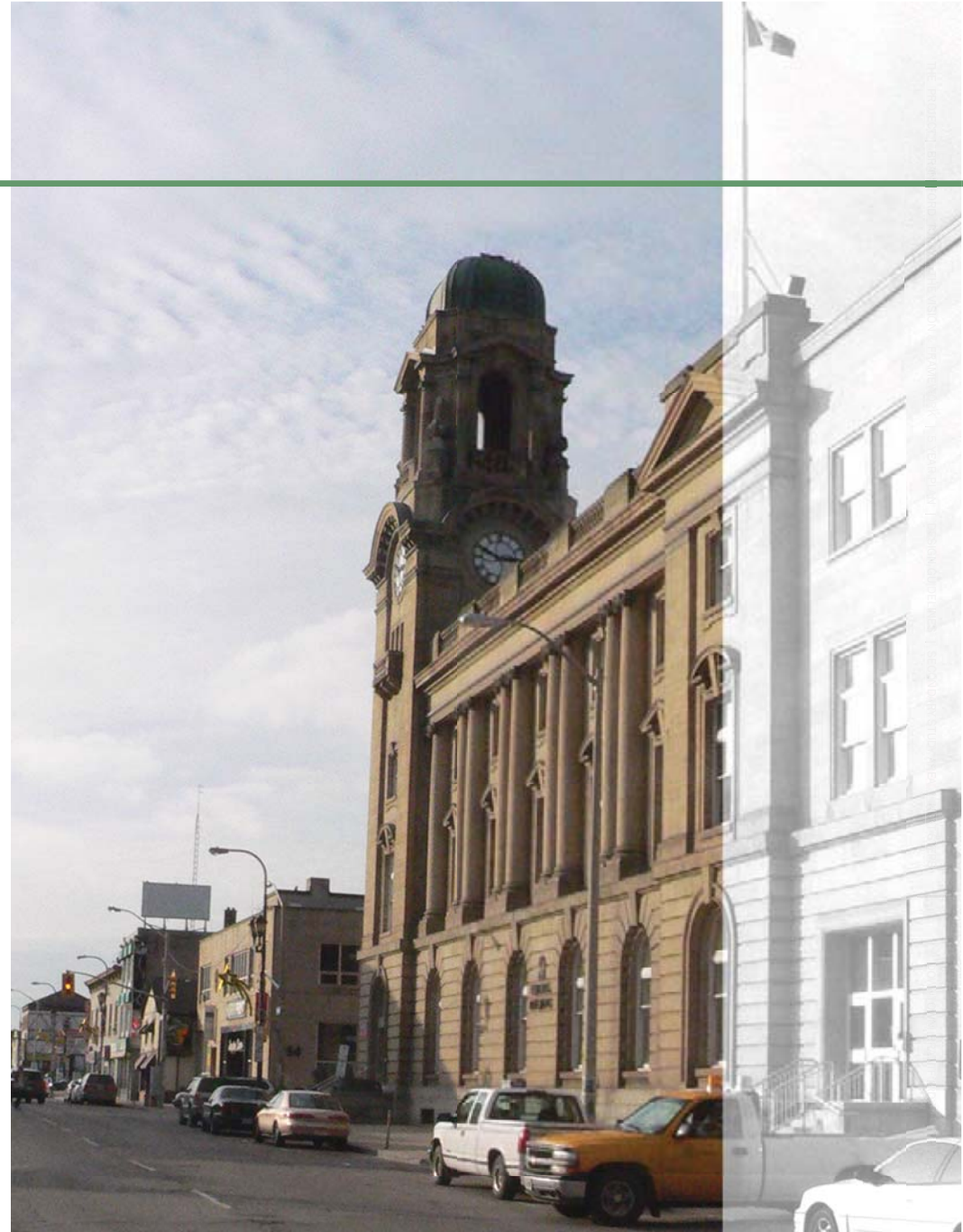




# A Master Plan for Downtown Brantford

## Appendix C: Transportation & Parking Study





City of Brantford

**DOWNTOWN MASTER PLAN  
TRANSPORTATION, PARKING AND INFRASTRUCTURE  
ISSUES AND OPPORTUNITIES**

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FINAL REPORT

APRIL 2008

Prepared for Urban Strategies by:



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## 1. INTRODUCTION

Urban Strategies, in association with IBI Group, was retained to carry out the Downtown Brantford Master Plan Project. The overall objective of this project is to develop a Vision for the Downtown along with supporting implementing strategies. The approach to developing the Vision and associated Downtown Master Plan recognizes that transportation infrastructure, land use and urban design are intrinsically linked to the success of the Downtown in terms of economic potential, quality of life for residents, attractiveness for visitors, safety and security and long term financial sustainability.

One of the primary goals of the Downtown Brantford Master Plan is to articulate a Vision for the Downtown that recognizes the inter-relationships between the various infrastructure components and seeks to provide a balance among competing modes and competing interests while considering the overall need to provide a more environmentally, economically and socially sustainable infrastructure system.

The purpose of this background report is to describe the existing transportation, parking and infrastructure systems and to identify issues and opportunities to guide the development of the overall Master Plan. Following this Introduction, **Chapter 2** provides a description of the existing transportation systems including streets, transit, cycling and pedestrian systems, and related infrastructure. **Chapter 3** focuses on the parking system and provides an assessment of existing parking supply and demand. Based on the assessment of existing transportation and parking systems, **Chapter 4** identifies a number of key strategic opportunities for consideration in the development of the overall Master Plan. Finally, **Chapter 5** summarizes the key findings of the report and discusses next steps.

## 2. EXISTING TRANSPORTATION CONDITIONS

### 2.1 Study Area Street Network

The primary study area for this transportation assessment corresponds to the City of Brantford Downtown Community Improvement Plan Area. This area is bounded by Brant Street/Icomm Drive to the south, Clarence Street to the east, Nelson Street to the north and West Street to the west. As shown on **Exhibit 2-1**, the street network within this study area is primarily a traditional grid pattern and most streets are continuous through the study area, at least as far south as Colborne Street.

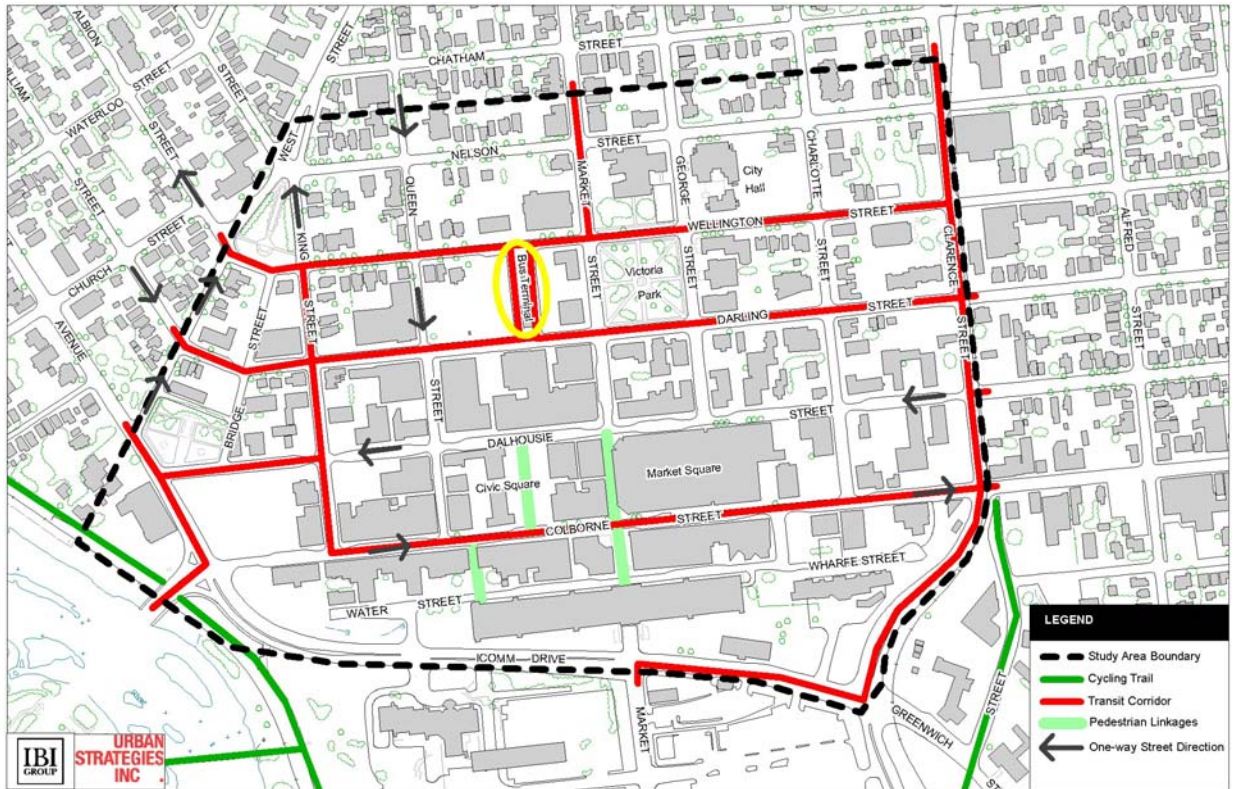
Historically, Dalhousie Street and Colborne Street were the primary east-west streets through the Downtown. These streets were converted to one-way operation several decades ago to maximize traffic capacity, at a time when Highway 403 did not exist. With Highway 403 now extending from Hamilton to Woodstock, and with the construction of Icomm Drive, the pressure on Colborne Street and Dalhousie Street to accommodate through traffic has been reduced considerably. This surplus capacity has in part been taken advantage of through the creation of parking bays/curb extensions, which limits the capacity of the streets to two through lanes (See **Exhibit 2-2**). As discussed later in this report, there are opportunities to take further advantage of the spare capacity that exists on these one-way streets by converting them back to two-way operation.

