

City of Hamilton Parking Master Plan

Prepared for City of Hamilton
by IBI Group
August 17, 2021

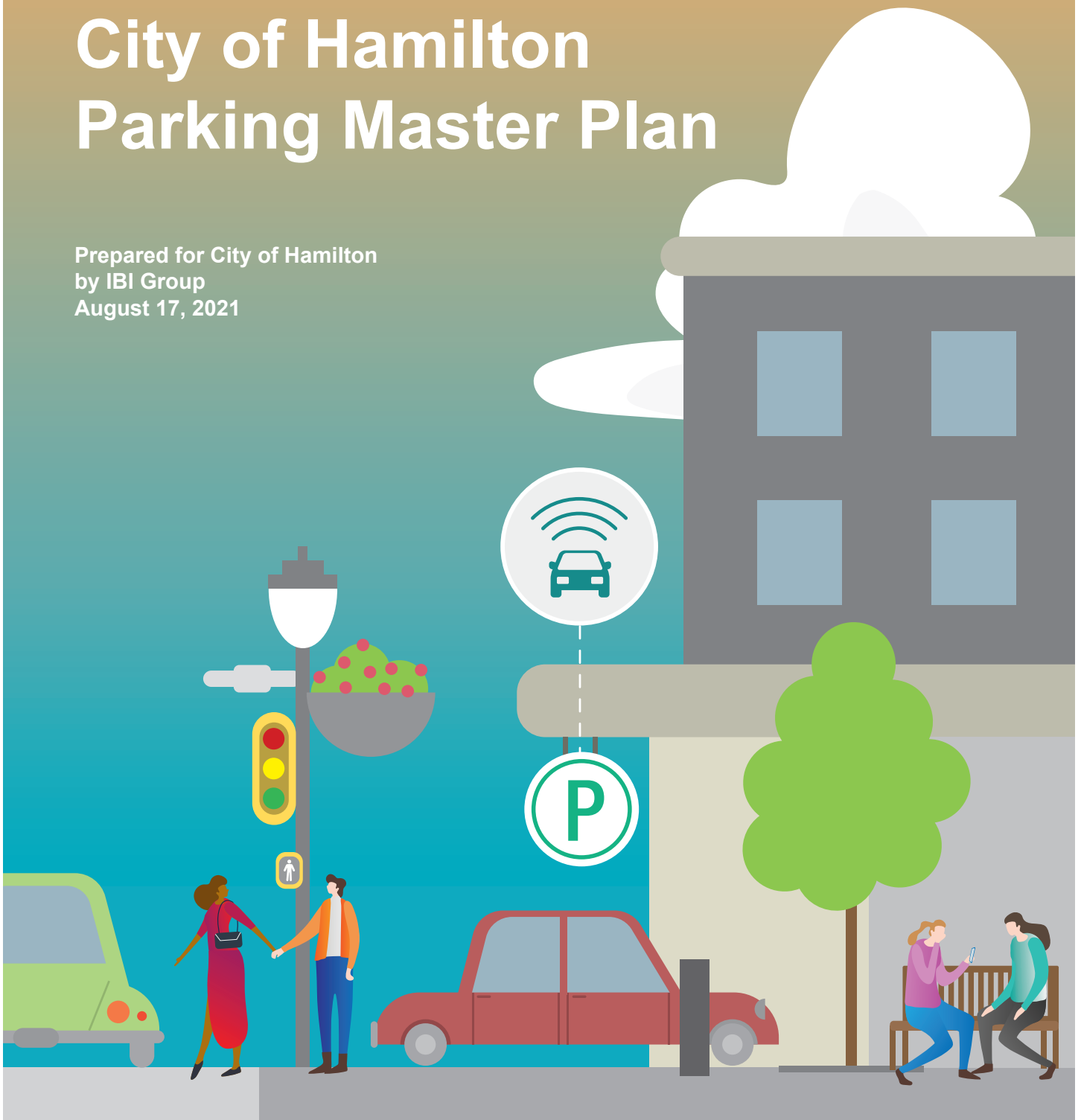
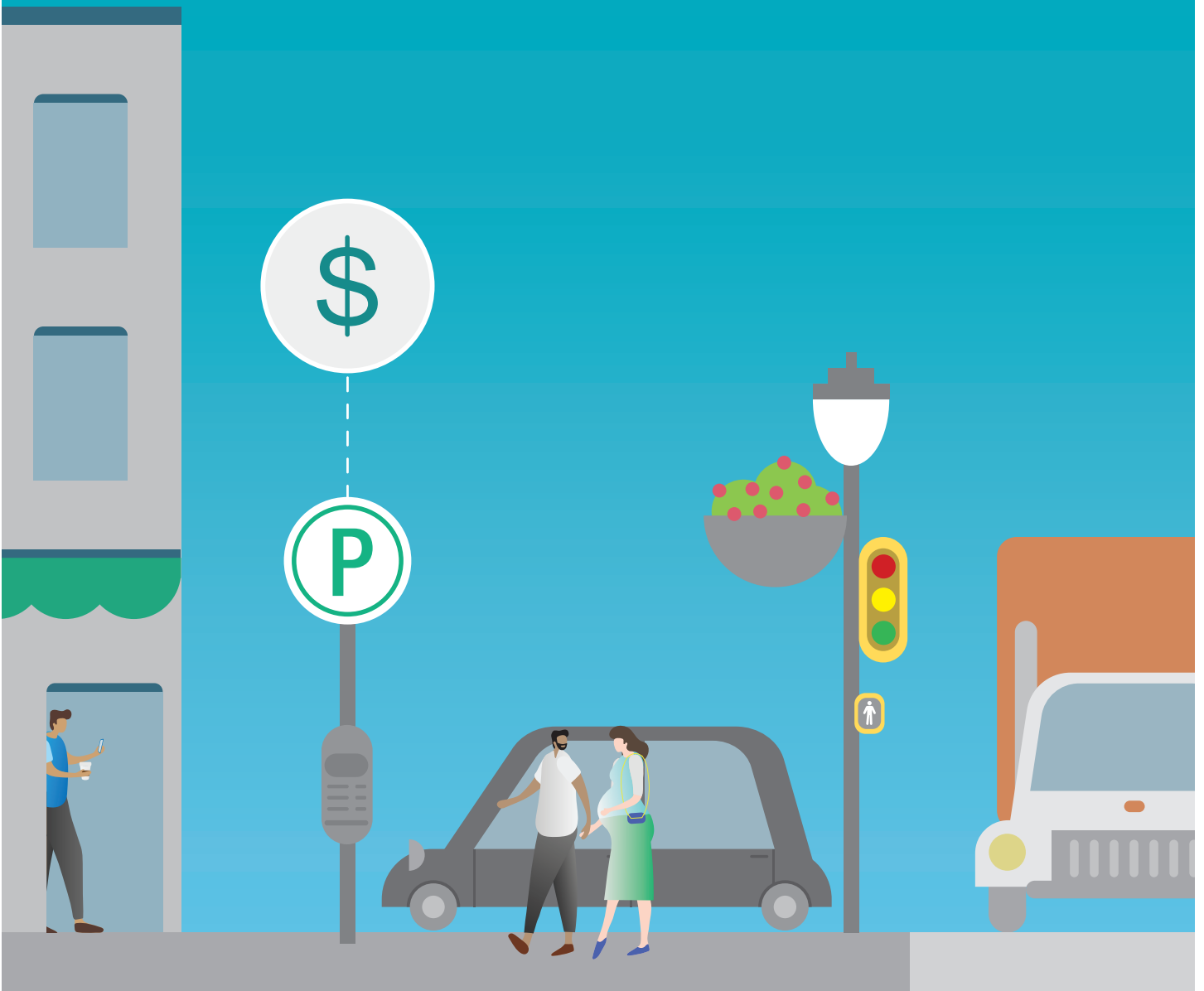


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1. Introduction



1. Introduction

Hamilton has grown and changed significantly since the last citywide review of parking operations in 2005. Even since the last Downtown focused parking review in 2013, Hamilton has undergone an economic revival with an influx of new residents and businesses. Land use downtown has evolved towards higher density developments while maintaining and restoring many of the heritage structures that make Hamilton unique. In many cases, these new developments have replaced existing surface parking lots which in turn has impacted parking supply and demand over a short time. At the same time, outlying communities in Waterdown, Dundas, Ancaster, Binbrook and Stoney Creek have expanded steadily and, in some places, outgrown their existing parking infrastructure.

Travel trends have also changed over the last 15 years. The emergence of Personal Transportation Providers (PTP) such as Uber and Lyft and the popularization of micro mobility services like SoBi have expanded transportation choice and reduced the need for residents to own their own cars. A growing number of Hamiltonians, especially those under 45, are increasingly including non-Single Occupancy Vehicle (SOV) travel methods as a part of their mobility choices. Even more disruption is on the horizon with the emergence of Electric Vehicles (EVs) and Connected and Automated Vehicles (CAVs) which have the potential to completely change every day travel behaviours, and the growing popularity of home delivery for retail services.

The City of Hamilton initiated the Hamilton Parking Master Plan (PMP) to address these developments, provide direction on a strategic approach to parking policy, planning, financial sustainability, and enforcement that will align with other city-wide transportation and land use planning policies, and help address the changing needs faced by the Hamilton Municipal Parking System (HMPS).

The scope of this plan is focused primarily on “public” parking supply and operations. It is not intended to review parking supply requirements for private development which are regulated through the Official Plan and applicable Zoning By-laws, except insofar as to account for these regulations and related trends on public parking needs.

