CITY OF HAMILTON

PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Parking and By-law Services Division

TO: Chair and Members Planning Committee	**WARD(S) AFFECTED:** Ward 2
COMMITTEE DATE: September 17, 2013	
SUBJECT/REPORT NO: Downtown Parking Study Update (PED12153(a)) (Ward 2)	
SUBMITTED BY: Tim McCabe General Manager Planning and Economic Development Department	**PREPARED BY:** Ted Arnold (905) 546-2424 Ext. 6006 Marty Hazell (905) 546-2424 Ext. 4588 Glen Norton (905) 546-2424 Ext. 5780
SIGNATURE:	

RECOMMENDATION

That staff be authorized to issue a Request for Information (RFI) to gauge the level of private sector interest in participating with the City in the development of a parking structure in one of the two Downtown "*high demand parking areas*" (King and Bay Streets and King William and John Streets).

EXECUTIVE SUMMARY

While the long-term objective is to reduce dependency on the automobile and to promote alternative modes of transportation, the City is under increasing pressure to provide more parking to support re-development and revitalization Downtown.

As directed by City Council, the MMM Group Limited was contracted to undertake an update of their 2005 Parking Study in order to provide information to facilitate better decision-making about parking supply and demand in the Downtown.

The current report indicates that while parking should generally be available in the Downtown as a whole, future parking demands in some specific areas are expected to meet or exceed the anticipated parking supply in those areas.

The study has, based on known development, identified the need for additional public parking in the area of King and Bay Streets within the next five years, and parking challenges in the area of King William and John Streets at whatever point in time Municipal Carpark #1 (John and Rebecca) is redeveloped as a public park.

As an initial step to ensuring adequate Downtown parking is available in the future, staff recommend that a Request for Information (RFI) be issued to determine the level of private sector interest in partnering with the City in a joint venture to construct a parking structure in one of the two "*high demand parking areas*" (identified in the MMM Report as King and Bay Streets and King William and John Streets).

Alternatives for Consideration: Not Applicable

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

N/A

HISTORICAL BACKGROUND

In October 2005, MMM Group Limited completed the "*City Wide and Downtown Parking and Loading Study*" which recommended in part, parking strategies for the Downtown, and provided recommendations concerning the municipal role in providing parking, as well as potential Downtown parking structure locations and priorities.

In August 2012, City Council directed staff to undertake an update of the 2005 Downtown Parking Study and to single source the contract to MMM Group Limited.

POLICY IMPLICATIONS

The recommendation aligns with the Downtown Transportation Master Plan which contains a policy statement to "*provide public parking in strategically located lots or structures*".

The recommendation aligns with the Downtown Secondary Plan which states "*An efficient and cost-effective approach would be for the City to enter into joint ventures with major private sector developments*" and "*…to develop strategically placed municipal parking decks or garages, to replace the proliferation of surface parking lots in the Downtown*".

RELEVANT CONSULTATION

Public Works (Transportation) was consulted in the preparation of this Report.

ANALYSIS / RATIONALE FOR RECOMMENDATION

The vitality of the Downtown core is dependent, in part, on readily available parking for visitors and customers, and while the long-term objective is to reduce dependency on the automobile and to promote alternative modes of transportation, the City is under increasing pressure to provide more parking to support development and revitalization of the Downtown. The City plays an important role in Downtown parking because, as re-development occurs, the supply of public parking on private lands will erode, leaving the City to ensure that sufficient public parking is available.

To facilitate better decision-making about parking supply and demand in the Downtown, the MMM Group Limited was contracted to update their October 2005 "*City Wide and Downtown Parking and Loading Study*". The purpose of this Study was to undertake a complete re-measurement of the current Downtown parking inventory and parking demands, to examine options to provide additional parking on the basis of forecasted future parking demands, and to complete a financial assessment for constructing a new parking facility in Downtown Hamilton. Attached as Appendix "A" to this report is a copy of MMM Group Limited's 2013 update report. **NOTE: Due to the length of this referenced update report, a hard copy will be available for public viewing in the Office the City Clerk, 71 Main Street West, Main Floor, Hamilton City Hall, or by e-mail at the following City of Hamilton website link:**
http://www.hamilton.ca/CityDepartments/CorporateServices/Clerks/AgendaMinutes/Planning/2013/Sep17PlanningCommitteeAgenda.htm

The current MMM Report forecasts that, based on known development activity (e.g. McMaster Complex, Vrancor developments and the loss of 110 public parking spaces for a park at John and Rebecca), parking will generally be available Downtown in the foreseeable future. However, parking challenges are impending in the following two areas of the Downtown:

- parking utilization is predicted to reach 85% capacity in the area of King and Bay within five years; and,

- the area around King William and John is predicted to reach 84% capacity at whatever point in time Municipal Carpark #1 (John and Rebecca) is redeveloped as a public park.

Parking industry practices dictate that critical parking problems begin to occur when 85% of the parking capacity is reached. This is the point at which drivers generally experience difficulty in locating suitable parking even though there may be parking available within a reasonable walking distance. Therefore, it would be prudent to begin investigating creating additional public parking in these two areas (King and Bay, and King William and John) to address the impending parking challenges.

While an actual business case would need to be developed, hypothetically, MMM Group Limited estimates the cost of providing a 500 space parking garage to be in the order of $20 to $23M including land purchase, design and construction. Assuming that the entire amount would need to be financed, annual ("*cost of capital*") payments would be in the order of $1.2 to $1.8M.

The aforementioned costs to develop a new parking structure would appear to be cost-prohibitive for the City to undertake alone. Therefore, as an initial step to ensuring adequate Downtown parking is available in the future, staff is recommending that a Request for Information (RFI) be issued to determine the level of private sector interest in partnering with the City in a joint venture to construct a parking structure in one of the two "*high demand parking areas*".

Issuing an RFI, would allow the City to explore the level of interest from the private sector, and the potential magnitude of investment which might be required, without making any commitment to proceed. As well, comprehensive consultation with Public Works/Transit would need to be undertaken before moving ahead on any development proposal as parking supply is directly related to transit ridership and travel demand management initiatives.

Unintended Consequence - Downtown Mosque

There is an unintended consequence of the Parking Study which will negatively impact a valued downtown stakeholder. This Study has identified that the area bounded approximately by Rebecca, King, Ferguson and John will reach practical capacity (demand will exceed supply) within ten years, should both the parking lot at 140 King William be redeveloped for another use and Municipal Carpark #1 (John and Rebecca) is redeveloped as a public park. Therefore, from a parking perspective it would be prudent to retain 140 King William for parking purposes to ensure adequate public parking in this area of Downtown.

Discussions have been held over the last several years with the Hamilton Downtown Mosque about their expansion plans. Parties to these discussions have included Councillor Morelli, former Councillor Bratina, Councillor Farr, the City Manager, Economic Development staff, and Hamilton Police Services. The Mosque owns a building and leases parking from the City at the corner of Wilson and Catharine Streets. Their desire was to obtain the Ontario Realty Corporation (ORC) and GO Transit lands adjacent to them, such that they would essentially own the full block bounded by Catharine, Wilson, Mary and Rebecca. Their expansion plans include not only an expanded Mosque and parking area, but a school, retail shops, offices and new immigrant reception centre. These uses are all compatible and, in fact, highly desirable from the neighbourhood and City building perspective. Unfortunately the lands they were interested in acquiring, and were having discussions with some City representatives about, were already being acquired by the City for Hamilton Police Services. These lands were eventually acquired in 2011 for the purpose of constructing a future forensics lab.

In an effort to accommodate the plans of the Mosque, in early 2012 discussions were initiated between the Police Services Board (PSB) and the Mosque, with the City at the table, which would have seen the PSB switch their plans for a future lab to the municipal parking lot at 140 King William Street (directly across the street from Police Headquarters). There was staff support in principle with the Mosque, in terms of structuring a potential deal where the Mosque would acquire the ORC/GO Transit lands from the City, at the same price the City had paid for them, plus an additional amount as may be required if there were any incremental costs to the PSB as a result of moving their project from the ORC/GO lands to the 140 King William parking lot. However, the deal was conditional upon the municipal parking lot being available for redevelopment.

As a result of this Parking Study, it is the opinion of the Hamilton Municipal Parking System that the municipal parking lot is needed for current and future parking needs. It is, therefore, not available for the Police Services' lab, and the lab reverts to the original intended site, and the Mosque will no longer have a site for their expansion. This is an unfortunate outcome, and Council needs to be aware that this is a group that has been patient for a number of years and is now, understandably, extremely frustrated that they are no further ahead than they were several years ago. City staff will continue to work with them to try and identify a suitable alternate site within close proximity to the existing site. We will also work with them to accommodate additional parking on an interim basis on the Police Services' land. Staff will also examine the existing on-street parking regulations to see if they still meet operational and neighbourhood needs.

Other Key Findings

Other key findings of the 2013 MMM Report include:

- Overall parking utilization in the Downtown has decreased from 76% in 2005 to 68% in 2012;

- Although there is no justification in the MMM Report, this could be attributed to several factors including; improved transit service, increased fuel costs and transportation demand management measures such as cycling, walking, CarShare and carpooling. According to the Public Works Department, transit ridership increased by 3% for the period of 2006 to 2012. Transportation demand management investment was in its infancy at the time and with increased investment from the Quick Wins transit projects, ridership is expected to continue to increase in the foreseeable future;

- Hamilton's on-street parking rates are slightly lower than those of other Canadian cities, and the price of a Hamilton Street Railway (HSR) monthly bus pass is greater than the lowest monthly parking rate in Downtown Hamilton; approximately 57% less than the cost of a HSR pass;

- Lower parking rates do not promote alternate transportation modes;

- The hourly and daily parking rates for municipal parking lots/garages, in general, are slightly lower than the public parking facilities in other Canadian cities, and municipal parking rates are lower than the rates in privately-owned, public lots/garages in Downtown Hamilton; and,
- Monthly parking rates in municipal parking lots/garages are within the range of monthly parking rates in other Canadian cities.

A representative of the MMM Group Limited will be in attendance at the September 17, 2013 Planning Committee meeting to provide an overview of their Report.

ALTERNATIVES FOR CONSIDERATION

N/A

CORPORATE STRATEGIC PLAN

Strategic Priority #1 A Prosperous & Healthy Community

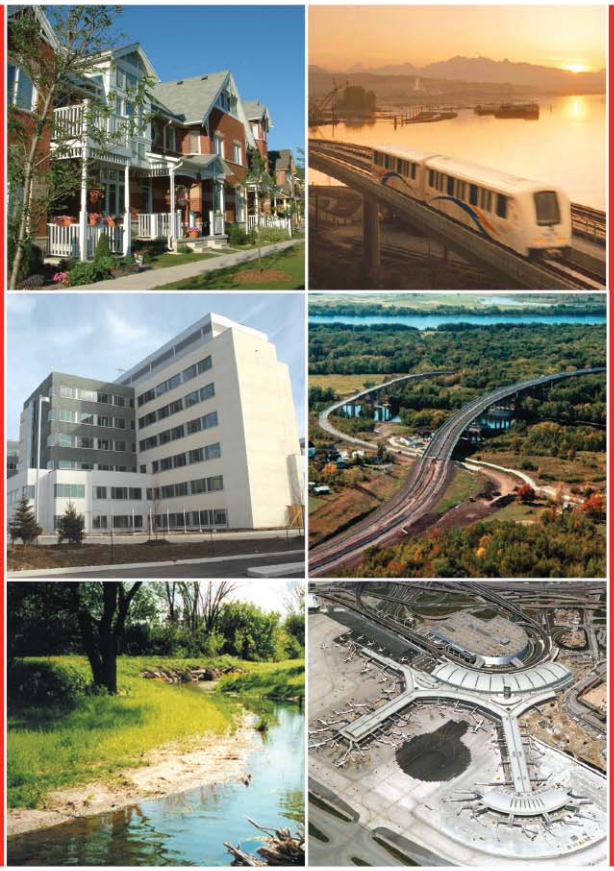
WE enhance our image, economy and well-being by demonstrating that Hamilton is a great place to live, work, play and learn.

APPENDICES / SCHEDULES

Appendix "A" to Report PED12153(a) – "*Downtown Hamilton Parking Study and Parking Garage Assessment*" by the MMM Group Limited dated March 2013

TA/MH/dt

MMM Group Limited



Downtown Hamilton Parking Study and Parking Garage Assessment

Prepared For: City of Hamilton

COMMUNITIES
TRANSPORTATION
BUILDINGS
INFRASTRUCTURE

MMM GROUP

March 2013 | 16-12086

STANDARD LIMITATIONS

This report was prepared by MMM Group Limited (MMM) for the account of the City of Hamilton. The disclosure of any information contained in this report is the sole responsibility of the client, the City of Hamilton. The material in this report reflects MMM's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. MMM accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

EXECUTIVE SUMMARY

Background

MMM Group undertook the City-wide and Downtown Parking and Loading Study for the City of Hamilton in 2005. The study had three main components

- Comprehensive review of by-laws, including parking and loading standards City-wide and in the Downtown core area, as well as recommendations on new parking standards.
- Development of parking strategies and recommendations regarding the municipal role in the provision of parking in the Downtown core area.
- Review and examination of the feasibility and opportunities of providing strategically located parking structures and/or lots, as well as funding related to the construction of new parking structure.

In 2008, MMM completed another parking study to examine other parking related matters, including parking rates, hours/days of paid parking, uses that are subject to paid versus free parking.

Since the completion of the above parking studies, a number of developments have taken place and more are currently planned in Downtown Hamilton, including the McMaster University/Public Health Building and various hotel developments. The City is currently also considering redevelopment of two of the City municipal surface lots. Accordingly, it is considered prudent to re-assess downtown parking conditions, in view of the changing conditions and strategic initiatives for the city.

Study Purpose

In September 2012, the City of Hamilton retained MMM Group to carry out an update of the downtown parking component of the 2005 study. The purpose of this study is to undertake a complete re-measurement of the current downtown parking inventory and parking demands, to examine options to provide additional parking on the basis of forecasted future parking demands, and to complete a financial assessment for constructing a new parking facility in Downtown Hamilton.

Existing Parking Needs

A comprehensive parking utilization survey was undertaken on typical weekdays in October 2012 in Downtown Hamilton. Although the overall peak parking utilization was found to be only 68 percent (indicating substantial surplus capacity in the downtown), the off-street parking facilities in several individual zones were found to experience parking utilizations of over 85% during the overall peak

period. In addition, some on-street parking locations were found to operate at over 85 percent utilization. This means that these parking facilities are effectively operating at capacity when ease in locating a parking space and vehicles in circulation are taken into consideration. On a zonal basis, Zone 5 (southwest of York Boulevard and Bay Street intersection) and Zone 10 (southwest of John Street and Wilson Street intersection) were found to operate at parking utilization levels that exceed the practical capacity to accommodate parking. Analyses based on the existing conditions suggest that the parking shortfall identified in these zones could possibly be addressed by available parking surplus observed in the neighbouring zones.

As compared with the 2005 study (2003 data), the overall peak utilization has decreased from 76% to 68%. The parking utilizations during the overall peak utilization period were also found to decrease for all types of parking facilities since the 2005 study.

Duration parking surveys were also undertaken in four select public parking lots on a typical weekday in January 2013. About 33% of all observed parked vehicles in the four surface lots were identified as short-term parking (i.e., vehicles observed to be parked for a duration which is less than the duration equivalent to the daily maximum for the lot), while 67% were identified as long-term parking.

Future Parking Requirements

The future parking requirements were forecasted based on the gross density target for the Downtown Hamilton Secondary Plan area and the current rate of parking demand. Annual growth in gross density of 0.80% for Downtown Hamilton was derived, using the 2010 gross density of 218 residents and jobs per hectare in the study area and the minimum gross density target of 250 residents and jobs per hectare for 2031 set by the City. By applying the assumed 0.80% annual growth rate to the existing parking demand, an increase in overall parking demands of 357 and 714 spaces during the overall peak period is expected for the 5-year (2017) and 10-year (2022) periods, respectively.

The future parking supply has been estimated on the basis of the existing parking supply and the anticipated displacement of public parking supply, due to known redevelopment proposals or assumed non-renewal of leases.

The 2005 study identified three “zones” in the downtown core, which coincided with the centre of the Strategic Parking Areas in the City of Hamilton “*Putting People First: Downtown Transportation Master Plan* (2001)” document. Similar to the 2005 study, zones with forecasted demands exceeding practical capacity were grouped into two larger high-demand areas:

- Area 1: the area centred around Bay Street and King Street intersection (Zone 3, Zone 5, and Zone 12),

- Area 2: the area centred around King William Street and John Street intersection (Zone 10, Zone 11, and Zone 20)

These larger high-demand areas contain numerous individual parking facilities that demonstrate high parking demands (existing and future) and could be potential locations for a new parking structure. It is anticipated that candidate sites for a future parking structure in these areas would be within reasonable walking distance of the majority of potential users in the area.

The existing parking utilizations for Area 1 and Area 2 in 2012 are relatively consistent with those in the 2005 study (2003 survey). Based on the parking utilization forecasted, Area 1 is expected to reach practical capacity (i.e., 85% capacity) in the short-term period.

Area 2 is forecasted to reach practical capacity in the long-term period, when both Municipal Car Parks No. 1 and No. 5 are assumed to be displaced by a public park and redevelopment. To better understand the impacts of the loss of one or both municipal parking lots on the future parking conditions, further analysis was undertaken. The analysis indicated that either Municipal Car Park No. 1 or Car Park No. 5 would need to be maintained for Area 2 to operate at a future parking utilization rate below practical capacity and with surplus parking in the area in the long-term period. If both municipal car parks are redeveloped, future parking utilization in Area 2 is forecast to exceed the practical capacity, and additional parking needs to be provided.

Downtown Parking Strategy and Potential Parking Garage Locations

A number of downtown parking strategies have been identified to address the existing parking deficiencies, as well as the projected future parking needs.

- Transportation Demand Management Initiatives (TDM)

  Transportation Demand Management (TDM) initiatives involve a series of programs and strategies designed to provide more travel choices that promote environmental, health, and financial benefits to individuals and the community. TDM strategies related to alternative modes of travel and parking management strategies, including public transit improvements, promotion of active transportation, and cycling and walking infrastructure improvements, changes to parking fees, electronic parking guidance systems, as well as improving walkability in Downtown Hamilton, can support more efficient use of existing parking facilities.

  TDM initiatives work best when complementary strategies are implemented together. It is recommended that the implementation of TDM initiatives be reviewed in more detail and assessed in

view of the City's objectives and specific needs, as part of City of Hamilton's Transportation Demand Management strategy and objectives.

- Construction of Additional Parking Facilities

  As privately owned public parking lots are displaced by redevelopment in the future, there will be increasing expectation for the City to provide public parking to address the downtown parking needs. There is also the need to identify and protect additional parking supply in Downtown Hamilton based on the forecasted parking demand.

To address the forecasted parking shortfall in the two high demand areas, potential parking garage locations in the areas were identified, screened, and evaluated. The parking lots in the two areas were assessed based on the potential to construct a parking garage on the candidate sites.

For Area 1, the existing municipal parking lot located at the southwest corner of King Street and Bay Street intersection was identified as a preferred site for a parking garage. It is a good location to incorporate ground-level retail along King Street and Bay Street as a component of the proposed parking facility, if desirable by the City. The additional parking supply provided by the new parking garage is recommended to be a minimum 500 spaces by 2017.

For Area 2, the existing privately owned public parking lot at the southeast corner of Wilson Street and Hughson Street intersection was identified as a preferred site for a parking garage. The size of the new parking garage is recommended to be a minimum 443 spaces (existing parking supply of 338 spaces and additional parking supply of 105 spaces) by 2022.

Preliminary Financial and Economic Assessment

A financial model was developed to determine the feasibility of developing a potential 500 space parking garage with ground floor retail at a preferred location in each of the two identified high demand areas. Total capital costs are estimated to be $20 to $23 million for an above grade parking garage and $26 to $29 million for a below grade parking garage based on the following:

- Land acquisition costs of $2.9 and $5.9 million for Area 1 and Area 2, respectively;
- Parking construction costs of $12 million for an above grade garage and $17 million for a below grade garage;
- Retail area construction cost of $1.1 million; and

- Soft costs (e.g., project planning and design, and consultant fees) of $4.5 million for an above grade garage and $5.0 million for a below grade garage.

This is equivalent to the annual “cost of capital” of $1.2 to $1.8 million, based on 4.0% per annum amortized semi-annually over 25 years with a down payment of $1.5 million. The annual operating costs are estimated to be $0.52 million for an above grade garage and $0.55 million for a below grade parking garage.

Two sets of parking rates were modelled, including conservative parking rates that are within the range of the observed rates and higher parking rates that are at the top end of the range of the observed rates. Assuming an average parking utilization of 90%, the proposed mixed-use development is anticipated to generate income from operations (total revenue – operating expenses) of $0.59 million - $0.62 million in the first year of operations with conservative parking rates. If the annual financing costs are accounted for, a loss of $0.56 million - $1.2 million (rounded) would be realized in the first full year of operation. Due to the low operating revenue with conservative parking rates, the income from operations alone would not be enough to cover the cost of financing a parking structure. If pricing rates are increased, income from operations improves and first year losses are reduced to $0.21 million - $0.82 million.

Based on the preliminary financial assessment, a mixed-use development is financially viable in both Areas 1 and 2 and can support both above and below grade development with higher parking rates. With conservative parking rates, only Area 1 with an above grade parking structure appears to be financially viable.

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DOWNTOWN HAMILTON PARKING STUDY AND PARKING GARAGE ASSESSMENT

PREPARED FOR:

CITY OF HAMILTON

March 2013

16-12086

1.0 INTRODUCTION

MMM Group was retained to undertake the Downtown Hamilton Parking Study and Parking Garage Assessment on behalf of the City of Hamilton.

By way of background, MMM Group completed the City-wide and Downtown Parking and Loading Study in 2005 for the City of Hamilton. A key component of the study was the development of a downtown parking strategy. The study examined the parking policies and standards, travel characteristics, and role of the municipality in the provision of parking. Options to provide additional parking were also reviewed. The study examined the feasibility and opportunities of providing strategically located parking garages and various economic analyses related to the construction of a new parking garage were undertaken.

Since the completion of the 2005 parking study, a number of commercial/retail, residential, and institutional developments have taken place and more are being planned in Downtown Hamilton, including the McMaster University/Public Health Building and hotel developments. This has resulted in increased demand for short-term and long-term municipal parking in some localized areas. For instance, residential/commercial tenants are looking to the City for monthly parking (waiting lists in Downtown municipal lots are currently estimated at 600). The City is also considering redevelopment of two of the City municipal surface lots. These new developments and initiatives may potentially shift the supply, demand, and strategic direction for parking compared to what was anticipated in the 2005 study.

This study was commissioned to re-assess the existing parking use and demands, to forecast future demands for parking, to examine options to provide additional parking, as well as to complete a financial assessment for constructing new parking facilities in Downtown Hamilton. The study has now been completed, with the associated analysis and findings outlined herein.

2.0 EXISTING CONDITIONS

2.1 Study Area

Existing parking conditions were examined for Downtown Hamilton (Downtown Hamilton Secondary Plan area). The study area is generally bounded by Cannon Street to the north, Queen Street to the west, Wellington Street to the east, and Hunter Street to the south, which is consistent with the study area in the 2005 City-wide and Downtown Parking and Loading Study. **Figure 1** illustrates the study area.

2.2 Parking Supply

Similar to the 2005 study, an updated parking inventory of all non-residential parking spaces was undertaken on Thursday, September 27, 2012.

A summary of the total non-residential parking supply in the study area is outlined in **Table 1**. For comparison purposes, the parking supply identified in the 2005 study (2003 survey data) has also been included in Table 1.

Table 1 - Parking Supply

Category	Existing (2012) Parking Supply		2005 Study(4)	
	No. of Parking Spaces	Percentage	No. of Parking Spaces	Percentage
Municipal Parking Lots/Garages(1)	2,999	22.9%	3,108	24.3%
Privately Owned Public Parking Lots/Garages(2)	5,024	38.3%	4,719	36.9%
Privately Operated Private Parking Lots/Garages(3)	3,948	30.1%	4,016	31.4%
Off-Street Parking Sub-Total	11,971	91.3%	11,843	92.6%
Metered On-Street Parking Spaces	685	5.2%	648	5.1%
Other On-Street Parking Spaces	453	3.5%	301	2.3%
On-Street Parking Sub-Total	1,138	8.7%	949	7.4%
Total	13,109	100%	12,792	100%

(1) Lots/structures operated by the City of Hamilton (e.g. City Hall parking)
(2) Other public lots or structures operated by a private operator (e.g. Jackson Square underground parking)
(3) Private off-street lots owned or used by retail, office, or institutional uses for their customers or employees (e.g. Tim Hortons parking lot)
(4) 2005 study based on recorded parking inventory and observed parking demands in November 2003

As indicated, there are a total of 13,109 spaces available for public parking. These include 2,999 spaces in municipal parking lots/garages, 5,024 spaces in privately owned public parking lots/garages, 3,948 spaces in privately operated private parking lots, and 1,138 on-street parking spaces.

The Hamilton Municipal Parking System currently operates 37% of the public off-street parking supply (2,999 spaces of 8,023 public off-street spaces). Along with the 1,138 on-street parking spaces, municipally operated parking spaces account for approximately 32% of the overall Downtown parking supply, which is consistent with the public/private parking ratio from the 2005 study. **Figure 2** illustrates the existing parking inventory.

Consistent with the 2005 study, the study area was divided into twenty-five (25) zones for ease of analysis and the numbers of parking spaces related to each zone within the study area were also recorded. **Figure 3** illustrates the parking supply on a zonal basis. The breakdown of parking supply by category for each zone is provided in **Appendix A**. The following changes in parking supply between the 2005 study (2003 survey data) and the 2012 inventory by parking facility type were identified:

- Decrease of municipal off-street parking by about 100 spaces (It can be attributed to the repaving and reconfigurations of municipal lots/garages);
- Increase of privately owned public parking lots/garages in the order of 300 spaces (Some private parking lots are now identified to be public parking lots, such as the Effort Square parking structure);
- Decrease of private parking lots/garages by about 50 spaces (Some private parking lots are now identified to be public parking lots and some private lots were repaved and reconfigured);
- Increase in metered on-street parking spaces by about 30 spaces, including new meters along Hughson Street between King Street and Cannon Street and on the south branch of King Street from John Street to James Street, loss of metered spaces along York Boulevard between James Street and Hess Street, as well as minor adjustments at other locations; and
- Increase in non-metered on-street parking spaces in the order of 150 spaces, as the 2012 inventory has included non-metered parking spaces on both sides of the boundary roads, namely Cannon Street, Queen Street, Wellington Street, and Hunter Street.

Overall, a total of 317 additional public/private spaces have been captured in the 2012 inventory.

2.3 Parking Utilization Surveys

Detailed parking utilization surveys were undertaken in Downtown Hamilton. All non-residential off-street parking spaces were surveyed on Thursday, October 4, 2012, with the exception of Municipal Car Park No. 37 (Convention Centre). The parking demands at this municipal parking facility were derived from the Hamilton Municipal Parking system data records collected on October 11, 2012 to reflect typical operations of the parking facility. All on-street parking spaces were surveyed on Thursday, October 11, 2012 to assess how the available parking supply is used. Consistent with the 2005 study, the numbers of parked vehicles were recorded at the following times:

- 7:15 a.m.
- 9:30 a.m.
- 11:00 a.m.
- 2:30 p.m.
- 5:30 p.m.

The surveys were undertaken on a block and block-face basis. This allows the parking demands related to any particular parking facility to be identified.