In the north-south direction, Market Street is the most prominent street extending from the VIA Rail Station in the north to Colborne Street in the south, and then continuing on south to the Brantford



Southern Access Road. Market Street was once a continuous street, but vehicular access (and to some extent pedestrian access) was severed with the construction of the Market Square Parkade.

**Exhibit 2-1: Existing Downtown Transportation System**



**Exhibit 2-2: Colborne Street and Dalhousie Street Existing Conditions**



*Colborne Street at Charlotte Street*



*Dalhousie Street at George Street*

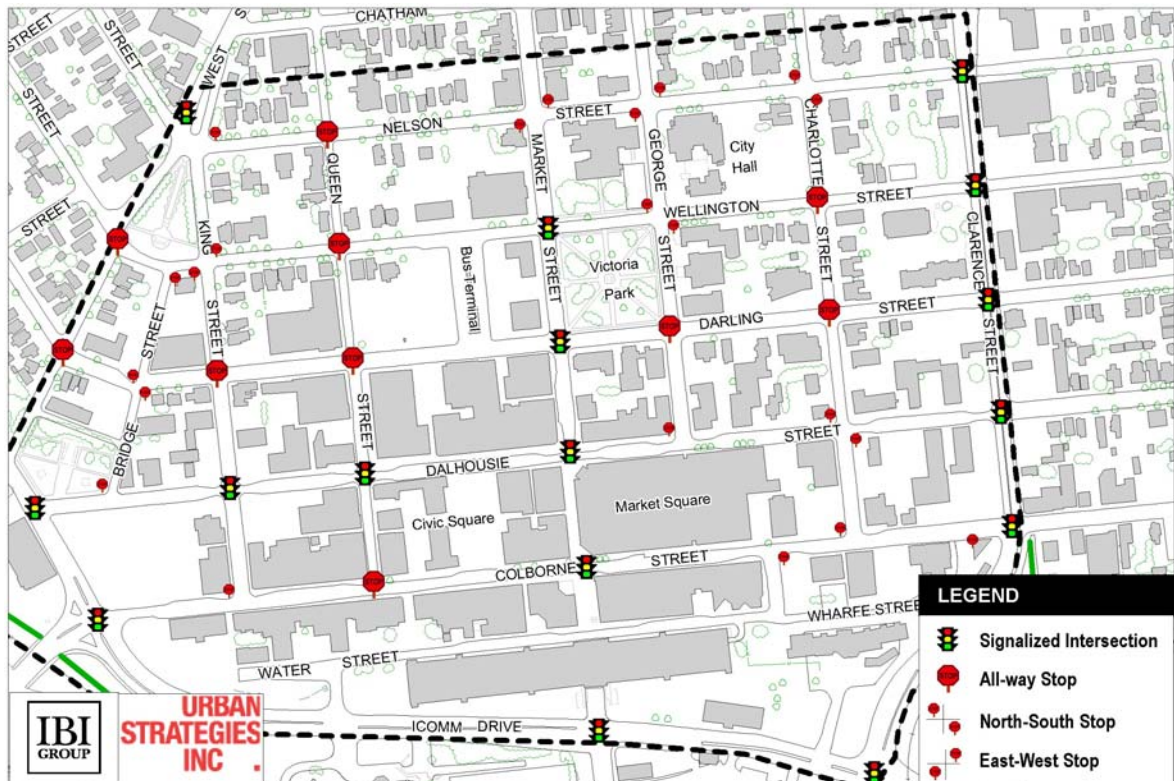
As summarized on **Exhibit 2-3**, Brant Street, ICOMM Drive and Clarence Street, which mark the South and East extent of the study area, are all four travel lanes wide. The remainder of the streets, although four lanes wide, have only one lane in each direction for travel and both curb lanes dedicated for on-street parking. The on-street parking ends prior to intersections to allow for a left or right turn lane, depending on the demand at the intersection.

**Exhibit 2.3: Streets Number of Lanes**

Street	Northbound Lanes	Southbound Lanes	Intersection Widening
Brant Avenue	2	2	@ ICOMM
West Street	2	varies	Yes
Bridge Street	1	1	No
King Street (N of Wellington)	2		No
King Street (S of Wellington)	1	1	Right turn bays
Queen Street (N of Darling)		2	No
Queen Street (S of Darling)	1	1	Right turn bays
Market Street	1	1	Right turn bays
George Street	1	1	Right turn bays
Charlotte Street	1	1	Right turn bays
Clarence Street	2	2	No
Street	Eastbound Lanes	Westbound Lanes	Intersection Widening
Nelson Street	1	1	No
Wellington Street	1	1	Left turn bays
Darling Street	1	1	Right turn bays
Dalhousie Street		2	Right & left turn bays
Colborne Street	2		@ Clarence
Water / Wharfe Street	1	1	No
ICOMM Drive	2	2	Right & left turn bays

There are 14 signalized intersections and 2 pedestrian activated signals within the study area (**Exhibit 2.4**). The remaining unsignalized intersections are either all-way stop controlled (10 locations) or have two-way stops (approximately 15 locations). It is noted that there are four audible signals for persons with visual impairments.

**Exhibit 2-4: Intersection Controls**



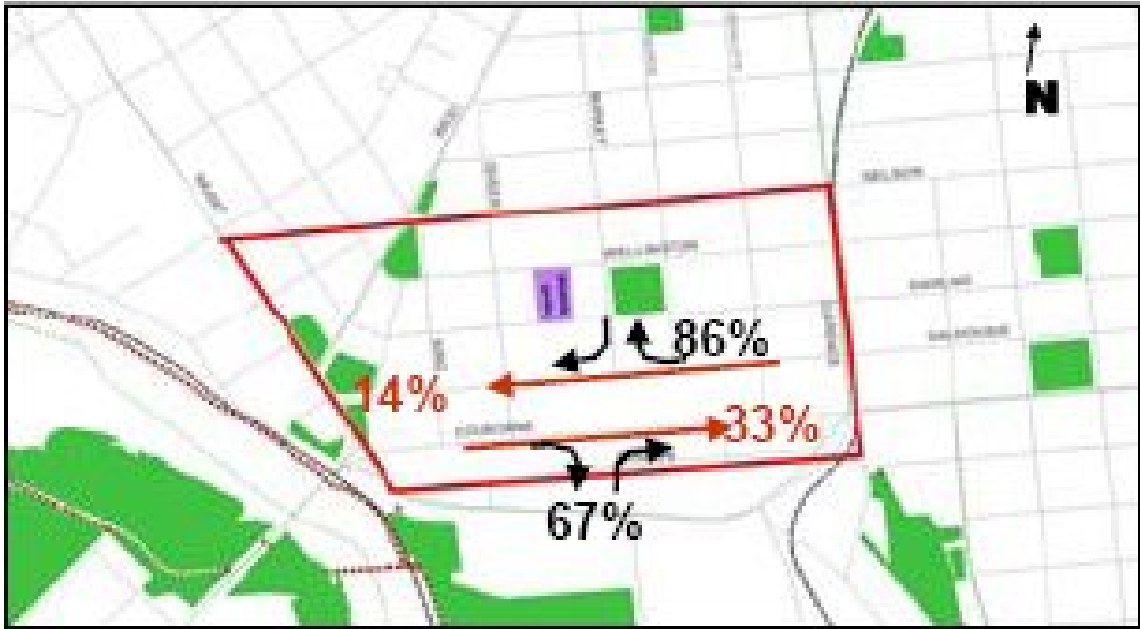
## 2.2 Traffic Patterns

As discussed in the recently completed City of Brantford Transportation Master Plan Update, the private automobile is by far the most common mode of transportation in Brantford accounting for 90% of all peak hour trips. In total, Brantford residents typically make 36,200 auto trips during the PM peak period. Of these trips, 5,520 (15%) originate within downtown while 4,390 (12%) are destined for downtown. Approximately 1,000 trips start and end within downtown Brantford during the PM peak hour<sup>1</sup>.

As shown on **Exhibit 2-5** below, taken from the City of Brantford Transportation Master Plan, less than 15% of the traffic on Dalhousie Street is through traffic while one-third (33%) of the traffic on Colborne Street is passing through the Downtown study area. This reinforces the conclusion that these two street are no longer serving longer distance through traffic, which has since been captured by Highway 403 and Icomm Drive.

<sup>1</sup> City of Brantford Transportation Master Plan Update, 2007.

**Exhibit 2-5: Downtown Travel Patterns**



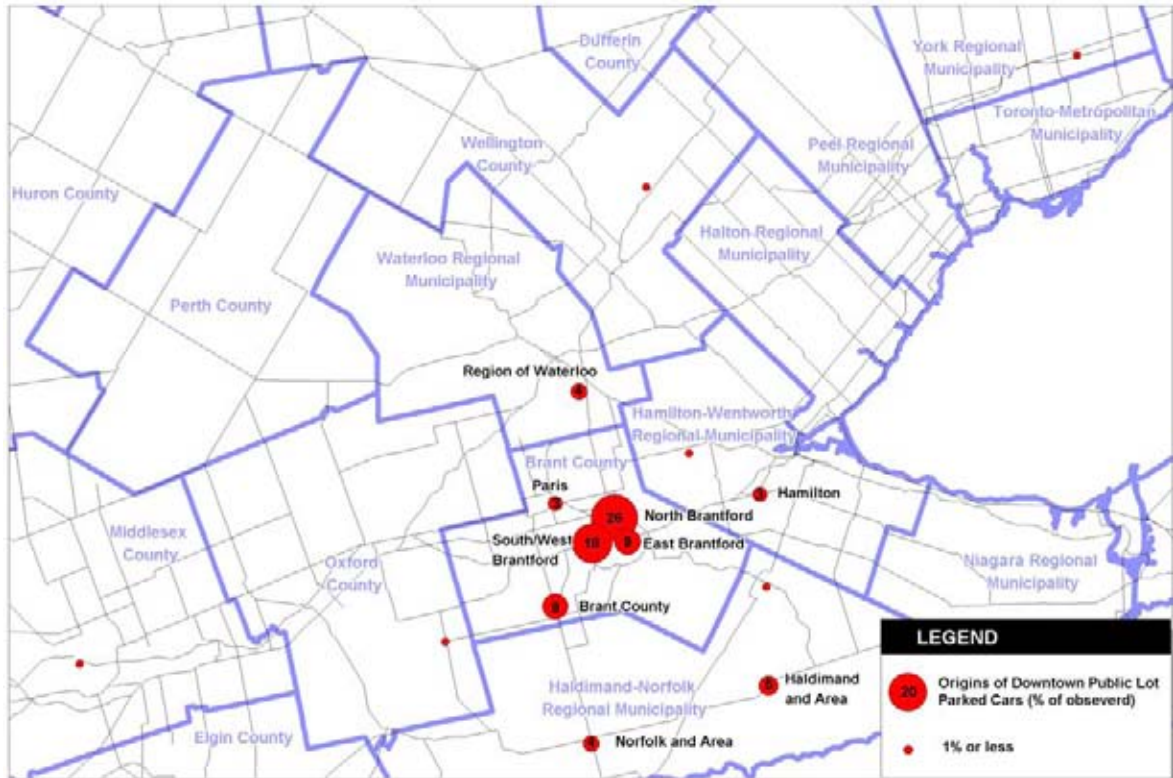
Source: City of Brantford Transportation Master Plan Update, 2007.