The PMP focuses in particular on the challenges and solutions for Downtown Hamilton and the City’s 13 Business Improvement Areas (BIAs). To gain an understanding of Hamilton’s parking operations, the study examined existing parking supply and demand, consulted stakeholders and the general public on issues they saw and solutions they want to see in Hamilton, reviewed best practices successfully adopted in other Canadian municipalities, and established a range of future scenarios to test potential solutions. Based on the study findings, 25 strategic recommendations were identified to help guide HMPS staff in addressing existing parking issues and meeting future parking needs.

This report presents a summary of the key findings and recommendations of the PMP. More detailed data and analysis is presented in accompanying background reports as follows:

Background Report I – Existing Conditions and Best Practices: This Report includes a detailed summary of the 2019 parking inventory and utilization surveys along with a review of best practices in other jurisdictions.

Background Report II – Future Conditions and Financial Assessment: This report provides a detailed analysis of future conditions including parking demand and supply, along with an analysis of the financial implications for HMPS.

A Note on COVID-19

Over the last year COVID-19 related impacts have dramatically changed travel patterns and parking demand as in-person gatherings were restricted and many workers were required to work remotely. Overall parking demand has decreased, with far fewer people travelling to business areas across Hamilton for work or leisure, resulting in budgetary and operational challenges for many parking systems like HMPS.

But at the same time, the changes brought on by the pandemic have provided an opportunity to re-think the role that parking space can play in a city. Across Canada, on-street curbside spaces have been repurposed to serve as expanded outdoor dining areas or dedicated pick-up spaces to support local businesses. In Calgary, surface parking lots have been converted to parks, and right here in Hamilton

the York Parkade was re-imagined as an open-air concert venue. So while it is not clear what the long term impacts of COVID-19 will be on parking operations, what is clear is that cities like Hamilton can adapt and leverage parking facilities in new and creative ways to support their communities even in the face of significant challenges.

The analysis presented in this report assumes that parking demand will return to near normal levels at some point over 2021, and it is noted that the parking utilization surveys referenced herein were conducted in fall 2019 prior to COVID-19. However, several of the recommendations also envision a different future where some impacts of COVID-19 will remain permanent, or at minimum have changed the discussion around on needs and opportunities.



2. Hamilton Today



2. Hamilton Today

As of the end of 2020, Hamilton Municipal Parking System (HMPS) operated 58 surface lots, 2 parking structures, and approximately 2,700 on-street parking meters across the City. HMPS is responsible for operations across the city from Downtown Hamilton to Stoney Creek, Dundas, Ancaster, Waterdown, Glanbrook, and everywhere in between. Though all of these areas are managed by HMPS, they are distinctly different markets with different travel patterns and parking demands which result in differences in how public parking facilities are operated across the city.

Downtown Hamilton

Downtown Hamilton is the City's central core and the location where many Hamilton residents live, work, and play. It is the centre of a city of over 560,000 residents and 212,000 jobs, and is identified as an Urban Growth Centre in the Province's Growth Plan for the Greater Golden Horseshoe area. Downtown Hamilton is populated by a growing number of residential high rises, popular restaurants and entertainment venues, tourist destinations, and offices.

Downtown Hamilton contains approximately 8,600 parking spaces comprised of on-street curbside spaces (1,158 spaces), municipally owned and operated off-street facilities (2,811 spaces), and publicly accessible privately-owned off-street lots (4,579 spaces). Surveys and site visits conducted in fall 2019 indicated that the current parking supply in Downtown Hamilton is generally adequate to meet current demands. On a typical weekday, usage is approximately 80% of supply with some 1,700 spaces available. However, many individual lots are often at capacity by mid-day meaning that the travelling public must often search for available parking or opt for a location that is not optimal. On weekends, there is generally sufficient parking, but some lots operate near capacity around commercial and retail destinations like Jackson Square. Exhibits 1 and

2 summarize peak weekday and weekend parking utilization based on the fall 2019 surveys.

While total supply is adequate to meet demand, available parking in some key desirable areas was scarce, resulting in a general feeling among some residents and businesses that there is not enough parking downtown. This can lead to inefficient behaviours like cruising for parking and short term parking in no stopping zones. Conversely, periods of low parking utilization can lead to impressions of areas of the Downtown being under-utilized, vacant and unsafe, and they can create undesirable spatial separations between origins and destinations that reduce vibrancy and walkability.

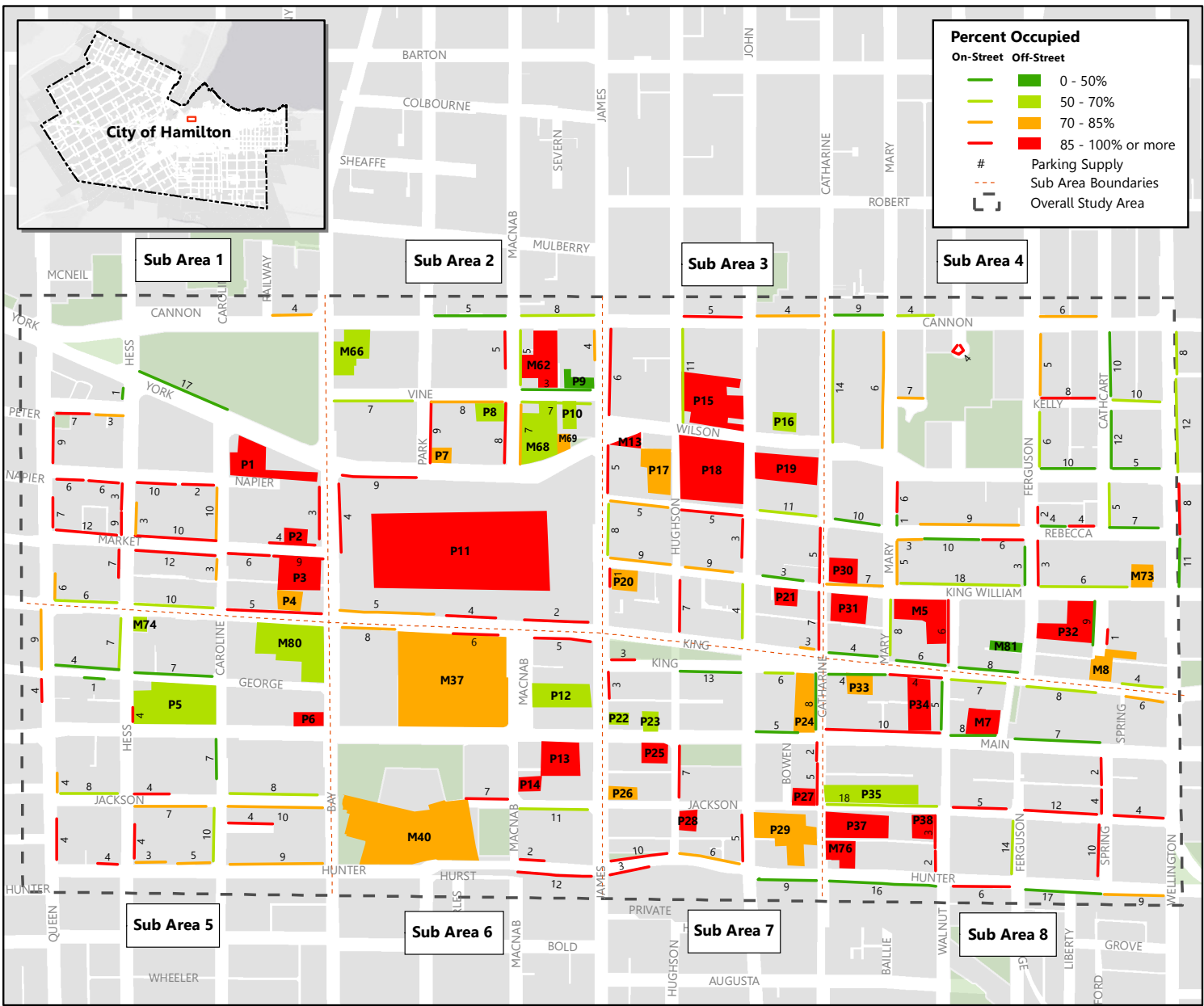
In summary, while there is generally adequate capacity to meet demand overall, the Downtown experiences periods of both acute shortages in key locations during peak periods, as well as periods of oversupply that result in inefficient land use. This suggests a high need and potential for optimizing the use of existing supply, while being strategic in the introduction of any new supply.