2.4 Overall Parking Utilization

The overall parking demand and utilization for the study area are summarized in **Table 2.**

Table 2 – Parking Demand and Utilization by Time of Day

Time	No. of Parked Vehicles	Utilization Percentage
7:15 a.m.	4,896	37%
9:30 a.m.	8,439	64%
11:00 a.m.	8,909	68%
2:30 p.m.	8,678	66%
5:30 p.m.	3,266	25%

The overall peak parking demand was found to occur at 11:00 a.m. with 8,909 of 13,109 available parking spaces being occupied, **representing a peak utilization of 68% for the entire study area**. Slightly lower utilizations of 64% and 66% were found at 9:30 a.m. and 2:30 p.m., respectively. The parking demands were found to drop off substantially at 5:30 p.m. **Figure 4** illustrates the peak parking utilization by parking facility during the overall peak period (11:00 a.m.).

In the 2005 study, a peak parking demand of 9,756 spaces or an overall parking utilization of 76% was observed. The overall demand for or utilization of parking has decreased in the study area since the 2005 study. The overall peak parking utilization of 68% indicates that parking is generally available in Downtown Hamilton as a whole.

The peak parking demands and utilizations during the overall peak period by type of parking facility are indicated in **Table 3**.

Table 3 – Existing Parking Demand During the Overall Peak Period – 11:00 a.m. (No. of Parking Spaces)

Category	2012			2005 Study(1)		
	Parking Supply	Overall Peak Parking Demand	Utilization	Parking Supply	Overall Peak Parking Demand	Utilization
Municipal Parking Lots/Garages	2,999	2,066	69%	3,108	2,250	72%
Privately Owned Public Parking Lots/Garages	5,024	3,743	75%	4,719	4,106	87%
Privately Operated Private Parking Lots/Garages	3,948	2,456	62%	4,016	2,776	69%
Off-Street Parking Sub-Total	11,971	8,265	69%	11,843	9,132	77%
Metered On-Street Parking	685	402	59%	648	425	66%
Other On-Street Parking Spaces	453	242	53%	301	199	66%
On-Street Parking Sub-Total	1,138	644	57%	949	624	66%
Total	13,109	8,909	68%	12,792	9,756	76%

(1) 2005 study based on recorded parking inventory and observed parking demands in November 2003

The utilization for each type of parking facility during the overall peak period is also illustrated in **Figure 5.** A general decrease in peak parking utilization for all types of facilities was observed since the 2005 study.

2.5 Parking Utilization by Zone

The peak parking utilization data by zone are presented in **Table 4** and illustrated in **Figure 6**.

Table 4 – Existing Parking Utilization by Zone During the Overall Peak Parking Period (11:00 a.m.)

Zone	Municipal Parking Lots/Garages	Privately Owned Public Parking Lots/Garages	Privately Operated Private Parking Lots/Garages	Metered On-Street Parking Spaces	Other On-Street Parking Spaces	Total
1	-	-	45%	-	63%	49%
2	82%	-	50%	51%	47%	51%
3	-	78%	44%	13%	0%	68%
4	-	-	56%	47%	92%	58%
5	99%	92%	138%	105%	120%	109%
6	72%	-	73%	21%	0%	70%
7	64%	68%	71%	71%	67%	67%
8	59%	81%	60%	89%	-	65%
9	-	89%	53%	35%	0%	74%
10	75%	87%	53%	117%	-	86%
11	74%	67%	70%	58%	-	70%
12	72%	92%	101%	96%	-	80%
13	-	77%	53%	100%	-	76%
14	-	62%	64%	88%	-	66%
15	-	71%	56%	77%	80%	67%
16	-	74%	50%	5%	58%	60%
17	-	81%	58%	51%	82%	63%
18	42%	-	45%	50%	28%	40%
19	51%	54%	67%	29%	100%*	61%
20	71%	90%	56%	30%	-	71%
21	-	62%	45%	84%	100%	63%
22	-	44%	64%	71%	65%	61%
23	73%	68%	69%	35%	0%	66%
24	68%	-	-	-	-	68%
25	-	68%	-	70%	-	68%

** One non-metered parking space in Zone 19 (100% occupied)*

For planning purposes, the practical capacity of a parking area is generally defined as 85% occupancy or utilization of the available parking supply. Beyond this level, drivers generally experience some difficulty in locating a parking space, even though there are unoccupied parking spaces still available. The practical capacity serves as a benchmark at which point parking providers may consider options to increase the parking supply. It should be noted, however, that the practical capacity is not equivalent to the absolute capacity.

As shown in Table 4 and Figure 6, even though the peak utilization was found to be 68% for the entire study area, the parking demands in some zones, including Zones 5 and 10 were observed to exceed the practical capacity of the available parking supply when vehicle circulation and ease in locating a parking space are taken into consideration.

In fact, Zone 5 was found to have the highest existing peak parking utilization (109% utilized), during the overall peak parking demand period. In other words, the parking demands for parking facilities in Zone 5 were found to exceed capacity. This is attributable to the parking demands observed at the surface lot at the northeast corner of the George Street and Caroline Street intersection, which is considered an illegal lot by the City.

The parking utilization in Zone 10 was observed to be 86%, with existing parking demands in privately owned public parking lots exceeding the practical capacity, and on-street metered parking operating over-capacity (i.e., illegal parking was observed).

The parking demand patterns observed from the 2012 survey are consistent with the 2005 study (2003 survey data). The high off-street parking demands were found near the intersections of Bay Street and King Street (Zone 5), and John Street and York Boulevard (Zone 10) in the 2005 study.

In addition to the zones noted above, high parking utilization (over 85%) was observed for individual privately owned public parking lots, as follows:

- Zone 9 – Northwest corner of John Street and Wilson Street intersection;
- Zone 12 – all privately owned public parking lots in Zone 12; and
- Zone 20 – Southeast corner of Catharine Street and King William Street intersection.

High parking utilization (over 85%) was also found in some on-street parking locations including:

- Zone 4 – Queen Street between Main Street and Hunter Street, Hess Street between Hunter Street and Jackson Street, Jackson Street between Hess Street and Caroline Street, and Hunter Street between Caroline Street and Queen Street;
- Zone 8 – Vine Street between Park Street and James Street, and MacNab Street between Vine Street and York Boulevard;
- Zone 12 – King Street between James Street and Bay Street, and James Street between Main Street and King Street;
- Zone 13 - Jackson Street between Bay Street and James Street;
- Zone 14 – Hunter Street between Catharine Street and MacNab Street, and Jackson Street between MacNab Street and James Street; and
- Zone 21 – King Street between Mary Street and Catharine Street, and Main Street between Catharine Street and Walnut Street.

These on-street and off-street parking facilities, with peak utilizations of over 85%, are effectively operating near or at capacity when ease in locating a parking space is taken into consideration.

2.6 Zone Analysis

As noted, existing parking demands in Zones 5 and 10 were observed to exceed the practical capacity of the available parking supply. Detailed discussions related to these zones are provided below.

2.6.1 Zone 5

Table 5 summarizes the parking supply and demand in Zone 5 by type of parking facility.

Table 5 – Existing Parking Supply and Demand in Zone 5 by Type of Parking Facility During the Overall Peak Parking Demand Period – 11:00 a.m.

Zone 5	Municipal Parking Lots/Garages	Privately Owned Public Parking Lots/Garages	Privately Operated Private Parking Lots/Garages	Metered On-Street Parking Spaces	Other On-Street Parking Spaces	Total
Parking Supply	205	196	177	22	5	605
Parking Demand	203	180	245	23	6	657
Surplus	2	16	-68	-1	-1	-52

Table 6 summarizes the parking utilization in Zone 5 by type of parking facility by time of day.

Table 6 – Existing Parking Utilization in Zone 5 by Type of Parking Facility by Time of Day

Zone 5	Municipal Parking Lots/Garages	Privately Owned Public Parking Lots/Garages	Privately Operated Private Parking Lots/Garages	Metered On-Street Parking Spaces	Other On-Street Parking Spaces	Total
7:15 a.m.	84%	82%	93%	64%	80%	85%
9:30 a.m.	100%	81%	120%	86%	80%	99%
11:00 a.m.	99%	92%	138%	105%	120%	109%
2:30 p.m.	89%	70%	128%	86%	100%	94%
5:30 p.m.	15%	8%	38%	23%	80%	20%

Key findings related to Zone 5 are summarized as follows:

- A parking shortfall of 52 spaces was observed in Zone 5 during the overall peak parking demand period.
- On-street parking was observed to reach its absolute capacity during the peak parking demand period (illegal parking was observed). Privately operated private parking lots were also observed to reach absolute capacity during the peak parking demand period, due to parking demands (86 vehicles) observed at the illegal parking lot at 17 Caroline Street.

- The municipal parking lot in Zone 5, Car Park 80, was observed to be 100% occupied at 9:30 a.m., and exceed practical capacity at 11:00 a.m. and 2:30 p.m.
- For Zone 5 to operate at the 85% parking utilization threshold, given the observed 109% utilization, an additional parking supply of 168 spaces is required.
- The 2005 study indicated that Zone 5 was operating at 89% utilization with privately owned public lots, private lots, and non-metered on-street parking operating above practical capacity during the overall peak period.
- Based on existing conditions, the analysis suggests that existing long-term parking shortfall in the area could be addressed by the available underground parking at Jackson Square (Zone 25) and the public parking lots in Zone 3 (south of George Street), while the existing short-term parking shortfall could also be addressed by the public parking in Zone 3. These parking facilities are located within 300-metre walking distance from Zone 5. Typically, the maximum distance that parkers are willing to walk to access parking ranges from 300 to 400 metres. It is recognized that one of the public parking lots in Zone 3 is expected to be redeveloped and the associated parking supply that is available today is expected to be displaced in the short-term horizon.

2.6.2 Zone 10

Table 7 summarizes the parking supply and demand in Zone 10 by type of parking facility.

Table 7 – Existing Parking Supply and Demand in Zone 10 by Type of Parking Facility During the Overall Peak Parking Demand Period – 11:00 a.m.

Zone 10	Municipal Parking Lots/Garages	Privately Owned Public Parking Lots/Garages	Privately Operated Private Parking Lots/Garages	Metered On-Street Parking Spaces	Other On-Street Parking Spaces	Total
Parking Supply	16	440	15	6	0	477
Parking Demand	12	382	8	7	0	409
Surplus	4	58	7	-1	0	68

Table 8 summarizes the parking utilization in Zone 10 by type of parking facility by time of day.

Table 8 – Existing Parking Utilization in Zone 10 by Type of Parking Facility by Time of Day

Zone 10	Municipal Parking Lots/Garages	Privately Owned Public Parking Lots/Garages	Privately Operated Private Parking Lots/Garages	Metered On-Street Parking Spaces	Other On-Street Parking Spaces	Total
7:15 a.m.	13%	48%	47%	0%	-	46%
9:30 a.m.	50%	81%	40%	83%	-	79%
11:00 a.m.	75%	87%	53%	117%	-	86%
2:30 p.m.	44%	84%	33%	100%	-	81%
5:30 p.m.	31%	20%	27%	133%	-	22%

Key findings related to Zone 10 are summarized as follows:

- A parking surplus of 68 spaces was observed in Zone 10 during the overall peak parking demand period.
- On-street metered parking was observed to reach its absolute capacity between 11:00 a.m. and 5:30 p.m. (illegal parking was observed).
- The 2005 study indicated that Zone 10 was operating at 99% utilization during the overall peak period with privately owned public lots and municipal parking lots operating above the practical capacity.
- For Zone 10 to achieve the 85% parking utilization threshold, given the observed 86% utilization, an additional parking supply of 5 spaces is required.
- Based on existing conditions, the analysis suggests the parking deficit could be addressed by parking surplus in the adjacent zones: Zone 9 with a parking surplus of 118 spaces and Zone 11 with a parking surplus of 127 spaces.

2.7 Parking Duration Surveys

Detailed parking duration surveys were also undertaken in select privately owned public parking lots and municipal parking lots on Thursday, January 31, 2013, between 7:30 a.m. and 5:30 p.m. The parking duration of vehicles in the parking lots was recorded at hourly intervals. Using the observed parking duration, parked vehicles were classified as either short-term or long-term parking. For the purposes of the analysis, short-term parking is defined as vehicles observed to be parked for a duration that is less than the duration that is equivalent to the daily maximum of the lot. For example, vehicles parked in Municipal Car Park No. 80 pay on an hourly basis up to a duration of 3 hours. Beyond a parking duration of 3 hours, the daily maximum rate of $7.00 is applicable. Thus, vehicles parked in Municipal Car Park No. 80 for 3

hours or less are defined as short-term parking. Vehicles observed to be parked in Municipal Car Park No. 80 for more than 3 hours are defined as long-term parking.

Table 9 summarizes the proportion of short-term and long-term use at the select public parking lots on the survey date. Details of the parking duration survey are provided in **Appendix B**.

Table 9 – Proportion of Short-Term and Long-Term Parkers by Lots

Public Parking Lots	Parking Supply	Short-Term Parkers (%)	Long-Term Parkers (%)
Municipal Car Park No. 1[(1)]	170	17%	83%
Municipal Car Park No. 80[(2)]	205	47%	53%
Hess Village Parking (Northwest Quadrant of Caroline Street and Main Street) [(2)]	226	41%	59%
Privately Owned Public Parking Lot (Southwest Quadrant of Wilson Street and John Street) [(3)]	338	22%	78%
TOTAL	939	33%	67%

(1)Short-term parkers are those who park for 2 hours or less
(2)Short-term parkers are those who park for 3 hours or less
(3)Short-term parkers are those who park for 1 hour or less

As shown, about 33% of all observed parked vehicles in the four surface lots are short-term parking, while 67% are long-term parking.

The percentages of vehicles observed to be parked for a duration that is less than two hours and vehicles observed to be parked for more than two hours were also derived from the duration survey results, as shown in **Table 10**.

Table 10 – Percentages of Vehicles Parked for Two Hours or Less and Vehicles Parked for More than Two Hours by Lots

Public Parking Lots	Parking Supply	Vehicles Parked for Two Hours or Less (%)	Vehicles Parked for More than Two Hours (%)
Municipal Car Park No. 1	170	17%	83%
Municipal Car Park No. 80	205	44%	56%
Hess Village Parking (Northwest Quadrant of Caroline Street and Main Street)	226	39%	61%
Privately Owned Public Parking Lot (Southwest Quadrant of Wilson Street and John Street)	338	27%	73%
TOTAL	939	33%	67%

The survey data also indicates that the parking duration for the majority of the short-term parking was observed to be an hour or less (15% to 36% of all parked vehicles depending on location). With respect to long-term parking, the majority of parked vehicles were observed to be parked for 8 to 9 hours (18% to 25% of all parked vehicles depending on location).

A comparison of parking duration at the two municipal car parks shows that Municipal Car Park No. 1 has a higher percentage of long-term parking. Conversely, Municipal Car Park No. 80 which is located along the main roadways (i.e., King Street and Bay Street) has a slightly higher percentage of short-term parking. This is likely due to the type of uses (i.e., office vs. retail uses) adjacent to the lots, as well as the availability of other long-term parking facilities in the vicinity. This is also reflected in the number of monthly parking passes sold at the two lots. 75% of the parking supply at Car Park No. 1 is sold as monthly permit parking (non-reserved), while 41% of the parking supply at Car Park No. 80 is sold to monthly permit holders (non-reserved).

3.0 PARKING FEES FOR PUBLIC PARKING FACILITIES

3.1 Parking Fees in Downtown Hamilton

Parking fees for public parking facilities in the study area were obtained by visiting the parking facilities and from parking operators that responded to our inquiries. Hourly parking rates, daily maximum parking rates, and monthly parking rates for the public parking facilities are illustrated in **Figures 7**, **8**, and **9**, respectively.

The short-term parking rates range between $1.00 and $6.00 for each hour or less, with the municipal public parking charging between $1.00 and $2.50 for each hour or less. The privately operated public parking lots that charge between $5.00 and $6.00 per hour are all located in the area south of King William Street between Catharine Street and Caroline Street.

The daily maximum parking rates range between $3.50 and $15.00 per day, with the majority priced between $4.00 and $10.00. The daily maximum parking rates for municipal parking range between $5.00 and $9.00 per day. The public parking located mid-block along James Street between King Street and Main Street (19 James Street South in Block 12) charges the highest observed daily maximum parking rate of $15.00.

The monthly permits generally range between $25.00 and $171.29 per month. The highest monthly parking rate is $171.29 per month at 19 James Street South lot in Block 12. The monthly parking rates at privately owned parking lots in the area south of King William Street between MacNab Street and John Street are found to be higher ($140 - $171.29) than those in the other locations.

Monthly permits are sold at fourteen (14) of the sixteen (16) municipal parking lots/structures. About 2,166 monthly permits are currently sold in these municipal lots and structures. This suggests that about 73% of the municipal off-street spaces are being leased to monthly parkers. Relative to the findings of the 2005 study, the number of monthly permits issued for municipal off-street parking lots and structures has increased by about 266 permits.

About 559 regular monthly permits and 14 reserved parking permits (54% of parking supply) are sold at Jackson Square underground parking. Forty-eight (48) monthly spaces (44% of parking supply) are sold at 19 James Street South lot.

Parking fees for each public lot and garage, as of September 2012, are summarized in **Appendix C**.

Table 11 summarizes the public parking rates.

Table 11 – Public Parking Rates

	Short-Term Parking	Daily Maximum Parking	Monthly Permit
Municipal Parking	$1.00 - $2.50	$5.00 - $9.00	$50.00 - $120.00
Privately Operated Public Parking	$1.00 - $6.00	$3.50 - $15.00	$25.00 - $171.29
All Public Parking	$1.00 - $6.00	$3.50 - $15.00	$25.00 - $171.29

The parking fee for on-street parking in Downtown Hamilton is $1.00 per hour, with time limit ranging from 1 hour to 3 hours.

Table 12 compares the municipal public parking rates between 2008 and 2012.

Table 12 – Municipal Public Parking Rates Comparison between 2008 and 2012

	2008*	2012	Percentage Increase
On-Street Parking	$0.50 - $1.00	$1.00	0% - 200%
Short-Term Parking	$0.80 - $2.50	$1.00 - $2.50	0% - 25%
Daily Maximum Parking	$2.00 - $7.50	$5.00 - $9.00	20% - 150%
Monthly Parking	$31.50 - $108.00	$50.00 - $120.00	11% - 59%

** 2008 parking rates taking directly from City of Hamilton Parking Study dated June 2008 prepared by MMM Group*

As shown in Table 12, municipal public parking rates have increased for both on-street metered parking and off-street municipal lots (short-term, daily maximum, and monthly parking) since 2008.

3.2 Comparison of Parking Rates between City of Hamilton and other Municipalities

Pricing is an effective tool to influence parking demand. Compared with other out-of-pocket expenses, parking fees have a greater effect on number of vehicle trips and parking in a downtown area. Parking fees set below the parking market rate typically lead to excessive parking demand and inefficient use of parking facilities. The parking market rate can be defined as the rate at which funds generated through parking fees are greater than cost of land, facilities and operations, and that a 15 percent level of parking vacancy is achieved to accommodate turnover. It is important that parking rates of municipal parking facilities are appropriately priced.

As noted, the overall peak parking utilization in 2012 for Downtown Hamilton is 68 percent, with some zones observed to exceed the practical capacity (85 percent parking utilization threshold). In other words, surplus parking is available in many areas of Downtown Hamilton. In terms of pricing, on-street parking is

$1.00 per hour, while most of the municipal parking facilities have hourly rates ranging from $1.00 and $2.50, daily maximum parking rates ranging from $5.00 to $9.00, and monthly parking permits ranging from $50.00 to $120.00. A survey of parking rates of other comparable Canadian municipalities provides a better understanding of how Downtown Hamilton parking rates compare with those in other cities.

3.2.1 On-Street Parking Rate

Table 13 compares the on-street parking rates between City of Hamilton and other Canadian cities.

Table 13 – Comparison of On-Street Parking Rates

Municipality	Population(1)	On-Street Parking Rates (hourly)
London, ON	366,151	$1.25(2)
Mississauga, ON	713,443	$1.00(3)
Brampton, ON	523,911	$1.00 - $1.50(3)
Kitchener, ON	219,153	N/A(4)
Windsor, ON	210,891	$1.25(3)
Oakville, ON	182,520	$1.50(3)
Burlington, ON	175,779	$1.50(3)
Barrie, ON	135,711	$1.00(3)
Kingston, ON	123,363	$1.00 - $1.50(3)
Winnipeg, MB	663,617	$2.00(3)
Halifax, NS	390,096	N/A(4)
Saskatoon, SK	222,189	N/A(4)
Regina, SK	193,100	$1.00(3)
Hamilton	519,949	$1.00

(1) Source: Population and Dwelling Counts, 2011 Census, Statistics Canada
(2) Source: 2030 Transportation Master Plan: SmartMoves (City of London)
(3) Source: Website of the Individual Municipality
(4) Source: Not available on the website of the Individual Municipality

The comparison indicates that the on-street hourly parking rate in Downtown Hamilton is the same as that in Mississauga, ON, Barrie, ON, and Regina, SK, but is slightly lower than those of other Canadian cities reviewed.

3.2.2 Hourly and Daily Parking Rates

Table 14 summarizes the hourly and daily parking rates of City of Hamilton and other Canadian cities.

Table 14 – Comparison of Hourly and Daily Parking Rates

Municipality	Population[1]	Hourly Parking Rates	Daily Parking Rates
London, ON[2]	366,151	$1.50 - $3.00	$5.00 - $15.00
Mississauga, ON	713,443	$1.00[3]	$6.00[3]
Brampton, ON	523,911	$1.50[3]	$8.00[3]
Kitchener, ON	219,153	$2.00 - $3.00[4]	$10.00 - $18.00[4]
Windsor, ON	210,891	$1.00[3]	N/A[5]
Oakville, ON	182,520	$1.50[3]	$5.00 - $24.00[3]
Burlington, ON	175,779	$1.50[3]	$12.00[3]
Barrie, ON	135,711	$0.75 - $1.00[3]	$5.50[3]
Kingston, ON	123,363	$1.00 - $2.00[3]	$5.25 - $15.00[3]
Winnipeg, MB	663,617	$2.00 - $4.75[6]	$8.50 - $12.50[6]
Halifax, NS	390,096	$2.25 - $4.00[6]	$10.00 - $25.00[6]
Saskatoon, SK	222,189	$2.00 - $3.00[7]	$7.50 - $12.00[7]
Regina, SK	193,100	$2.00 - $3.00[7]	$4.00 - $11.00[6]
Hamilton (Municipal Parking)	519,949	$1.00 - $2.50	$5.00 - $9.00
Hamilton (Privately Operated Public Parking)	519,949	$1.00 - $6.00	$3.50 - $15.00
Hamilton (All Public Parking)	519,949	$1.00 - $6.00	$3.50 - $15.00

(1) Source: Population and Dwelling Counts, 2011 Census, Statistics Canada
(2) Source: Downtown London Parking study 2012 Update (June 2012)
(3) Source: Website of the Municipality(Municipal Parking Rates Only)
(4) Source: 2012 Parking Rate Survey (North America, Central Business District) by Colliers International for Waterloo Region
(5) Source: Not available on the website of the Individual Municipality
(6) Source: Website of the Municipality and 2012 Parking Rate Survey (North America, Central Business District) by Colliers International
(7) Source: 2012 Parking Rate Survey (North America, Central Business District) by Colliers International

In general, the hourly and daily parking rates for *municipal* parking lots and garages in Downtown Hamilton are slightly lower than the public parking facilities of the other Canadian cities reviewed.

The hourly parking rate for municipal parking lots and garages in Downtown Hamilton ranges between $1.00 and $2.50, which is lower than the rates at privately owned public parking lots and garages. The minimum hourly parking rates in other Canadian cities reviewed are also found to be slightly higher at $1.50 to $2.25, with the exception of Mississauga, Windsor, Barrie, and Kingston in Ontario.

The daily parking rate for municipal parking lots and garages in Downtown Hamilton ranges between $5.00 and $9.00. This was found to be lower than most rates at privately owned public parking lots and

garages. The maximum rates for daily parking of most Canadian cities are also slightly higher, with the exception of Mississauga, Brampton, and Barrie in Ontario.

3.2.3 Monthly Parking Rates

Table 15 summarizes the monthly parking rates of City of Hamilton and other comparable Canadian cities.

Table 15 – Comparison of Monthly Parking Rates

Municipality	Population(1)	Monthly Parking Rates
London, ON	366,151	$60.00 - $345.50(2)
Mississauga, ON	713,443	$65.00(3)
Brampton, ON	523,911	$20.00 - $40.00(3)
Kitchener, ON	219,153	$107.35 - $168.17(4)
Windsor, ON	210,891	$22.60 - $66.78(3)
Oakville, ON	182,520	N/A(5)
Burlington, ON	175,779	$65.00 - $117.00(3)
Barrie, ON	135,711	$60.00 - $80.00(3)
Kingston, ON	123,363	$45.00 - $112.10(3)
Winnipeg, MB	663,617	$126.79 - $292.16(6)
Halifax, NS	390,096	$155.25 - $230.00(6)
Saskatoon, SK	222,189	$152.25 - $399.00(6)
Regina, SK	193,100	$140.00 - $246.75(6)
Hamilton (Municipal Parking)	519,949	$50.00 - $120.00
Hamilton (Privately Operated Public Parking)	519,949	$25.00 - $171.29
Hamilton (All Public Parking)	519,949	$25.00 - $171.29

(1) Source: Population and Dwelling Counts, 2011 Census, Statistics Canada
(2) Source: Downtown London Parking study 2012 Update (June 2012)
(3) Source: Website of the Municipality(Municipal Parking Rates Only)
(4) Source: 2012 Parking Rate Survey (North America, Central Business District) by Colliers International for Waterloo Region
(5) Source: Not Available on the website of the Individual Municipality
(6) Source: 2012 Parking Rate Survey (North America, Central Business District) by Colliers International

As shown, the monthly parking rates for municipal parking lots and garages in Downtown Hamilton are within the range of monthly parking rates of other Canadian cities reviewed.

The monthly parking rates were also compared with the cost of a Hamilton Street Railway (HSR) monthly pass. The fee for a transit monthly pass is $87. Thus, the lowest monthly parking rate (i.e., $50) at a municipal parking lot is about 57 percent of the transit monthly pass fee.

In summary, the comparisons seem to suggest that there is some opportunity to increase the on-street parking rate, as well as the hourly, daily maximum and monthly parking rates for off-street municipal parking facilities in Downtown Hamilton.

4.0 FUTURE PARKING REQUIREMENTS

4.1 Growth Assumptions

As noted, the overall demand for, or utilization of parking has decreased in the study area since the 2005 study, which could be attributed to factors such as downtown economic vitality, vehicle ownership, and fuel prices. As more detailed historical parking utilization data are not available, it is not possible to empirically assess past trends and use them as a guide for future growth.

A number of commercial/retail, residential, and institutional developments have recently taken place in Downtown Hamilton and more redevelopment proposals are expected, including hotels, condominiums, office, and institutional uses. Based on the *Downtown Hamilton Employment Analysis* report, dated November 2010, the Downtown Hamilton Secondary Plan area (i.e., the study area) has a gross density of 218 residents and jobs per hectare. The City has established a minimum gross density target of 250 residents and jobs per hectare by 2031 for the Downtown Hamilton Urban Growth Centre, a slightly larger area that includes the study area. **Figure 10** illustrates the boundaries of both the Downtown Hamilton Urban Growth Centre and the Downtown Hamilton Secondary Plan area.

Thus, an annual growth of 0.71% in gross density is expected over the span of 21 years (between 2010 and 2031), as shown in **Table 16**.