In order to add to the information on Downtown Brantford travellers, IBI Group collected a sample of the licence plates of vehicles parked in the major public Downtown parking lots. Through a service provided by the Ministry of Transportation of Ontario, it was possible to obtain the first three digits of the vehicle owner’s postal code. Although not an exact process, this informal survey provides insights on where drivers coming to Downtown Brantford originate.

According to the licence plate survey, sixty-four percent (64%) of the vehicles parked in the Downtown on the day of the survey were from either Brantford or Brant County while 18% were from the four districts surrounding Brant County (Halimand-Norfolk, Hamilton, Waterloo and Oxford). As shown graphically on **Exhibit 2-6**, 26% of the vehicles were from North Brantford while 18% were from south/west Brantford. Surprisingly, very few vehicles observed were from nearby Paris.

The fact that many of the vehicles observed parking in the Downtown are from the local area suggests that there may be opportunities to attract some of these drivers to transit or other non-auto modes, thereby easing pressure on existing parking facilities.

**Exhibit 2-6: Origins of Parked Vehicles in Downtown Brantford Public Lots**

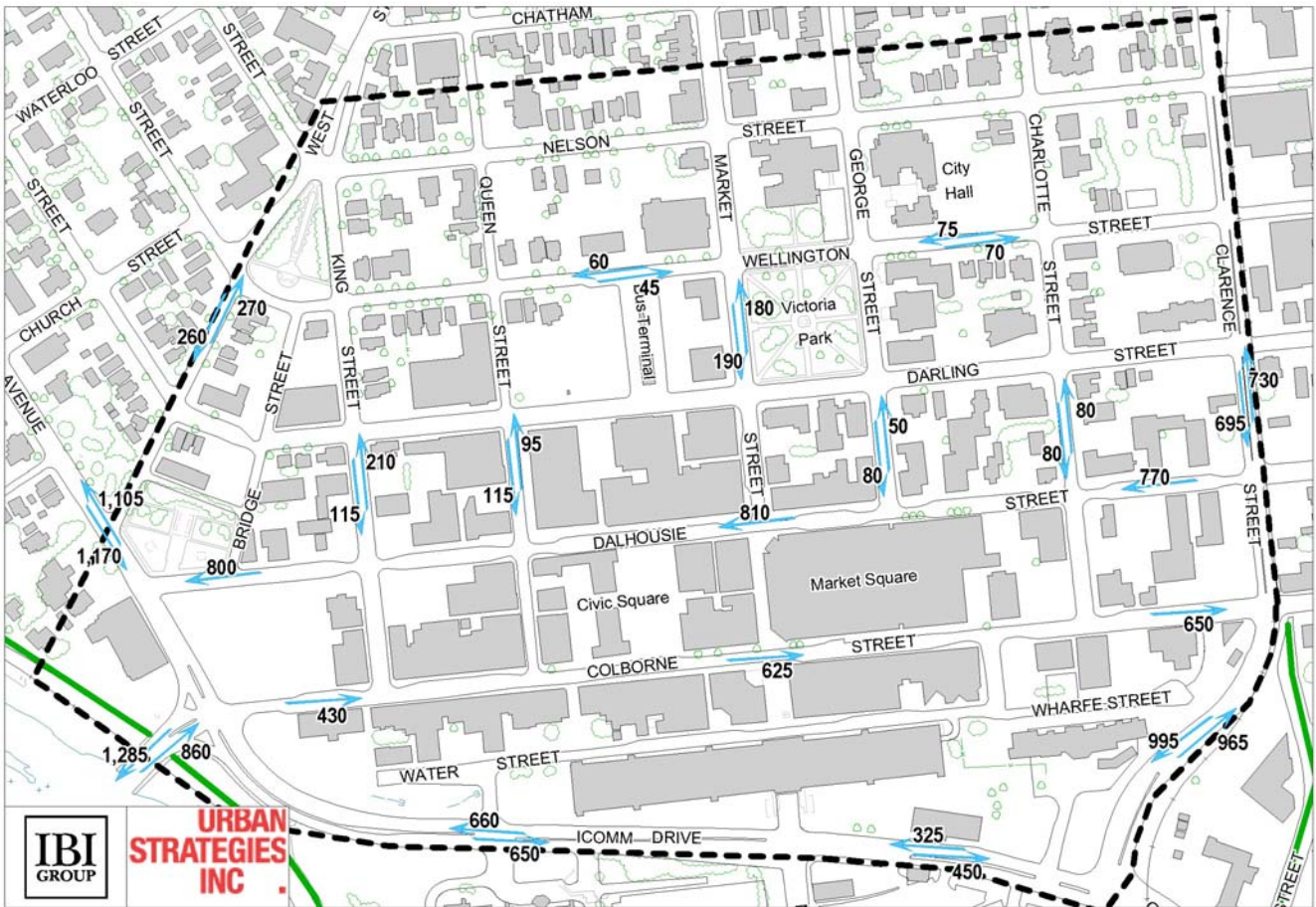


### 2.3 Traffic Volumes and Level of Service

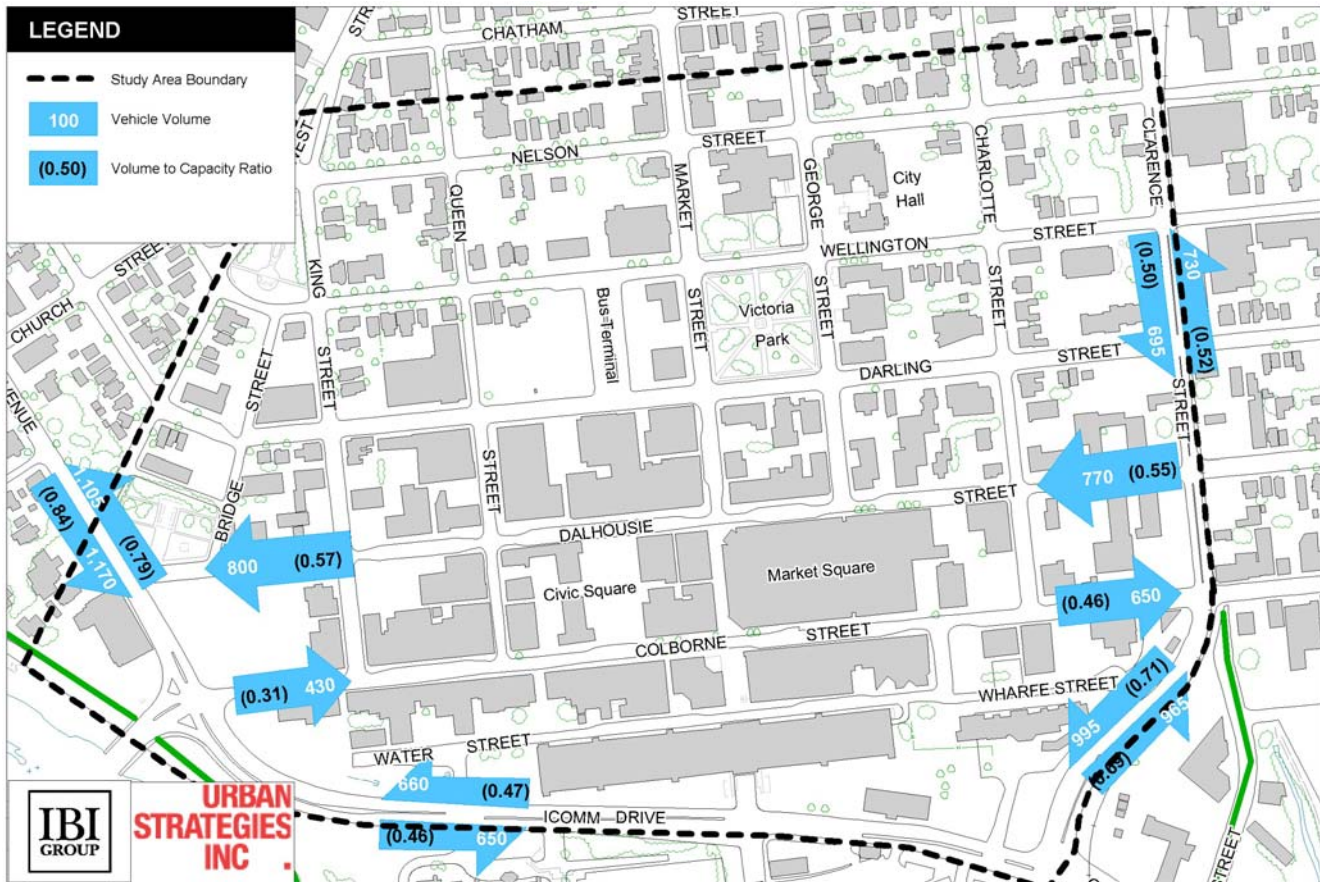
Overall, downtown Brantford has more than enough lane capacity to accommodate vehicular demands. As shown in **Exhibit 2-7**, the majority of the downtown streets have fairly low traffic volumes (less than 200 vehicles per hour per lane) whereas the maximum capacity of a typical downtown street is typically taken as 700 vehicles per lane. The few exceptions are Dalhousie Street, Colborne Street, Clarence Street, Brant Street and ICOMM Drive. These roads represent the major transportation routes into and around downtown Brantford and correspond to the roads having more than one travel lane per direction. Even these major roads with volumes greater than 200 vehicles per hour per lane are operating well within acceptable volume-to-capacity ratios, as shown in **Exhibit 2-8**.