Key Facts about Downtown Hamilton Parking

- HMPS manages **4,000 parking spaces** in Downtown Hamilton between on and off-street spaces
- The 1,100 on-street spaces alone represent an area roughly equivalent to the size of 10 NHL-sized ice rinks
- Private parking facilities provide an **additional 4,600 spaces** in Downtown Hamilton
- On-street parking costs **\$2.00 per hour**, while off-street facilities are **\$3.00 per hour**
- Monthly parking permits are available ranging from **\$85 to \$150 per month**
- Paid parking operations are generally in effect 9 AM to 6 PM on Monday, Tuesday, Wednesday, and Saturday, and between 9 AM to 9 PM on Thursday and Friday
- Parking is free on Sundays
- Weekday parking demand peaked with **80% of parking spaces occupied**
- Weekend demand peaked with only **30% of spaces occupied**
- Municipal lots at King William Street/Mary Street (M5), Main Street/Ferguson Avenue (M7), and Catharine Street/Hunter Street (M76) operated above their stated capacities during the weekday business peak period at the time of the fall 2019 surveys
- While there is generally adequate capacity to meet demand overall, the Downtown experiences periods of both acute shortages in key locations during peak periods, as well as periods of oversupply that result in inefficient land use





Parking Facility Occupancy/Supply (Spaces)

On-Street Parking 811/1,155
Municipal Off-Street 2,111/2,811

Lot M5	131/125
Lot M7	61/59
Lot M8	38/47
Lot M13	15/16
Lot M37	633/800
Lot M40	307/433
Lot M62	99/111
Lot M66	55/86
Lot M68	542/796
Lot M69	17/20
Lot M73	30/37
Lot M74	7/11
Lot M76	58/55
Lot M80	114/202
Lot M81	4/13

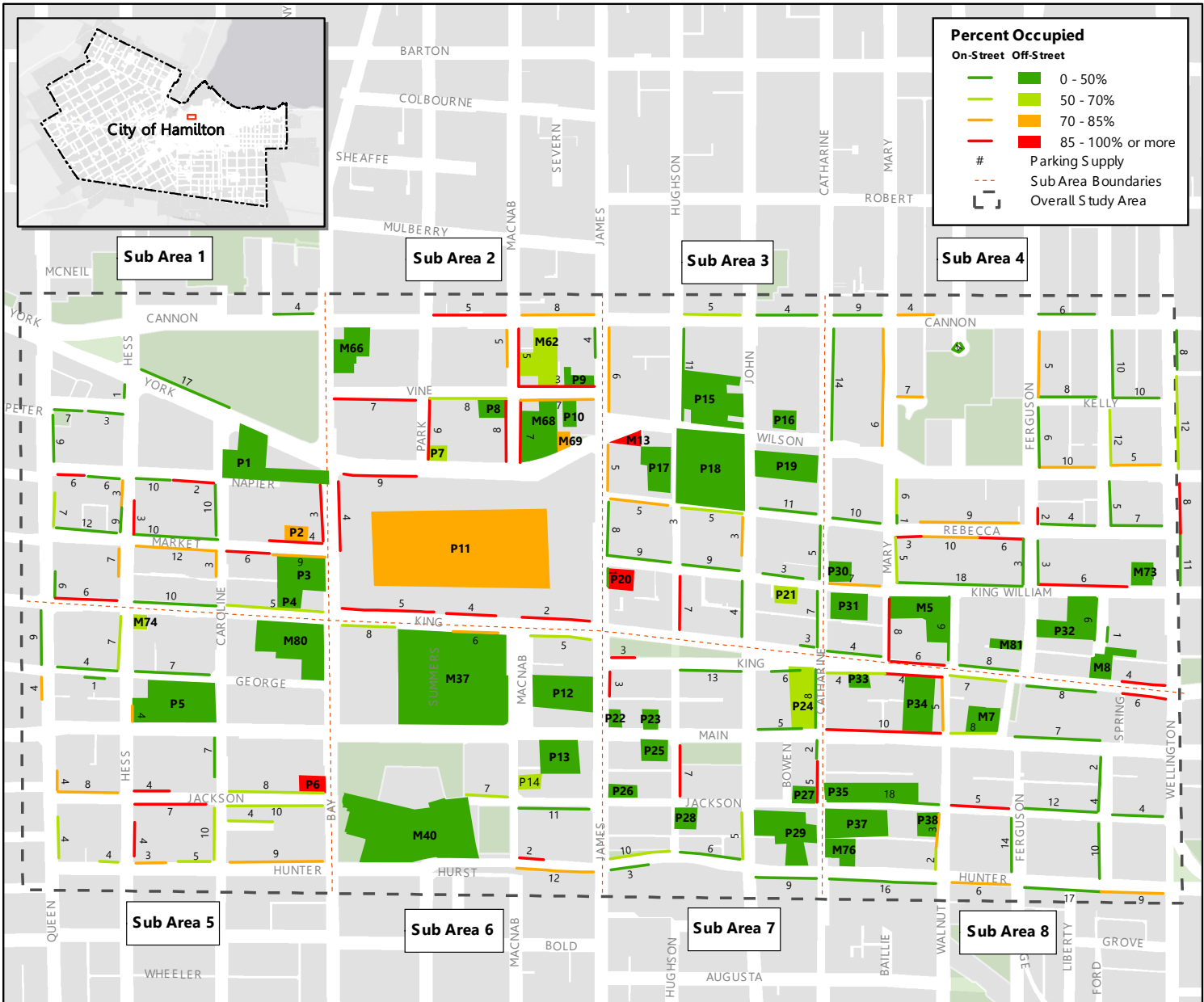
Private Off-Street 3,887/4,579

Lot P1	118/114
Lot P2	9/11
Lot P3	110/110
Lot P4	46/60
Lot P5	117/206
Lot P6	46/44
Lot P7	51/68
Lot P8	61/102
Lot P9	6/20
Lot P10	23/38
Lot P11	645/657
Lot P12	59/115
Lot P13	66/61
Lot P14	54/59
Lot P15	240/274
Lot P16	23/34
Lot P17	83/102
Lot P18	312/336
Lot P19	184/209
Lot P20	78/93
Lot P21	51/59
Lot P22	49/71
Lot P23	29/49
Lot P24	70/90
Lot P25	80/81
Lot P26	95/128
Lot P27	41/48
Lot P28	62/56
Lot P29	184/232
Lot P30	117/112
Lot P31	129/137
Lot P32	42/45
Lot P33	198/245
Lot P34	95/110
Lot P35	137/209
Lot P37	114/133
Lot P38	63/61

Hamilton Parking Master Plan
 Downtown: Peak Occupancy (Weekday 12:00 PM)



Exhibit 1: Downtown Hamilton Parking Supply and Peak Demand, Fall 2019 Weekday



Percent Occupied

On-Street	Off-Street	Legend
Light Green	Light Green	0 - 50%
Medium Green	Medium Green	50 - 70%
Yellow	Yellow	70 - 85%
Red	Red	85 - 100% or more
#		Parking Supply
- - -		Sub Area Boundaries
[]		Overall Study Area

Parking Facility	Occupancy/Supply (Spaces)
On-Street Parking	626/1,158
Municipal Off-Street	707/2,811
Lot M5	60/125
Lot M7	8/59
Lot M8	9/47
Lot M13	16/16
Lot M37	249/800
Lot M40	33/433
Lot M62	71/111
Lot M66	5/86
Lot M68	174/796
Lot M69	17/20
Lot M73	2/37
Lot M74	7/11
Lot M76	2/55
Lot M80	51/202
Lot M81	3/13
Private Off-Street	1,236/4,579
Lot P1	23/114
Lot P2	8/11
Lot P3	41/110
Lot P4	6/60
Lot P5	21/206
Lot P6	43/44
Lot P7	35/68
Lot P8	43/102
Lot P9	8/20
Lot P10	15/38
Lot P11	524/657
Lot P12	11/115
Lot P13	4/61
Lot P14	34/59
Lot P15	33/274
Lot P16	1/34
Lot P17	41/102
Lot P18	41/336
Lot P19	5/209
Lot P20	80/93
Lot P21	30/59
Lot P22	3/71
Lot P23	7/49
Lot P24	46/90
Lot P25	6/81
Lot P26	7/128
Lot P27	7/48
Lot P28	3/56
Lot P29	21/232
Lot P30	9/112
Lot P31	13/137
Lot P32	2/45
Lot P33	32/245
Lot P34	17/110
Lot P35	4/209
Lot P37	8/133
Lot P38	4/61



Hamilton Parking Master Plan

Downtown Peak Occupancy (Weekend 1:00 PM)



Business Improvement Areas

Parking operations in each BIA are unique. There are a number of nuances in how parking policies are applied across the city, resulting in some cases in inconsistent access to and availability of publicly operated parking facilities. Some of these issues can be addressed by updating existing policies and regulations across the city, with an eye towards the local context, while others are unique to specific areas and do not lend themselves to one-size-fits-all solutions.

Ancaster Heritage Village



Ancaster Village lies within an area of relatively high personal vehicle mode share (approximately 82% of trips to Ancaster are by automobile). Parking opportunities are generally provided on-site at local businesses with minimal public parking. On-site private parking is complemented by 17 paid on-street parking spaces. During surveys and site visits conducted in fall 2019, 11 of the 17 on-street parking spaces were observed to be occupied at all times. Given the limited amount of on-street parking in the commercial core, one of the main challenges in Ancaster is a lack of clarity on what private parking lots are available for the public.

Barton Village



Barton Village is a mixed use area with a number of businesses fronting Barton Street. HMPS provides 186 on-street and 156 off-street parking spaces within the BIA. However, as Barton Street also functions as a Minor Arterial and truck route, and with high transit bus volumes, many conflicts are known to occur with vehicles parked on-street. The Hamilton General Hospital is a large parking demand generator with demand often spilling into the nearby residential neighbourhood. It was also observed that over half the drivers parked in the lots nearest the Hamilton General Hospital were accessible parking permit holders.

Concession Street



This “Main street” has a number of businesses that serve the neighbourhood and broader areas with 133 on-street parking spaces provided along Concession Street. Municipal off-street parking opportunities are limited (24 spaces), however several businesses provide on-site parking including the Juravinski Hospital which is a major trip and parking generator in the area. A minimum of 20% of on-street parking spaces were available at the time of the surveys, indicating that while supply is sufficient today, future growth in parking demand could strain the parking system.

Downtown Dundas



This historic main-street area currently offers 331 municipal off-street parking spaces complemented by 91 on-street spaces. Outside of the Downtown Hamilton core, Downtown Dundas has the largest supply of publicly operated parking spaces in Hamilton. Notwithstanding its high personal vehicle mode share, many local residents walk Downtown. While the on-street parking system was observed to be well utilized, almost 100 off-street parking spaces were available at all times.