Table 16 – City Growth Target

	Time Period	Increase	Annual Growth
Gross Density Target (residents and jobs per hectare)	21 years (2010 – 2031)	15% (from 218 to 250 residents and jobs per hectare)	0.71%

Ideally, future growth in downtown parking demand would be developed based on forecasted growth in employment alone. However, given the gross density target of residents and jobs per hectare in Downtown Hamilton, it is used as the basis for projecting growth in Downtown parking demand (0.71% growth per annum). Based on the *Downtown Hamilton Employment* report, the gross density in the Downtown Hamilton Urban Growth Centre is 189 residents and jobs per hectare in 2010, which is slightly lower than that in the Downtown Hamilton Secondary Plan area (218 residents and jobs per hectare). This is understandable given the majority of jobs are located within the area bounded by John Street, Bay Street, Hunter Street, and York Boulevard and this area contains the corporate corridor between the Jackson Square complex and Gore Park, where most of the high-rise office towers in the downtown are located.

Thus, it is expected that the targeted intensification (250 residents and jobs per hectare) of the Downtown Urban Growth Centre will be more focused in the area bounded by John Street, Bay Street, Hunter Street and York Boulevard, as well as the immediate surrounding areas. The annual growth for the Downtown Hamilton Secondary Plan area is expected to be slightly higher than 0.71% and is conservatively estimated to be 0.80% for both the 5-year (2017) and 10-year (2022) horizons.

The future parking requirements have been forecasted based on the anticipated growth in gross density for the Downtown Hamilton Secondary Plan area and the current rate of parking demand (i.e., the ratio of peak parking demand to gross density (residents and jobs per hectare)). The assumed 0.80% annual growth rate results in peak period parking demand increases of 357 and 714 spaces for the 5-year and 10-year periods, respectively. It should be noted that the approach to forecasting future parking demands using per annum growth is consistent with the approach in the 2005 study.

As noted, the future parking requirements are developed based on the existing rate of parking demand. It is noted that the rate of parking demand could vary in the future depending on various factors, such as:

- Changes in transit usage and modal split, due to factors such as the potential LRT B-Line and changes in fuel prices;
- Changes in downtown parking pricing; and
- Success of Travel Demand Management (TDM) initiatives in Downtown Hamilton, such as ride-matching and emergency ride home services provided by Smart Commute Hamilton, and better biking and walking infrastructure.

4.2 Future Parking Supply

Based on the information related to future developments provided by the City, the municipal and privately owned public parking facilities that are expected to be displaced due to potential developments or non-renewal of leases are summarized in **Table 17**.

Table 17 – Changes in Parking Supply due to Potential Developments and Non-Renewal of Lease

Location	Zone	Changes in Parking Supply (Spaces)	Horizon	Remarks
John/Rebecca Park (Municipal Car Park 1 and neighbouring parking lot)	11	-210	10 Year	Potential Conversion to City Park
140 King William St. (Municipal Car Park 5)	20	-124	10 Year	Potential Site for New Forensic Building
100 Main Street West (Parking north of future McMaster University/Public Health Building)	12	-91	5 Year	Redeveloped by 2020; Existing parking lot assumed to be displaced by 2017
Convention Centre Garage (Municipal Car Park 37)	12	-104	5 Year	104 spaces to be used for McMaster University/Public Health Building based on City agreement with McMaster University
King/Bay SW corner (Municipal Car Park 80)	5	-205	5 Year	Lease is up in 2015 and there is the possibility that it will not be renewed
166 and 190 Main Street West	3	-226	5 Year	Displaced for redevelopment
137 Main Street West*	4	-62	5 Year	Displaced for redevelopment
121 James Street North	7	-44	5 Year	Displaced for redevelopment

** Vehicles were observed to park on this site. For analysis purposes, the parking supply related to this site has been removed for the future horizons based on our expectation it will be redeveloped.*

As shown, a total of 732 and 1,066 public parking spaces are assumed to be displaced in the study area by 2017 (5-year horizon) and 2022 (10-year horizon), respectively.

The future parking supply has been estimated on the basis of the existing parking supply and the anticipated displacement of public parking supply, as shown in Table 17. It is acknowledged that the proposed parking supply associated with future developments in Downtown Hamilton could add more parking spaces to the future parking supply in the study area. However, based on the information provided by the City, three of the known future developments are residential condominiums, which are typically excluded from the commercial parking inventory. Four of the future developments are primarily hotel uses. The parking spaces associated with hotel uses are typically reserved for hotel employees and guests only and are not open to the general public. In addition, some of the potential developments are still in planning stage and are subject to change. Thus, the proposed parking supply associated with future developments has not been included in the future parking supply in the study area. Depending on the nature (i.e., public vs. private) of the parking supply associated with these future developments and the actual parking

demands generated by individual developments, this may represent a slightly conservative approach to estimating future parking utilization.

To assess the impacts of the additional parking supply associated with the future developments, a sensitivity analysis was carried out for the following scenarios:

- **Scenario 1:** Additional parking supply associated with all future non-residential and non-hotel developments is included in the future parking supply.
- **Scenario 2:** Additional parking supply associated with all future non-residential developments is included in the future parking supply.

The sensitivity analysis results are detailed in Section 4.4.1.

4.3 Impacts of Future LRT line on Downtown Hamilton Parking

Light Rail Transit (LRT) was first identified as part of the long-term high-order transit strategy for Hamilton in the *City of Hamilton Transportation Master Plan* in February 2007. Further work related to implementation of the LRT lines, including the LRT B-Line that is proposed to run along King Street in the study area has then been conducted, including the *Rapid Transit Feasibility Study*, *Metrolinx Benefits Case Analysis*, and *Environmental Project Report* for the LRT B-Line project. However, the proposed LRT B-Line is still in the planning stage, and the timing and status has not been finalized at the time of this study.

Due to the uncertainty of the status and timing of the proposed LRT B-line, the impacts of the future LRT line on Downtown Hamilton parking are not reflected in the analysis. However, it is recognized that the implementation of LRT line could have a direct impact on both the future parking demand and supply in Downtown Hamilton.

Impact on Parking Demand

The *Community Impact & Economic Analysis of Light Rail Transit* report prepared by the City of Hamilton Rapid Transit Office in December 2008 documented some of the potential benefits of LRT lines in Hamilton. The report indicated that light rail and transit oriented development generally increase access to commercial and employment areas and a well-planned and convenient transit system has the ability to attract new ridership with improved accessibility. When considered as an independent variable, it has the potential to reduce total vehicle use by 2% to 12%. Examples of increased ridership as a result of implementation of light rail transit services identified in the report are Santa Clara Valley Transit Authority (SCVTA), and Minnesota (Hiawatha light rail line).

Typically the implementation of LRT services is complemented by parking policies that are supportive of transit oriented developments in the area, such as reduced parking standards and increased parking pricing. With the appropriate transit oriented policies, LRT implementation can have a significant impact on auto modal split, which in turn can result in a reduction in parking demands in the area. The December 2008 report stated that LRT, along with other transit oriented policies has the ability to reduce total vehicle use by 18% to 58%. For instance, according to the article, *Light Rail Transit in Calgary – The First Twenty-Five Years,* the implementation of downtown parking policies, along with strategic decision to expand LRT and bus service in Calgary has resulted in transit modal split increase from 37 percent in 1996 to over 42 percent in 2005. The total number of long-term parking downtown stalls per employee has also declined in the same period. Thus, it is expected that the parking demand rate in Downtown Hamilton may decrease with the implementation of the planned LRT services. The level of decrease will depend on various factors, such as downtown policy to encourage transit oriented development along the LRT corridor, a reduction of parking standards, increases in parking pricing, and effectiveness of TDM programs.

Impact on Parking Supply

To accommodate the proposed LRT B-line right-of-way, on-street parking spaces along the affected segments of King Street would be displaced. The number of on-street parking directly impacted by the potential LRT B-line has been summarized in **Table 18.**

Table 18 – On-Street Parking Affected by the Potential LRT B-line

Zone	On-Street Parking Supply Affected by LRT B-Line (Along King Street)
2	16
5	5
12	19
15	3
19	18
20	25
21	8
25	11
Total	105

As shown, a total of 105 on-street parking spaces would be displaced with the implementation of the proposed LRT B-line. About 70 vehicles were observed to park at these on-street parking spaces during the overall peak parking period (11:00 a.m.).

4.4 Future Parking Utilization

Future parking demand and supply were projected for the twenty-five (25) zones in the study area. On the demand side, the growth in parking demands in the study area has been estimated on the basis of the 0.8% per annum growth and distributed to the zones in proportion to the observed parking demands at each zone. In other words, all the zones are projected to experience the same rate of growth. Zones with higher observed parking demands, such as those near the Bay Street and King Street intersection, are expected to have more absolute growth in future parking demands, while zones with lower observed parking demands, such as the northeast area of the study area are assumed to have less absolute growth in parking demands in the future.

On the supply side, the displacement of public parking due to potential development or non-renewal of leases was added to the existing parking supply to develop the future parking supply by zone. The future parking utilization by zone was then calculated on the basis of the projected parking demand and the estimated future parking supply. **Table 19** summarizes the future parking utilization for both the short-term (5-year) and long-term (10-year) horizons.

Table 19 – Parking Utilization Forecast - Short-Term (5-Year) and Long-Term (10-Year) Horizons

Zone	Short-Term (5 Year)			Long-Term (10 Year)		
	Future Parking Requirement(1)	Future Parking Supply Estimate (2)	Future Parking Utilization	Future Parking Requirement(1)	Future Parking Supply Estimate(3)	Future Parking Utilization
1	197	386	51%	204	386	53%
2	229	431	53%	238	431	55%
3	249	127	196%	258	127	203%
4	238	330	72%	247	330	75%
5	683	400	171%	710	400	178%
6	329	454	72%	341	454	75%
7	233	289	81%	242	289	84%
8	766	1,132	68%	796	1,132	70%
9	344	449	77%	357	449	80%
10	425	477	89%	442	477	93%
11	302	417	72%	313	207	151%
12	956	960	100%	993	960	103%

Zone	Short-Term (5 Year)			Long-Term (10 Year)		
	Future Parking Requirement(1)	Future Parking Supply Estimate (2)	Future Parking Utilization	Future Parking Requirement(1)	Future Parking Supply Estimate (2)	Future Parking Utilization
13	268	339	79%	279	339	82%
14	296	433	68%	308	433	71%
15	274	394	70%	284	394	72%
16	309	495	62%	321	495	65%
17	312	473	66%	324	473	68%
18	243	578	42%	253	578	44%
19	332	521	64%	345	521	66%
20	318	432	74%	330	308	107%
21	257	393	65%	267	393	68%
22	251	392	64%	260	392	66%
23	388	565	69%	403	565	71%
24	304	431	71%	315	431	73%
25	763	1,079	71%	793	1,079	73%
Total	9,266	12,377	75%	9,623	12,043	80%

(1) Based on assumed 0.8 percent per annum growth
(2) Future Parking Supply = Existing Parking Supply – Changes in Public Parking due to Potential Development/Non-Renewal of Lease

The overall parking utilizations in Downtown Hamilton were forecasted to be 75% and 80% for the 5-year and 10-year horizons, respectively. It is expected that parking will generally be available in Downtown Hamilton as a whole in the future. However, it is recognized that some individual zones are expected to have future parking demands at, or beyond the practical capacity of the anticipated parking supply (i.e., 85% capacity), including Zone 3, Zone 5, zone 10, and Zone 12 in the 5-year period. Over the long term horizon (10 years), the parking utilizations in these zones are forecasted to be worse. Zone 11 and Zone 20 are also expected to have future demands beyond the absolute capacity of the anticipated parking supply. **Figures 11 and 12** illustrate the parking utilization forecasts by zone for the 5-year and 10-year horizons, respectively.

4.4.1 Sensitivity Analysis

As noted, a sensitivity analysis was conducted to assess the impacts of the additional parking supply associated with future developments on future parking utilizations. Two scenarios were reviewed:

- **Scenario 1:** Adding the proposed parking supply associated with all future non-residential and non-hotel developments to the future total parking supply (about 206 spaces in horizon 2017 and 276 spaces in horizon 2022).

- **Scenario 2:** Adding the proposed parking supply associated with all future non-residential developments to the future total parking supply (about 559 spaces in horizon 2017 and 629 spaces in horizon 2022).

The results of the sensitivity analysis are summarized in **Tables 20** and **21**. The tables presented the future parking utilization of the study area as a whole and zones where demand is forecasted to be beyond the practical capacity of the anticipated parking supply.

Table 20 – Parking Utilization Sensitivity Analysis – Scenario 1 - Short-Term (5-Year) and Long-Term (10-Year) Horizons

Zone	Short-Term (5 Year)			Long-Term (10 Year)		
	Future Parking Requirement	Future Parking Supply Estimate	Future Parking Utilization	Future Parking Requirement	Future Parking Supply Estimate	Future Parking Utilization
3	249	191	130%	258	191	135%
5	683	400	171%	710	400	178%
10	425	477	89%	442	477	93%
11	302	417	72%	313	207	151%
12	956	1,027	93%	993	1,097	91%
20	318	432	74%	330	308	107%
Total	9,266	12,583	74%	9,623	12,319	78%

Table 21 – Parking Utilization Sensitivity Analysis – Scenario 2 - Short-Term (5-Year) and Long-Term (10-Year) Horizons

Zone	Short-Term (5 Year)			Long-Term (10 Year)		
	Future Parking Requirement	Future Parking Supply Estimate	Future Parking Utilization	Future Parking Requirement	Future Parking Supply Estimate	Future Parking Utilization
3	249	306	81%	258	306	84%
5	683	400	171%	710	400	178%
10	425	477	89%	442	477	93%
11	302	417	72%	313	207	151%
12	956	1,027	93%	993	1,097	91%
20	318	519	61%	330	395	84%
Total	9,266	12,936	72%	9,623	12,672	76%

As shown in Tables 20 and 21, the overall parking utilizations in Downtown Hamilton are forecasted to decrease by 1% to 2% under Scenario 1, and by 3% to 4% under Scenario 2.

When the proposed parking supply associated with future non-residential and non-hotel developments is included in the future parking supply, the forecasted parking utilizations in Zones 3 and 12 decline substantially. However, forecasted parking demands in Zones 3, 5, 10, 11, 12, and 20 all continue to exceed the practical capacity (i.e., 85% utilization) in the long-term horizon.

When the parking supply related to new hotel developments is also included in the future parking supply in Scenario 2, two of the six zones (Zone 3 and Zone 20) are forecasted to operate close to the practical capacity (i.e., 84%) in the long-term horizon.

Given the study approach to forecasting future parking utilization in Downtown Hamilton does not take into account the potential parking supply associated with future developments (as explained in Section 4.2), the future available parking supply may be slightly understated. In actuality, this depends on the nature and mix of parking (i.e., public vs. private) that is provided by future developments. Thus, the study approach being used to forecast future parking requirements may be slightly conservative (i.e., result in higher future parking utilizations).

However, it should be noted that the approach to forecasting future parking utilization that is used in this study yields generally similar overall results to the results of the Scenario 1 and Scenario 2 sensitivity

analyses. For the most part, the inclusion of the potential parking supply associated with future developments has a minimal impact on overall future parking utilization in Downtown Hamilton.

4.5 High Parking Demand Areas

As shown in Figures 11 and 12, the high parking demand areas for the two horizon years are identified to be generally located in the following two areas:

- Area 1: the area centred around Bay Street and King Street intersection (Zone 3, Zone 5, and Zone 12),
- Area 2: the area centred around King William Street and John Street intersection (Zone 10, Zone 11, and Zone 20).

These larger high-demand areas contain numerous parking facilities that demonstrate high parking demands (existing and future) and could be potential locations for a new parking structure.

These two high parking demand areas are consistent with two of the three "Strategic Parking zones" identified in the 2005 study (i.e., Zone 1 – Market and Caroline area, and Zone 3 – King William and Mary area). Similar to the approach in the 2005 study, the boundaries of the two areas, as illustrated in **Figure 13** were established by taking into account a 300 metre walking distance radius from the intersection. It is anticipated that candidate sites for a future parking structure in these areas would be within reasonable walking distance of the majority of potential uses in the area.

Table 22 summarizes the future parking utilizations for Areas 1 and 2 over the short-term (5-year) and long-term (10-year) horizons.

Table 22 – Parking Utilization Forecast of High Parking Demand Areas 1 and 2 Short-Term (5-Year) and Long-Term (10-Year) Horizons

Area	Short-Term (5 Year)			Long-Term (10 Year)		
	Future Parking Requirement	Future Parking Supply Estimate	Future Parking Utilization	Future Parking Requirement	Future Parking Supply Estimate	Future Parking Utilization
1	2,773	2,889	96%	2,879	2,889	100%
2	2,540	3,336	76%	2,641	3,002	88%

As shown, Area 1 is expected to reach practical capacity (i.e., 85% capacity) in the short-term period, while Area 2 is forecasted to reach practical capacity in the long-term period.

4.5.1 Area 2 – Alternative Assumptions Related to Municipal Car Parks

Presently, there is a possibility that two of the existing municipal parking lots in Area 2 could be developed: Municipal Car Park No. 1 as a City park and Municipal Car Park No. 5 as a new forensic building. This is assumed in the analysis findings presented in Section 4.4. To better understand the implications on the future parking supply and utilization (and the potential need for future additional parking supply) in Area 2, additional analyses were completed assuming the loss of only one of the municipal parking lots, as well as the retention of both municipal parking lots. The alternative analysis assumptions are as follows:

- Municipal Car Park No. 1 will be displaced while Municipal Car Park 5 will remain in the 10-year period
- Municipal Car Park No. 5 will be displaced while Municipal Car Park 1 will remain in the 10-year period
- Both Municipal Car Parks No. 1 and 5 will remain in the 10-year period

Table 23 summarizes the long-term (10-year) future parking utilizations in accordance with the alternative assumptions.

Table 23 – Parking Utilization Forecast for Area 2 in the Long-Term (10-Year) Horizon – Municipal Car Park Alternative Assumptions

Displaced lot	Long-Term (10 Year)		
	Zone 11	Zone 20	Area 2
Both Lots	151%	107%	88%
Car Park No. 1	151%	76%	84%
Car Park No. 5	75%	107%	83%
Both Retained	75%	76%	80%

Based on the analysis in Section 4.4 which assumed that both existing municipal parking lots in Area 2 would be displaced, the future parking demands in Zone 11 and Zone 20 are forecasted to exceed the available parking supply in the 10-year period.

Based on the alternative assumptions, future parking utilization in Area 2 is forecasted to be below the practical capacity of the anticipated parking supply (80% to 84%) in the long-term horizon.

Municipal Car Park No. 1 Displaced

The street block where Municipal Car Park No. 1 is located is currently designated as a potential City park location. The assumption is that Municipal Car Park No. 1 will be displaced, while Municipal Car Park 5 will remain in the 10-year period.

With the displacement of the existing parking supply in Municipal Car Park No. 1, the future parking demand of Zone 11 is forecasted to exceed the parking supply available in the long-term period. To achieve the 85% parking utilization threshold in Zone 11, an additional parking supply of 162 spaces is required. However, the parking shortfall due to the displaced parking and anticipated growth in parking demand in Zone 11 could likely be accommodated by surplus parking forecasted in the adjacent zones, including Zones 15, 16, and 20. These zones are within convenient walking distance from Municipal Car Park No. 1.

Overall future parking utilization in Area 2 is forecasted to be 84% under this assumption, which indicates that a sufficient level of parking is expected to be available in the area.

Municipal Car Park No. 5 Displaced

Municipal Car Park No. 5 is currently proposed as a potential site for a new forensic building. The assumption is that Municipal Car Park No. 5 will be displaced, while Municipal Car Park 1 will remain in the 10-year period.

With the loss of parking in Municipal Car Park No. 5, the future parking demand of Zone 20 is forecasted to exceed the parking supply available in the long-term period. To achieve the 85% parking utilization threshold in Zone 20, an additional parking supply of 80 spaces is required. This parking shortfall in Zone 20 could likely be accommodated by surplus parking forecasted in the adjacent zones, such as Zone 21, which is within convenient walking distance from Municipal Car Park No. 5.

Overall future parking utilization in Area 2 is forecasted to be 83% under this assumption, which indicates that a sufficient level of parking is expected to be available in the area.

Both Municipal Car Parks No. 1 and 5 will remain in the 10-year period

The assumption is that both Municipal Car Parks No. 1 and 5 will remain in the 10-year period. In other words, it is assumed that the block where Municipal Car Park No. 1 is located will not be converted to a City park, and Municipal Car Park No. 5 will not be redeveloped as a new forensic building.

Under this assumption, Zone 11, Zone 20, and the entire Area 2 are expected to operate at utilizations below the practical capacity, with surplus parking available in the area.

In summary, the alternative municipal car park assumptions indicate that at a minimum either Municipal Car Park No. 1 or Car Park No. 5 would need to be maintained for Area 2 to operate at a future parking utilization rate below practical capacity and with surplus parking in the area in the long-term period. If both municipal car parks are redeveloped, the future parking utilization in Area 2 is forecast to exceed the practical capacity, and additional parking will need to be provided.

5.0 DOWNTOWN PARKING STRATEGY

Parking plays an important role in supporting the economic health and vitality of downtown. Parking is also an essential part of the overall transportation system in the City, which also consists of auto traffic, public transit, biking, as well as walking. Thus, downtown parking needs to be managed to ensure that parking is not oversupplied such that travel by single-occupant automobile (SOV) is favoured above other modes of travel such as transit. On the other hand, lack of parking can result in vehicles circulating on roads looking for a parking space, leading to more traffic congestion and delay. There is also the potential for illegal parking and spillover of parking into residential neighbourhoods. And, a lack of convenient parking in a Downtown area can result in declines in visitations and overall activity and lead to potential economic decline. A thoughtful balance of parking is vitally important.

The future parking requirements in this study have been developed based on the existing rate of parking demand. This represents a base-case scenario. Various downtown parking strategies that may influence the rate of demand for future parking are discussed below. The downtown parking strategies reflect a “carrot-and-stick” approach, which aims to achieve the balance of ensuring that future parking needs are met, while supporting reduced reliance on SOV travel.

5.1 Transportation Demand Management (TDM) Initiatives

Travel demand management initiatives include enhancements to the provision and accessibility of alternative modes of travel such as public transit, cycling, and walking, and the use of discentives to discourage SOV travel.

TDM initiatives are used by municipalities to influence travel behaviour, improve transportation system efficiency, and decrease SOV travel. The choice of TDM strategies is dependent on the overall objectives, the desired results, as well as applicability to the area of concern. In addition to parking demand reduction, municipalities may implement TDM strategies to achieve goals, such as congestion reduction, pollution reduction, increased usage of non-auto travel modes, and increased accessibility in downtown neighbourhoods. Some of the common and effective strategies include provision of high-order transit and carpool services, as well as parking management. The effectiveness of any of these TDM strategies varies depending on the unique characteristics of each municipality, and TDM works best when complementary strategies are implemented together. The following sections highlight some of the TDM strategies related to alternative modes of travel, as well as strategies associated with parking management.

5.1.1 TDM Strategies related to Alternative Modes of Travel

Some of the TDM initiatives related to alternative modes of travel include:

- Public transit improvements to encourage transit use through increased transit availability, convenience and comfort, such as increase in transit routes and frequency, improved transit stops and amenities,

and provision of high-order transit. For instance, the potential LRT B-Line is expected to increase ridership in Downtown Hamilton and reduce automobile use.

- Promotion of active transportation, and cycling and walking infrastructure improvements. It is our understanding that the Pedestrian Mobility Master Plan was undertaken for the City of Hamilton. One of the goals of the master plan is to increase the number of walking trips to achieve the TMP pedestrian mode split target of daily trips of 10% in the short-term and 15% (including cycling) in the long-term across the City.

5.1.2 Parking Management Strategies

The goals of parking management strategies are to encourage more efficient use of existing parking facilities, and to reduce parking demand. Some of the parking management strategies include:

- Changes to parking fees. Pricing is an effective tool to influence parking demand. As noted in Section 3.2, there is opportunity to increase the hourly, daily maximum, and monthly parking rates for municipal parking facilities, which has the potential to reduce downtown parking demand. Many municipalities, such as San Francisco and Los Angeles, are also implementing variable market rate for on-street parking. The on-street parking rate for individual road segment is adjusted based on locations, time of the day, and the real-time/modelled parking availability in the area.

- Electronic parking guidance systems. Municipalities implement electronic parking guidance system to direct drivers from key entrance points of a defined area (e.g., downtown) to parking facilities with available spaces. One example is e-Park in the City of Seattle. Dynamic signs are installed at key entrance points to downtown Seattle to guide drivers to parking facilities that have short-term spaces and provide real-time information about space availability. The information is also available through smart phone applications, the City website, and car navigation systems. This strategy reduces the time it takes parkers to search for parking, resulting in reduction of emissions and fuel consumption. It allows better use of existing parking facility capacity, and addresses the perception of parking shortage. It can also potentially increase the practical capacity from the current 85% threshold to a higher level due to reduced time spent by drivers looking for a parking space, which in turn reduces the effective parking demand.

- Improving Walkability. People are willing to walk a longer distance in an attractive, pedestrian-oriented street environment. Improving walkability in Downtown Hamilton and pedestrian connections to parking can increase the usable parking supply serving a destination (i.e., people are willing to walk further to park). Ways to achieve a pedestrian friendly downtown include: improving sidewalks, creating more attractive and clean walking areas along with landscaping and trees, creating pedestrian shortcuts, such as mid-block paths and connections between dead-end streets.

As noted, TDM initiatives work best when complementary strategies are implemented together, providing a set of strategies with incentives for commuters to use alternative modes of travel, as well as discentives to discourage commuters from SOV travel. The implementation of TDM initiatives should be reviewed in

more detail and assessed in view of the City's objectives and specific needs. It is crucial to recognize that while TDM initiatives can be successful in reducing peak period trips by automobile, they alone do not necessarily lead to a reduced need for parking for certain land uses. For instance, TDM may be very successful in reducing residential-based trips. However, many residents may continue to own a vehicle. As a result of TDM initiatives, they may choose to use the vehicle less or at different times of the day, but they still have a need for parking. Coordination of the overall supply of parking in Downtown Hamilton, as part of City of Hamilton's Transportation Demand Management strategy and objectives is recommended.

It is recognized that the analysis in this study reflects a base-case analysis, which does not take into account the impacts of potential TDM initiatives on Downtown Hamilton parking. In part, this is due to the uncertain status and timing of TDM initiatives, such as the proposed LTR B-line. Nevertheless, projected parking demand suggests there is a need to identify and protect additional parking supply in Downtown Hamilton.

Moreover, a by-law was enacted to restrict the further proliferation of surface parking lots in Downtown Hamilton. As the privately owned public parking lots are redeveloped in the future, fewer public parking spaces will be available. There will be increasing expectation for the City to ensure that public parking is sufficient in Downtown Hamilton.

5.2 Potential Parking Garage Locations

To address the forecasted parking shortfall in the two high demand areas as identified in Section 4.5, potential parking garage locations in the areas were identified, screened, and evaluated.

Selection of a potential site for any parking facilities involves consideration of the following three key factors: site suitability, proximity to parking generators, and access to major roadways.

Site Suitability

Site suitability is primarily related to the shape and size of the site, which determines the parking design and layout efficiency. Typically rectangular sites are preferred as they can accommodate multiple parking modules and allow for efficient parking layouts. Sites with irregular shapes can result in inefficient use of the site, which equates to higher square footage of parking area and higher construction cost per parking space.