Of particular interest to this study are the operations of Colborne and Dalhousie, which have been proposed for conversion to two-way operations. **Exhibit 2-9** illustrates volume to capacity ratios for the signalized intersections along these two main streets. With the exception of the three major entry points, all of the intersections are operating well below their capacity.

Exhibit 2-7: PM Peak Hour Traffic Volumes



**Exhibit 2-8: Volume to Capacity Ratios Major Streets**



Note: Volume to capacity ratios are calculated based on a capacity of 700 vehicles per lane, which is representative of the capacity of a typical collector or minor arterial street.

**Exhibit 2-9: Signalized Intersection Volume-to-Capacity (V/C) Ratios on Dalhousie and Colborne Streets for the PM peak hour<sup>2</sup>**

Intersection		V/C
Dalhousie	Brant	0.78
	King	0.53
	Queen	0.41
	Market	0.44
	Clarence	0.41
Colborne	ICOMM	1.06
	Clarence	0.73

<sup>2</sup> City of Brantford Transportation Master Plan Update Appendix H, 2006.

## 2.4 Transit Services

Downtown Brantford is well served by public transit. As shown below in **Exhibit 2-10**, Brantford Transit operates nine regular routes in the downtown area that all originate from the Downtown Transit Terminal. For the most part, transit services are focused on Wellington Street, Darling Street and Colborne Street in the downtown area, which generally provide access for the remaining streets. These routes operate between 6:00 a.m. and 6:30 p.m. on weekdays and 7:30 a.m. to 6:30 p.m. on Saturdays. Brantford Transit also operates three routes in the evenings until 1:00 a.m. on Monday to Saturday; these same routes operate on Sundays between 9:30 a.m. and 5:30 p.m. Route 4A and 4C act to provide a connection from the Downtown to the VIA Terminal and beyond via Market Street.

**Exhibit 2-10: Downtown Transit Map**



Source: Brantford / Brant County Visitor Map. City of Brantford Tourism, February 2006.

The Brantford Transit Terminal is a key activity node within the Downtown. The terminal is located between Wellington Street and Darling Street, just west of Market Street, with access to both Wellington and Darling. There are nine bus bays servicing the nine local Brantford Transit routes as well as inter-regional daily runs operated by Greyhound, Trentway Wager and Cherrey Buslines.

In addition to these major transit services, for several years, a private company – Paris Taxi - has provided transit service between Paris and Downtown Brantford. There are currently two scheduled trips leaving from Brantford and two leaving from Paris each weekday and the cost of the service is \$6.00. At the time of this report it was unclear whether this services was still in operation.



Brantford is also fortunate to have access to the VIA Rail network with the station in close proximity to the downtown core and Brantford Bus terminal. There are currently 10 daily passenger trains connecting Brantford to Windsor, Sarnia, Toronto, Montreal, and Ottawa. In recent years, the number of people using the VIA Rail service to commute to Toronto and other locations has increased significantly. Between 1996 and 2005, the number of passengers using the Brantford VIA Station increased by 55%<sup>3</sup>.

GO Transit does not currently serve Brantford, though as discussed later in this report, the Provincial Growth Plan identifies the need for improved inter-regional transit to serve the designated Brantford Urban Growth Centre.

## 2.5 Cycling and Walking

The City of Brantford maintains an extensive network of recreational trails, several of which are near the Downtown. The recreational trail network runs on both sides of the Grand River, along abandoned rail corridors and some parts of the Wayne Gretzky Parkway. Unfortunately, the trail system stops at the boundary of the downtown and there are few dedicated connections between the trail network and downtown businesses other than regular streets. The only connection that exists is the recently constructed bike lane on Newport Street, which provides a connection from Earl Haig Family Fun Park via Erie Avenue and Clarence Street.



The existing rail line adjacent to Clarence Street is often used by pedestrians and cyclists to reach the downtown, but this is both unsafe and illegal, as it is an active rail line (albeit with low volumes). The potential for a long-term connection is discussed in **Section 4.6**.

In 2000, the City completed a Multi-use Trail / Bikeway Master Plan that proposed a system of 12 primary routes – connecting major destinations within the city, 14 neighbourhood routes – connecting neighbourhood parks and other destinations, and 12 connecting links – joining primary routes. The 2006 Transportation Master Plan also identified a cycling network plan for the Downtown. Since 2000 many of the off-road facilities have been implemented but the on-road facilities lack neighbourhood backing. Some of the challenges stem from concerns about the loss of on-street parking.



In addition to the recreational trail system, there are four distinguishable pedestrian paths within the study area boundary, including the new Civic Square, the Market Street path and two pedestrian bridges from Colborne Street over Water Street to the Market Centre Parkade. These latter connections provide pedestrian access from the Market Centre Parkade into the

<sup>3</sup> Based on information obtained from VIA Rail Canada by IBI Group.

core of downtown Brantford. While functional, these connections are perceived by some as lacking security features.

In general, conditions for pedestrians within the Downtown are considered adequate, though not superior. Sidewalks are provided on each city block within the study area and are typically 2.5 metres wide and constructed with concrete. Along Dalhousie Street, in the vicinity of Market Street, and Colborne Street, between George Street and Brant Avenue, sidewalk improvements have been made, including the use of coloured interlocking bricks and the extension of the sidewalks into the street right-of-way to accommodate the placement of large planters and trees and to facilitate pedestrian movement at intersections by decreasing the time spent crossing the street.

## 2.6 Accessibility

With an aging population, having a downtown that is accessible to all citizens is paramount. From a transportation and parking perspective, this includes:

- Ensuring sufficient parking spaces close to key activities are reserved for disabled parking; and,
- Ensuring that access from parking lots and transit stops to all buildings is barrier free,
- Ensuring that transit vehicles are accessible;
- Providing an urban Braille system for the visually impaired
- Providing audible pedestrian signals.



The City of Brantford has been working to retrofit infrastructure to improve accessibility for persons with mobility limitations, including reconstructing sidewalks to include ramps. There are also four audible pedestrian signals in the downtown.

Due to the age of infrastructure, there are several locations that still require improvements. In several cases, narrow sidewalks are interrupted by lamps standards and other obstructions. Generally, it is accepted that a clear width (travel path free of any obstructions) of at least 1.5 m (5 ft.) on sidewalks is provided. In commercial and other activity areas, walkways should be at least 3-m wide to serve higher pedestrian volumes and facilitate public use of the area.

All of the municipal parking lots currently designate accessible parking spaces; however, there are only a few on-street spaces marked for disabled parking, primarily in the area of City Hall.

The pending re-construction of Colborne Street and Dalhousie Street provides the opportunity to ensure that these streets are “complete” and accessible to all users. In addition to designing the streets to include wider sidewalks, other features such as benches and rest areas can be included, provided they do not restrict movement of pedestrians.

## 2.7 Street Lighting

Two studies on street lighting have been conducted for Brantford since 2005. The first covered a small area bounded by Brant Street, Clarence Street, Dalhousie Street and Darling Street. The second study, completed by McCormick Rankin Corporation (MRC) in September 2006, encompassed a larger area essentially the same as the study area defined in this report. The objectives of the second study included analysing the illumination levels on all streets, parking lots and public alleyways and walkways, as well as recommend improvements. The remainder of this section is an overview of the findings of the MRC study.

As a result of the 2005 study, all high pressure sodium “King” acorn style luminaires within the focused area were replaced with metal halide luminaires. In total, 168 King acorn style luminaires were converted, while 10 cobrahead style luminaires along Dalhousie between Clarence Street and George Street were not replaced. The remaining streetlights within the study area boundary are high pressure sodium, except for the globe luminaires along the Market Street walkway, which are mercury vapour.

The Illuminating Engineering Society (IES) recommends that the Minimum Maintained Average Illuminance for a major street with high pedestrian conflict be 17 LUX (1.6 foot candles). Less than half of the streets in the downtown area meet or exceed this minimum, though Colborne Street, most of Dalhousie Street and Clarence Street do. In the 2006 study, MRC analysed three options for future lighting standards:

- Provide Minimum Maintained Average Illuminance equal to 25 LUX (2.3 foot candles), to match the levels achieved on Colborne Street for all streets within the study area (\$2.235 million capital cost)
- Classify all streets as major with high pedestrian conflict and thereby maintain a minimum of 17 LUX (1.6 foot candles) (\$1.63 million capital cost); and,
- Classify some of the streets as major with high pedestrian conflict and classify the remaining streets as collectors with medium pedestrian conflict and thereby maintain 9 LUX (0.85 foot candles) as per IES recommendations (\$1.37 million capital costs).

The MRC study also identified four parking lots requiring illumination improvements: the three municipal lots (#1, #3, #4) and the City Hall parking lot. Each parking lot was found to be sub-par – with sporadic, non-uniform, low light. It was determined that a minimum maintained average illuminance of 17 LUX be provided for all parking lots. The City Hall parking lot has since been improved with more coverage and the implementation of metal halide white lights.

Two laneways were also identified in the MRC report that required improvements including the an east-west laneway located south of Municipal Lot #4 which has inadequate lighting and a north-south laneway between Darling Street and Dalhousie Street, south of Municipal Lot #3, which has no lighting. The walkway running south from Market Street past Market Square was also recommended for improvements as the lighting was found to be inadequate.