Downtown Hamilton



The Downtown Hamilton BIA is a sub-section of Downtown Hamilton (as opposed to Downtown Hamilton as defined by the Downtown Secondary Plan). Generally comprising the area east of James Street and centred on Gore Park, it is a traditional central business district environment with 224 on-street and 71 off-street parking spaces provided by the HMPS. Available parking opportunities are scarce in Downtown Hamilton during the weekday peak, with 95% of the parking spaces occupied. Strategies that help manage existing demand, like dynamic pricing and real-time-parking information systems, may help parkers more easily find available spaces without requiring expensive infrastructure like new parking structures. Strategies to help manage parking demand would also support Hamilton's planning documents (Official Plan, Downtown Transportation Master Plan, etc.). Large volumes of alternative curbside activities (transit, passenger pick-up/drop-off, office deliveries, pop-up patios, etc.) are known to occur.

International Village



Similar to the Downtown Hamilton BIA, the International Village BIA is also located within Hamilton's Urban Growth Centre. The HMPS provides 281 off-street and 117 on-street parking spaces within this BIA. Parking users are known to experience difficulty in finding an available parking spaces during weekday business hours. Strategies aimed at managing parking demand would be beneficial. Large numbers of passenger pick-up/drop-off and ride-sharing curbside activities are known to occur.

King Street



Generally comprising the area along King Street between Caroline Street and Queen Street this is an active area for residential development with a number of new street level businesses. Most parking needs are met privately through on-site parking. However, the HMPs does provide 16 on-street and 11 off-street parking spaces. Finding an available on-street parking space may be challenging during peak periods, however available off-street parking was always observed. On-street parking time restrictions are known to create compliance issues.

Locke Street



This “Main street” neighbourhood has 124 on-street parking spaces provided along Locke Street, but no municipal parking lots. Many restaurants front Locke Street with many multi-modal transportation visitors. The municipal on-street parking is complemented by on-site private parking at many establishments as well as some off-street private commercial parking. Available on-street parking opportunities were observed at all times. The local places of worship are known to draw high parking demand on Sundays.

Main Street West Esplanade



This BIA extends between Queen Street and Dundurn Street. While lined with commercial establishments, Main Street predominantly serves through vehicles travelling Downtown from Highway 403 and western Hamilton. Similar to Locke Street, the 39 on-street parking spaces are complemented by privately owned on-site parking facilities. Abundant on-street parking opportunities are known to be available at all times, but high traffic volumes may give the perception that these spaces are not useable.

Ottawa Street



The Ottawa Street neighbourhood continues to evolve and is home to a large textile district, antique stores and other popular businesses. Large volumes of out of town visitors are known to frequent the area during weekends. The HMPS provides 102 on-street and 306 off-street parking opportunities in the Ottawa Street BIA, with plentiful available parking opportunities at all times. Recently, AM peak rush hour restrictions were eliminated in order to make on-street parking available for longer periods.

Stoney Creek



This area is characterized by a number of small businesses fronting onto King Street West. A large supply of municipal off-street parking and on-street parking along King Street West is provided, both of which are available at no cost, with a two-hour maximum parking duration. Available parking opportunities are known to be limited during weekday business hours.

Waterdown



The Waterdown BIA comprises an historic main-street area with many commercial businesses fronting onto Hamilton Street North. Municipal parking facilities are limited (8 off-street parking spaces), which means that businesses rely heavily on private parking operations. Approximately 55 free on-street parking spaces are also available. Concerns have been raised around the zoning standard that small retail units (less than 450 m²) do not require a parking spaces, with fears that these uses would then rely on parking at adjacent properties. As the area intensifies, on-site parking supply shortages may develop, partially due to the lack of local municipally operated parking facilities.

Westdale Village



Similar to the Locke Street BIA, the HMPS provides 98 on-street parking spaces within the Westdale BIA, which is complemented by privately owned on-site parking. On-street parking demand is known to be high, but parking opportunities were available at all times during the 2019 utilization survey. A high volume of boulevard parking with parking infiltration from surrounding areas is known to be an issue.





Exhibit 3: Hamilton Parking Master Plan Study Areas

3. Best Practices



3. Best Practices

From a parking perspective, Hamilton is unique in many ways. Municipal parking operations have evolved from initially being overseen by the Traffic Department, to conversion to a Parking Authority, and then to the current form of a City Division in 1998. While unique, there are still a number of lessons that can be learned from practices that other cities have adopted to address their challenges and how those strategies of succeeded or fallen short over time. By building on these experiences and applying them with the proper context, Hamilton can address the unique challenges presented across the city without having to reinvent the wheel.

This section provides a brief summary of some best practices, with additional details and insights provided in Background Report I.



Emerging Trends

Vehicle technologies such as Electric Vehicles (EVs) and Connected and Automated Vehicles (CAVs) have the potential to significantly impact parking patterns in the not-too-distant future. Growing demand for shared economy services like ride hailing, carshare, and micro mobility services like bikeshare has the potential to expand these impacts.

While the nature and magnitude of the impacts is subject to debate, most experts agree that future parking needs will be significantly impacted by technology. CAVs have the potential to reduce the need for downtown parking lots in a future where long term parking is replaced by curbside drop-off, but could conversely help make existing lots become more efficient as the space required per parking stall can be reduced. Increased use of alternative modes

like ride hailing, carshare, transit, or other micro mobility services could reduce levels of car ownership and the resulting number of people commuting in their own cars, but could increase demand for curbside space for short term use. These trends are likely to affect parking in Downtown Hamilton more than some of the outer areas as they are facilitated by a high density of trips and mixed uses.

Given that parking structures typically have a service life of 50 years, which significantly exceeds the timeframe where experts expect to see the above technology trends play out, alternative measures to meet existing and future parking needs are becoming more popular from a risk management perspective. Some of these strategies include:

- Creating publicly-available parking spaces in existing under-utilized privately owned parking facilities (e.g. older apartment buildings or lots adjacent to places of worship during off-peak times);
- Building in publicly available spaces to new developments through agreements with developers; and,
- Designing any new parking facility in a manner that allows for relatively easy conversion to other uses like housing, office space, or retail if the parking space is not needed in the future.

Best practices suggest that municipalities begin developing policies to address these and other emerging trends early. While the policies may need to be adjusted as trends and services emerge and evolve, developing policies early allows municipalities to proactively respond to future needs instead of reacting to developments they could have expected.



Future Technology

Parking technologies play an important role in the parking experience of users and can increase the efficiency of parking management. Areas where technologies can improve parking operations include parking lot entrance/exits, payment (pay and display, pay by phone, etc.), enforcement (license plate recognition systems), and wayfinding signage through the delivery of real time parking information (variable message signs, smart phone apps, online, etc.).

Given that technology procurements can be expensive, Canadian municipalities are generally upgrading technologies in areas that provide the highest benefit to cost incurred. Common upgrades include pay parking machines, parking management software, and license plate recognition (LPR) systems.

Hamilton currently has various technologies deployed throughout the HMPS (parking meters, pay and display, gated parking structure entry/exit lanes, etc.). As new technologies are adopted, parking operation efficiencies will be realized along with an improved parking user experience.



Enforcement

The most common enforcement approach involves proactive enforcement in the areas with paid municipal parking operations with reactive, complaint-based enforcement in all other areas.

Canadian municipalities are trending towards the adoption of LPR systems to assist enforcement officers. LPR synergizes with pay parking technologies that record vehicle license plates, such as pay-by-plate technology and parking apps, to provide a more efficient method of parking enforcement. User payments are uploaded into a database along with the user's license plate number and a timestamp. This information can then be used to determine whether a vehicle is parked illegally. LPR increases the efficiency of proactive enforcement and reduced enforcement costs.



Residential On-street Parking

Hamilton offers two types of residential on-street permits: Parking Zones Permit and Parking Time Limit Zones Permit. Parking Zones Permits allow the holders to park their vehicles on select streets specified by the City of Hamilton, and the Parking Time Limit Zones Permits exempt permit holders from all signed time limits in the purchased zone.

Municipalities are known to provide on-street residential permit parking programs in neighbourhoods with limited off-street parking. Two types are programs are typically provided depending on needs:

- Local residents: long term on-street parking permits sold by the municipality.
- Visitors: temporary on-street parking passes that can be requested several times per year

The long term permits help meet residential parking needs in areas where off-street opportunities are insufficient. The temporary on-street passes provide flexibility to residents when hosting overnight visitors or if off-street facilities are temporarily unavailable (e.g. driveway paving). The visitor parking passes could be adopted City-wide, while a case by case evaluation at each neighbourhood's off-street parking opportunities would be required when deciding whether the long-term permit program is suitable for a given area. Additional considerations include, safety, road width, snow clearance, etc.



On-street Accessible Parking

On-street accessible parking programs are programs intended to provide a dedicated on-street accessible parking space for those residents who have mobility limitations and who cannot access off-street parking facilities.

In general, applications for a designated on-street accessible parking space can be made by residents on an as-needed basis, which are then reviewed on a case-by-case basis by the municipality. If granted, the zoning by-laws are updated, and accessible parking signage is installed.

Accessible on-street parking permits are available in Hamilton to qualifying residents, but unlike some municipalities there is no limit on the number of spaces that are provided on a street, which has caused some challenges in some areas.