The width and length of the site also affect the efficiency of a parking layout. A parking garage with two double-loaded parking modules and 90-degree parking requires a minimum width of about 35 metres. An effective width less than the minimum may limit design options and increase construction and operating costs per parking space. According to the industry publication, *Parking,* published by Eno Foundation for Transportation (1990), about 100 metres of effective site length is generally ideal for providing a good

balance between minimizing parking square footage per parking space and maximizing operational efficiencies. Site lengths that are too short result in parking layout inefficiencies, while sites that are too long require drivers to travel longer distances when circulating, or increase traffic conflicts when cross-over aisles are provided.

Proximity to Parking Generators

Proximity to parking generators is measured by walking distance between the parking facility and the nearest pedestrian entrance to parking generators. A parking facility should be strategically located near a variety of land uses with varying peak parking demand characteristics to maximize the use of the parking facility at all times. For instance, the Jackson Square underground parking facility serves the office, retail, and entertainment uses (Copps Coliseum) in proximity to the garage, which allows the facility to be shared by office employees, retail patrons, and visitors to concerts, hockey games, and other events because peak parking demands are at different times of the day and week.

Access to Major Roadways

The volume and traffic flow on adjacent streets has a major impact on the use of a parking facility.

Features that make a potential site desirable from a traffic perspective include location on main routes, opportunity for multiple access points, and excess capacity available on the roadway network serving the site. Parking garages that are located along main roadways allow easy access and promote less circuitous travel for drivers, and better serve transient parkers (such as visitors) who may not be familiar with the area.

It is also important to ensure that there is sufficient capacity available on the boundary roads to accommodate the increase in traffic associated with the parking garage.

The parking lots in the two areas were assessed based on these criteria, as well as the existing and future parking utilizations. The potential future parking garage locations in the two areas are shown in **Figure 14**.

5.2.1 Area 1: Bay Street and King Street Area

The existing parking utilization in Area 1 is 75 percent. This is consistent with the parking utilization of Zone 1 (74 percent in the Market and Caroline Area) in the 2005 study. Higher parking utilization is observed in localized areas, such as Zone 5 and in privately operated parking lots and garages in Zone 12. Given many of the existing surface parking lots have been identified for commercial redevelopment, such as office buildings and hotels, the future parking demands in individual zones in Area 1 are expected to reach or exceed the available parking supply (Zones 3, 5, and 12) in the 5-year period. Furthermore, the

parking shortfalls in these zones are expected to worsen in the 10-year period. In addition, Area 1 includes part of the King Street West BIA and Hess Village Entertainment District, as well as major commercial office and convention uses to the east of Bay Street. Parking availability is expected to be critical to the economic viability of the businesses in the area.

To address the forecasted parking shortfall in the area, as well as to support the economic vibrancy of the King Street West BIA and the Hess Village Entertainment District, construction of a parking garage in the area warrants consideration by 2017.

The additional parking supply provided by the new parking garage is recommended to be 500 spaces at minimum. This is the amount of additional parking supply required to achieve 85% parking utilization threshold for Area 1 over the long-term horizon. The 500 spaces will also replace the parking spaces associated with the anticipated loss of municipal and privately operated public parking facilities in the area.

The potential parking garage locations were evaluated based on factors such as existing and forecasted parking utilization in the area, site suitability, proximity to parking demand generators, and access to major roadways. Based on the evaluation results, the locations have been prioritized, with the preferred location listed first.

Site 1:Southwest corner of King Street and Bay Street intersection (Preferred)

- Located at the southeast corner of Zone 5
- Municipal Car Park No. 80, with 205 parking spaces

Parking Utilization

- Observed utilization during peak period: 99 percent
- Utilization of adjacent parking lots: 84 – 98 percent
- Future parking utilization for Zone 5 is forecasted to be 171% and 178% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is L-shaped
- The rectangular portion of the parking lot is about 246 feet (75 metres) long and 164 feet (50 metres) wide

Parking Demand Generator

- Adjacent to major demand generators: King Street retail to the north, office commercial to the north-east, future McMaster University/Public Health building to the east, and future hotel/condominium developments to the south

Access to Major Roadways

- Access onto both Bay Street and King Street

Summary

- One of the candidate sites and the preferred site in the 2005 parking study.
- The parking lot size is large enough to be used effectively in a parking garage, when ramp and garage access are taken into account.
- The L-shaped footprint may result in some inefficiency in the parking layout.
- The site is strategically located, along King Street and Bay Street, near prime parking demand generators, and in close proximity to the high parking demand zones (Zone 3, Zone 5, and Zone 12). The site is expected to have a high parking utilization.

Site 2: Northeast corner of George Street and Caroline Street intersection

- Located at the southwest corner of Zone 5
- Currently occupied by an illegal parking lot, with 102 parking spaces

Parking Utilization

- Observed utilization during peak period: 84 percent
- Utilization of adjacent parking lots: 77 – 99 percent
- Future parking utilization for Zone 5 is forecasted to be 171% and 178% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is regularly shaped

- The parking lot is about 230 feet (70 metres) long and 115 feet (35 metres) wide

Parking Demand Generator

- Adjacent to major demand generators: close to retail uses along King Street, future hotel/condominium developments to the south and the Hess Village Entertainment District to the west

Access to Major Roadways

- Access onto local roads: Caroline Street and George Street

Summary

- One of the candidate sites in the 2005 parking study.
- The parking lot is regularly shaped and is large enough to be used effectively in a parking garage, when ramp and garage access are taken into account.
- The location is strategically located and is in close proximity to the Hess Village Entertainment District.
- A parking structure at this location can serve the parking needs of parkers destined to Zone 2, Zone 3, and Zone 5. The site is expected to have a high parking utilization.
- Access to the parking lot is via two local roads, which likely have lower capacity to accommodate the anticipated traffic volumes related to a future parking garage.

Site 3: Southwest corner of Bay Street and Market Street intersection

- Located along the east side of Zone 5
- Currently occupied by a privately owned public parking lot with 108 parking spaces

Parking Utilization

- Observed utilization during peak period: 95 percent
- Future parking utilization for Zone 5 is forecasted to be 171% and 178% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is regularly shaped

- The parking lot is about 246 feet (75 metres) long and 115 feet (35 metres) wide

Parking Demand Generator

- Adjacent to major demand generators: federal building to the north, Copps Coliseum to the northeast, office commercial to the east, and King Street retail to the south

Access to Major Roadways

- Access onto Bay Street

Summary

- One of the candidate sites in the 2005 parking study.
- The parking lot size is large enough to be used effectively in a parking garage, when ramp and garage access are taken into account.
- The site is strategically located along Bay Street near the King Street corridor, and near prime parking demand generators, and in close proximity to the high parking demand zones (Zone 5 and Zone 12). The site is expected to have a high parking utilization.

Site 4: Southeast corner of King Street and Bay Street

- Located at the northwest corner of Zone 12
- Currently occupied by a surface parking lot which serves the school board during the transition period, with a total of 91 parking spaces
- It is our understanding that the lot could be redeveloped by 2020. A potential office/commercial use of 150,000 ft^2 has been assumed for the location

Parking Utilization

- Observed utilization during peak period: 98 percent
- Future parking utilization for Zone 12 is forecasted to be 100% and 103% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is regularly shaped

- It is uncertain how much space is available for construction of a parking garage as part of the existing parking lot is fenced off for construction of the future McMaster University/Public Health building to the south

Parking Demand Generator

- Adjacent to major demand generators: the future McMaster University/Public Health building to the south, institutional uses to the east, and office commercial use to the north

Access to Major Roadways

- Access onto both Bay Street and King Street

Summary

- The site is strategically located along King Street and Bay Street, and is expected to have a high parking utilization.
- It is uncertain whether the footprint of the land parcel is large enough to be used effectively for a parking garage.
- A parking structure at this location can serve the parking needs of parkers destined to Zone 5 and Zone 12. The site is expected to have a high parking utilization.
- As noted in Table 17, the existing parking lot is proposed to be redeveloped for a potential office/commercial development. Potential partnership with the developer is required to include public parking in the office/commercial redevelopment proposal.

5.2.2 Area 2: King William Street and John Street area

The existing parking utilization in Area 2 is 73 percent. This is consistent with the parking utilization of Zone 3 (76 percent in the King William and Mary Area) in the 2005 study. Higher parking utilization is observed in localized areas, such Zone 10. Zone 10 is expected to exceed the practical capacity in the 5-year period.

With one of, or both Municipal Car Parks No. 1 and No. 5 retained, Area 2 is forecasted to operate at a future parking utilization rate below practical capacity and with surplus parking in the area in the long-term period. This suggests that in all likelihood a parking garage would not be required in the future.

However, if both municipal car parks are redeveloped, the future parking utilization in Area 2 is forecast to exceed the practical capacity in the 10-year period. In addition, Area 2 includes the majority of the Downtown Hamilton BIA and part of the International Village BIA.

A parking structure could be built by 2022 or earlier to accommodate the displaced parking demand at the two municipal car parks. The additional parking supply provided by the new parking garage is recommended to be 105 spaces at minimum. The 105 spaces would replace the anticipated loss of parking in the area.

Similar to Area 1, potential parking garage locations were evaluated based on factors such as existing and forecasted parking utilization in the area, site suitability, proximity to parking demand generators, as well as access to major roadways. Based on the evaluation results, the locations have been prioritized, with the preferred location listed first.

Site 5: Southeast corner of Wilson Street and Hughson Street (Preferred)

- Located at the east end of Zone 10
- Currently occupied by a privately owned public parking lot, with a total of 338 parking spaces

Parking Utilization

- Observed utilization during peak period: 88 percent
- Utilization of adjacent parking lots: 75 – 89 percent
- Future parking utilization for Zone 10 is forecasted to be 89% and 93% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is regularly shaped
- The parking lot is about 312 feet (95 metres) long and 295 feet (90 metres) wide

Parking Demand Generator

- Adjacent to office commercial and institutional uses in the area

Access to Major Roadways

- Access onto both Wilson Street and John Street

Summary

- A parking garage at this location can serve the parking needs of parkers destined to Zone 10 and Zone 11. The site is expected to have a high parking utilization.
- The parking lot size is large enough to be used effectively in a parking garage, when ramp and garage access are taken into account.
- The site is strategically located along John Street and Wilson Street, providing accesses to two minor arterial roads.
- It is noted that the site is identified as a “potential park location to be investigated” in the Downtown Hamilton Secondary Plan Review Background Report.

Site 6: Southeast corner of King William Street and Catharine Street

- Located at the northwest corner of Zone 20
- Currently occupied by a public parking lot, with a total of 139 parking spaces

Parking Utilization

- Observed utilization during peak period: 90 percent
- Utilization of adjacent parking lots: 73 – 84 percent
- Future parking utilization for Zone 20 is forecasted to be 74% and 107% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is regularly shaped
- The parking lot is about 262 feet (80 metres) long and 131 feet (40 metres) wide

Parking Demand Generator

- Close to King Street business area to the south

Access to Major Roadways

- Access onto local roads: Mary Street, Catharine Street, and King William Street

Summary

- One of the candidate sites in the 2005 parking study.
- The parking lot size is large enough to be used effectively in a parking garage, when ramp and garage access are taken into account.
- A parking garage at this location can serve the parking needs of parkers destined to Zone 11 and Zone 20. The site is expected to have a high parking utilization.
- Access to the parking lot is via local roads, which likely have lower capacity to accommodate the anticipated traffic volumes related to a future parking garage.

Site 7: Southeast corner of King William Street and Mary Street

- Located at the north end of Zone 20
- Municipal Car Park No. 5, with 124 parking spaces
- Currently proposed as a potential site for a new forensic building (10-year horizon)

Parking Utilization

- Observed utilization during peak period: 73 percent
- The future utilization for Zone 20 is forecasted to be 74% and 107% in the short-term and long-term horizons, respectively

Site Suitability

- The footprint of the parking lot is L-shaped
- The rectangular portion of the parking lot is about 279 feet (85 metres) long and 98 feet (30 metres) wide

Parking Demand Generator

- Adjacent to major demand generators: King Street retail to the south, police station to the north, Theatre Aquarius to the east, and future forensic building at the location

Access to Major Roadways

- Access onto local roads: King William Street and Walnut Street

Summary

- One of the candidate sites and the preferred site for “Zone 3” in the 2005 parking study.
- The L-shaped footprint may result in some inefficiency in the parking layout design.
- The parking lot size is large enough to be used effectively in a parking garage, when ramp and garage access are taken into account.
- A parking garage at this location can serve the parking needs of parkers destined to Zone 11 and Zone 20. The site is expected to have a high parking utilization.
- Access to the parking lot is via local roads, which likely have lower capacity to accommodate the anticipated traffic volumes related to a future parking garage.
- Potential partnerships are required to include public parking in the new forensic building proposal.
- Consistent with the Commercial Market Analysis for Downtown Hamilton BIA report recommendation that the BIAs should consider development on the parking lots along King William Street for mixed-use with parking garage structures.

5.2.3 Preferred Parking Garage Locations

As noted, a preferred site for a parking garage was identified for each of the high parking demand areas. Further details are discussed below.

Area 1: Bay Street and King Street area

For Area 1, Site 1 (southwest corner of King Street and Bay Street intersection) was identified as a preferred site for a parking garage. It is a larger property than others considered. It is strategically situated at the Bay Street and King Street intersection, which can serve the future parking demands in the high parking demand zones, namely Zone 3, Zone 5, and Zone 12. It is also a good location to incorporate ground-level retail along King Street and Bay Street as a component of the proposed parking facility, if desirable by the City. The additional parking supply provided by the new parking garage is recommended to be a minimum 500 spaces by 2017.

Area 2: King William Street and John Street area

For Area 2, Site 5 (southeast corner of Wilson Street and Hughson Street intersection) was identified as a preferred site for a parking garage. It is a larger property than others considered. It can serve the future parking demands in the high parking demand zones, namely Zone 10 and Zone 11. It is located along two

main roadways in the area: Wilson Street and John Street. The size of the new parking garage is recommended to be a minimum 443 spaces (existing parking supply of 338 spaces and additional parking supply of 105 spaces) by 2022.

6.0 PRELIMINARY FINANCIAL AND ECONOMIC ASSESSMENT

This section presents a preliminary financial assessment for developing a potential 500 space parking garage with ground floor retail at a preferred location in each of the two identified high demand areas, Area 1 and Area 2. Developing a garage can potentially provide the City with additional "value" that can improve the economics of development. For example, developing a parking garage (both above and below grade) can provide unused development potential that may support higher density development. Additional density becomes more feasible as parking requirements can be accommodated on site. For example, opportunities exist for ground floor retail uses, providing additional commercial space. This can present additional benefits to the City by potentially offering additional income streams, air rights value, development fees, property taxes and land value appreciation.

As such, this financial model has been developed to analyze the feasibility of a mixed use development that consists of a 3 storey – 500 space parking garage, with 10,000 square feet of ground floor retail (5,000 sq. ft. along each street frontage). The financial model test scenarios with 3 storeys above grade, 3 storeys below grade and different pricing levels. It should be noted that a key component of commercial real estate valuation is an estimate of terminal value. This represents the value of the asset at the end of the investment time horizon and depending on the asset quality can have a significant contribution to the present values estimate. As such, a terminal value estimate has been included to each scenario. Detailed cash-flow analyses of the financial models are provided in **Appendix D**.

6.1 Capital Costs

The capital cost elements impacting the parking garage development are summarized below:

Land Costs: Developing a new parking garage requires land acquisition costs. Typically the land cost per square foot increases with proximity to a popular commercial corridor. In this analysis, the potential garage locations are in highly attractive areas resulting in higher land values. Through an analysis of comparable sales and discussions with City of Hamilton officials, land acquisition costs have been estimated at $60.00 per square foot. **Table 24** illustrates the comparable sales analyzed and their respective sales price.

Table 24 - Land Sales – City of Hamilton

Address	Sale Date	Sale Price	Zoning	Lot Size (Sq. Ft.)	Price Per Square Foot	Comments
100 Main St. W.	Aug-12	$8,600,000	D1	139,392	$61.70	Site at NE corner of Bay and Main St. Bldg. demolished in Oct-12. Site of new McMaster Health Centre, 6 storey, 195,000 SF
149 Main St. W.	May-12	$1,475,000	D3	27,050	$54.53	Irregular shaped site - vacant parking lot. Re-sale since Aug-07 (17.8%/annum). Site plan submitted for 7 storey, 100 unit hotel w/ 52,937 GFA
123 James St. N.	Jan-12	$320,000	D2	6,157	$51.97	Former bldg. on site was demolished. Purchased by abutting owner who paid a premium for plottage.
305 – 307 Main St. W.	Nov-11	$165,000	D/S-1316	5,109	$32.30	Rectangular lot just east of Pearl St. Zoning allows offices and limited retail & personal service.
64 Main St. E.	Mar-10	$615,000	D3	13,568	$43.17	Former Shell gas station at SE corner of John and Main, opposite court house.

Construction Costs: Construction costs (also known as hard costs) represent the actual tangible costs to develop the parking structure. They are typically affected by location, parking stall size, parking stall shape, physical design and grade level. Typically, underground construction is more expensive, due to the costs of rock excavation, shoring and ventilation.

To develop construction cost estimates for both the retail and parking garage components, this study relies on previous MMM Group parking garage studies and costing information from “Hanscomb Yardsticks for Costing”. This resulted in total construction costs for above and below grade of $23,300 and $34,300 per space respectively. Total construction cost to develop retail space is $105 per square foot. Construction cost assumptions and estimates are further detailed in **Table 25**.

Soft Costs: Capital costs are also affected by “soft” costs, which typically account for project planning and design, consultant fees, permits, contingences and construction management and services.

To develop soft cost estimates, this study relies on previous MMM Group parking garage studies and costing information from “Hanscomb Yardsticks for Costing”. This results in total soft costs for above and below grade of $8,996 and $10,096 per space, respectively. Soft cost assumptions and estimates are further detailed in Table 25.

Table 25 - Capital Cost Assumptions

Area 1		Area 2	
Description		Description	
Location	Site 1	Location	Site 5
Site Size (estimate)	48,000 sq. ft. (1.1 acre)	Site Size (estimate)	98,000 sq. ft. (2.2 acre)
No. of Parking Spots	500	No. of Parking Spots	500
Proposed Structure	3 levels	Proposed Structure	3 levels
Sq. Ft. per parking space	310 sq. ft.	Sq. ft. per parking space	310 sq. ft.
Parking Construction (Hard) Costs ($ per space)		Parking Construction (Hard) Costs ($ per space)	
Above Grade – Average Cost	$22,000	Above Grade – Average Cost	$22,000
Below Grade – Average Cost	$33,000	Below Grade – Average Cost	$33,000
Roadway reconstruction and utilities	$200	Roadway reconstruction and utilities	$200
Underground services	$500	Underground services	$500
Streetscaping	$600	Streetscaping	$600
Sub Total – Construction Costs ($ per space)	$23,300 - $34,300	Sub Total – Construction Costs ($ per space)	$23,300 - $34,300
Soft Costs ($ per space)		Soft Costs ($ per space)	
Architecture	$3,000	Architecture	$3,000
Engineering Fees	$2,500	Engineering Fees	$2,500
Control	$560	Control	$560
Above Grade - Contingency (10%)	$2,936	Above Grade - Contingency (10%)	$2,936
Below Grade - Contingency (10%)	$4,036	Below Grade - Contingency (10%)	$4,036
Sub Total – Soft Costs ($ per space)	$8,996 - $10,096	Sub Total – Soft Costs ($ per space)	$8,996 - $10,096
Retail Area Costs (per square foot)	$105 psf	Retail Area Costs (per square foot)	$105 psf
Land Acquisition Cost (per square foot)	$60 psf	Land Acquisition Cost (per square foot)	$60 psf

6.2 Financing Costs

For this study, it is assumed the project will be partially debt financed (land and building costs) at 4.0% per annum, amortizing semi-annually over 25 years with a down payment of $1,500,000. **Table 26** summarizes the total construction costs, as well as the annual cost of capital, for a 500-space above grade parking garage with ground-floor retail in Area 1 and Area 2.

Table 26 - Total Construction Costs and Annual cost of Capital (500-space above grade parking garage with ground floor retail)

Description	Area 1 (All Above Grade)	Area 2 (All Above Grade)
Description		
Land Acquisition Cost	$2,880,000	$5,880,000
Parking Construction (Hard) Costs	$11,650,000	$11,650,000
Retail Area Costs	$1,050,000	$1,050,000
Soft Costs	$4,498,000	$4,498,000
Total Cost	$20,078,000	$23,078,000
Annual Cost of Capital	$1,182,400	$1,373,400

Table 27 summarizes the total construction costs, as well as the annual cost of capital, for a 500-space below grade parking garage with ground-floor retail in Area 1 and Area 2.

Table 27 - Total Construction Costs and Annual cost of Capital (500-space below grade parking garage with ground floor retail)

Description	Area 1 (All Below Grade)	Area 2 (All Below Grade)
Description		
Land Acquisition Cost	$2,880,000	$5,880,000
Parking Construction (Hard) Costs	$17,150,000	$17,150,000
Retail Area Costs	$1,050,000	$1,050,000
Soft Costs	$5,048,000	$5,048,000
Total Cost	$26,128,000	$29,128,000
Annual Cost of Capital	$1,567,500	$1,758,400

6.3 Parking Rates

Parking rates for the new mixed-use development are assumed to reflect the 2012 pricing. Given a potential new garage would be located within a high demand area, it is anticipated that parking rates at the top end of the range of observed rates. For the purposes of this analysis, MMM modelled scenarios with conservative parking rates and higher rates.

Table 28 illustrates existing parking rates, as well as both conservative and higher parking rates assumed for the parking garage.

Table 28 - Hamilton Parking Rates

	Short-Term Parking	Daily Maximum Parking	Monthly Permit
Municipal Parking	$1.00 - $2.50	$5.00 - $9.00	$50.00 - $120.00
Privately Operated Public Parking	$1.00 - $6.00	$3.50 - $15.00	$25.00 - $171.00
Conservative Parking Rates	$4.00	$9.50	$128.00
Higher Parking Rates	$6.00	$15.00	$160.00

6.4 Mixed Use Revenues

The proposed parking garage is anticipated to be highly utilized by staff at nearby commercial buildings, who would likely purchase a monthly pass. During the off peak hours, the proposed garage is anticipated to attract casual users which are likely to generate casual revenues – at short term or daily maximum rates. Based on an estimate of parking facility users, **Tables 29** and **30** summarize the revenue projections for Area 1 and Area 2 to showcase scenarios with conservative and higher parking rates. It should be noted that the total fee revenue has been discounted by 10 percent to reflect the assumed 90 percent occupancy of a new parking garage.

Retail revenues are anticipated to be derived from users seeking “flex space” to service the local population needs. Through research of comparable transactions and retail listings in the downtown core, we have approximated a lease rate of $18.00 per square foot (triple net) with 0% vacancy.

Table 29 - Area 1 and Area 2 – Mixed Use Facility Users & Revenue Projection – Conservative Rates

Component Type	No. Of Space	Payment Type	Utilization (hrs/day)/ [days/week]	Annual Revenue
Short Term Parking	50	Hourly	(4 hrs.)/[5 days]	$208,000
Daily Maximum Parking	75	Daily - Flat	6 Days	$222,300
Monthly Parking	415	Monthly	All month	$637,440
Total Parking Fee ($) Revenue	500			$1,067,740
Discounted Parking Fee Revenue (90 percent occupancy)				$960,966
Monthly Parking Revenue Per Space ($)				$160.00
Retail Revenue ($)	$18.00 psf x 10,000 sf			$180,000
Total Revenue				$1,140,966
Assumptions	1. Short term parking = 50 spots; Daily Maximum = 75 spots; Monthly Parking = 415 spots (assumed to be oversold by 10 percent) 2. All revenue based on 90% occupancy 3. Pricing based on *conservative* parking rates denoted in Table 28 4. Typical calculation for short term: 50 x $4.00 x 4 hrs./day x 5 days/week x 52 weeks/year 5. Typical calculation for daily rate: 75 x $9.50 x 6days/week x 52 weeks/year 6. Typical calculation for monthly parking: 415 x $128 x 12 months/year 7. Annual fee increase = 3 percent per annum (applied in cash flow analysis) 8. Retail Revenue = $18.00 per square foot			

Table 30 - Area 1 and Area 2 – Mixed Use Facility Users & Revenue Projection – Higher Rates

Component Type	No. Of Space	Payment Type	Utilization (hrs/day)/ [days/week]	Annual Revenue
Short Term Parking	50	Hourly	(4 hrs.)/[5 days]	$312,000
Daily Maximum Parking	75	Daily - Flat	6 Days	$351,000
Monthly Parking	415	Monthly	All month	$796,800
Total Parking Fee ($) Revenue	500			$1,459,800
Discounted Parking Fee Revenue (90 percent occupancy)				$1,313,820
Monthly Parking Revenue Per Space ($)				$219.00
Retail Revenue ($)	$18.00 psf x 10,000 sf			$180,000
Total Revenues				$1,493,820
Assumptions	1. Short term parking = 50 spots; Daily Maximum = 75 spots; Monthly Parking = 415 spots (assumed to be oversold by 10 percent) 2. All revenue based on 90% occupancy 3. Pricing based on *higher* parking rates denoted in Table 28 4. Typical calculation for short term: 50 x $6.00 x 4 hrs./day x 5 days/week x 52 weeks/year 5. Typical calculation for daily rate: 75 x $15.00 x 6days/week x 52 weeks/year 6. Typical calculation for monthly parking: 415 x $160 x 12 months/year 7. Annual fee increase = 3 percent per annum (applied in cash flow analysis) 8. Retail Revenue = $18.00 per square foot			

6.5 Operating Expenses

It is assumed that the mixed-use facility would be operated by the City of Hamilton Municipal Parking System (HMPS) in a manner similar to the Convention Centre and York Boulevard Parkdale operations. As such, operating costs will generally follow the 2012 budgets and actual operations for these facilities. It should be noted, however, that utility costs will vary depending on grade level. Typically, below grade structures incur higher utility costs than above grade structures. **Table 31** summarizes the annual operating expenses for the 500 space above grade and below grade parking facilities. It should be noted, that retail space will be leased on a triple net basis, with the prospective tenants responsible for all operating costs. As such, operating expenses are assumed to only be parking related.

Similar to the two structured facilities operated by the City, a “Pay-on-Foot” system of revenue collection would be most appropriate. Employees could access the parking garage by means of transponders or access cards, while visitors would either have their tickets validated electronically, or pay at a central station. Using the information from the City of Hamilton budget variance reports and similar studies conducted by MMM Group, the following operating costs are expected to apply to the proposed mixed use

facility. For reference, the following were the 2012 year-to-date budgeted operating costs for two similar facilities (excluding administrative fees, reserves and recoveries):

- Lot 37 - Convention Centre (797 spaces – All below grade): $112/space/month (budget)
- Lot 68 – York Blvd. (778 – All above grade): $76/space/month (budget)

Using the King William Street and Mary Street Feasibility Study, operating costs that are expected to apply to the potential parking garage. These are summarized in Table 31.