## 2.8 Municipal Infrastructure

Growth in the downtown is contingent on the provision of adequate and clean water supply, sufficient underground sewer capacity and subsequent treatment and environmentally responsible management of storm water.

The City of Brantford relies entirely on the Grand River for its water supply. While it is estimated that the existing water treatment plant has capacity for several decades, constant investment in treatment and storage are required because of use of river water. New elevated storage facilities are being planned to serve the southwest portion of the City, including the downtown<sup>4</sup>.

Unlike many older cities, Brantford is fortunate to have separate sanitary and storm sewers. This means that storm water run-off does not take up sanitary sewer capacity, nor does sewage overflow into the storm drainage system.

Brantford is served by one wastewater treatment plant which is operating at about 50% capacity. There is sufficient treatment capacity to meet projected population projections up to 2031, though studies have recommended upgrades to improve the quality of effluent.

In general, municipal infrastructure in the Downtown is sufficient to handle existing demands. In the past, there have been minor capacity issues and incidences of localized flooding, but these were addressed through the construction of a new trunk sewer several years ago. The most significant issue with the underground infrastructure is age. Most of the underground services in the Downtown are 80 to 100 years old. This includes water pipes, sewer lines and utilities (hydro, bell, gas).

The need to re-construct the underground infrastructure below Dalhousie Street and Colborne Street has been identified for some time, and is now reaching a critical point. The cost of upgrading this infrastructure has been estimated at more than \$5 million, for the complete length of these streets. This need presents a good opportunity to refurbish both streets since the upgrades require a full reconstruction of the street, and therefore considerations for two-way traffic, sidewalk and streetscape improvements and other street realm improvements can be incorporated.

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<sup>4</sup> Brantford Growth Management Strategy, Water and Wastewater Servicing Upgrades and Costs for Growth Area 1, EarthTech Canada

### 3. EXISTING PARKING SUPPLY AND DEMAND

Since 2002, the City of Brantford has conducted periodic surveys of municipal parking facilities and on-street parking. This section presents a summary of the key findings of these surveys, conducted in 2002, 2004 and 2007. The findings are supplemented with observations on parking supply made by IBI Group for the purpose of this study.

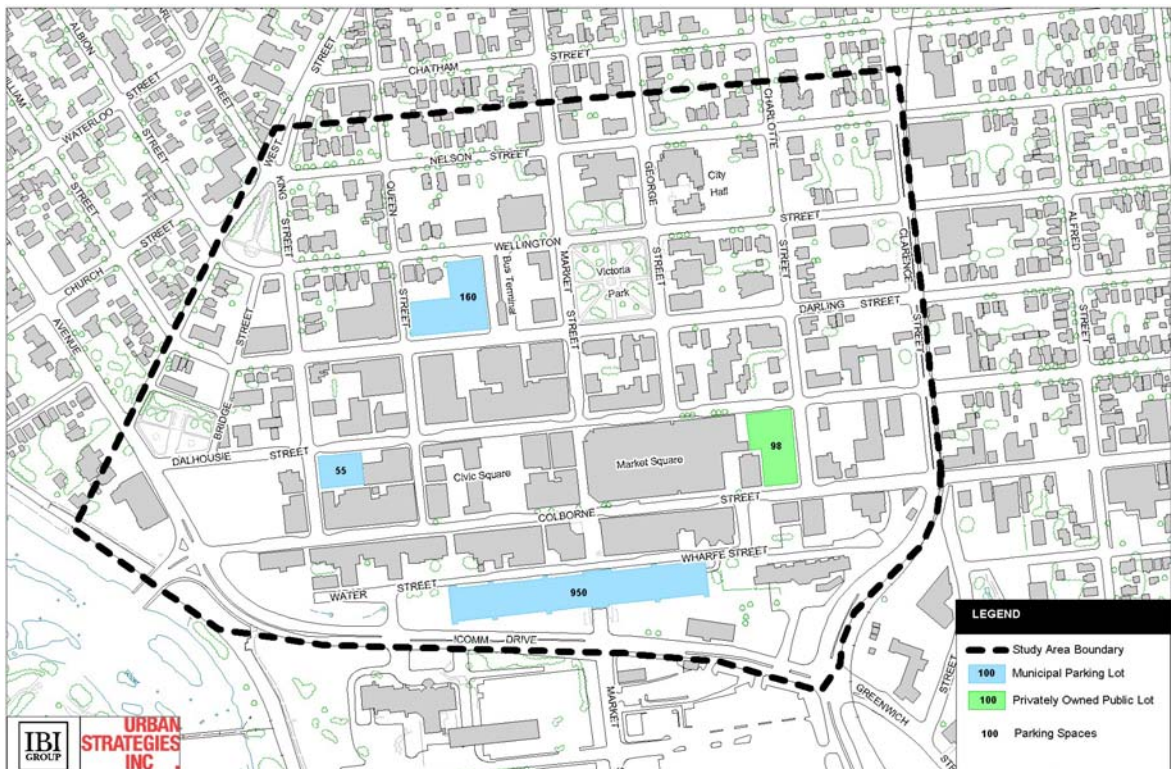
The current downtown parking supply is estimated at 3,641 spaces: 2,015 in private lots, 1,165 in municipal off-street lots and 461 on-street spaces.

#### 3.1 Off-Street Parking

Off-street parking is comprised of both private and public parking lots. There are currently 113 private lots within the Downtown study area, the majority of which have 10 or fewer spaces and are dedicated for employees and patrons. One of the private lots, comprising 98 spaces, is formally open to the public for general parking purposes. Collectively, these private lots provide approximately 2000 parking spaces.

In addition to the private parking supply, there are currently three municipal lots open for public use which provide some 1,165 spaces. This figure excludes the former municipal lot #2, on Dalhousie Street, which is now occupied by the new Civic Centre. **Exhibit 3-1** shows the location of each municipal parking lot along with the largest private lot at the east end of the Downtown.

**Exhibit 3-1: Off-Street Public Parking**



**Exhibit 3-2** below shows the maximum utilization for the individual municipal lots and one private lot based on the three parking surveys. As shown, most of the lots are well utilized. On an overall basis, maximum occupancy during the day increased from 53% in 2002 to 78% in 2004. A slight decline was observed 2007, though anecdotal information suggests that this may be an anomaly.

**Exhibit 3-2: Municipal Lots' Maximum Occupancies (2002-2007)**

Municipal Parking Lot	Spaces	Daily Maximum Occupancy		
		2002	2004	2007
Market Centre Parkade	950	50%	80%	77%
Dalhousie Street Lot #2 <sup>(1)</sup>	77	40%	36%	N/A
Darling Street Lot #3	160	67%	97%	64%
Dalhousie Street Lot #4	55	75%	49%	40%
Charlotte (Privately Owned)	100	N/A	N/A	70%
Overall	1242	53%	78%	69%

<sup>(1)</sup> Lot closed due to construction of Civic Centre.

Parking industry standards typically define the practical capacity of a parking lot at 80-85% occupancy, reflecting the point at which drivers start to experience difficulties in finding a parking space. Given this threshold, it can be concluded that the existing downtown public parking supply is approaching capacity. Accordingly, Section 4 of this report discusses options for addressing this pending parking shortage.

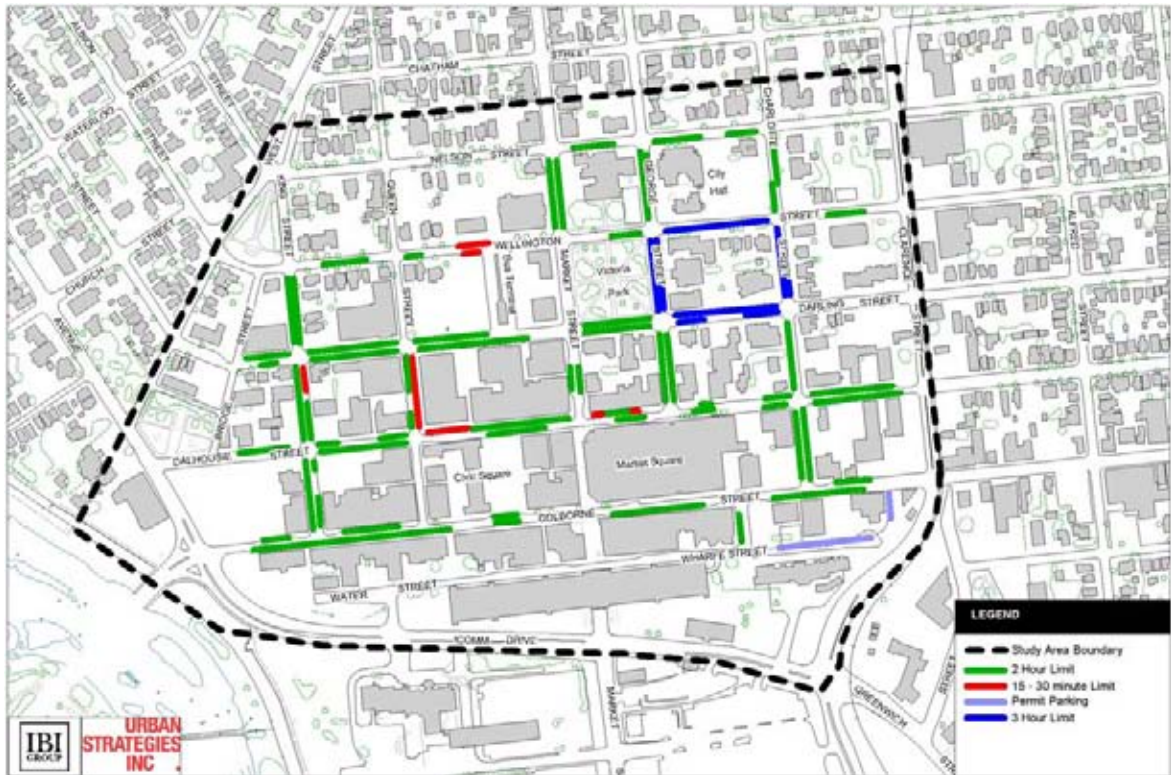
In terms of the nature of people parking in the Downtown lots, the 2004 survey results indicated that Market Centre Parkade is used for mainly long-term parking while the Dalhousie Lot # 2 lot (now closed) is used for mainly short-term parking and the remaining two lots on Darling and Dalhousie are contain a mix of long-term and short-term parking. These results are consistent with an survey conducted by IBI Group staff in May 2007 to record the number of monthly pass holders each of the three smaller public lots (monthly passes are not displayed in the Market Centre Parkade due to card access). This survey revealed that monthly passes were displayed in 42% of the parked vehicles in Lot #3 and 73% of the vehicles in Lot #4 indicating a significant portion of the people using these lots are long term parkers.