Financial Sustainability

Canadian municipalities generally strive for financially sustainable parking operations where parking revenues are enough to fund expenses. This model is preferred as it places the costs of the parking system on the users of the system instead of placing the costs on the public at large if the system were to be subsidized by municipal tax revenues. An additional benefit of financially sustainable parking operations is that it can provide the financial flexibility required to cover risk driven by fluctuating revenue while allowing for reinvestment into the system needed to respond to changing needs and transportation trends.



Parking Prices

Canadian municipalities have adopted a few different types of pricing models. Location-based parking pricing is a strategy where prices vary by location to provide a financial incentive to park in underutilized

parking facilities, and therefore improve the distribution of parking demand. Time-based pricing varies parking prices by time-of-day and day-of-week, to manage parking demand during peak periods. Under the performance-based pricing strategy, the price of parking is automatically adjusted based on observed demand with the intent of maintaining a desired overall utilization. Prices can be periodically adjusted if automated technology is not available.

Hamilton currently has time and location-based parking prices. Pay parking operations are in effect during weekday business hours and on Saturdays, with variable parking prices depending on the facility. Hamilton could adopt the performance-based pricing strategy as well, where parking prices would be updated periodically to target a desired utilization (i.e. between 60% and 80% utilization). If adopted, performance based pricing would be expected to better distribute parking demand throughout the HMPS.



Cash-in-lieu (CIL) of Parking

CIL of parking programs are appropriate in some municipalities while not feasible in others. CIL allows developers to pay a predetermined sum instead of meeting the proposed development's required parking. These funds are then used by the municipality to construct a public parking facility to offset the deficiency. One of the key benefits of CIL is that it allows for more strategic and efficient provision of shared parking supply, rather than each development providing its own supply. A potential drawback of CIL is that a temporary parking shortfall can be created between a point in time that developments contribute to CIL and the point at which a new municipal parking facility is opened. Enough funding must be collected which can take time, and then additional time is required to construct the new facility.

Hamilton has had a CIL policy in place for several decades, but uptake has been limited. This policy is currently being reviewed following a recommendation of the Mayor's Task Force on Economic Recovery.

4. Hamilton Tomorrow



4. Hamilton Tomorrow

Parking operations in Hamilton are expected to evolve as the City continues to grow and travel patterns of residents and visitors change. By 2051, Hamilton is projected to be home to nearly 820,000 residents and almost 360,000 jobs. Long term planning is required today to address the parking needs of future residents and businesses, both to support local economic development as well as to encourage adoption of emerging sustainable mobility trends.

Forecasting future parking demand is a complex process, but in general is most strongly tied to the following factors:

- **Population and employment growth**, which can be expected to drive parking demand growth in line with the growing number of residents and jobs across the city.
- **New developments** which generate additional trips, and as a result, additional parking demand. While most parking demand generated by a new development will be captured on site, some parking demand can be expected to spill over into municipal parking facilities.
- **Changes to parking supply** due to redevelopment of off-street facilities or repurposing of on-street spaces in favour of other uses.
- **Changing travel patterns** including shifting dependency on personal vehicles, adoption of transit and active transportation options, impacts of micro mobility services, and longer term impacts of technologies like EVs and CAVs. This also includes changes to trip patterns driven by non-transportation factors, such as an increased propensity for working from home as observed throughout 2020 in response to COVID-19.

Each of these factors can vary, but identifying a range of likely outcomes for each and combining them into a number of potential scenarios can provide insights into future needs and opportunities for Hamilton's parking operations. As described further below, future parking supply challenges are expected in Downtown

Hamilton as development increases, as well as in outlying communities as they continue to expand and attract new residents and jobs.

While the loss of some parking supply due to the repurposing of lots has and will continue to contribute to some parking pressures, it is important to contrast these changes with the resultant benefits which include the creation of urban parks, affordable housing and urban intensification. The new John Rebecca Park is an example of one such change.

As part of the Parking Master Plan, a detailed forecast of future parking demand and supply was undertaken for Downtown Hamilton. This included alternative scenarios reflecting different pricing strategies. Details and assumptions around these forecasts are provided in Background Report II.

Overall, under a base case where no major policy changes are implemented and parking prices are increased to match the rate of inflation, the Downtown Hamilton parking system is projected to experience the following demand during peak periods by 2030:

- On-street: 840 vehicles (72% utilization);
- Off-street (Public): 2,200 vehicles (90% utilization);
- Off-street (Private): 4,100 vehicles (97% utilization); and
- Overall: 7,100 vehicles (91% utilization)

Future parking operations in Downtown Hamilton are projected to approach capacity under these demands. It is also expected that the busiest areas today will see demand increases which push them beyond existing parking capacity, resulting in perceived parking shortages and an inefficient parking system. Given this future condition, solution-oriented policies are recommended to help manage future parking demand. These policies should help increase the amount of readily available parking for those who need it and in the locations that it is needed while at the same time helping the HMPS to maintain financial sustainability and meeting long term sustainable transportation policy goals.

Projected Future Parking Operations

- Future parking demand can be expected to grow alongside Hamilton's population. 120,000 new residents are projected to live in Hamilton by 2030, along with 100,000 new jobs.
- Changing nature of travel can reduce future parking demand as travelers switch from personal vehicles to alternative modes of transportation.
- Automated vehicles are anticipated to revolutionize parking operations. While the exact magnitude is open for debate, parking demand is expected to decrease while pick-up drop-off activities are likely to increase.
- Downtown Hamilton parking supply provided through surface parking lots is projected to decrease as new development occurs.
- Improving the distribution of parking demand in Downtown Hamilton from popular facilities to underutilized facilities can greatly improve operations.
- As development density in all downtown areas of the city increases, a curbside management plan will become essential to ensuring all users are provided with access.
- Parking price increases are anticipated to be required to manage parking demand and collect sufficient parking revenue to fund operations. These increases should be standardized to increase public transparency and perceived fairness.
- The importance of proactive enforcement will grow as parking demand increases and will be a key piece of making sure the adopted strategies are working as intended.
- Residential neighbourhood parking challenges tend to be unique and require a case-by-case assessment to meet.



5. Financial Outlook



5. Financial Outlook

In 2019, gross revenues for HMPS were approximately \$14.7M which encompasses on-street meter and annual permit revenue, municipal car park transient and monthly permit revenue, administration fees, parking ticket revenue, and plate denial fees from the Ministry of Transportation (MTO). In comparison, expenses were approximately \$12.2M comprised of employee costs, maintenance, vehicles, property taxes, and contractual costs.

Currently, the HMPS net surplus is used to fund the parking reserve (approximately \$840,000 annually) to fund future capital needs, as well as off-set the general levy. On average, HMPS transfers between \$1.2M and \$2M to the levy annually, in addition to amounts paid in property taxes.

In the future, it is anticipated that capital re-investment through the parking reserve will continue to be required in order to maintain existing capital assets, and will most likely increase in order to support investment in new technology such as smart pricing technologies and EV charging.

To help plan for financial sustainability and for HMPS to continue to operate as a self-sustaining business unit, four different financial scenarios were constructed that project operating revenues and expenditures, parking reserve capital transfers and expenditures, and net levy transfers over the next ten years. The financial analysis in the four scenarios also takes into account the projected supply and demand to the year 2030. The scenarios assessed as part of this study include:

- **Status Quo** – existing pricing structures are maintained and rates are increased only at the rate of inflation;
- **Revised Pricing Framework** – existing pricing structures are revised to provide a more consistent experience across the system and rates are increased only at the rate of inflation;
- **Revised Pricing Framework and Modest Rate Increases** – the revised pricing structure is applied alongside rate increases higher than the rate of inflation in order to manage demand in busy areas and help achieve sustainable transportation policy goals; and,
- **Revised Pricing Framework, New Infrastructure, and Modest Rate Increase** – again the revised pricing structure is applied this time alongside approximately 380 new spaces to be built in Downtown Hamilton to serve future parking demands. Rate increases in this scenario are in line with the previous scenario. This scenario is the only scenario where expanded parking supply is analyzed.

Exhibit 4 provides a numerical summary of each scenario and the following sections describe these scenarios in more detail including the result of the financial analyses in which they were applied.

	Scenario 1 - Status Quo	Scenario 2 - Revised Pricing Framework	Scenario 3 - Revised Pricing Framework and Modest Increase	Scenario 4 - Revised Pricing Framework, New Infrastructure and Modest Rate Increase
Annual revenue in 2025	\$16,310,000	\$17,266,000	\$18,529,000	\$18,529,000
Annual operating and maintenance expenses in 2025*	\$13,292,000	\$13,292,000	\$13,292,000	\$13,292,000 **
Municipal owned parking supply constructed	-	-	-	380 spaces
Capital reserve balance in 2030	\$7,131,000	\$7,131,000	\$7,131,000	\$3,000,000
Net operating surplus over 10 years	\$20,025,000	\$30,274,000	\$43,807,000	\$32,739,000

Exhibit 4: Summary of Financial Scenarios Evaluated

* Excludes planned capital improvements beyond state of good repair

** Operating and maintenance costs increase after addition of new supply in 2028

Scenario 1 – Status Quo

In this scenario, parking prices are increased by 2% each year which is expected to be in line with inflation. For reference, under this scenario, hourly on-street spaces which cost \$2.00 per hour today would cost about \$2.50 in 2030.

Under this scenario, future parking revenues are expected to exceed the expenses, resulting in an operating surplus. The operating surplus is sufficient to maintain a stable capital reserve while annually contributing to the levy.

