinforce it is a pedestrian-priority area while still integrating other modes of transportation including bicycles, transit, and vehicles. Special pedestrian areas may include existing and proposed public spaces, transit station areas, and particular sections along the corridor. Further planning and urban design studies, reconfiguration of the existing street, as well as special treatment beyond standard street improvements should be considered.

Public Realm: Includes exterior places, linkages, and built form elements that are physically and/or visually accessible to the public. These elements can include, but are not limited to, streets, pedestrian ways, bikeways, bridges, plazas, nodes, squares, transportation hubs, gateways, parks, waterfronts, natural features, view corridors, landmarks, and building interfaces.

View: Public views and vistas are significant visual compositions of important public and historic buildings, natural heritage and open space features, landmarks, and skylines, which enhance the overall physical character of an area when viewed from the public realm. Vistas are generally panoramic in nature, while views usually refer to a strong individual feature, often framed by its surroundings.

View Terminus: A significant feature that terminates a view.

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