### 3.2 On-Street Parking

The full inventory of on-street parking is shown below in map and tabular form in **Exhibit 3-3** and **Exhibit 3-4**, respectively. In total there are 461 on-street parking spaces in the Downtown study area. Most of the on-street parking spaces are limited to 2 hours, however, there are several streets with 3 hour parking around the main Laurier University building and a select number of 30 minute and 15 minute parking spaces around the government buildings on Queen Street and Dalhousie Street. A small number of permit parking spaces exist near the residences on Warfe Street.

At the present time, on-street parking time restrictions are generally enforced between 8:00 a.m. and 6:00 p.m. In 2007, the City extend of the time restrictions to 8:00 PM in response to concerns about parking availability in the evenings; however, this has since been retracted due to public and business opposition. Part of the rationale for the extension was that with the number of new residential units coming on line with relatively limited parking, there is a need to ensure that on-street parking in the evening is not used up by residential dwellers or their visitors.

Exhibit 3-3: On-Street Parking Locations



**Exhibit 3-4: On-Street Parking Inventory**

Street	Section	Number of Spaces within Study Area				Total
		Permit	3 hour	2 hour	< 1 hour	
Nelson	East of Market			16		16
Wellington	West of Market			7	8	15
Wellington	East of Market		7	10		17
Darling	West of Market			38		38
Darling	East of Market		18	16		34
Dalhousie	West of Market			38	5	43
Dalhousie	East of Market			33	2	35
Colborne	West of Market			42		42
Colborne	East of Market			27		27
Wharfe	East of Market	26				26
King	North of Darling			11		11
King	South of Darling			19	3	22
Queen	South of Darling			5	9	14
Market	North of Darling			18		18
Market	South of Darling			6		6
George	North of Darling		17	12		29
George	South of Darling			15		15
Charlotte	North of Darling		12	8		20
Charlotte	South of Darling			23		23
Bain	South of Darling			4		4
Echo	South of Darling	6				6
<b>Total</b>		<b>32</b>	<b>54</b>	<b>348</b>	<b>27</b>	<b>461</b>

Based on the Downtown Parking Surveys, as well as general observations, on-street parking is very well utilized. In the most recent parking survey conducted in 2007, 18 block faces out of a total of 67 block faces (26%) were found to be above their practical operating capacity (i.e. >80%). This was down from 22 block faces in 2004 (33%) but up from 11 block faces (16%) in 2002.

The Downtown Parking Surveys also recorded turn-over rates for on-street parking. From a business perspective, it is generally considered preferable to have a high turnover rate for parking since low turn-over rates are a sign that on-street parking is being taken up by long term parkers (e.g. commuters or store owners).

The determination of desirable turnover rates are a dependant on the parking time limit for the street. As outlined in the 2004 Downtown Parking Survey, a turnover rate of below 3 vehicles in a nine-hour period is considered a poor turnover rate where the parking time limit is 3 hours; a turnover rate below 5 vehicles in a nine-hour period is considered a poor turnover rate where the limit is 2 hours. In 2002, there were 28 block faces with a poor turnover rate; that number decreased to 23 in 2004 but increased dramatically to 32 in 2007.

Both the occupancy and turnover data for suggest that on-street parking is being used to at least some extent for commuter parking, as opposed to its intended role of serving downtown businesses. This is in part due to the fact that on-street parking is free whereas off-street public parking is charged for.

The issue of free on-street parking, and its advantages and disadvantages is discussed further in the next section.

## 4. KEY OPPORTUNITY AREAS

The purpose of this chapter is to outline and describe key opportunity areas to improve the downtown transportation and parking system, in a manner that is consistent with the overall Master Plan Vision. Strategies are outlined in general in this report, while additional details are provided in the main Master Plan document.

### 4.1 Rebalance Transportation Capacity

As identified in the previous section, most streets within Downtown Brantford are operating well below their capacity. In particular, Dalhousie Street and Colborne Street are currently designed to maximize traffic throughout, given their one-way configuration, yet this capacity is no longer required due to the completion of Highway 403. The eventual completion of the Brantford Southern Access Road will take even more vehicle pressure off Colborne Street and Dalhousie Street. The under-utilization of these streets combined with one-way traffic flow encourages speeding, which in turn limits the potential for the Downtown to become a successful pedestrian-oriented destination.

The Downtown Master Plan provides the opportunity to re-consider the function of each of the major Downtown Streets, with a view to ensuring a more equitable balance of capacity between different modes. In the case of Dalhousie and Colborne Street, converting these streets back to two-way operation would help to slow traffic, improve wayfinding and increase exposure for businesses (due to two-way traffic flow). Such changes have recently taken place in other cities including Hamilton, Kitchener and Cambridge, with successful outcomes. There have been no major repercussions as a result of these conversions, and in fact most are being hailed as major success stories. Examples include:

#### Downtown Hamilton

- Two-way traffic is being hailed as helping to revitalize the James North District, now an emerging arts district
- Concerns about pedestrian safety, loading, and transit access were not significant
- Congestion did occur, but this was seen as a positive by many businesses



***Hamilton (James Street) before and after two-way conversion***

#### Downtown Kitchener

- Converted Charles and Duke Streets to two-way operations in late 1990's, as part of multi-point plan
- Vacancy rates have decreased, new housing units have been built and no significant traffic impacts have occurred

A considerable amount of work has already been completed on the impacts of converting Dalhousie and Colborne Street to two-way traffic. Most recently, the issue was examined extensively as part of the City's Transportation Master Plan. The Transportation Master Plan examined three potential conversion scenarios:

- Full conversion of the existing one-way street system
- Partial conversion from Brant Avenue or King Street to Clarence Street only
- Partial conversion from Brant Avenue or King Street to Murray Street only

The general conclusion of the TMP was that the full conversion was preferable as a long term objective, but that a partial conversion could be considered as an interim phase. Exhibit 4.1. illustrates the changes that would be required to implement the two-way conversion.

Since the completion of the TMP, preliminary concept plans for the two-way conversion have been developed. It is noteworthy that the two-way conversion can take place with almost no losses to parking in the Downtown area. In fact, it was determined that extra parking spaces could be provided on the south side of Dalhousie Street between Bridge Street and east of Queen Street.

**Exhibit 4.1: Proposed Improvements to Support One-way Street Conversion**



**4.1.1 IMPLEMENTATION CONSIDERATIONS**

As mentioned previously, the majority of infrastructure beneath Colborne Street and Dalhousie Street is 80-100 years old and requires immediate replacement. Additionally, portions of the pavement structure of these two streets is also in critical need of repair. In fact, \$100,000 has been budgeted for immediate repairs, to address safety concerns.

Brantford engineering has identified the need to fully reconstruct Colborne and Dalhousie Street from Brant Street to Clarence Street, and carry out major upgrades to the sections from Clarence Street to Stanley Street. Within the downtown core, all utilities require replacement including water,

sewer, hydro, gas and Bell. Accordingly, the reconstruction would occur from block-face to block-face.

Following the adoption of the Downtown Master Plan and approval of the recommendation to implement two-way traffic on Colborne Street and Dalhousie Street, the City will proceed to undertake required environmental assessment, preliminary design and detailed design activities. The basic timing of these activities would be as follows:

- Spring 2008 – Fall 2008: Undertake Phase 3/4 Environmental Assessment Study
- Fall 2008- Fall 2009: Complete Detailed Design and Tender Documents
- Spring 2010: Start Construction

The phasing of construction will be influenced in part by the pace of development activities in the downtown core. There may be advantages to completing the sections east of Clarence Street before the downtown core sections if, in 2010, there is a lot of sites under construction in the core. The staging plan will need to be designed to minimize business disruptions. The most efficient approach for reconstruction would be to close portions of each street fully. This means that the parallel street would need to be converted to two-way traffic during the re-construction of the other street.

## 4.2 Continue to Improve Transit Options

As reported in the 2006 Transportation Master Plan, transit ridership has increased by 33% since 1997 and all expectation are that this growth trend will continue. However, on an overall basis, transit still only accounts for 3% of all trips in Brantford.

Providing viable options for people to access the Downtown via transit is essential to achieving the overall Vision for Downtown Brantford. Most importantly, attracting more people to transit reduces the need to construct additional parking, which can detract from the pedestrian environment. There are also sound financial reasons for improving transit in that it typically costs about \$125 per month to finance and operate a structured parking space, compared to the current monthly parking rate of \$60. The monthly transit pass is offered at a comparable rate: \$60 (tax deductible) for an adult pass.

The City of Brantford has already identified several short term priorities for improving transit including:

- improving transit stops,
- implementing a new fare box system,
- increasing downtown service,
- upgrading transit to fleet to be more accessible;
- adding bikes on buses;
- and automated bus stop announcements; and,

- increasing marketing and promotion efforts.

Brantford Transit has also recently initiated a “smart card” pass and entered into an agreement with Wilfrid Laurier-Brantford and its student union to provide unlimited access to the transit system with the student’s one card as part of their tuition”.