However, the continued underpricing of parking results in increased parking demand and pressure on parking supply, especially in high-demand areas which are expected to operate at or above capacity. Further, by maintaining existing pricing structures and increasing rates only at the rate of inflation, existing auto-oriented travel patterns are maintained, making achieving longer term sustainable transportation policy goals established by the City more difficult to achieve. Lastly, while this scenario is expected to be financially sustainable, the financial health of HMPS would be susceptible to future uncertainty and may require additional funding from the City to maintain and operate existing systems. This scenario also

provides the least flexibility of all scenarios for HMPS to strategically reinvest in the parking system to plan for and meet the needs of future demands such as charging stations for Electric Vehicles. Therefore, while expected to be financially sustainable, Scenario 1 is not recommended.

Scenario 2 – Revised Pricing Framework

For Scenario 2, a pricing plan for on-street and off-street parking was developed for different BIA areas depending upon location and proximity to the downtown core. A variable pricing model was also adopted which allows for higher rates at the busiest lots, which helps manage overall demand and distribute it to nearby under-utilized facilities. This scenario also includes a \$0.25/hour rate increase to on-street and off-street transient parking, as well as proportional increases to on-street and off-street permits. These scheduled increases would occur for the first time in 2025 and every five years thereafter. Over a 10 year period these price increases are comparable to the inflation based price increases applied in Scenario 1. As in Scenario 1, under this scenario hourly on-street spaces which cost \$2.00 per hour today would cost about \$2.50 in 2030.

Under this scenario, revenues are expected to exceed expenses resulting in the ability to maintain a sufficient capital reserve while continuing annual net levy transfers.

Similar to Scenario 1, parking demand is projected to approach capacity in Scenario 2 with localized parking supply issues, as inflationary price increases are not able to significantly influence travel behaviour and reduce or redirect parking demand from the areas where parking is in highest demand. Therefore, while financially sustainable, Scenario 2 is not preferable from an operations perspective.

Scenario 3 – Revised Pricing Framework & Modest Rate Increases

This scenario takes the pricing framework and variable pricing models from Scenario 2 to help HMPS manage parking demand in the busiest areas. This scenario also includes a citywide increase of \$0.50 per hour to on-street and off-street transient parking, as well as a proportional increase to on-street and off-street permits. Together these scheduled increases equate to approximately 4% per year, or 2% above the expected rate of inflation. Hourly on-street spaces which cost \$2.00 per hour today would cost approximately \$3.00 in 2030 and the cost of a monthly permit which costs \$85 today would cost \$128 in 2030.

Under Scenario 3, parking revenues are observed to exceed the expenses, resulting in an operating surplus. The operating surplus is sufficient to maintain a stable capital reserve while annually contributing to the levy. Note that parking revenues in Scenario 3 are larger than both Scenario 1 and 2, resulting in a larger annual levy contribution as well as allowing for additional reinvestment into the parking system to address future needs.

Overall parking operations under Scenario 3 are projected to improve compared to Scenarios 1 and 2 as a result of price increases above the rate of

inflation influencing travel behaviour. Operational issues in the busiest areas are also addressed under this scenario as HMPS would have the greatest flexibility to modify prices in high demand areas as-needed to address these acute deficiencies and maintain efficient and accessible parking operations.

Scenario 3 is also the most effective scenario at supporting Hamilton's future transportation sustainability goals.

Scenario 4 – Revised Pricing Framework, New Infrastructure, and Modest Rate Increases

This scenario is the only scenario where expanded parking supply is analyzed, which is assumed to be in the form of a municipally-owned parking structure. The pricing plan from Scenario 3 is maintained in this scenario.

While parking revenues are expected to exceed expenses, the construction of 380 new parking spaces in 2028 and 2029 included in this scenario results in a deficit in the capital reserve of approximately \$15M dollars. Even with 4% per year price increases the parking operation is not projected to be financially sustainable under this scenario. A consideration for increasing the capital reserve contribution would be needed in order to provide sufficient funding to cover the new parking facility costs.

With the addition of approximately 380 publicly available parking spaces, overall parking utilization is expected to be lower than in other scenarios. However, the greater availability of parking in Downtown Hamilton may result in an increase in long term parking demand, as the excess capacity could induce additional auto trips which otherwise may have been made by transit or other sustainable modes. As a result, constructing new parking facilities could help alleviate parking issues in high demand areas in the short term, but only further contribute to rising parking demand in the long term.

Recommendation

It is recommended that Scenario 3 is the most appropriate long term scenario to be considered for the sustainability of the parking operation through 2030.

This scenario maintains a stable capital reserve and maintains or increases the net operating surplus which can be used towards annual levy contributions and/or for reinvestment in the parking system. A summary of expected financial performance of the HMPS under this scenario is shown in Exhibit 5.

As well as being the most prudent scenario financially, this scenario best addresses existing and future needs of drivers by maintaining the availability of parking spaces. This is achieved by ‘right sizing’ prices so the highest prices are applied in the busiest areas and by adopting dynamic pricing strategies which gives HMPS the flexibility to distribute demand and maintain efficient operations.

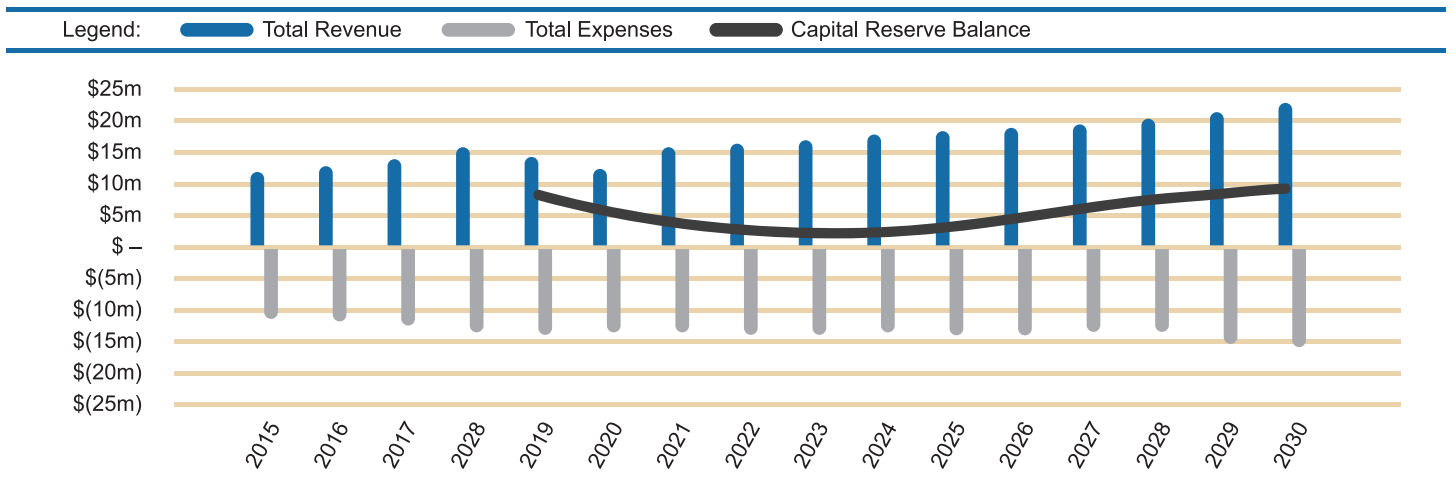


Exhibit 5: Expected Financial Performance of HMPS under Scenario 3

6. Recommendations



6. Recommendations

To guide Hamilton in addressing existing parking issues and meeting future needs, the following recommended strategies have been developed. These recommended strategies were formulated based on issues identified through the existing conditions assessment, desired study outcomes identified by stakeholders and the public, challenges anticipated in the future, and the best practices observed to be successful in other municipalities.

The recommended strategies, presented in the following subsections, are categorized under a set of four general principles.

These principles have been established to give a clarity of purpose to each of the recommendations. The intention is to help to facilitate communication of the recommendations to the public, as well as to guide HMPS in their implementation.

Note that these principles and recommendations apply citywide, but may be applied differently across the city in accordance with the local context. For example, the actions required to provide adequate future parking supply in Downtown Hamilton are very different than those required to achieve the same goal in Dundas, but the principle of serving existing and future parking demand are applicable within both contexts.



Financial Sustainability - Operate the Parking System as a Self-Funded Organization with Fair and Transparent Pricing Policies



Economic Development – Support Local Business and Stimulate Development by Efficiently Managing Parking Supply



Environmental Sustainability – Reduce Climate Impact by Supporting Sustainable and Environmentally Friendly Transportation Mode Choices



Resiliency – Prepare for an Uncertain Future





Financial Sustainability

Operate the Parking System as a Self-Funded Organization with Fair and Transparent Pricing Policies

Free or low cost parking is viewed by some as a way to promote economic activity, but there is little research to substantiate this claim. In fact, free parking in business districts often leads to mis-use and ultimately less access to parking for intended users. Low cost parking also leads to increased auto use, congestion and environmental impacts.

From a municipal perspective, underpricing public parking is financially unsustainable. Costs are incurred by HMPS to build, operate, and maintain both on-street and off-street parking facilities regardless of whether fees are charged to users for access or not. If fees are not charged and the system instead relied on tax supported revenue, these costs would be borne by all Hamilton residents, including those that choose other more sustainable modes of transportation. That is to say, someone is always paying for these costs, whether actively through the meter or passively through taxes and higher costs of goods and services.

All comparator municipalities reviewed as part of the Best Practices research conducted as part of this study are currently operating or have plans to soon operate their parking systems as a fully user-fee supported service. In order to operate in this manner, while maintaining financial sustainability, it is imperative that the fees charged for parking are fair, the policies that lead to changes in fees are transparent, and that the fees are understood by residents and local businesses. The following pricing related recommendations are aimed at achieving this goal.