Table 31 - Annual Operating Expenses

Above Grade (500 Spaces)		Below Grade (500 Spaces)	
Cashiers	$140,000	Cashiers	$140,000
Maintenance Pay on Foot	$2,500	Maintenance Pay on Foot	$2,500
Signage & Equipment Repair	$25,500	Signage & Equipment Repair	$25,500
Surveillance Equipment Maintenance	$1,000	Surveillance Equipment Maintenance	$1,000
Security Guard	$46,720	Security Guard	$46,720
City Maintenance	$54,600	City Maintenance	$54,600
Insurance	$8,600	Insurance	$8,600
Municipal Taxes	$175,000	Municipal Taxes	$175,000
General Repair Allowance	$21,500	General Repair Allowance	$21,500
Hydro & Other	$44,900	Hydro & Other	$77,100
Total Operating Expenses	$520,320	Total Operating Expenses	$552,520
Operating Expense per Space	$86.72 per month	Operating Expense per Space	$92.09 per month

Assumptions

1. Cashiers: Assumed to be private contract similar coverage at Lot 37 and Lot 68. $16/hour (contract value) x 24 hrs. x 365 days
2. Maintenance Pay on Foot: Maintenance and replacement, signage and equipment repair, surveillance maintenance figures all taken from above referenced study
3. Security Guard: $16/hour x 8 hrs. x 365 days
4. City Maintenance: – 1 FTE x $30.00/hour *1,820 annual hours
5. Insurance costs: prorated from above mentioned study
6. Municipal Taxes: $350 per space (HMPS rate)
7. General Repair Allowance – prorated from above mentioned study
8. Hydro & Other – Hydro calculated from Lot 68 average ($83.60) per space for above grade parking garage and from Lot 37 average ($148.00) per space for below grade parking garage.

In the above grade scenario, monthly operating costs are approximately $87 per space. In the below grade scenario, monthly operating costs increase to approximately $92 per space. Both of these scenarios are lower than the expected monthly revenue potential of $160.00 per space. It should be noted that operating costs do not reflect possible sinking funds, reserve requirements or allowances for future capital maintenance.

6.6 Income from Operations

Based on the two different pricing models, the financial feasibility of the assumed mixed-use development was evaluated. **Table 32** highlights the feasibility with the conservative parking rates and **Table 33** with the higher parking rates.

As noted in Table 32, the proposed mixed-use development is anticipated to generate income from operations of $588,446 - $620,646 in the first year of operations with conservative parking rates. If the annual financing costs are accounted for, a loss of $561,800 - $1,170,000 (rounded) would be realized in the first full year of operation. Due to the low operating revenue with conservative parking rates, the income from operations alone would not be enough to cover the cost of financing a parking structure. If pricing rates are increased, income from operations improves and, as noted in Table 33, first year loss narrows to $208,900 - $817,100.

Table 32 - Feasibility Analyses - Conservative Rates

	Area 1 (All Above Grade)	Area 1 (All Below Grade)	Area 2 (All Above Grade)	Area 2 (All Below Grade)
Revenue				
Short Term Parking	$187,200	$187,200	$187,200	$187,200
Daily Maximum Parking	$200,070	$200,070	$200,070	$200,070
Monthly Parking	$573,700	$573,696	$573,696	$573,696
Sub Total Parking Revenue	$960,966	$960,966	$960,966	$960,966
Retail Revenue	$180,000	$180,000	$180,000	$180,000
Total Revenue	$1,140,966	$1,140,966	$1,140,966	$1,140,966
Operating Expenses				
Cashiers	$140,000	$140,000	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500	$25,500	$25,500
Surveillance Equipment Maintenance	$1,000	$1,000	$1,000	$1,000
Security Guard	$46,720	$46,720	$46,720	$46,720
City Maintenance	$54,600	$54,600	$54,600	$54,600
Insurance	$8,600	$8,600	$8,600	$8,600
Municipal Taxes	$175,000	$175,000	$175,000	$175,000
General Repair Allowance	$21,500	$21,500	$21,500	$21,500
Hydro & Other	$44,900	$77,100	$44,900	$77,100
Total Operating Expenses	$520,320	$552,520	$520,320	$552,520
Net From Operations	$620,646	$588,446	$620,646	$588,446
Less: Annual Cost of Capital	$1,182,400	$1,567,500	$1,373,400	$1,758,400
End of Year Balance (rounded)	($561,800)	($979,000)	($752,700)	($1,170,000)

Table 33 - Feasibility Analyses - Higher Rates

	Area 1 (All Above Grade)	Area 1 (All Below Grade)	Area 2 (All Above Grade)	Area 2 (All Below Grade)
Revenue				
Short Term Parking	$280,800	$280,800	$280,800	$280,800
Daily Maximum Parking	$315,900	$315,900	$315,900	$315,900
Monthly Parking	$717,120	$717,120	$717,120	$717,120
Sub Total Parking Revenue	$1,313,820	$1,313,820	$1,313,820	$1,313,820
Retail Revenue	$180,000	$180,000	$180,000	$180,000
Total Revenue	$1,493,820	$1,493,820	$1,493,820	$1,493,820
Operating Expenses				
Cashiers	$140,000	$140,000	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500	$25,500	$25,500
Surveillance Equipment Maintenance	$1,000	$1,000	$1,000	$1,000
Security Guard	$46,720	$46,720	$46,720	$46,720
City Maintenance	$54,600	$54,600	$54,600	$54,600
Insurance	$8,600	$8,600	$8,600	$8,600
Municipal Taxes	$175,000	$175,000	$175,000	$175,000
General Repair Allowance	$21,500	$21,500	$21,500	$21,500
Hydro & Other	$44,900	$77,100	$44,900	$77,100
Total Operating Expenses	$520,320	$552,520	$520,320	$552,520
Net From Operations	$973,500	$941,300	$973,500	$941,300
Less: Annual Cost of Capital	$1,182,400	$1,567,500	$1,373,400	$1,758,400
End of Year Balance (rounded)	($208,900)	($626,200)	($399,900)	($817,100)

6.7 Business Case

Based on this preliminary financial assessment, the income from operations alone does not appear to be sufficient to cover the cost of financing as a mixed-use development. However, with higher parking rates, the analyses yield a better cash-flow situation. As previously mentioned, terminal value represents the asset value at the end of the investment horizon. This is calculated by taking the final year (Year 25) net income and dividing by a terminal capitalization rate. For this analysis this rate is estimated to be 8%. As terminal value is highly sensitive to net income, the scenario with higher parking rates generates higher net income and thus a higher terminal value. **Tables 34** and **35** present the financial summary to reflect all key financial metrics for each scenario. As summarized, with higher parking rates, the mixed-use development is financially viable in both Areas 1 and 2 and can support both above and below grade

development. With conservative parking rates, only Area 1 with an above grade parking structure appears to be financially viable.

Table 34 - Financial Analyses - Conservative Rates

	Area 1 (All Above Grade)	Area 1 (All Below Grade)	Area 2 (All Above Grade)	Area 2 (All Below Grade)
NPV of Cash Flows During Holding Period	($4,784,004)	($10,955,825)	($7,531,791)	($13,700,612)
PV of Terminal	$4,796,806	$4,547,940	$4,796,806	$4,547,940
Final Investment Value (rounded)	$9,800	($6,407,900)	($2,735,000)	($9,152,700)

Table 35 - Financial Analyses – Higher Rates

	Area 1 (All Above Grade)	Area 1 (All Below Grade)	Area 2 (All Above Grade)	Area 2 (All Below Grade)
NPV of Cash Flows During Holding Period	$2,155,023	($4,013,799)	($589,764)	($6,758,586)
PV of Terminal	$7,523,919	$7,275,054	$7,523,919	$7,275,054
Final Investment Value (rounded)	$9,678,900	$3,261,300	$6,934,200	$516,500

7.0 CONCLUSIONS

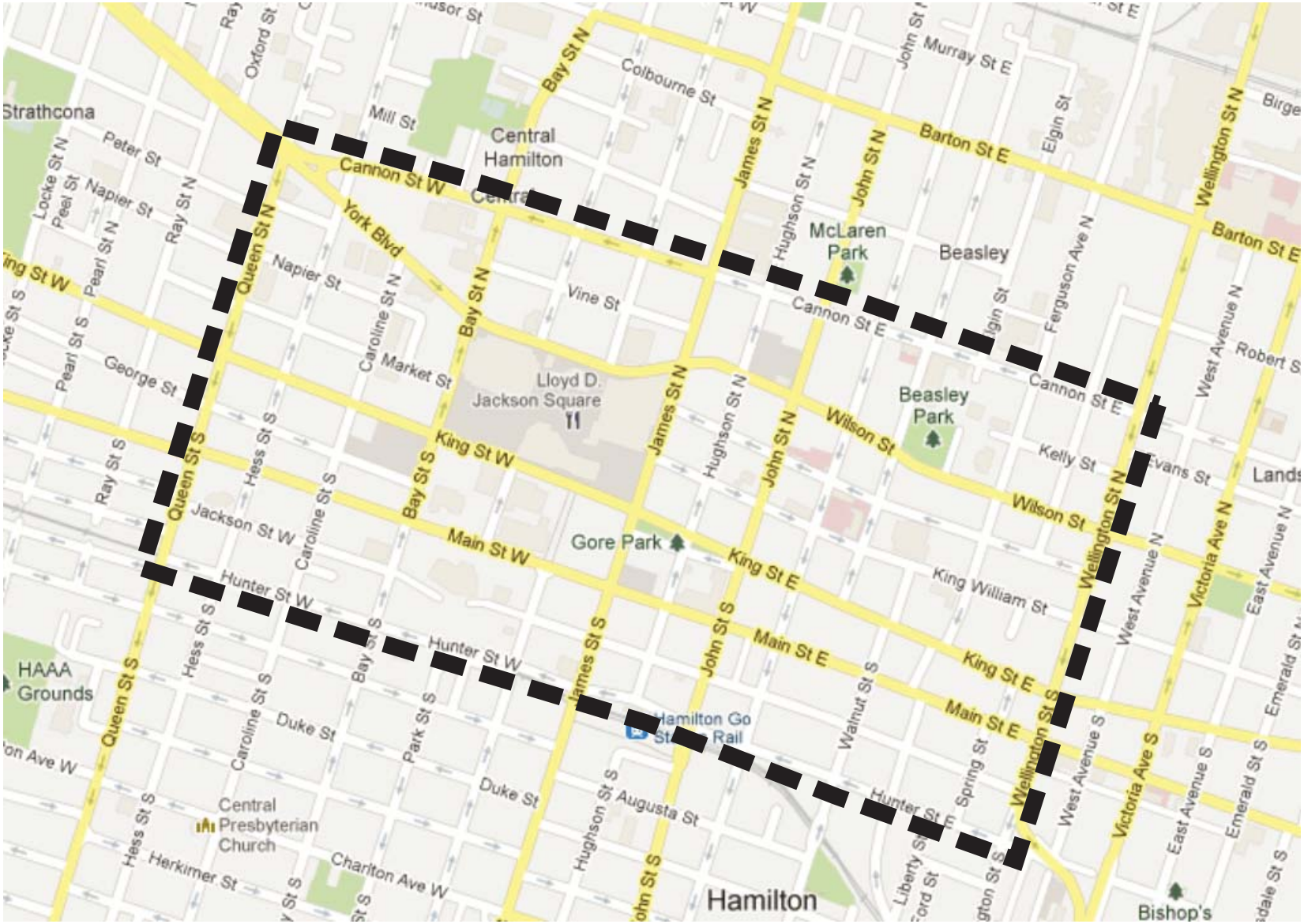
MMM Group was retained by the City of Hamilton to undertake a Downtown Hamilton Parking Study and Parking Garage Assessment, which updates the current downtown parking inventory and parking demands, examines options to provide additional parking to address future parking demands, and develops a financial assessment for the construction of a new parking facility in Downtown Hamilton.

Parking utilization survey findings indicated that the overall peak utilization has decreased from 76% in 2003 to 68% in 2012. It is observed that there is a substantial surplus capacity in Downtown Hamilton as a whole. Based on the future parking demand forecasts, the future parking demands in several localized areas (defined as zones) are forecasted to exceed practical capacity. These zones were grouped into two larger high-demand areas: Area 1, which centred around Bay Street and King Street intersection and Area 2, which centred around King William Street and John Street intersection.

A number of downtown parking strategies have been examined to address the projected future parking needs, including various Transportation Demand Management Initiatives related to alternative modes of travel and parking management strategies. Need for additional parking facilities in the two high-demand areas is identified. For Area 1, a new parking garage of 500 spaces at the existing municipal parking lot located at the southwest corner of King Street and Bay Street intersection is recommended by 2017. For Area 2, a new parking garage of a minimum 443 spaces is recommended at the existing privately owned public parking lot at the southeast corner of Wilson Street and Hughson Street intersection by 2022.

Preliminary financial and economic assessment was then conducted to determine the feasibility of constructing a parking facility with a 500-space capacity and ground floor retail at the two high demand areas. Total capital costs are estimated to be $20 to $23 million for an above grade parking garage and $26 to $29 million for a below grade parking garage. Based on the financial models, the parking rates at the future parking garages need to be set at the high end of the range of parking rates observed in public parking facilities in Downtown Hamilton for the development to be financially viable in both Areas 1 and 2. If a more conservative parking rates (at the middle range of parking rates observed in public parking facilities) are assumed for the future parking garage, only an above grade parking structure in Area 1 appears to be financially viable.

J:\01 PROJECTS\2012 jobs\16-12086.DED (Hamilton Parking)\Final Report\[2013.March] Downtown Hamilton Parking Study.doc



Source: GoogleMaps

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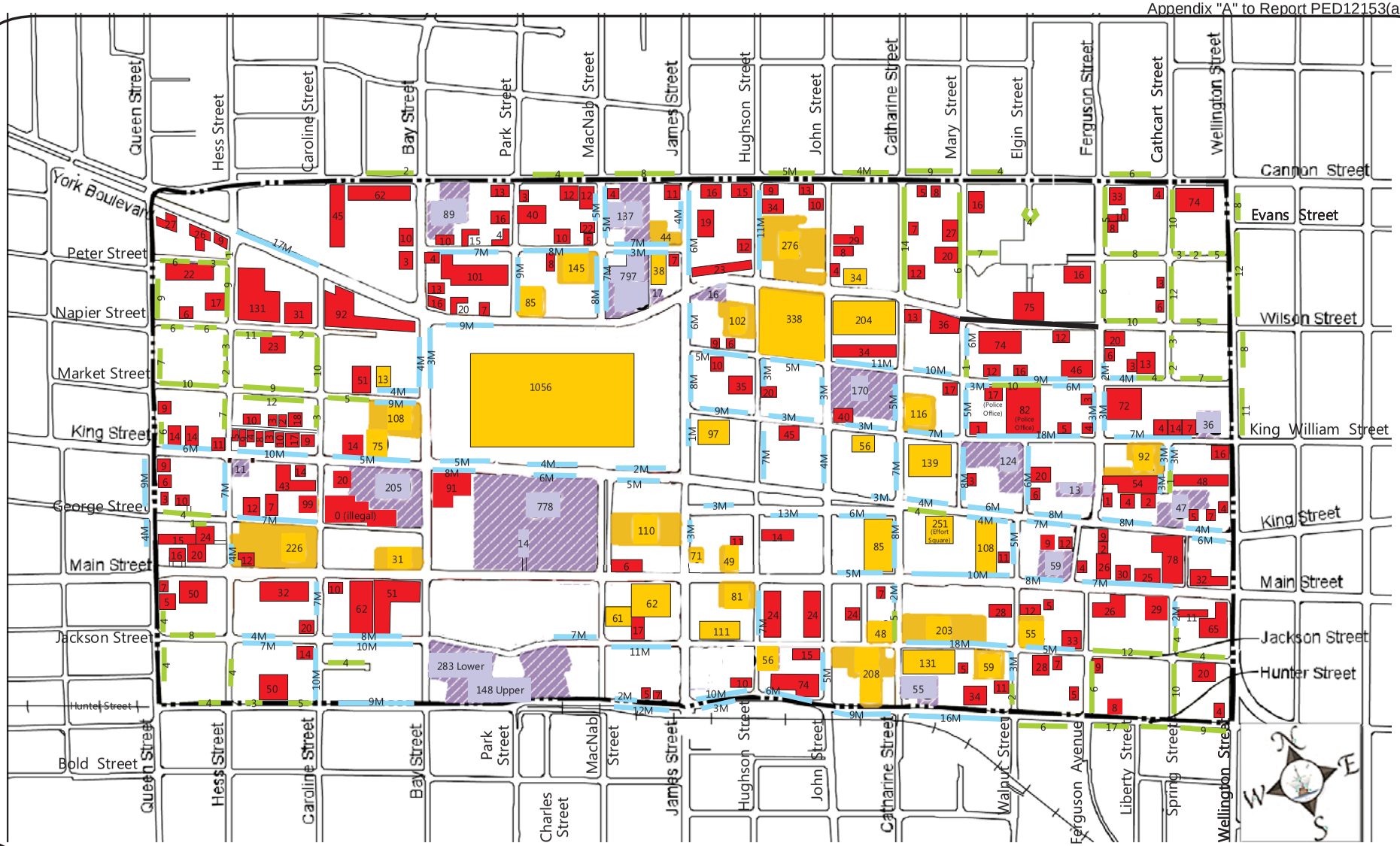
Study Area

Figure 1
Study Area



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5 Municipal Parking Lots

20 Privately Owned Public Parking Lots

10 Other Parking Lots

5M Metred On-Street Parking Spaces

5 Other On-Street Parking Spaces

Figure 2
Existing Parking Inventory
Downtown Hamilton

Total: 13,109 spaces

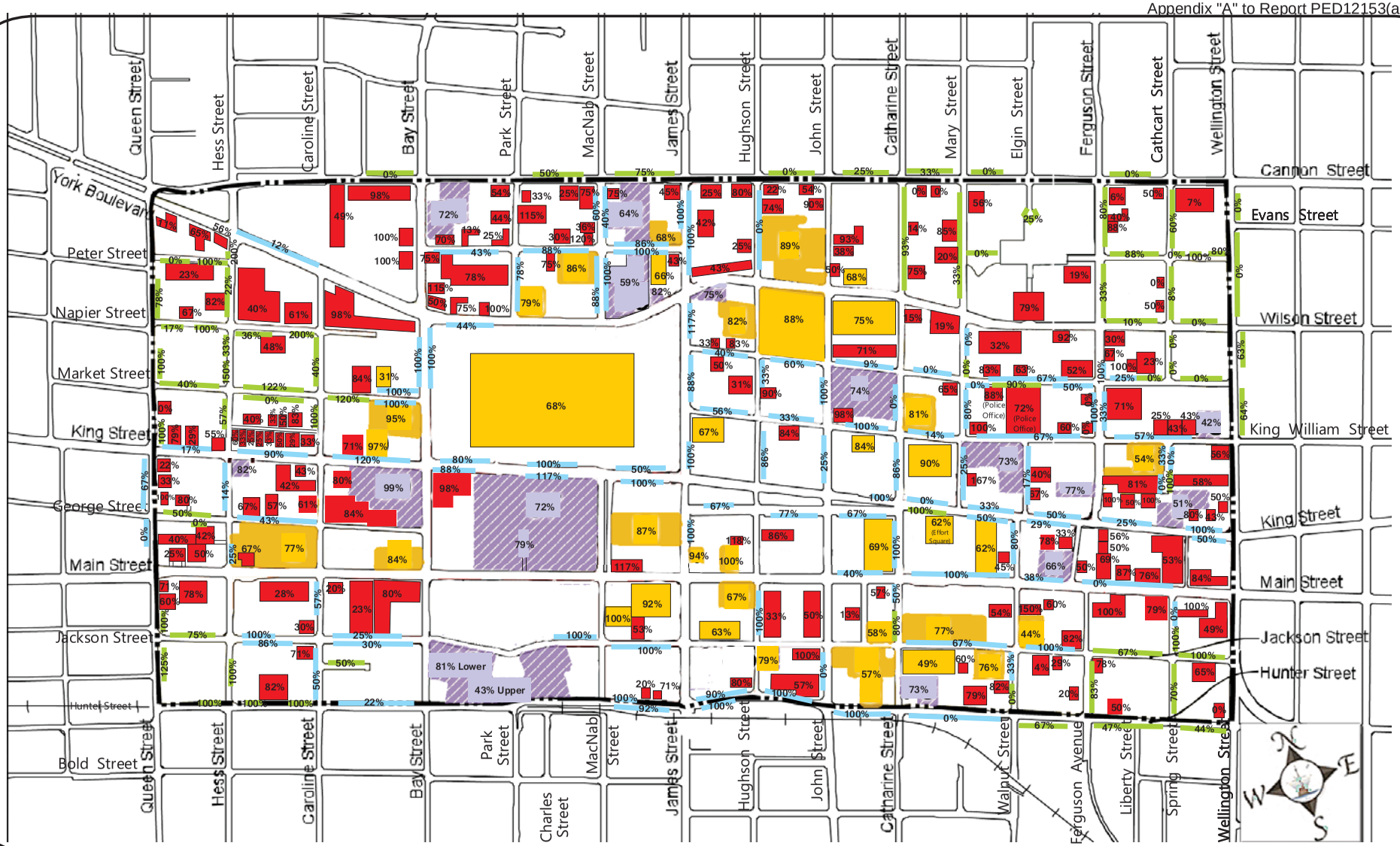
MMM GROUP

Zone Boundary

1 Zone

(xx spaces) Parking Supply by Zone

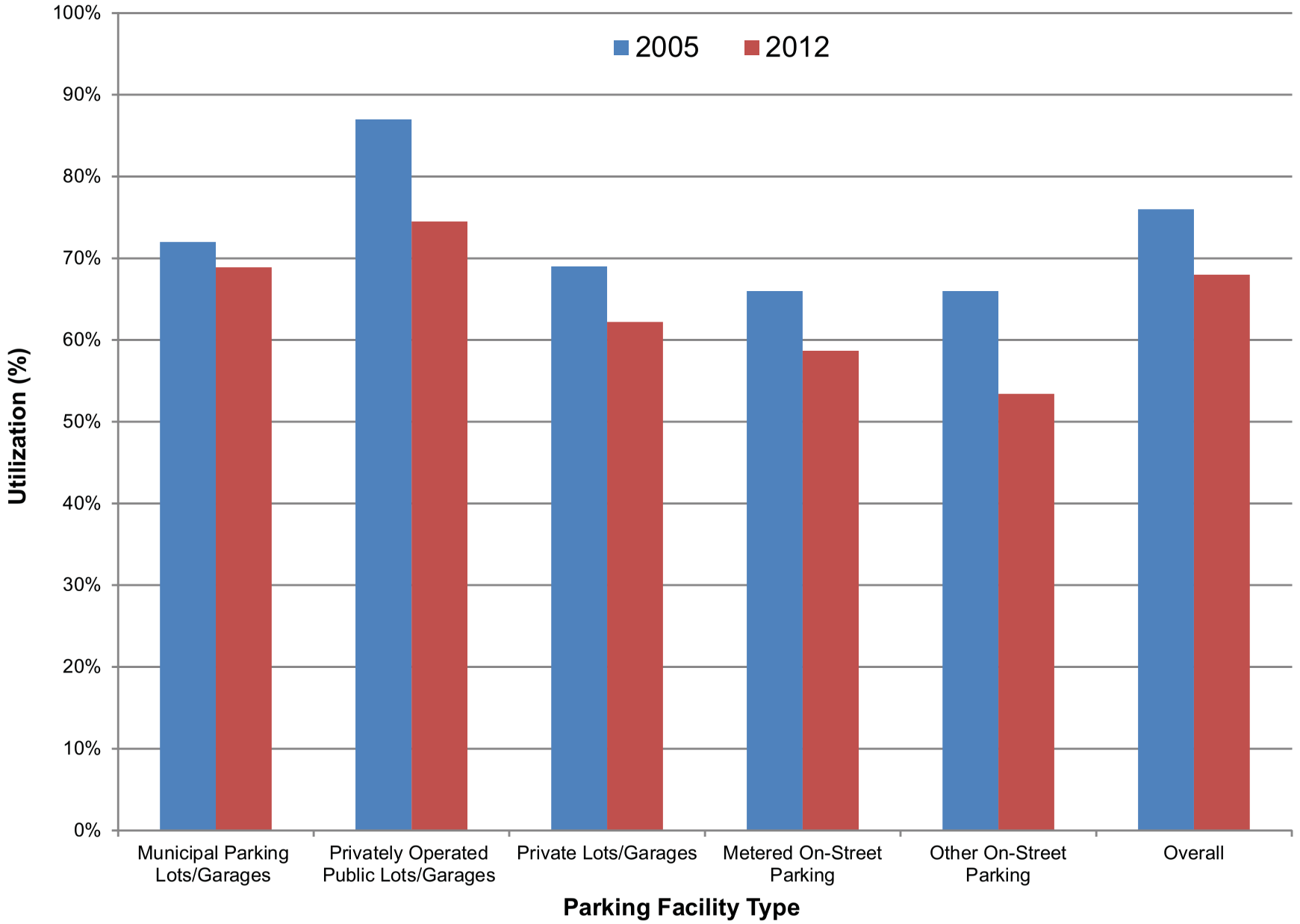
Figure 3
Parking Supply by Zone
Downtown Hamilton



MMM GROUP

- Municipal Parking Lots
- Privately Owned Public Parking Lots
- Other Parking Lots
- Metred On-Street Parking Spaces
- Other On-Street Parking Spaces

Figure 4
Existing Parking Utilization (%)
During Overall Peak Period (11:00 a.m.)