Other short term strategies include investigating transit priority on key corridors, developing transit supportive urban design guidelines and monitoring trends and annual record keeping.

Medium to long term priorities identified in the Transportation Master Plan that are specific to the Downtown include

- creating a downtown shuttle service to complement existing fixed routes and to connect downtown attractions such as municipal parking lots, VIA Rail station, Universities and Colleges to the downtown Transit Terminal.;
- establish an new or expanded Downtown transit terminal with improved passenger comforts and conveniences; and,
- Incorporating Transportation Demand Management policies into new development applications for major employers in the downtown.

The Transportation Master Plan also acknowledges the need for improvements to intercity transit service, and in particular the potential for future rapid transit corridors linking Brantford to the GTA and to the Region of Waterloo, as identified in the Provincial Growth Plan (Places to Grow).

The current Downtown Brantford Master Plan can help to support all of the above objectives for transit by:

- Identifying the existing transit terminal as a major transportation hub and designating surrounding land uses accordingly;
- Improving pedestrian connections to the VIA terminal, via Market Street;
- Ensure that public parking rates are not sufficiently low so as to discourage transit use;
- Designing streetscaping plans that provide sufficient space for transit stops and other pedestrian-oriented amenities.

### 4.3 Identify Options for Off-Street Parking

In concert with the City’s Transportation Demand Management and non-auto mode objectives, the City’s Transportation Master Plan recognizes the need to increase the long-term and short-term parking supply both on-street and off-street as well as manage the demand of long-term parking through price increases.

The TMPU goes further to call for a detailed downtown parking plan to:

- Identify Opportunities to provide new municipal lots near employers and key destinations;
- Establish a supply of 6,000 to 6,800 spaces by 2031 (representing a 10% reduction in spaces per capita compared to today);

- Provide a target of 50% of spaces in municipal lots, 40% in private lots and 10% on-street to allow for better management of parking prices and parking demands; and,
- Develop an infrastructure plan to provide 2200 new municipal spaces by 2031, which may require new surface lots or a new parking garage.

The TMP also identified several supporting parking management policies including:

- Lower parking requirements for development in downtown and along major transit routes;
- Encouraging “Cash in Lieu” of private parking for downtown redevelopment, with the cash payments invested in new municipal lots;
- Establishing a preferential parking program in downtown municipal lots for carpools, with a target of 5-10% of supply, and provide discounts for carpools;
- Increasing long-term (all day) parking rates to encourage transit use (a transit monthly pass currently costs twice as much as a monthly parking pass);
- Increasing hourly parking rates at municipal and metered spaces to encourage turnover, but provide first half-hour free to support area businesses;
- Consideration of converting existing metered parking to pay and display;
- Development of a standby bus parking area for the Sanderson Centre; and,
- Developing an Urban Design Guidelines for parking facilities / downtown development.

The most significant recommendation from the perspective the Downtown Master Plan is the identified need for additional surface and/or structured parking. The exact amount and location of parking depends on several factors:

- the pace of development and types of development
- the degree to which the City would like use parking supply as a tool for moderating single occupant use (reflecting sustainability goals)
- the price of on-street and off-street parking
- whether or not parking is required as part of new developments (see Section 4.4 below)

Notwithstanding these uncertainties, it is reasonable to plan for an increased supply of public parking. One of the benefits of public parking is that it can provide parking for multiple users during different times of the day, thereby increasing the overall efficiency of the parking system

Based on a review of available sites, as well as taking into account the location of existing parking supply, several potential opportunities exist to increase parking supply:

- Expand the Market Centre Parkade;

- Construct a New Structure at the Darling Street #3 lot; and/or
- Construct a new remote parking lot south of the Downtown and provide a shuttle service connection.

Of the above three options, the most attractive option is to construct a new parking structure on the existing Darling Street Lot in conjunction with an expanded bus terminal (See **Exhibit 4-2**). This has the benefit in that it could help to increase the number of people around the bus terminal, thereby increasing perceived security. In general, it is considered more desirable to provide fewer and more dispersed parking lots as opposed to one large parking lot. For example, expanding the Market Centre Parkade would serve to increase parking supply, but may have diminishing returns in improving access to the Downtown.

The new parking lot would be in close proximity to the Sanderson Centre and is within an easy walk of the new Civic Square. Based on the potential footprint of the structure (80 m x 75 m), and assuming four levels of parking, it is estimated that up to 900 parking spaces could be provided at this location.

**Exhibit 4-2: Future Municipal Off-Street Parking**



#### 4.4 Modify Off-Street Parking Standards

Under the current zoning by-law, new developments in the Downtown are permitted reductions from the regular off-street minimum parking requirements. As shown on **Exhibit 4-3**, these exceptions

range from a 25% to a 100% reduction. It is understood that this exemption was implemented several years ago to stimulate development. In the case of the 100% exemption area, this primarily corresponds to the historical and institutional areas of the Downtown where it is likely not feasible to provide off-street parking in any event.

The reduced minimum parking standards for designated areas in the downtown has advantages and disadvantages. The primary advantage is that small developments can be constructed on infill sites without parking in a manner that is consistent with the historic nature of the downtown while at the same time promoting reduced reliance on auto travel. However, the reduced standards are a disadvantage in that a development constructed without parking (or with too little parking) could place additional demand on the parking system which the City would then need to make up, a difficult task given the lack of available land for public parking and the fact that cash-in-lieu is not applicable in the given zero parking requirements. It is also a disadvantage in that a development could provide too much parking, which detracts from the urban environment.

There are various opinions among the stakeholders regarding minimum parking standards in the Downtown. In the case of the new Civic Centre developments, both the residential units as well as the new hotel have been constructed with very minimal amounts of parking. This has been positive in that it reduced the cost of development, which may otherwise not have been financially viable, while avoiding the possibility that extensive parking detracted from the downtown environment. However, there are also issues emerging with residents who require a car for work or other purposes not being able to find parking. With no options, some of these residents choose to park on the street overnight, which is permitted under the current parking regulations. This reduces the amount of space for restaurants and other businesses, which rely on parking in the evening. Overnight on-street parking also creates maintenance and snow removal problems for the public works department.

Accordingly, a balanced strategy is recommended to ensure parking standards in the Downtown are supportive of the Vision including:

- Reducing minimum parking standards, but providing a reasonable amount of parking
- Adjust zoning by-law to ensure that developers share the burden of providing parking
- Implement maximum parking standards to prevent over-supply of parking
- Implement design standards for new parking facilities
- Improve way-finding and signage to maximize use of existing lots (See section 4.5)

The maximum parking standard is a policy-based parking management tool that is receiving increased attention as a means of discouraging the development of excessive commuter parking facilities, reducing traffic congestion, and improving street amenity for pedestrians and cyclists, while providing reasonable parking levels to facilitate business activities and site development where desired. In the case of downtown Brantford, parking maximums could help to ensure that Downtown maintains and increases its pedestrian-oriented feel.

Preliminary proposed parking standards for the major land use categories are provided in the table below. These standards are based on a review of best practices and standards in other cities conducted by IBI Group and adjusted to the downtown Brantford context. These are proposed for discussion purposes and would need to be finalized in conjunction with the city and development community prior to adoption in the zoning by-law.

City of Brantford  
DOWNTOWN MASTER PLAN  
TRANSPORTATION, PARKING AND INFRASTRUCTURE ISSUES AND OPPORTUNITIES

Urban Structure Category	Multi-Unit Residential				Office		Retail	
	Bachelor	1 Bedroom	2+ Bedroom	Senior Citizen Residence	Minimum	Maximum	Minimum	Maximum
	(Spaces/unit)	(Spaces/unit)	(Spaces/unit)	(Spaces/unit)	(Spaces/100m <sup>2</sup> )	(Spaces/100m <sup>2</sup> )	(Spaces/100m <sup>2</sup> )	(Spaces/100m <sup>2</sup> )
Downtown (Community Improvement Area)	0.3	0.6	0.8	0.3	0.5 <sup>(1,3)</sup>	1.5	1.0 <sup>(1,2,3)</sup>	3.0
Downtown Secondary Area	0.3	0.6	0.8	0.33	1.0 <sup>(1,3)</sup>	2.5	1.5 <sup>(1,2,3)</sup>	4.0

<sup>(1)</sup> Developments smaller than a certain size (e.g. GFA<200-300m<sup>2</sup>) exempted from minimum requirement

<sup>(2)</sup> Ground floor retail below a certain size (e.g. GFA<150m<sup>2</sup>) in a mixed-use building exempted from minimum parking requirement

<sup>(3)</sup> Within the Downtown Core a minimum of 50% of required parking must be provided as short-term public parking

In conjunction with changes to parking standards, policies and guidelines should also be introduced pertaining to the design of parking facilities. Examples of parking structures designed for downtown environments are shown on **Exhibit 4-4**. The development of specific guidelines will be considered in Phase 4 of the Master Plan as part of the Design Guidelines for public and private realms.

Exhibit 4-3: Downtown Parking Exemption Areas



**Exhibit 4.4: Examples of Parking Structure Designs Sensitive to Pedestrians**



### 4.5 Improve Way-finding and Signage

It is generally regarded that a comprehensive information system that includes vehicle, parking and pedestrian wayfinding systems can help to maximize the efficiency of the parking system while reducing confusion and frustration for drivers, which can in turn benefit retailers. At present, there is very little signage that distinguishes Downtown Brantford from the rest of the City, nor is there any significant signage that directs drivers from Highway 403 to the Downtown. Conversely, there is extensive signage directing drivers to the Casino.

This highlights the need for an improved approach to parking wayfinding, particularly for visitors who may not be familiar with existing parking facilities. However, parking wayfinding should not be implemented in isolation. Rather, the look of and approach to parking wayfinding should be coordinated with other signage, such as gateways signs and other destination signs. In general, urban wayfinding signs must:

- Be attractive;
- Direct to smaller destinations;
- Be part of an overall city identity
- Provide direction over very small distances at lower speeds;
- Compete with street, regulatory and storefront signs for the attention of the motorist/pedestrian; and
- Be planned and designed with a consistent set of standards

Examples of different levels of signage are provided below. The City of Brantford has a unique opportunity to develop a comprehensive signage and wayfinding program for the Downtown in

conjunction with the implementation of this Master Plan and in partnership with the BIA and other stakeholders.