1. Adopt predictable rate increases

Historically, the time period between parking rate increases in Hamilton has been uneven and tends to be a response to mitigating budget pressures as opposed to following a clear strategy. Predictable rate increases would assist with long term financial planning tied to strategic parking policy directions. The following consideration should guide the City's approach to pricing:

- Increases should be indexed to inflation in order to keep pace with growth in costs;
- Increases should occur regularly, as often as yearly, in order to provide certainty in budgeting and certainty in costs for users;
- Increases should be built into base budgeting, similar to other City user fees; and
- Round number pricing may not be required given the introduction and growing adoption of the pay-by-phone system.

While the approval of parking rates would be subject to the normal City budgeting process, as described in the financial analysis in previous section it is recommended that Hamilton adopt an increase to baseline parking prices of a minimum of \$0.25/hour every 2-3 years between now and 2030, to be accompanied by corresponding increases to off-street lots. Overall, scheduled increases would equate to approximately 4% per year, or 2% above the rate of inflation. For reference, under this approach, the cost of an on-street space would increase from \$2.00/hour today to \$3.00/hour in 2030, and the cost of a monthly permit which costs \$85 today would cost \$128 in 2030.

2. Manage utilization in all HMPS off-street parking facilities through pricing

Pricing provides the most effective means of managing utilization of parking facilities. The majority of HMPS parking lots are currently paid parking facilities, with the exception of Stoney Creek. Stoney Creek has a 169-space off-street parking lot which was observed to reach 91% capacity by 10:00 am. To support good parking management practices and maintain the financial sustainability of the parking system, it is appropriate that appropriate pricing be phased in over time at all facilities, and that it be reasonably and fairly priced according to location and occupancy. Ideally, prices should be set to maintain an occupancy rate of 60 to 80%. This would require a phased implementation in areas where pricing does not currently exist, or where it is under-priced, in order to provide ample opportunity for consultation.

3. Evaluate the feasibility of extending paid parking operations to 7 days-a-week

Currently, parking meters are free on Sundays throughout City, and meters in Dundas and most of Downtown Hamilton are also free on Saturdays. Given that most businesses are open seven days per week, and pricing is a parking management tool, pricing parking during these times is recommended. Prices for weekend parking should reflect demand and may well be lower than prices charged during the week, and a seven day enforcement strategy would be needed to support this change.

4. Maintain higher prices on-street than off-street

This pricing strategy would incentivize longer term parkers to park in off-street facilities, freeing up on-street spaces for shorter term uses with higher turnover, resulting in more on-street spaces available when and where they are needed, particularly to support local businesses.

As a target, on-street hourly rates should be set at least 15% higher than off-street hourly rates in order to incentivize greater use of off-street facilities.

A minimum difference of \$0.25/hour would also be useful as a way to clearly differentiate prices in areas where a 15% difference would be less than \$0.25. For example, an area with off-street parking rates of \$2.50 should have on-street parking rates of at least \$2.87 per hour, or \$3.00 if round number pricing is maintained, while an area with off-street parking rates of \$1.00 should have on-street parking rates of at least \$1.25 per hour.

5. Implement performance-based pricing in high demand areas

Under a performance-based pricing strategy, the price of parking is automatically adjusted based on observed demand with the intent of maintaining a desired overall utilization. This strategy could help address the acute parking issues in Downtown Hamilton and some BIAs that were observed in the parking survey. By increasing prices in areas of high demand and reducing prices in areas of low demand, the overall demand for parking can be distributed across the system, making use of currently underutilized spaces that are still within walking distance of major destinations. Such a policy is likely to be revenue neutral, and previous implementations of such pricing systems elsewhere have resulted in average prices decreasing.

A policy to guide how prices would be adjusted would need to be adopted prior to implementing such a system in order to provide transparency and predictability. For example:

- Where parking occupancy exceeds 80%, prices could be increased by \$0.25/hour;
- Where parking occupancy is between 60% and 80%, prices could be maintained;
- Where parking occupancy is lower than 60%, prices could be decreased by \$0.50/hour up to a pre-selected minimum price which covers operations and maintenance costs; and
- Performance based prices should generally not exceed 50% of the base rate

6. Implement dynamic pricing in response to events

When higher demand is expected, such as before a sporting event or concert, prices for parking both on-street and off-street in the surrounding area should be increased to account for the increased demand. Similar to performance-based pricing, prices and resulting occupancy should be monitored event-by-event to enable HMPS to set prices which achieve occupancy targets. Price changes would need to be a delegated responsibility to the HMPS in order to provide for flexibility and timeliness in adoption.



Economic Development

Support Local Business and Stimulate Development by Efficiently Managing Parking Supply

A well planned and managed parking system supports economic development and serves a wide range of needs from short-term parking for local businesses to monthly parking programs for residents and employees. It does this while at the same time allowing for new development, intensification of our urban areas, and making an efficient use of land. The key to achieving this is to minimize the space required for parking by maximizing the efficiency of the current parking supply and integrating new parking supply within new developments.

7. Expand the supply of on-street paid parking

Some on-street segments within Downtown Hamilton and across BIAs within walking distance to major destinations are unmetered and therefore do not require payment. Parking in many of these areas was observed to operate at or near capacity. Leaving these spaces to operate without requiring payment inadvertently incentivizes cruising for parking and long-term vehicle storage in areas of the city where the curbside could serve a higher and better use. Expanding on-street paid parking to these areas can increase turnover, which results

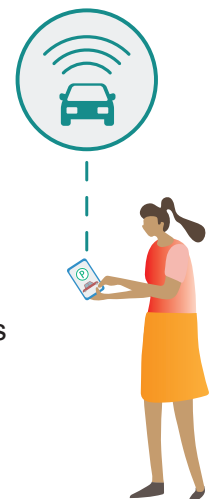
in increased availability of and access to parking where it is needed. Existing rush hour and other parking restrictions should be reviewed to identify opportunities to introduce additional on-street parking supply.

8. Increase HMPS contribution to BIAs using revenue from increased parking fees

Under current policy, the City of Hamilton shares 10% of HMPS's net operating surplus with Hamilton's active BIAs on an annual basis. This investment provides an opportunity for BIAs to implement and maintain improvement programs and to undertake promotional initiatives within their designated boundaries. The current revenue sharing funding formula is a blend of fifty-percent (50%) from each of the following two formulas: a) The percent that the individual BIA levy/individual BIA assessment is of the total of all the BIA levies/assessments. b) The percent that the individual BIA generates through parking meters is of the total parking revenue generated from parking meters within all of the BIAs.

Under current policy, there is limited incentive for BIA's to support parking price increases as half of the formula is tied to overall revenues across the City. A revised policy could better tie BIA contributions to local parking revenue performance. This could in turn lead to a cycle where parking prices are increased, new amenities are provided making the area more attractive to residents and consumers leading to increased economic development. This would create a more direct connection between the pricing policies required to effectively manage a parking system and financial support of local businesses.

Further consultation with the BIAs is required to confirm the best approach. One option could be to use the past five years contribution to establish a "base contribution". A supplemental contribution over and above the base would be based on a percentage of parking meter revenue increases. For example, if a BIA saw increases in meter revenues due to good management practices, performance pricing or increased parking activity, a set percent would go back to the BIA.



9. Provide better information in the form of improved signage, wayfinding, and digital tools

Providing better information to users can facilitate more efficient use of the parking system. For example, by providing comprehensive information on the locations, time limits, and prices of parking facilities, HMPS can provide users the information they need to make informed decisions which would likely result in distributing demand to existing facilities with excess capacity. Improvements could include refreshed signage both at lot entrances and along key corridors and intersections leading up to the facilities. Physical improvements can also include more informative digital signage with details like capacity, live or expected occupancy based on historical data, and pricing.

10. Allow public use of private facilities during off-peak times

Locations such as Universities or Colleges, places of worship, restaurants, and condos all have significant variation in when they observe peak parking demands. These uses are frequently co-located, yet all are required to provide parking supply sufficient to meet their own peak demands. Outside of these peak periods there is a significant amount of parking space that is underutilized or even totally unused. By implementing a system by which these spaces could be made publicly accessible, HMPS could immediately increase parking supply in key areas with high demand and limited supply without incurring large capital costs associated with new parking facilities. The City has already facilitated arrangements such as these in many parts of the city by removing zoning obstacles and allowing tools such as shared use agreements or cash-in-lieu of parking agreements.

11. Pursue joint parking opportunities with private development

New developments or redevelopments provide an opportunity to create new publicly accessible parking in areas experiencing parking shortages. By working with developers, the City could potentially contribute funds to create additional parking for the public, over and above what is required for the development itself. This could be facilitated through expanded use of tools such as cash-in-lieu of parking. The marginal cost of providing parking in this manner would typically be lower than the cost of building an independent publicly-owned parking facility, and it provides high potential for shared use of parking across different types of and uses with different parking demand profiles. A further benefit of pursuing such a strategy to secure future parking supply is that the resulting supply would be located adjacent to where new demand is being generated in the form of residential and/or commercial developments, thereby efficiently distributing the new parking supply in the areas it will be needed most.

12. Manage on-street parking in future residential areas

More recently developed residential areas in Hamilton are experiencing parking related challenges which are distinct from those observed in Downtown Hamilton or in the BIAs identified in this study. These challenges should be addressed in a way that is consistent with meeting Hamilton's long term transportation goals while meeting the needs of existing and future local residents.