2005 study based on recorded parking inventory and observed parking demands in November 2003

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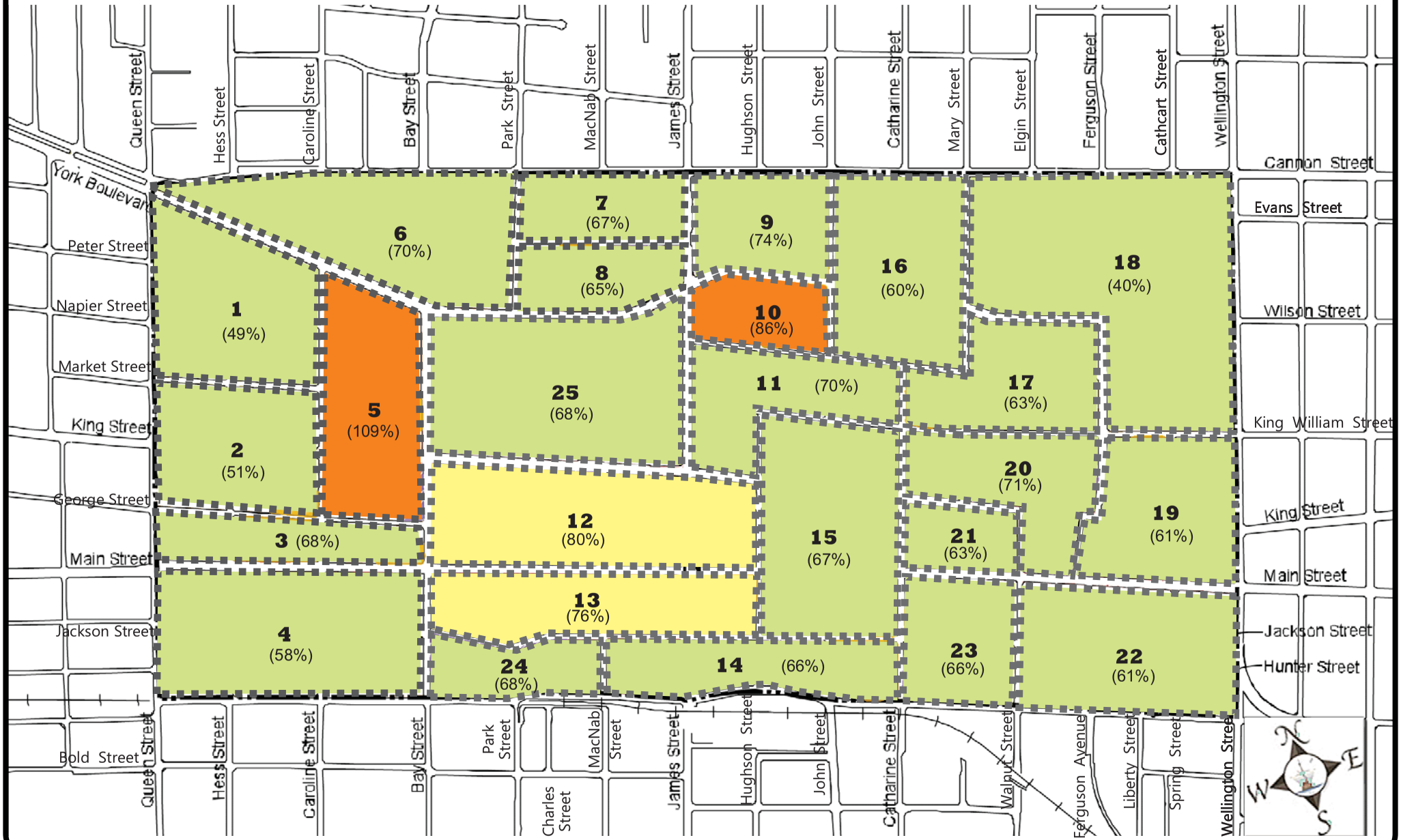
Figure 5
Comparison of Parking Utilization by Parking Facility Type During Overall Peak Period (2005 and 2012)



Parking Utilization

- > 85%
- 75 - 85%
- < 75%

1 Zone

(xx%) Parking Utilization

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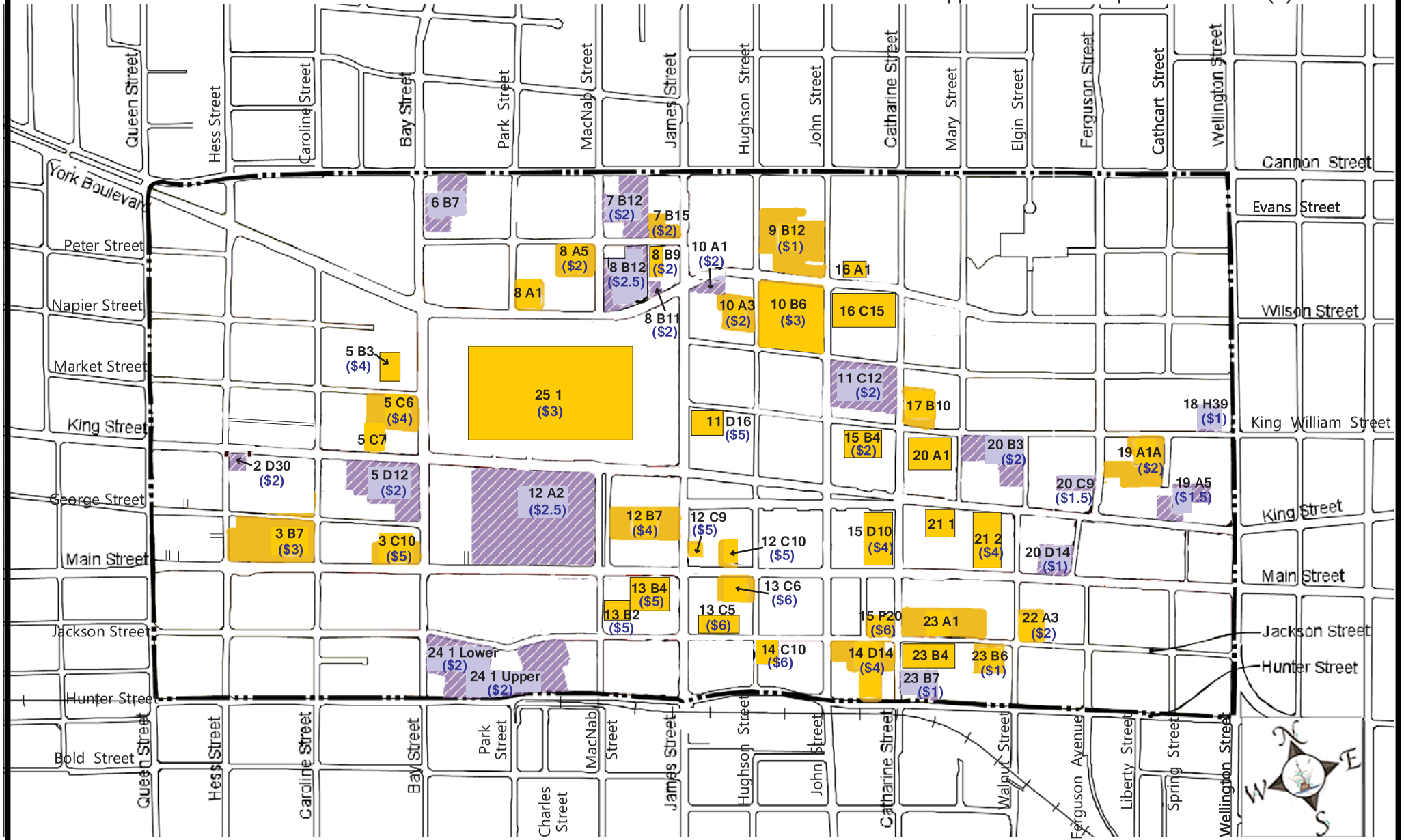
Figure 6
Parking Utilization by Zone
Downtown Hamilton
During Overall Peak Period (11:00 AM)



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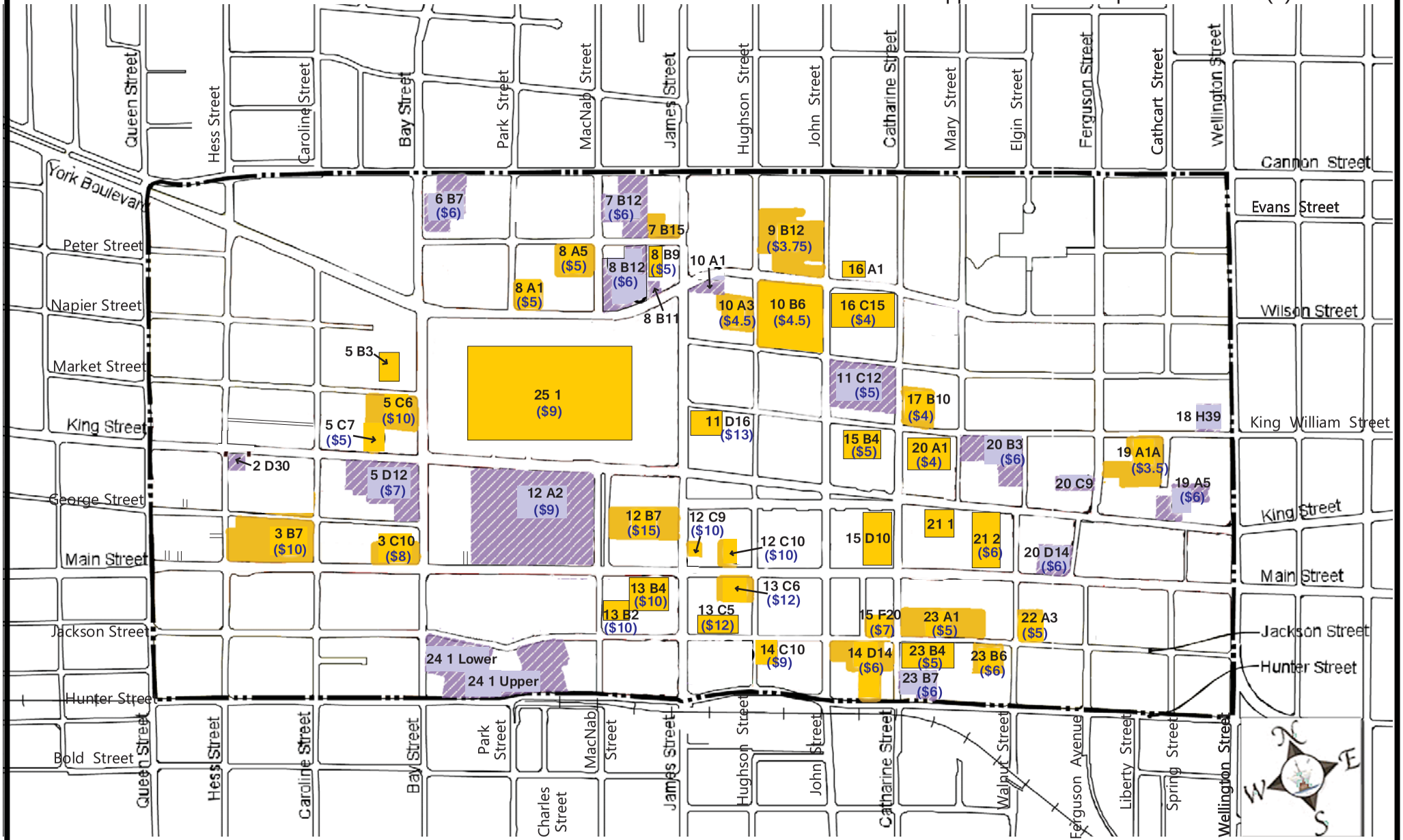
Municipal Parking Lots — xx xx — Lot Code

Privately Owned Public Parking Lots — ($ xx) — Hourly Rate

Figure 7
Hourly Parking Rates



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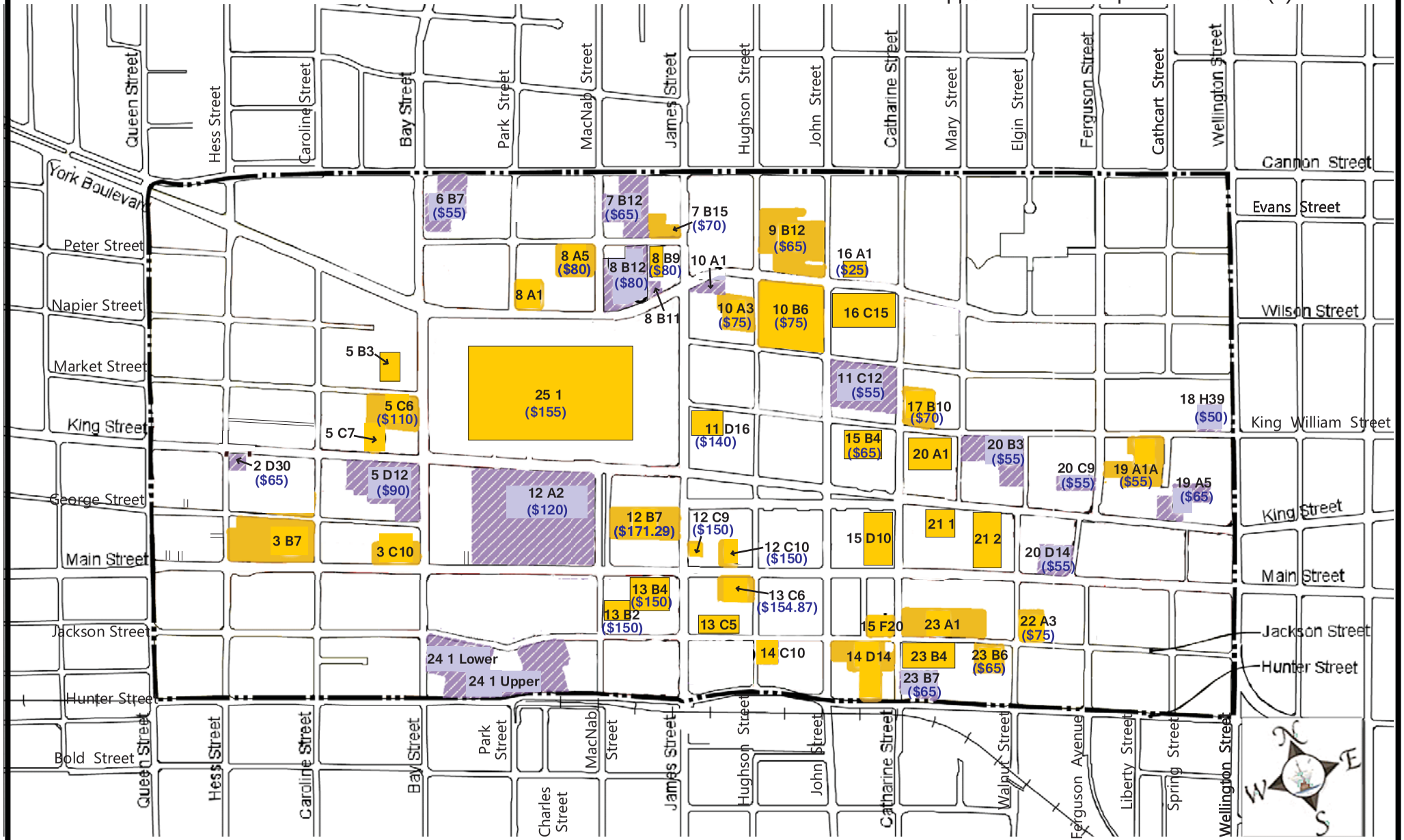
Municipal Parking Lots

Privately Owned Public Parking Lots

xx xx Lot Code

($ xx) Daily Maximum Parking Rate

Figure 8
Daily Maximum Parking Rates



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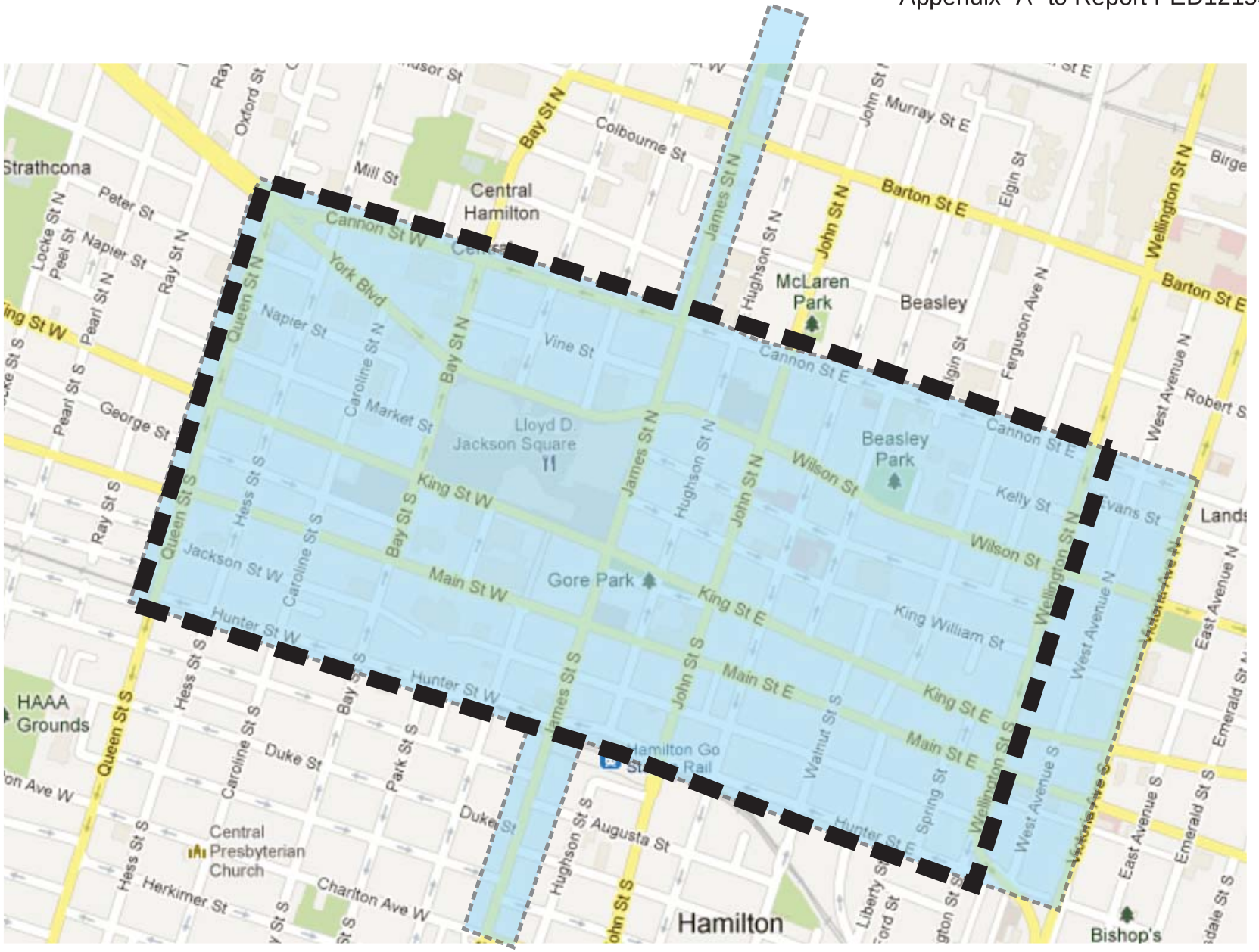
Municipal Parking Lots

Privately Owned Public Parking Lots

xx xx Lot Code

($ xx) Monthly Parking Rate

Figure 9
Monthly Parking Rates



Not to Scale (For illustrative purpose only)

Source: GoogleMaps

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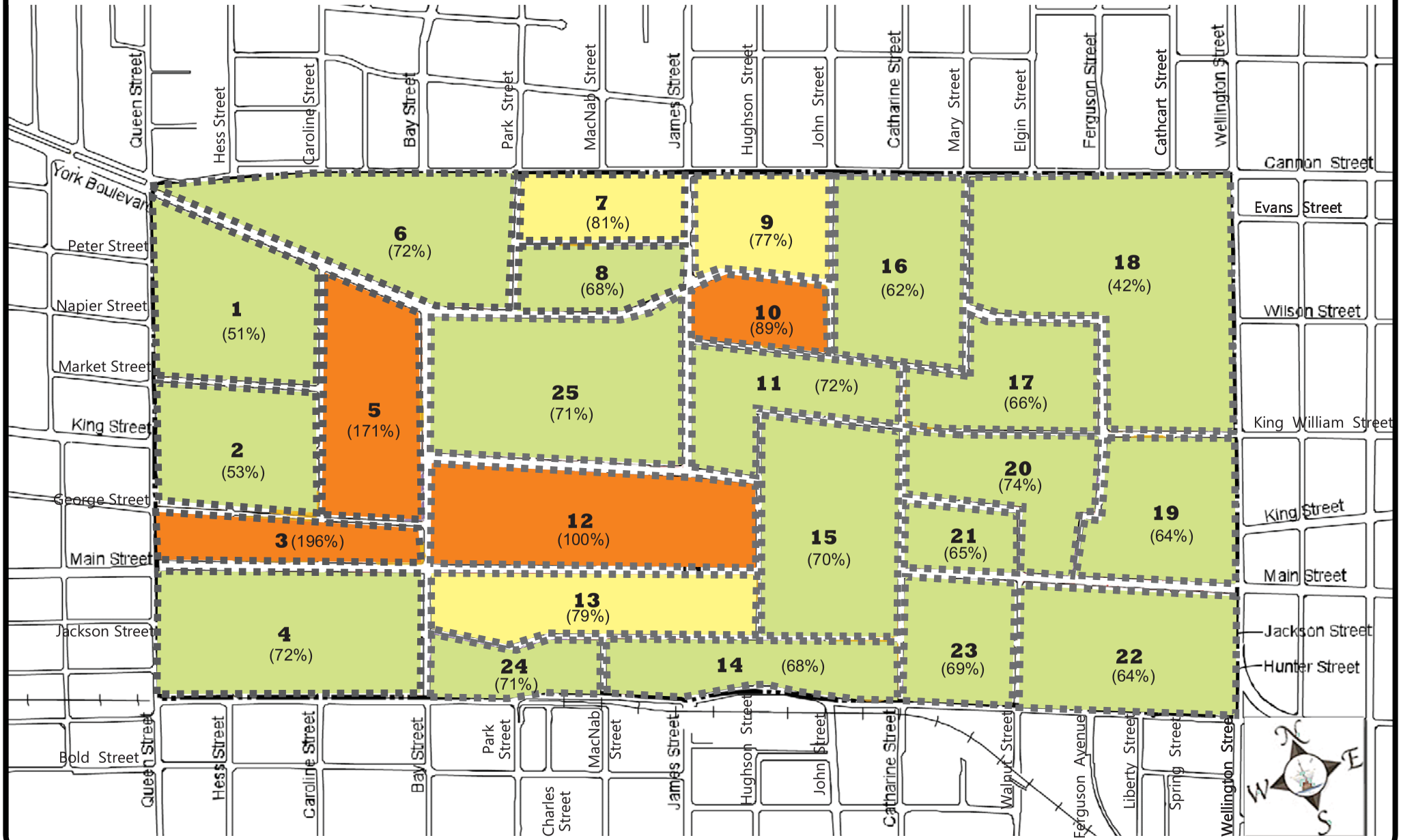
Downtown Urban Growth Centre Area

Downtown Hamilton Secondary Plan Area

Figure 10
Boundaries of
Downtown Hamilton Urban Growth Centre Area
and Downtown Hamilton Secondary Plan Area



Parking Utilization

- > 85%
- 75 - 85%
- < 75%

1 Zone

(xx%) Parking Utilization

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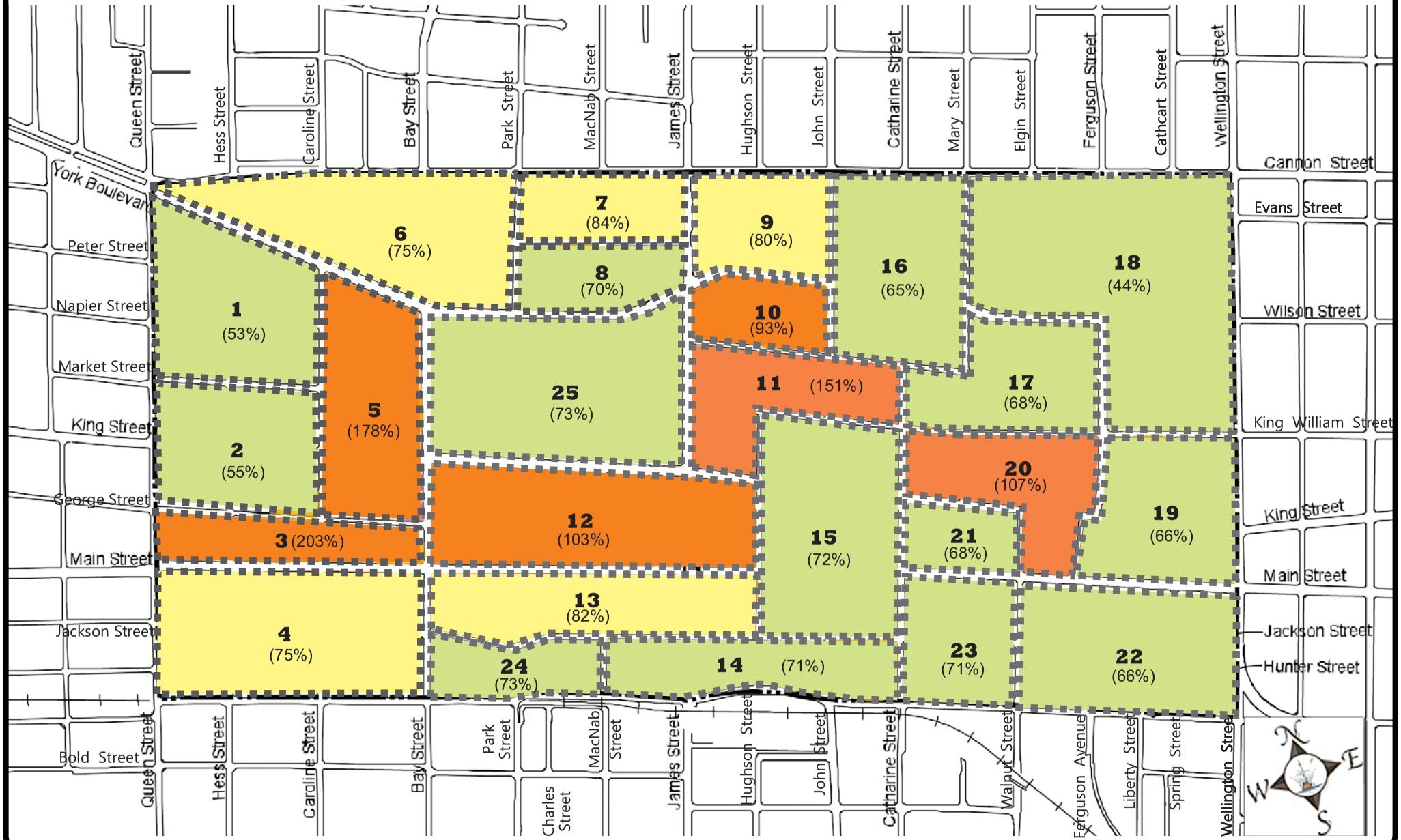
Figure 11
Forecasted Parking Utilization by Zone
Downtown Hamilton
During Overall Peak Period (5-Year Horizon)



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Parking Utilization

- > 85%
- 75 - 85%
- < 75%

1 Zone

(xx%) Parking Utilization

Figure 12
Forecasted Parking Utilization by Zone
Downtown Hamilton
During Overall Peak Period (10-Year Horizon)

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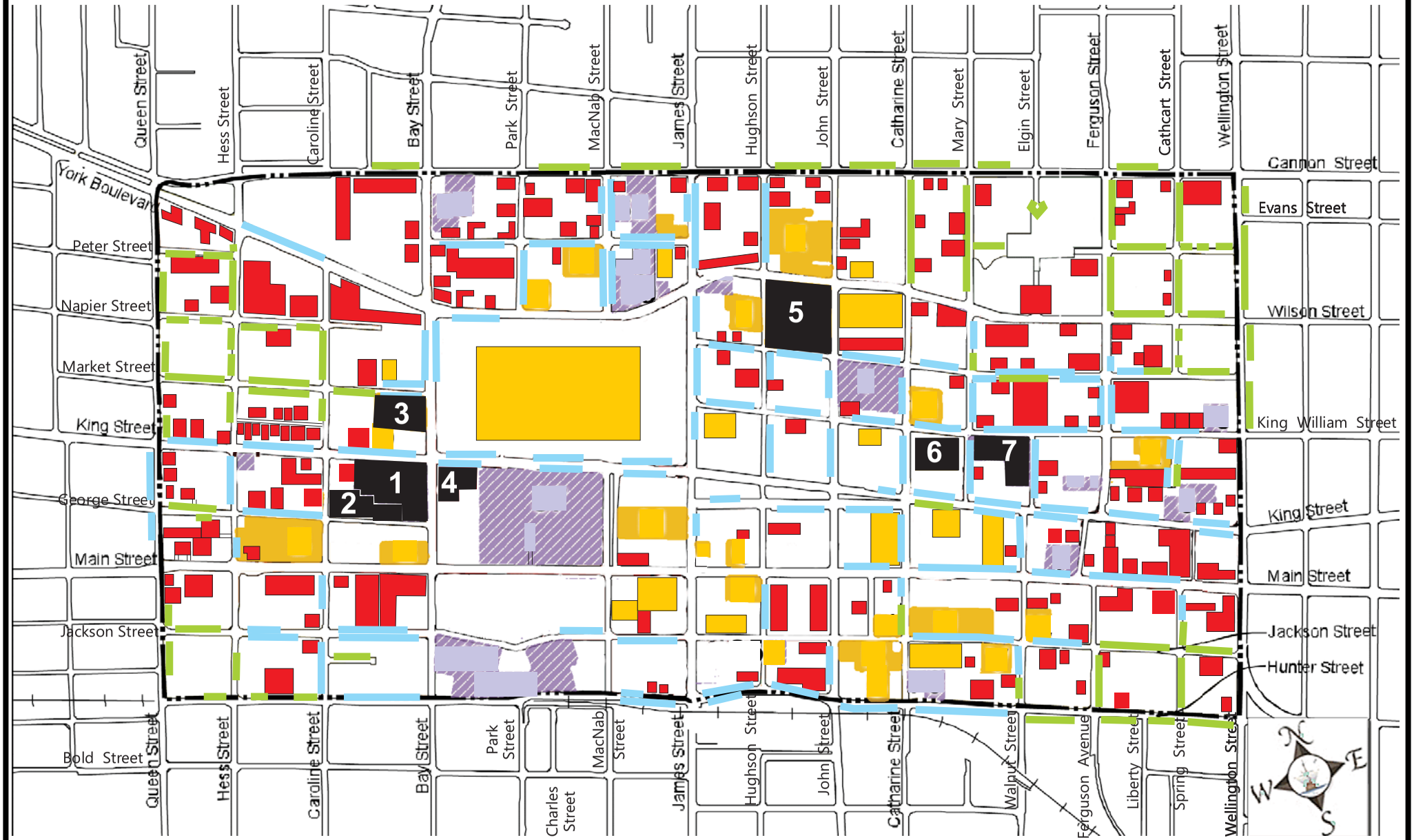
Area Boundary