**Exhibit 4.5: Examples of Wayfinding Signage**



*District Level Parking Signage*



*Destination specific parking signage*



*Standardized parking lot/space signage*



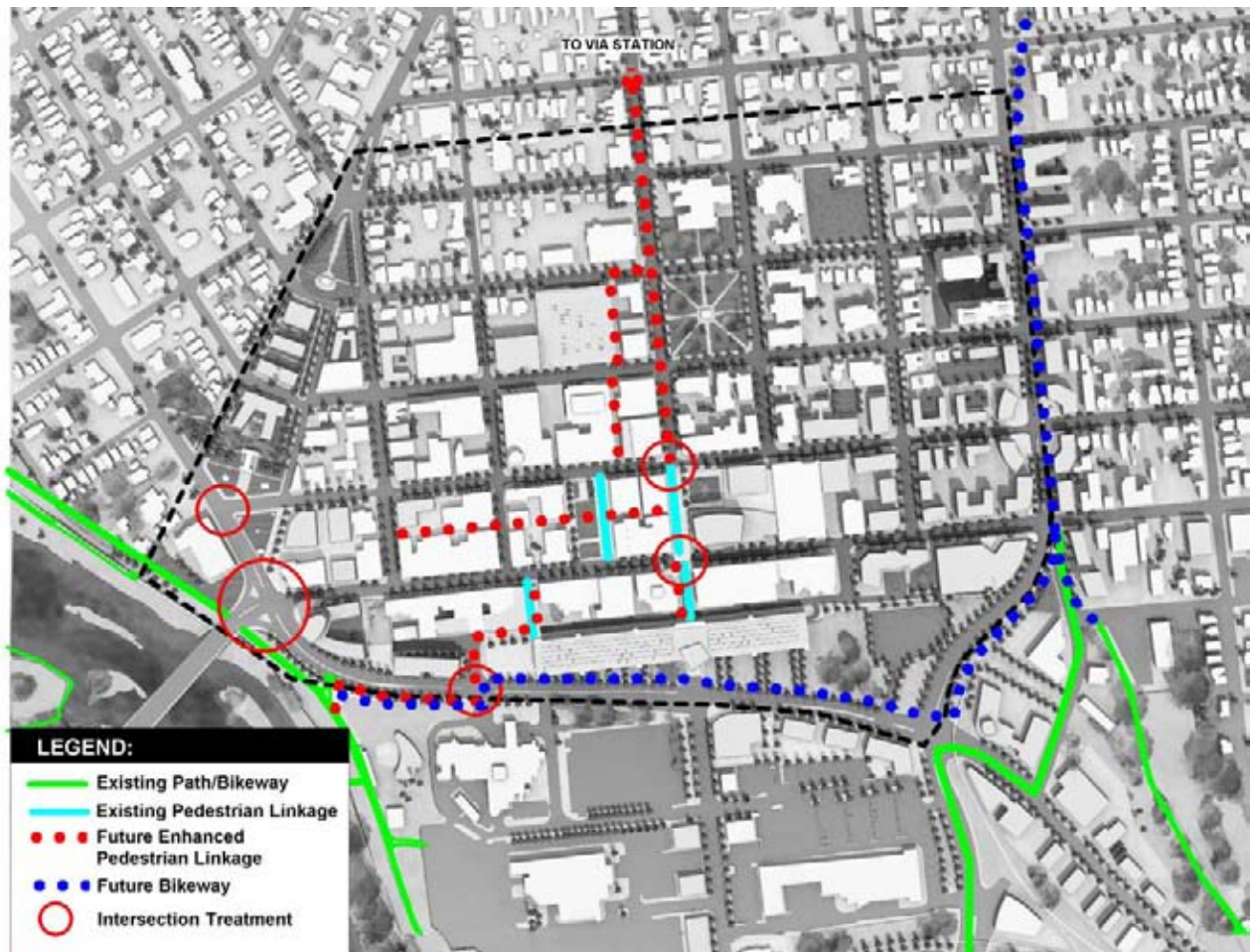
*Pedestrian-oriented signage*

## 4.6 Improve Pedestrian Linkages and Connections to Trail System

As discussed in Section 2.5, there are several major trail facilities surrounding the Downtown, but a general lack of connections from these trails into the Downtown. The Downtown Master Plan provides an opportunity to significantly improve cycling and pedestrian connections from the periphery of the Downtown as well as within the Downtown itself. **Exhibit 4-6** provides some suggestions on where enhanced pedestrian/cycle linkages could be provided.

Many of these linkages, such as the Market Street link, could be achieved through fairly minor streetscaping improvements. Others, such as the implementation of a multi-use path on the existing rail line that runs beside Clarence Street are obviously more challenging. Options to achieve these linkages are included in the main Master Plan report.

**Exhibit 4-6: Potential Opportunities for Enhanced Pedestrian and Bicycle Linkages**



In addition to improving pedestrian linkages to/from and within the Downtown, there are opportunities to further enhance the attractiveness of active transportation modes through the following:

- Amending the zoning by-law to include provisions for bicycle parking for new office developments;

- Installing secure bike parking facilities (i.e. bike lockers) in City-owned parking lots and in key areas;
- Installing bike racks throughout the downtown; and,
- Providing benches and other street furniture.

## 4.7 Optimize On-Street Parking

Overall, the City of Brantford has done a commendable job of maximizing available road space for on-street parking. There are few opportunities left for adding on-street parking without resorting to lane closures. Accordingly, there is a need to ensure that the existing on-street parking supply is utilized efficiently and equitably.

General guiding principles to ensure the management of on-street parking, based on industry best practices, include the following:

- On-street parking should be managed as a public resource with pricing and supply management attempting to balance equity and ensure full-cost pricing.
- No employee (i.e. commuter) should receive free daily on-street parking where parking is in high demand.
- On-street parking regulations should be strictly and consistently enforced to prevent abuse and to reduce the number of tickets issued over the longer term.

At the present, none of these principles are being met in Downtown Brantford. In particular, the fact that on-street parking is free in the Downtown is a major limitation to the achievement of the first two principles. The fact that on-street parking spaces are full by 9:00 AM is a sign that these spaces are being sought by downtown employees wanting to avoid paying for parking. Although the 2 hour time restrictions are in place to help prevent longer term parking, the City does not presently have the tools to efficiently enforce these restrictions. For example, the City currently uses a tire chalking approach to enforce time restrictions, which is quite labour intensive and difficult to enforce. While hand-held computers can aid in the enforcement of time limits, with free parking people will continue to abuse on-street parking.

Implementation of on-street parking pricing, through meters or pay-and display technologies, is essential for ensuring the efficient use of on-street parking as the Downtown develops. It is to be expected that some Downtown businesses will not be in favour of paid parking, due to the fact that most of the shopping options in the rest of Brantford offer free parking. However, most downtowns have realized that the benefits of charging for parking in terms of increased turnover greatly outweighs the potential for lost customers. An added benefit is that revenues from on-street parking can be used to support other downtown initiatives such as improved signage and streetscaping.

There are also options to off-set the potential impacts of paid on-street parking including:

- implementing first half hour or first hour free policy; or,
- expanding on the current token system in conjunction with the BIA where businesses could provide reduced price tokens to customers.

- Providing free parking on weekends and evenings, to support activities at Harmony Square
- Introduce permit parking on residential streets surrounding paid parking area to prevent spill over (if required)

Although it is not the intent of the Master plan to recommend specific pricing policies, the following general principles should be considered:

- Both on-street and off-street pricing should differentiate between areas of high demand, limited supply and areas of low demand, greater supply.
- On-street parking rates should be set to ensure that the price for longer duration stays are higher than competing off-street lots.
- Meter technologies should be selected to provide maximum convenience and to enable efficient enforcement and monitoring. These capabilities can be achieved with either traditional meters (which can now handle payment by smart card or cell phone) or with pay and display machines (capable of providing for a range of payment options).

If parking rates are initially set at 60 cents, consistent with the off-street lots, assuming a turnover rate of 5 vehicles per space per day, and that paid parking is applied to 400 on-street parking spaces (slightly less than the total number of spaces in the downtown), the daily revenue from parking would be \$1,200 per day (\$312,000 annually assuming weekday pricing only). Recognizing that there will be initial costs for equipment installation and on-going operating costs, it can still be expected that on-street parking will generate reasonable revenues for the city. These revenues can be invested back into the downtown to improve signage, wayfinding, streetscaping and other features to make the downtown more attractive overall.

## 5. SUMMARY AND CONCLUSIONS

The primary purpose of this report was to describe the existing Downtown Brantford transportation and parking systems and to identify issues that could be addressed within the context of the Downtown Master Plan, as well as identifying transportation and parking strategies to support the directions of the overall Master Plan.

In general, it was found that the transportation system is working well and there is sufficient capacity in the road network to accommodate fairly substantial levels of growth and intensification. The fact that there is residual capacity in the transportation network presents an opportunity to make changes to the transportation system that can act as a catalyst for change and revitalisation.

The most significant change that is proposed is the conversion of Colborne and Dalhousie Street from one-way to two-way operations from Brant Avenue to Stanley Avenue. However, just as important are changes that can serve to enhance the pedestrian environment, improve the attractiveness of transit and help enhance connections between the Downtown and the rest of the City.

In conjunction with changes to the transportation network, there is also a fairly immediate need to increase off-street parking supply to support and facilitate growth. It is critical that this is achieved

in a manner that does not detract from the existing Downtown environment, nor in a way that encourages excessive automobile use.

Finally, it is recommended that the City consider charging for the use of on-street parking spaces to encourage turnover and to reduce problems associated with the enforcement of the current two-hour time limits.