Figure 13
Boundaries of High Parking Demand Areas



MMM GROUP

1 Potential Parking Garage Location

Figure 14
Potential Parking Garage Locations

APPENDIX A – Parking Supply by Zone and Type of Facility

Appendix A
Parking Inventory by Zone and Type of Facility

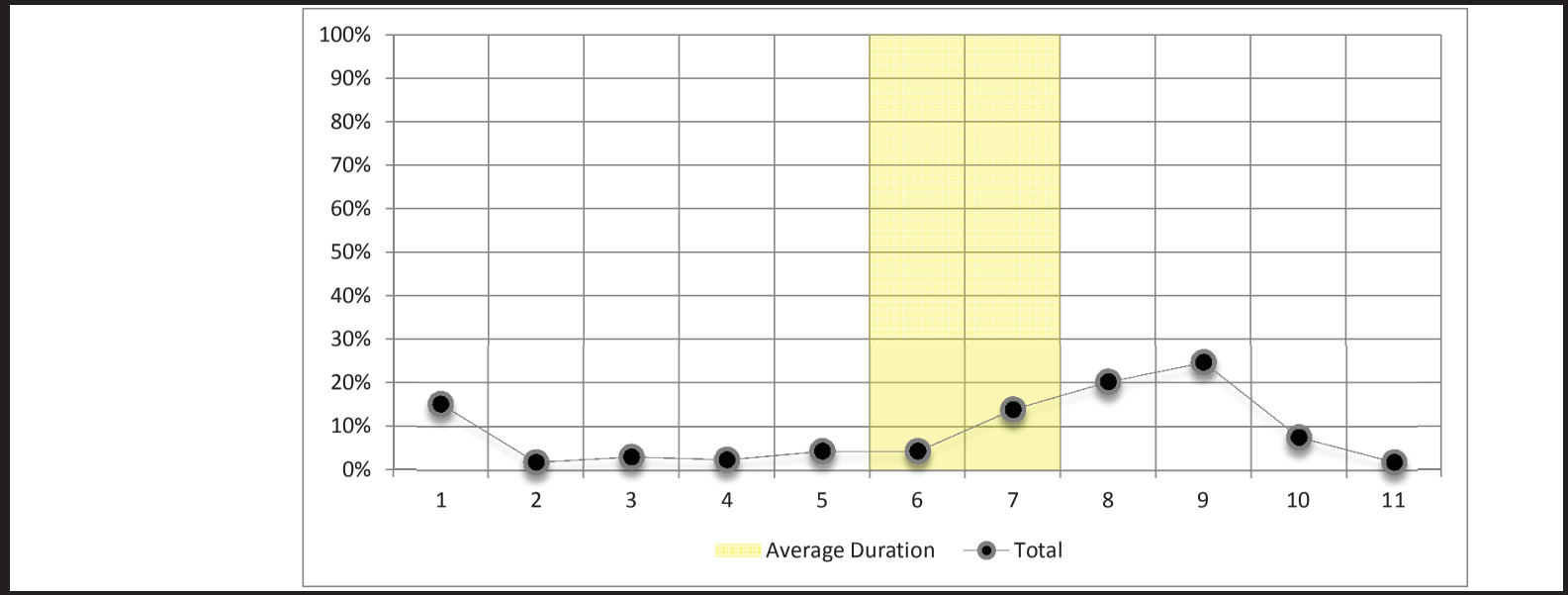
Zone	Municipal Parking Lot	Privately Owned Public Parking Lot	Other Parking Lots	Off-Street Parking Supply Sub-Total	Metered On-Street	Non Metered On-Street	On-Street Parking Supply Sub-Total	TOTAL
1	0	0	292	292	0	94	94	386
2	11	0	349	360	39	32	71	431
3	0	257	87	344	8	1	9	353
4	0	0	301	301	55	36	91	392
5	205	196	177	578	22	5	27	605
6	89	0	339	428	24	2	26	454
7	137	44	119	300	21	12	33	333
8	814	268	15	1,097	35	0	35	1,132
9	0	276	151	427	17	5	22	449
10	16	440	15	471	6	0	6	477
11	170	97	105	372	45	0	45	417
12	792	230	108	1,130	25	0	25	1,155
13	0	315	17	332	7	0	7	339
14	0	264	111	375	58	0	58	433
15	0	189	138	327	62	5	67	394
16	0	238	203	441	21	33	54	495
17	0	116	289	405	57	11	68	473
18	36	0	384	420	16	142	158	578
19	47	92	347	486	34	1	35	521
20	196	139	50	385	47	0	47	432
21	0	359	11	370	19	4	23	393
22	0	55	262	317	7	68	75	392
23	55	393	78	526	37	2	39	565
24	431	0	0	431	0	0	0	431
25	0	1,056	0	1,056	23	0	23	1,079
TOTAL	**2,999**	**5,024**	**3,948**	**11,971**	**685**	**453**	**1,138**	**13,109**

APPENDIX B – Parking Duration Survey Details

Parking Duration Distribution

Municipal Car Park No. 1	1	2	3	4	5	6	7	8	9	10	11		Average Duration
Regular	22	3	4	3	7	7	22	32	38	12	3	153	*6.8*
Handicapped	2		1	1					1			5	*3.6*
Reserved													
Total	24	3	5	4	7	7	22	32	39	12	3	158	*6.66*
%	*15.2%*	*1.9%*	*3.2%*	*2.5%*	*4.4%*	*4.4%*	*13.9%*	*20.3%*	*24.7%*	*7.6%*	*1.9%*	*100.0%*	

hours

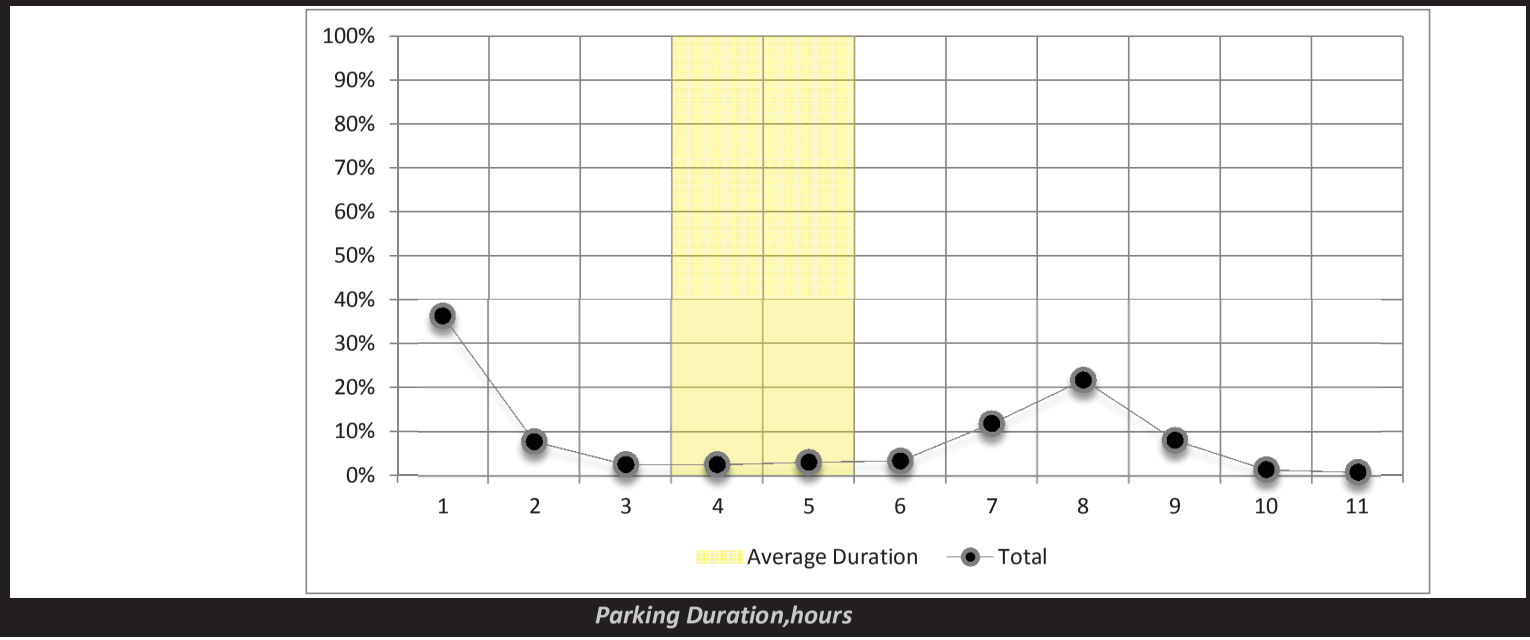


Parking Duration Distribution

Municipal Car Park No. 80

	1	2	3	4	5	6	7	8	9	10	11		Average Duration
Regular	123	26	8	9	11	10	41	72	28	5	3	336	*4.6*
Handicapped	2	1	1			2		2				8	*4.4*
Reserved								1				1	*8.0*
Total	125	27	9	9	11	12	41	75	28	5	3	345	*4.61*
%	*36.2%*	*7.8%*	*2.6%*	*2.6%*	*3.2%*	*3.5%*	*11.9%*	*21.7%*	*8.1%*	*1.4%*	*0.9%*	*100.0%*	

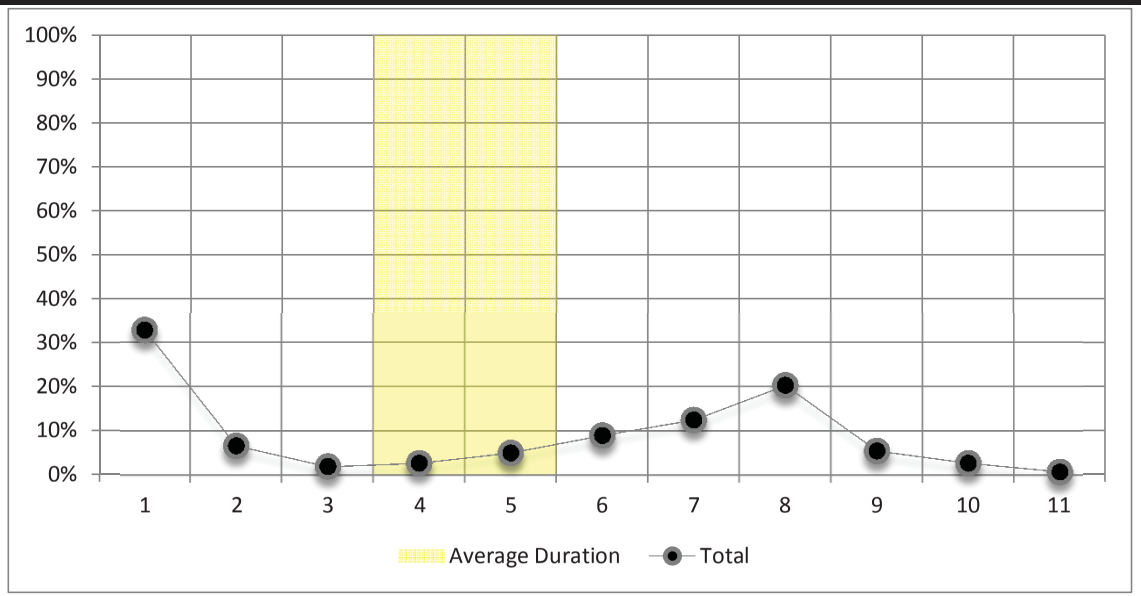
hours



Parking Duration Distribution

Hess Village Parking Lot	1	2	3	4	5	6	7	8	9	10	11		Average Duration
Regular	79	14	3	6	11	22	24	48	13	5	2	227	*4.7*
Handicapped													
Reserved	5	3	2	1	2	1	8	4	1	2		29	*5.3*
Total	84	17	5	7	13	23	32	52	14	7	2	256	*4.77*
%	*32.8%*	*6.6%*	*2.0%*	*2.7%*	*5.1%*	*9.0%*	*12.5%*	*20.3%*	*5.5%*	*2.7%*	*0.8%*	*100.0%*	

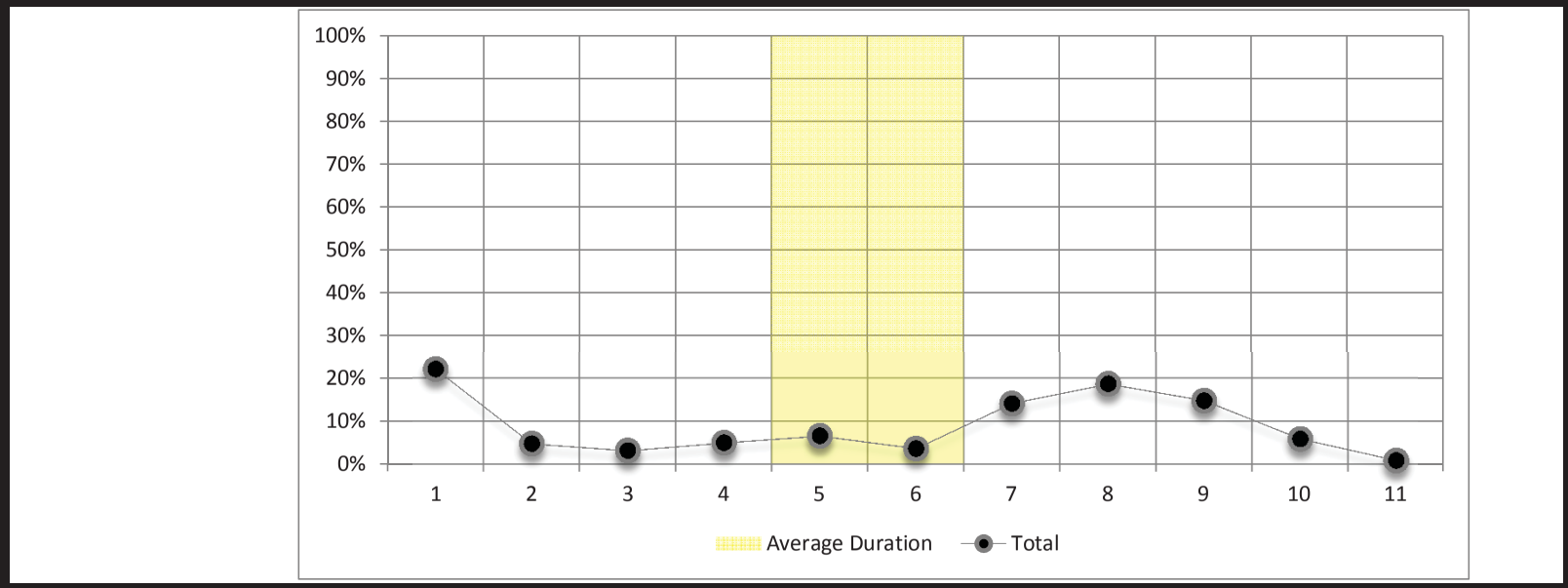
hours



Percent of Vehicles

Parking Duration, hours

Privately Owned Public Parking (Southwest of Wilson Street and John Street)	Parking Duration Distribution												Average Duration
	1	2	3	4	5	6	7	8	9	10	11		
Regular	97	21	14	22	29	16	62	82	65	26	4	438	*5.7*
Handicapped													
Reserved													
Total	97	21	14	22	29	16	62	82	65	26	4	438	*5.68*
%	*22.1%*	*4.8%*	*3.2%*	*5.0%*	*6.6%*	*3.7%*	*14.2%*	*18.7%*	*14.8%*	*5.9%*	*0.9%*	*100.0%*	*hours*



APPENDIX C – Parking Rates for Public Parking Facilities (As of September 2012)

Appendix C
Parking Rates for Public Parking Facilities (As of September 2012)

Lot Code			Lot Location	Lot Name	Lot Type	Inventory	Times	Hourly	Daily	Evening/Weekend	Monthly
Municipal Parking Lots											
2	2D	30	263 King St W and Hess	Car Park 74 - Downtown Hamilton	Municipal Parking Lot	11	9:00am - 2:00am	$2.00	-	-	$65.00
5	5D	12	22 Bay St N and 191 King St W (Bay and King)	Car Park 80 - Downtown Hamilton	Municipal Parking Lot	205	8:00am - 2:00am	$2.00	$7.00	-	$90.00
6	6B	7	106 Bay St N and Cannon	Car Park 66 - Downtown Hamilton	Municipal Parking Lot	89	9:00am - 10:00pm	-	$6.00	-	$55.00
7	7B	12	14 Vine Street	Car Park 62 - Downtown Hamilton	Municipal Parking Lot	137	9:00am - 10:00pm	$2.00	$6.00	-	$65.00
8	8B	11	12 York Boulevard	Car Park 69 - Downtown Hamilton	Municipal Parking Lot	17	9:00am - 2:00am	$2.00	-	-	-
8	8B	12	28 York Boulevard – York Boulevard Parkade	Car Park 68 - Downtown Hamilton	Municipal Parking Lot	797	7:00am - 10:30pm	$2.50	$6 - (6am-6pm)	$3 - (6pm-6am)	$80.00
10	10A	1	96 James St N at Wilson	Car Park 13 - Downtown Hamilton	Municipal Parking Lot	16	9:00am - 2:00am	$2.00	-	-	-
11	11C	12	76 John St N at Rebecca	Car Park 1 - Downtown Hamilton	Municipal Parking Lot	170	9:00am - 2:00am	$2.00	$5.00	-	$55.00
12	12A	2	80 Main St W – Convention Centre	Car Park 37 - Downtown Hamilton	Municipal Parking Lot	778	24 hour	$2.50	$9 - (6am-6pm)	$9 - (6pm-6am) $6 - (6am-6pm) - Sun	$120.00
18	18H	39	253 King William St and Wellington	Car Park 73 - Downtown Hamilton	Municipal Parking Lot	36	9:00am - 10:00pm	$1.00	-	-	$50.00
19	19A	5	297 King St E at Jarvis	Car Park 8 - Downtown Hamilton	Municipal Parking Lot	47	9:00am - 2:00am	$1.50	$6.00	-	$65.00
20	20B	3	140 King William St at Mary	Car Park 5 - Downtown Hamilton	Municipal Parking Lot	124	9:00am - 2:00am	$2.00	$6.00	-	$55.00
20	20C	9	11 Ferguson Ave N	Car Park 81 - Downtown Hamilton	Municipal Parking Lot	13	8:00am - 2:00am	$1.50	-	-	$55.00
20	20D	14	171 Main St E at Ferguson	Car Park 7 - Downtown Hamilton	Municipal Parking Lot	59	9:00am - 2:00am	$1.00	$6.00	-	$55.00
23	23B	7	75 Catharine St S and Hunter	Car Park 76 - Downtown Hamilton	Municipal Parking Lot	55	9:00am - 2:00am	$1.00	$6.00	-	$65.00
24	24	1	71 Main St W – City Hall	Car Park 40 - Downtown Hamilton	Municipal Parking Lot	148	8:00am - 10:00pm	$2.00	-	-	-
24	24	2	71 Main St W – City Hall	Car Park 40 - Downtown Hamilton	Municipal Parking Lot	283	8:00am - 10:00pm	$2.00	-	-	-
Privately Operated Parking Lots											
3	3B	7	North-west quadrant of Caroline Street and Main Street	Hess Village Parking	Privately Owned Public Parking Lot	226		$3.00	$10.00	$6.00	-
3	3C	10	North-west quadrant of Bay street and Main Street	IMPARK Parking (114 Main Street - Lot 46)	Privately Owned Public Parking Lot	31		$5.00	$8.00	$2.00	-
5	5B	3	North-west quadrant of Bay Street and Market Street	IMPARK Parking (55 Bay Street North - Lot 51)	Privately Owned Public Parking Lot	13		$4.00	-	-	-
5	5C	6	South-west quadrant of Bay Street and Market Street	IMPARK Parking (19 Bay Street North - Lot 3)	Privately Owned Public Parking Lot	108		$4.00	$10.00	$3.00	$110.00
5	5C	7	North-west quadrant of Bay Street and King Street	Privately Operated Public Lot	Privately Owned Public Parking Lot	75		-	$5.00	-	-
7	7B	15	North-west quadrant of James Street and Vine Street	James & Vine - 1 Vine St	Privately Owned Public Parking Lot	44		$2.00	-	-	$70.00
8	8A	1	North-east quadrant of Park Street and Wilson Street	Privately Operated Public Lot	Privately Owned Public Parking Lot	85		-	$5.00	$2.50	-
8	8A	5	South-west quadrant of MacNab Street and Vine Street	Privately Operated Public Lot	Privately Owned Public Parking Lot	145		$2.00	$5.00	$2.50	$80.00
8	8B	9	South-west quadrant of James Street and Vine Street	Privately Operated Public Lot	Privately Owned Public Parking Lot	38		$2.00	$5.00	$3.00	$80.00

Appendix C
Parking Rates for Public Parking Facilities (As of September 2012)

Lot Code			Lot Location	Lot Name	Lot Type	Inventory	Times	Hourly	Daily	Evening/Weekend	Monthly
9	9B	12	North-west quadrant of John Street and Wilson Street	Privately Owned Public Parking Lot	Privately Owned Public Parking Lot	276		$1.00	$3.75	-	$65.00
10	10A	3	North-west quadrant of Hughson Street and Rebecca Street	73 Hughson Lot - Canada Wide Parking Hamilton Inc.	Privately Owned Public Parking Lot	102		$2.00	$4.50	$2.50	$75.00
10	10B	6	South-west quadrant of John Street and Wilson Street	Impark Parking Lot #29	Privately Owned Public Parking Lot	338		$3.00	$4.50	$2.00	$75.00
11	11D	16	South-east quadrant of James Street and King William Street	Privately Operated Public Lot	Privately Owned Public Parking Lot	97		$5.00	$13.00	-	$140.00
12	12B	7	South-east quadrant of MacNab Street and King Street	Vinci Park	Privately Owned Public Parking Lot	110		$4.00	$15.00	-	$171.29
12	12C	9	North-east quadrant of James Street and Main Street	Canada Wide Parking	Privately Owned Public Parking Lot	71		$5.00	$10.00	$3.00	$150.00
12	12C	10	North-west quadrant of Hughson Street and Main Street	Canada Wide Parking	Privately Owned Public Parking Lot	49		$5.00	$10.00	$3.00	$150.00
13	13B	2	North-east quadrant of MacNab Street and Jackson Street	Canada Wide Parking	Privately Owned Public Parking Lot	61		$5.00	$10.00	$3.00	$150.00
13	13B	4	South-west quadrant of James Street and Main Street	Canada Wide Parking	Privately Owned Public Parking Lot	62		$5.00	$10.00	$3.00	$150.00
13	13C	5	North-west quadrant of Hughson Street and Jackson Street	Impark	Privately Owned Public Parking Lot	111		$6.00	$12.00	$4.00	-
13	13C	6	South-west quadrant of Hughson Street and Main Street	Impark	Privately Owned Public Parking Lot	81		$6.00	$12.00	$4.00	$154.87
14	14C	10	South-east quadrant of Jackson Street and Hughson Street		Privately Owned Public Parking Lot	56		$6.00	$9.00	$4.00	-
14	14D	14	South-west quadrant of Catharine Street and Jackson Street	M.P. Park Care Inc.	Privately Owned Public Parking Lot	208		$4.00	$6.00	-	-
15	15B	4	South-west quadrant of Catharine Street and King William Street	Canada Wide Parking	Privately Owned Public Parking Lot	56		$2.00	$5.00	M-W 5pm-6am $2.50 Thur-Sat 5pm-6am $4 Sun/Holidays 6am-6pm $2.50	$65.00
15	15D	10	North-west quadrant of Catharine Street and Main Street	Impark	Privately Owned Public Parking Lot	85		$4.00	-	-	-
15	15F	20	North-west quadrant of Catharine Street and Jackson Street	Impark	Privately Owned Public Parking Lot	48		$6.00	$7.00	$4.00	-
16	16A	1	North-east quadrant of John Street and Wilson Street		Privately Owned Public Parking Lot	34		-	-	-	$25.00
16	16C	15	South-east quadrant of John Street and Wilson Street	Canada Wide Parking	Privately Owned Public Parking Lot	204		-	$4.00	$2.50	-
17	17B	10	North-west quadrant of Mary Street and King William Street	Canada Wide Parking	Privately Owned Public Parking Lot	116		-	$4.00	$2.50	$70.00
19	19A	1A	South-east quadrant of King William Street and Jarvis Street	Canada Wide Parking	Privately Owned Public Parking Lot	92		$2.00	$3.50	$3.00	$55.00
20	20A	1	South-east quadrant of Catharine Street and King William Street	Public Parking	Privately Owned Public Parking Lot	139		-	$4.00	$2.00	-
21	21	1	South-east quadrant of Catharine Street and King Street	Effort Square Parking	Privately Owned Public Parking Lot	251		-	-	-	-
21	21	2	South-west quadrant of Walnut Street and King Street	Hamilton Parking (Park & Lock)	Privately Owned Public Parking Lot	108		$4.00	$6.00	$6.00	-
22	22A	3	North-east quadrant of Walnut Street and Jackson Street	IMPARK Parking (49 Walnut Street South - Lot 44)	Privately Owned Public Parking Lot	55		$2.00	$5.00	$4.00	$75.00
23	23A	1	North-east quadrant of Jackson Street and Catharine Street	Public Parking Lot	Privately Owned Public Parking Lot	203		-	$5.00	-	-
23	23B	4	South-east quadrant of Jackson Street and Catharine Street	Public Parking Lot	Privately Owned Public Parking Lot	131		-	$5.00	-	-

Appendix C
Parking Rates for Public Parking Facilities (As of September 2012)

Lot Code			Lot Location	Lot Name	Lot Type	Inventory	Times	Hourly	Daily	Evening/Weekend	Monthly
23	23B	6	South-west quadrant of Walnut Street and Jackson Street	IMPARK Parking (140 Jackson Street - Lot 45)	Privately Owned Public Parking Lot	59		$1.00	$6.00	-	$65.00
25	25	1	North-east quadrant of Bay Street and King Street	Jackson Square Parking (VINCI Parking)	Privately Owned Public Parking Lot	1056		$3.00	$9.00	-	$155.00

APPENDIX D – Financial Cash-Flow Analysis

Area 1 - Conservative Parking Fees
Option 1- 500 Space Above Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$960,966
Annual revenue/month per space (above grade)	$160
Annual revenue/year (below grade)	$0
Annual revenue/month per space (below grade)	$0
Annual below grade operating expense/month (per space)	$0
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$87
Annual Financing Costs	$1,182,423
Site Size (sq.ft)	48,000
No. of Spaces Above Grade	500
No. of Spaces Below Grade	0
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$4.00	50	20	52
Flat Rate	$9.50	75	6	52
Monthly Pass	$128.00	415	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$4.00	0	20	52
Flat Rate	$9.50	0	6	52
Monthly Pass	$128.00	0	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500
Surveillance Maintenance	$1,000	$1,000
Security Guard	$46,720	$46,720
City Maintenance	$54,600	$54,600
Insurance	$8,600	$8,600
Municipal Taxes	$175,000	$175,000
General Repair Allowance	$21,500	$21,500
Hydro & Other	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$0
Above Grade - Construction Cost	$16,148,000
Retail Construction Cost	$1,050,000
Land Cost	$2,880,000
Down payment	$1,500,000
Present Value of Loan	$18,578,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Parking Spaces Above Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Parking Operating Revenues		$960,966	$989,795	$1,019,489	$1,050,073	$1,081,576	$1,114,023	$1,147,444	$1,181,867	$1,217,323	$1,253,843	$1,291,458	$1,330,202	$1,370,108	$1,411,211	$1,453,547	$1,497,154	$1,542,068	$1,588,330	$1,635,980	$1,685,060	$1,735,611	$1,787,680	$1,841,310	$1,896,550	$1,953,446	$2,012,049
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$520,320	$535,930	$552,007	$568,568	$585,625	$603,193	$621,289	$639,928	$659,126	$678,900	$699,267	$720,245	$741,852	$764,107	$787,031	$810,642	$834,961	$860,010	$885,810	$912,384	$939,756	$967,948	$996,987	$1,026,897	$1,057,703	$1,089,435
Income From Operations		$620,646	$639,265	$658,443	$678,197	$698,543	$719,499	$741,084	$763,316	$786,216	$809,802	$834,096	$859,119	$884,893	$911,440	$938,783	$966,946	$995,955	$1,025,833	$1,056,608	$1,088,307	$1,120,956	$1,154,584	$1,189,222	$1,224,899	$1,261,646	$1,299,495
Cost of Construction		$16,148,000																									
Retail Construction		$1,050,000																									
Cost of Land		$2,880,000																									
Downpayment		$1,500,000																									
Loan		$18,578,000																									
Loan Service Costs		$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423
Terminal Value	**$4,796,806**																										$16,243,686
End of Year Balance	**-$4,787,004**	-$561,777	-$543,158	-$523,980	-$504,227	-$483,881	-$462,924	-$441,339	-$419,107	-$396,207	-$372,621	-$348,327	-$323,304	-$297,530	-$270,984	-$243,640	-$215,477	-$186,469	-$156,590	-$125,815	-$94,117	-$61,467	-$27,839	$6,799	$42,475	$79,222	$117,072
Final Investment Value	**$9,802**																										

Notes

Input Cell

1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 1 - Conservative Parking Fees
Option 1- 500 Space Below Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$0
Annual revenue/month per space (above grade)	$0
Annual revenue/year (below grade)	$960,966
Annual revenue/month per space (below grade)	$160
Annual below grade operating expense/month (per space)	$92
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$0
Annual Financing Costs	$1,567,484
Site Size (sq.ft)	48,000
No. of Spaces Above Grade	0
No. of Spaces Below Grade	500
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$4.00	0	20	52
Flat Rate	$9.50	0	6	52
Monthly Pass	$128.00	0	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$4.00	50	20	52
Flat Rate	$9.50	75	6	52
Monthly Pass	$128.00	415	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500
Surveillance Maintenance	$1,000	$1,000
Security Guard	$46,720	$46,720
City Maintenance	$54,600	$54,600
Insurance	$8,600	$8,600
Municipal Taxes	$175,000	$175,000
General Repair Allowance	$21,500	$21,500
Hydro & Other	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$22,198,000
Above Grade - Construction Cost	$0
Retail Construction Cost	$1,050,000
Land Cost	$2,880,000
Down payment	$1,500,000
Present Value of Loan	$24,628,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
No. of Parking Spaces Above Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Operating Revenues		$960,966	$989,795	$1,019,489	$1,050,073	$1,081,576	$1,114,023	$1,147,444	$1,181,867	$1,217,323	$1,253,843	$1,291,458	$1,330,202	$1,370,108	$1,411,211	$1,453,547	$1,497,154	$1,542,068	$1,588,330	$1,635,980	$1,685,060	$1,735,611	$1,787,680	$1,841,310	$1,896,550	$1,953,446	$2,012,049
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$552,520	$569,096	$586,168	$603,754	$621,866	$640,522	$659,738	$679,530	$699,916	$720,913	$742,541	$764,817	$787,761	$811,394	$835,736	$860,808	$886,632	$913,231	$940,628	$968,847	$997,913	$1,027,850	$1,058,685	$1,090,446	$1,123,159	$1,156,854
Income From Operations		$588,446	$606,099	$624,282	$643,011	$662,301	$682,170	$702,635	$723,714	$745,426	$767,789	$790,822	$814,547	$838,983	$864,153	$890,077	$916,780	$944,283	$972,612	$1,001,790	$1,031,844	$1,062,799	$1,094,683	$1,127,523	$1,161,349	$1,196,190	$1,232,075
Cost of Construction		$22,198,000																									
Retail Construction		$1,050,000																									
Cost of Land		$2,880,000																									
Downpayment		$1,500,000																									
Loan		$24,628,000																									
Loan Service Costs		$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484
Terminal Value	**$4,547,940**																										$15,400,941
End of Year Balance	**-$10,955,825**	-$979,038	-$961,385	-$943,202	-$924,473	-$905,183	-$885,314	-$864,849	-$843,770	-$822,058	-$799,695	-$776,662	-$752,937	-$728,501	-$703,331	-$677,407	-$650,704	-$623,201	-$594,872	-$565,694	-$535,640	-$504,685	-$472,801	-$439,961	-$406,135	-$371,294	-$335,409
Final Investment Value	**-$6,407,885**																										

Notes

Input Cell

1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 1 - Higher Parking Fees
Option 2- 500 Space Above Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$1,313,820
Annual revenue/month per space (above grade)	$219
Annual revenue/year (below grade)	$0
Annual revenue/month per space (below grade)	$0
Annual below grade operating expense/month (per space)	$0
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$87
Annual Financing Costs	$1,182,423
Site Size (sq.ft)	48,000
No. of Spaces Above Grade	500
No. of Spaces Below Grade	0
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$6.00	50	20	52
Flat Rate	$15.00	75	6	52
Monthly Pass	$160.00	415	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$6.00	0	16	52
Flat Rate	$15.00	0	6	52
Monthly Pass	$160.00	0	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500
Surveillance Maintenance	$1,000	$1,000
Security Guard	$46,720	$46,720
City Maintenance	$54,600	$54,600
Insurance	$8,600	$8,600
Municipal Taxes	$175,000	$175,000
General Repair Allowance	$21,500	$21,500
Hydro & Other	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$0
Above Grade - Construction Cost	$16,148,000
Retail Construction Cost	$1,050,000
Land Cost	$2,880,000
Down payment	$1,500,000
Present Value of Loan	$18,578,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Parking Spaces Above Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Parking Operating Revenues		$1,313,820	$1,353,235	$1,393,832	$1,435,647	$1,478,716	$1,523,077	$1,568,770	$1,615,833	$1,664,308	$1,714,237	$1,765,664	$1,818,634	$1,873,193	$1,929,389	$1,987,271	$2,046,889	$2,108,295	$2,171,544	$2,236,691	$2,303,791	$2,372,905	$2,444,092	$2,517,415	$2,592,937	$2,670,726	$2,750,847
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$520,320	$535,930	$552,007	$568,568	$585,625	$603,193	$621,289	$639,928	$659,126	$678,900	$699,267	$720,245	$741,852	$764,107	$787,031	$810,642	$834,961	$860,010	$885,810	$912,384	$939,756	$967,948	$996,987	$1,026,897	$1,057,703	$1,089,435
Income From Operations		$973,500	$1,002,705	$1,032,786	$1,063,770	$1,095,683	$1,128,553	$1,162,410	$1,197,282	$1,233,201	$1,270,197	$1,308,303	$1,347,552	$1,387,978	$1,429,618	$1,472,506	$1,516,681	$1,562,182	$1,609,047	$1,657,319	$1,707,038	$1,758,249	$1,810,997	$1,865,327	$1,921,286	$1,978,925	$2,038,293
Cost of Construction		$16,148,000																									
Retail Construction		$1,050,000																									
Cost of Land		$2,880,000																									
Downpayment		$1,500,000																									
Loan		$18,578,000																									
Loan Service Costs		$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423	$1,182,423
Terminal Value	**$7,523,919**																										$25,478,660
End of Year Balance	**$2,155,023**	-$208,923	-$179,718	-$149,637	-$118,653	-$86,740	-$53,870	-$20,013	$14,859	$50,777	$87,774	$125,879	$165,128	$205,555	$247,194	$290,083	$334,258	$379,759	$426,624	$474,895	$524,615	$575,826	$628,574	$682,903	$738,863	$796,502	$855,870
Final Investment Value	**$9,678,942**																										

Notes

Input Cell

1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 1 - Higher Parking Fees
Option 2- 500 Space Below Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$0
Annual revenue/month per space (above grade)	$0
Annual revenue/year (below grade)	$1,313,820
Annual revenue/month per space (below grade)	$219
Annual below grade operating expense/month (per space)	$92
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$0
Annual Financing Costs	$1,567,484
Site Size (sq.ft)	48,000
No. of Spaces Above Grade	0
No. of Spaces Below Grade	500
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$4.00	0	20	52
Flat Rate	$9.50	0	6	52
Monthly Pass	$128.00	0	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$6.00	50	20	52
Flat Rate	$15.00	75	6	52
Monthly Pass	$160.00	415	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500
Surveillance Maintenance	$1,000	$1,000
Security Guard	$46,720	$46,720
City Maintenance	$54,600	$54,600
Insurance	$8,600	$8,600
Municipal Taxes	$175,000	$175,000
General Repair Allowance	$21,500	$21,500
Hydro & Other	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$22,198,000
Above Grade - Construction Cost	$0
Retail Construction Cost	$1,050,000
Land Cost	$2,880,000
Down payment	$1,500,000
Present Value of Loan	$24,628,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
No. of Parking Spaces Above Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Operating Revenues		$1,313,820	$1,353,235	$1,393,832	$1,435,647	$1,478,716	$1,523,077	$1,568,770	$1,615,833	$1,664,308	$1,714,237	$1,765,664	$1,818,634	$1,873,193	$1,929,389	$1,987,271	$2,046,889	$2,108,295	$2,171,544	$2,236,691	$2,303,791	$2,372,905	$2,444,092	$2,517,415	$2,592,937	$2,670,726	$2,750,847
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$552,520	$569,096	$586,168	$603,754	$621,866	$640,522	$659,738	$679,530	$699,916	$720,913	$742,541	$764,817	$787,761	$811,394	$835,736	$860,808	$886,632	$913,231	$940,628	$968,847	$997,913	$1,027,850	$1,058,685	$1,090,446	$1,123,159	$1,156,854
Income From Operations		$941,300	$969,539	$998,625	$1,028,584	$1,059,441	$1,091,225	$1,123,961	$1,157,680	$1,192,411	$1,228,183	$1,265,028	$1,302,979	$1,342,069	$1,382,331	$1,423,801	$1,466,515	$1,510,510	$1,555,825	$1,602,500	$1,650,575	$1,700,093	$1,751,095	$1,803,628	$1,857,737	$1,913,469	$1,970,873
Cost of Construction		$22,198,000																									
Retail Construction		$1,050,000																									
Cost of Land		$2,880,000																									
Downpayment		$1,500,000																									
Loan		$24,628,000																									
Loan Service Costs		$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484	$1,567,484
Terminal Value	**$7,275,054**																										$24,635,915
End of Year Balance	**-$4,013,799**	-$626,184	-$597,945	-$568,859	-$538,900	-$508,043	-$476,259	-$443,523	-$409,804	-$375,073	-$339,301	-$302,456	-$264,505	-$225,415	-$185,153	-$143,683	-$100,969	-$56,974	-$11,659	$35,016	$83,091	$132,608	$183,611	$236,144	$290,253	$345,985	$403,389
Final Investment Value	**$3,261,255**																										

Notes

Input Cell

1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 2 - Conservative Parking Fees
Option 1- 500 Space Above Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$960,966
Annual revenue/month per space (above grade)	$160
Annual revenue/year (below grade)	$0
Annual revenue/month per space (below grade)	$0
Annual below grade operating expense/month (per space)	$0
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$87
Annual Financing Costs	$1,373,362
Site Size (sq.ft)	98,000
No. of Spaces Above Grade	500
No. of Spaces Below Grade	0
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$4.00	50	20	52
Flat Rate	$9.50	75	6	52
Monthly Pass	$128.00	415	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$4.00	0	20	52
Flat Rate	$9.50	0	6	52
Monthly Pass	$128.00	0	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot Signage & Equipment Repair	$2,500	$2,500
Surveillance Maintenance	$25,500	$25,500
Security Guard	$1,000	$1,000
City Maintenance	$46,720	$46,720
Insurance	$54,600	$54,600
Municipal Taxes	$8,600	$8,600
General Repair Allowance	$175,000	$175,000
Hydro & Other	$21,500	$21,500
	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$0
Above Grade - Construction Cost	$16,148,000
Retail Construction Cost	$1,050,000
Land Cost	$5,880,000
Down payment	$1,500,000
Present Value of Loan	$21,578,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Parking Spaces Above Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Parking Operating Revenues		$960,966	$989,795	$1,019,489	$1,050,073	$1,081,576	$1,114,023	$1,147,444	$1,181,867	$1,217,323	$1,253,843	$1,291,458	$1,330,202	$1,370,108	$1,411,211	$1,453,547	$1,497,154	$1,542,068	$1,588,330	$1,635,980	$1,685,060	$1,735,611	$1,787,680	$1,841,310	$1,896,550	$1,953,446	$2,012,049
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$520,320	$535,930	$552,007	$568,568	$585,625	$603,193	$621,289	$639,928	$659,126	$678,900	$699,267	$720,245	$741,852	$764,107	$787,031	$810,642	$834,961	$860,010	$885,810	$912,384	$939,756	$967,948	$996,987	$1,026,897	$1,057,703	$1,089,435
Income From Operations		$620,646	$639,265	$658,443	$678,197	$698,543	$719,499	$741,084	$763,316	$786,216	$809,802	$834,096	$859,119	$884,893	$911,440	$938,783	$966,946	$995,955	$1,025,833	$1,056,608	$1,088,307	$1,120,956	$1,154,584	$1,189,222	$1,224,899	$1,261,646	$1,299,495
Cost of Construction		$16,148,000																									
Retail Construction		$1,050,000																									
Cost of Land		$5,880,000																									
Downpayment		$1,500,000																									
Loan		$21,578,000																									
Loan Service Costs		$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362
Terminal Value	**$4,796,806**																										$16,243,686
End of Year Balance	**-$7,531,791**	-$752,716	-$734,097	-$714,919	-$695,166	-$674,820	-$653,864	-$632,279	-$610,046	-$587,147	-$563,560	-$539,266	-$514,243	-$488,470	-$461,923	-$434,580	-$406,416	-$377,408	-$347,529	-$316,754	-$285,056	-$252,407	-$218,778	-$184,141	-$148,464	-$111,717	-$73,868
Final Investment Value	**-$2,734,985**																										

Notes

Input Cell

1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 2 - Conservative Parking Fees
Option 1- 500 Space Below Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$0
Annual revenue/month per space (above grade)	$0
Annual revenue/year (below grade)	$960,966
Annual revenue/month per space (below grade)	$160
Annual below grade operating expense/month (per space)	$92
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$0
Annual Financing Costs	$1,758,423
Site Size (sq.ft)	98,000
No. of Spaces Above Grade	0
No. of Spaces Below Grade	500
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$4.00	0	20	52
Flat Rate	$9.50	0	6	52
Monthly Pass	$128.00	0	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$4.00	50	20	52
Flat Rate	$9.50	75	6	52
Monthly Pass	$128.00	415	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot Signage & Equipment Repair	$2,500	$2,500
Surveillance Maintenance	$25,500	$25,500
Security Guard	$1,000	$1,000
City Maintenance	$46,720	$46,720
Insurance	$54,600	$54,600
Municipal Taxes	$8,600	$8,600
General Repair Allowance	$175,000	$175,000
Hydro & Other	$21,500	$21,500
	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$22,198,000
Above Grade - Construction Cost	$0
Retail Construction Cost	$1,050,000
Land Cost	$5,880,000
Down payment	$1,500,000
Present Value of Loan	$27,628,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
No. of Parking Spaces Above Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Operating Revenues		$960,966	$989,795	$1,019,489	$1,050,073	$1,081,576	$1,114,023	$1,147,444	$1,181,867	$1,217,323	$1,253,843	$1,291,458	$1,330,202	$1,370,108	$1,411,211	$1,453,547	$1,497,154	$1,542,068	$1,588,330	$1,635,980	$1,685,060	$1,735,611	$1,787,680	$1,841,310	$1,896,550	$1,953,446	$2,012,049
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$552,520	$569,096	$586,168	$603,754	$621,866	$640,522	$659,738	$679,530	$699,916	$720,913	$742,541	$764,817	$787,761	$811,394	$835,736	$860,808	$886,632	$913,231	$940,628	$968,847	$997,913	$1,027,850	$1,058,685	$1,090,446	$1,123,159	$1,156,854
Income From Operations		$588,446	$606,099	$624,282	$643,011	$662,301	$682,170	$702,635	$723,714	$745,426	$767,789	$790,822	$814,547	$838,983	$864,153	$890,077	$916,780	$944,283	$972,612	$1,001,790	$1,031,844	$1,062,799	$1,094,683	$1,127,523	$1,161,349	$1,196,190	$1,232,075
Cost of Construction		$22,198,000																									
Retail Construction		$1,050,000																									
Cost of Land		$5,880,000																									
Downpayment		$1,500,000																									
Loan		$27,628,000																									
Loan Service Costs		$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423
Terminal Value	**$4,547,940**																										$15,400,941
End of Year Balance	**-$13,700,612**	-$1,169,977	-$1,152,324	-$1,134,141	-$1,115,412	-$1,096,122	-$1,076,253	-$1,055,788	-$1,034,709	-$1,012,997	-$990,635	-$967,601	-$943,876	-$919,440	-$894,270	-$868,346	-$841,644	-$814,140	-$785,812	-$756,633	-$726,580	-$695,624	-$663,740	-$630,900	-$597,074	-$562,234	-$526,348
Final Investment Value	**-$9,152,672**																										

Notes

Input Cell

1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 2 - Higher Parking Fees
Option 2- 500 Space Above Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$1,313,820
Annual revenue/month per space (above grade)	$219
Annual revenue/year (below grade)	$0
Annual revenue/month per space (below grade)	$0
Annual below grade operating expense/month (per space)	$0
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$87
Annual Financing Costs	$1,373,362
Site Size (sq.ft)	98,000
No. of Spaces Above Grade	500
No. of Spaces Below Grade	0
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$6.00	50	20	52
Flat Rate	$15.00	75	6	52
Monthly Pass	$160.00	415	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$6.00	0	20	52
Flat Rate	$15.00	0	6	52
Monthly Pass	$160.00	0	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500
Surveillance Maintenance	$1,000	$1,000
Security Guard	$46,720	$46,720
City Maintenance	$54,600	$54,600
Insurance	$8,600	$8,600
Municipal Taxes	$175,000	$175,000
General Repair Allowance	$21,500	$21,500
Hydro & Other	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$0
Above Grade - Construction Cost	$16,148,000
Retail Construction Cost	$1,050,000
Land Cost	$5,880,000
Down payment	$1,500,000
Present Value of Loan	$21,578,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Parking Spaces Above Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Parking Operating Revenues		$1,313,820	$1,353,235	$1,393,832	$1,435,647	$1,478,716	$1,523,077	$1,568,770	$1,615,833	$1,664,308	$1,714,237	$1,765,664	$1,818,634	$1,873,193	$1,929,389	$1,987,271	$2,046,889	$2,108,295	$2,171,544	$2,236,691	$2,303,791	$2,372,905	$2,444,092	$2,517,415	$2,592,937	$2,670,726	$2,750,847
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$520,320	$535,930	$552,007	$568,568	$585,625	$603,193	$621,289	$639,928	$659,126	$678,900	$699,267	$720,245	$741,852	$764,107	$787,031	$810,642	$834,961	$860,010	$885,810	$912,384	$939,756	$967,948	$996,987	$1,026,897	$1,057,703	$1,089,435
Income From Operations		$973,500	$1,002,705	$1,032,786	$1,063,770	$1,095,683	$1,128,553	$1,162,410	$1,197,282	$1,233,201	$1,270,197	$1,308,303	$1,347,552	$1,387,978	$1,429,618	$1,472,506	$1,516,681	$1,562,182	$1,609,047	$1,657,319	$1,707,038	$1,758,249	$1,810,997	$1,865,327	$1,921,286	$1,978,925	$2,038,293
Cost of Construction		$16,148,000																									
Retail Construction		$1,050,000																									
Cost of Land		$5,880,000																									
Downpayment		$1,500,000																									
Loan		$21,578,000																									
Loan Service Costs		$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362	$1,373,362
Terminal Value	**$7,523,919**																										$25,478,660
End of Year Balance	**-$589,764**	-$399,862	-$370,657	-$340,576	-$309,593	-$277,680	-$244,809	-$210,953	-$176,080	-$140,162	-$103,166	-$65,060	-$25,811	$14,616	$56,255	$99,144	$143,319	$188,819	$235,685	$283,956	$333,676	$384,887	$437,634	$491,964	$547,924	$605,563	$664,930
Final Investment Value	**$6,934,155**																										

Notes
Input Cell
1) Discount Rate = 5%
2) Utilization: Short Term = Hours/Week; Flat Rate = Days/Week; Monthly = Per Month
3) No consideration has been made for grants, reserve or sinking funds
4) Terminal Value Based on 8% Terminal Capitalization Rate

Area 2 - Higher Parking Fees
Option 2- 500 Space Below Grade Parking Garage with 10,000 square feet of ground floor retail
Cash-Flow Calculation

Assumptions	
Cost of land/sq ft	$60
Total Construction cost/space (above grade)	$32,296
Total Construction cost/space (below grade)	$44,396
Total Construction cost Ground Floor Retail Area	$1,050,000
Annual revenue/year (above grade)	$0
Annual revenue/month per space (above grade)	$0
Annual revenue/year (below grade)	$1,313,820
Annual revenue/month per space (below grade)	$219
Annual below grade operating expense/month (per space)	$92
Annual retail revenue	$180,000
Annual above grade operating expense/month (per space)	$0
Annual Financing Costs	$1,758,423
Site Size (sq.ft)	98,000
No. of Spaces Above Grade	0
No. of Spaces Below Grade	500
Space Utilization Rate	90%

Annual Increase	
Annual Revenue Increase	3%
Annual Operating Expense Increase	3%
Cost Inflation	3%

Financing	
Cost of Financing	4%
Term (Years)	25
Payments/Year	2

Construction Costs - Parking Garage	Below Grade	Above Grade
Cost Per Space	$33,000.00	$22,000.00
Architecture	$3,000.00	$3,000.00
Underground Service	$500.00	$500.00
Streetscaping	$600.00	$600.00
Roadway reconstruction	$200.00	$200.00
Engineering Fees	$2,500.00	$2,500.00
Control	$560.00	$560.00
Contingency	$4,036.00	$2,936.00

Construction Costs - Retail	
Gross Floor Area	10,000
Cost Per Square Foot	$105.00

Parking Revenue	Pricing	No. of Spots Above Grade	Utilization	No. of weeks
Short Term	$4.00	0	20	52
Flat Rate	$9.50	0	6	52
Monthly Pass	$128.00	0	1	12

Parking Revenue	Pricing	No. of Spots Below Grade	Utilization	No. of weeks
Short Term	$6.00	50	20	52
Flat Rate	$15.00	75	6	52
Monthly Pass	$160.00	415	1	12

Retail Revenue	Gross Floor Area	Lease Rate (Psf)
Annual Revenue	10,000	$18.00

Operating Expense (per space)	Below Grade	Above Grade
Cashiers	$140,000	$140,000
Maintenance Pay on Foot	$2,500	$2,500
Signage & Equipment Repair	$25,500	$25,500
Surveillance Maintenance	$1,000	$1,000
Security Guard	$46,720	$46,720
City Maintenance	$54,600	$54,600
Insurance	$8,600	$8,600
Municipal Taxes	$175,000	$175,000
General Repair Allowance	$21,500	$21,500
Hydro & Other	$77,100	$44,900

Financing Costs	
Interest Rate	4%
No. Payment/Year	2
Nominal Interest Rate	2.0%
Term	25
No. Of Payments	50
Below Grade - Construction Cost	$22,198,000
Above Grade - Construction Cost	$0
Retail Construction Cost	$1,050,000
Land Cost	$5,880,000
Down payment	$1,500,000
Present Value of Loan	$27,628,000

Proforma Mixed Use Model	NPV (5%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
No. of Parking Spaces Below Grade		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
No. of Parking Spaces Above Grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Operating Revenues		$1,313,820	$1,353,235	$1,393,832	$1,435,647	$1,478,716	$1,523,077	$1,568,770	$1,615,833	$1,664,308	$1,714,237	$1,765,664	$1,818,634	$1,873,193	$1,929,389	$1,987,271	$2,046,889	$2,108,295	$2,171,544	$2,236,691	$2,303,791	$2,372,905	$2,444,092	$2,517,415	$2,592,937	$2,670,726	$2,750,847
Ground Floor Retail Revenues		$180,000	$185,400	$190,962	$196,691	$202,592	$208,669	$214,929	$221,377	$228,019	$234,859	$241,905	$249,162	$256,637	$264,336	$272,266	$280,434	$288,847	$297,513	$306,438	$315,631	$325,100	$334,853	$344,899	$355,246	$365,903	$376,880
Operating Expenses		$552,520	$569,096	$586,168	$603,754	$621,866	$640,522	$659,738	$679,530	$699,916	$720,913	$742,541	$764,817	$787,761	$811,394	$835,736	$860,808	$886,632	$913,231	$940,628	$968,847	$997,913	$1,027,850	$1,058,685	$1,090,446	$1,123,159	$1,156,854
Income From Operations		$941,300	$969,539	$998,625	$1,028,584	$1,059,441	$1,091,225	$1,123,961	$1,157,680	$1,192,411	$1,228,183	$1,265,028	$1,302,979	$1,342,069	$1,382,331	$1,423,801	$1,466,515	$1,510,510	$1,555,825	$1,602,500	$1,650,575	$1,700,093	$1,751,095	$1,803,628	$1,857,737	$1,913,469	$1,970,873
Cost of Construction		$22,198,000																									
Retail Construction		$1,050,000																									
Cost of Land		$5,880,000																									
Downpayment		$1,500,000																									
Loan		$27,628,000																									
Loan Service Costs		$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423	$1,758,423
Terminal Value	**$7,275,054**																										$24,635,915
End of Year Balance	**-$6,758,586**	-$817,123	-$788,884	-$759,798	-$729,839	-$698,982	-$667,199	-$634,462	-$600,743	-$566,013	-$530,240	-$493,395	-$455,444	-$416,355	-$376,092	-$334,623	-$291,909	-$247,913	-$202,598	-$155,923	-$107,848	-$58,331	-$7,328	$45,205	$99,314	$155,046	$212,450
Final Investment Value	**$516,468**																										

Notes

Input Cell

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4) Terminal Value Based on 8% Terminal Capitalization Rate