In many recently developed neighbourhoods, there is a lack of publicly accessible off-street parking facilities. There is also often limited on-street parking relative to the population in the area due to higher density forms of development. A potential solution in some of these areas would be to regulate on-street parking through residential permits, similar to what is done in older parts of the city. Such an approach would be most effectively implemented at the time of initial development, rather than trying to introduce it once a neighbourhood has already become well-established.

13. Implement License Plate Recognition Software to improve enforcement efficiency

LPR software can read license plates of cars parked on- or off-street and automatically detect a parking violation, such as a vehicle that has overstayed time limits or not paid for parking, and notify officers to issue a citation. The technology allows enforcement officers to patrol larger areas in a shorter amount of time. With increased enforcement, parking user compliance is anticipated to increase, which improves the efficiency of the overall parking system.

There are two types of LPR technologies, handheld and mobile. Handheld devices allow officers to manually scan license plates to determine whether parking time has been purchased, while mobile cameras mounted on enforcement vehicles allow officers to scan parked vehicles on the go. Mobile LPR systems are more efficient but also cost more. An electronic database of parking regulations, permits, and hourly/daily pay parking users tied to vehicle license plates is required to facilitate LPR technology.

14. Continue to identify opportunities to leverage city-owned surface parking lots for new, integrated development

Leveraging city-owned surface parking lots to create opportunities for development can help achieve growth and intensification goals. Losses to the parking supply can be mitigated by integrating new parking supply as part of the new development.



Environmental Sustainability

Reduce Climate Impact by Supporting Sustainable and Environmentally Transportation Mode Choices

Transportation generates between 20-30% of all greenhouse gas emissions globally and represents the single largest source of emissions of all human activity – greater than agricultural production,

commercial and residential activities, industrial activity, and even power generation. Furthermore, parking facilities themselves, which typically result in large areas of paved, impermeable surfaces and/or concrete structures with high levels of embodied carbon, have a high carbon footprint and direct environmental impact.

Hamilton has recognized the importance of a sustainable and balanced transportation system as part of the City in Motion Transportation Master Plan as well as the City's Climate Action Plan.

HMPS can support the City in moving towards a more sustainable future by managing the parking system in a way that encourages sustainable transportation mode choices and reduces the environmental and carbon footprint of parking facilities.

15. Adopt pricing structures which incentivize environmentally sustainable transportation mode choices

Prices are a strong indicator of priorities, and how they are applied to different parts of the transportation system creates incentives and disincentives for users. For example setting parking fees below the cost of transit fares, especially for monthly passes targeted at commuters, incentivizes driving and disincentivizes transit. For example:

- The cost of a monthly parking permit in Downtown Hamilton ranges between \$55 and \$150;
- The cost of a monthly parking permit outside of Downtown Hamilton ranges between \$55 and \$65;
- The cost of a monthly transit pass in Hamilton is \$110;

The pricing policies and pricing strategies discussed earlier in this report should consider the impacts on mode choices, and the goal of shifting more trips toward sustainable transportation alternatives.

16. Introduce flexible multi-use passes

COVID-19 has demonstrated the potential for people to work from home and it is expected that many people will opt to continue to work from home at least some of the time. This could result in a reduction in the number of vehicle trips, which would have an environmental benefit. However, current monthly pass pricing does not provide any flexibility or incentive for this sustainable practice. Monthly pass holders are less likely to eliminate a trip, or choose another more sustainable mode for a trip, as they've effectively pre-paid for their parking. Providing options other than monthly or single day payment (e.g. 20-day, 10-day, or 5-day passes) could incentivize users to reduce their vehicular trips or choose more sustainable modes for some of their trips. Such a system could be implemented with physical passes but is most easily implemented with a digital permitting system.

17. Expand Parking Reserve and Cash-In-Lieu (CIL) policies to support TDM and sustainable mobility initiatives

Currently both the the General Parking Reserve and the CIL Reserve policies have restrictions on what collected monies can be used for. The General Parking Reserve is restricted to capital improvements for parking infrastructure. Similarly, the CIL policy states that monies collected are for the purposes of increasing the amount of municipal off-street parking. Expanding the criteria for eligible expenditures to include demand management investments, such as micro-mobility or smart technologies, could achieve the same goal of off-setting parking demand.

18. Limit residential boulevard parking agreements

Also known as 'front yard parking', this program allows residents who do not have private driveways (typically in the older parts of the city) to apply for a boulevard parking agreement that would allow them establish a driveway and driveway access on the public street. These spaces effectively result in the privatization of public space, as curb cuts are required to provide access which reduces the publicly available on-street parking. While potentially warranted in some circumstances, the use of boulevard parking agreements should only be granted in exceptional circumstances, and the City's boulevard parking

program should be reviewed to make sure that it is not resulting in the loss of on-street parking supply, or contributing to the loss of permeable greenspace.

19. Apply low impact materials and sustainable design in city-owned surface lots

Off-street surface lots can create a significant environmental impact through increased stormwater runoff as well as loss of greenspace and contribution to the urban heat island effect. Environmentally friendly materials and features such as permeable pavers, perforated storm sewers, and bioswale medians are all relatively small design interventions which can help HMPS support the long-term sustainability goals of the City, and is an action that is specifically referenced in the Hamilton's Climate Change Action plan.

20. Develop a comprehensive plan for EV charging

In 2021, twenty new EV charging stations will be provided in municipal parking lots throughout the City. However, it is expected that there will be a demand for significantly more charging stations as EV vehicle ownership increases. A comprehensive EV charging strategy is beyond the scope of this master plan, but developing such a strategy should be a priority for the City. An EV charging strategy should include considerations for off-street public facilities, off-street private facilities, curbside charging, and residential charging. It should also include a clear approach to enforcement, recognizing provincial legislation which prohibits non-EVs from parking in EV charging spaces, as well as a pricing strategy.

21. Continue to expand bicycle and other micro-mobility parking

The City's parking strategy should look beyond parking for vehicles and consider the parking needs of other modes. Over the past decade the City has installed bicycle racks throughout the downtown and most BIA areas. Increased efforts are needed to augment supply and expand geographic coverage. Additionally, if commercial e-scooter operations are approved, there will be a need for e-scooter parking. Opportunities to accommodate parking for carshare, bikes, and e-scooters within existing on-street and off-street parking spaces should be considered.



Prepare for an Uncertain Future

There is currently significant uncertainty around future transportation trends. In the last decade there have been significant changes to how people navigate cities and what their need is for parking. Personal Transportation Providers (PTPs) such as Uber and Lyft perform billions of trips globally each year and require limited parking, yet require constant access to the curbside. Adoption of EVs is growing rapidly, and the impact of CAVs is still on the horizon. COVID-19 has further reduced clarity of future transportation behaviour by dramatically shifting commutes and leisure travel in cities globally and resulting in significant parking revenue shortfalls, as well as placing high demand on the curbside for uses other than parking. The following recommendations are aimed at providing flexibility for HMPS in the future and protecting for long term financial sustainability.

22. New municipal parking should be integrated within developments and have the ability to be converted to alternative uses in the future

The 2013 Downtown Parking Master Plan identified the need for two new parking structures located in the westerly and easterly areas of the Downtown with 500 spaces and 443 spaces respectively. In the current context, as standalone facilities these parking structures could present a financial risk to the City given uncertainties around the future demand for parking. Parking structures are notoriously expensive to construct, with the cost of each space in the range of \$30,000 to \$50,000 and they frequently result in costly maintenance issues. To ensure the resiliency of the parking system, and to minimize risk, future parking supply should be delivered through integration within new developments, or through the retrofitting of under-utilized parking structures within existing development, as opposed to standalone parking structures or new surface parking lots. To provide for further resiliency, parking facilities should be designed such that they could be converted to alternative uses in the future, such as office, retail or residential uses, if there is no longer need for the parking.

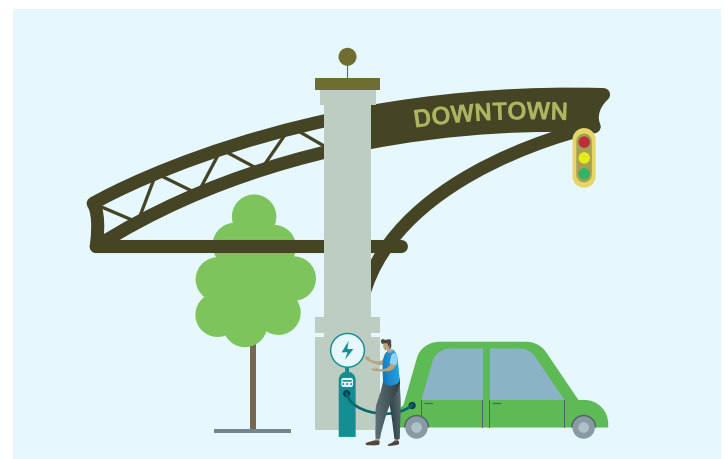
23. Develop policies and regulations for managing curbside use and payment

The curbside is at the center of all disruption related to parking, yet the existing regulations that apply to the curbside are poorly catalogued and not well understood by municipalities or by users, and curbside space is often inefficiently utilized and under-priced.

Curbside parking is steadily being displaced by short term uses like PTP pick-up and drop-offs, commercial vehicles, new mobility devices, and eventually by CAVs. Unlike on-street parking, these new uses typically do not pay for access to space and represent a significant risk to future revenues if systems and processes are not put in place to facilitate payment by these users. The limited understanding of existing regulations will inhibit municipalities in planning for these new uses, resulting in an inefficiently operating curbside and potential lost revenue. By planning ahead for these new uses, HMPS can identify ways to monetize short-term curbside use such that that all users of limited curbside space pay their fair share, and effectively maintain a functional and efficient curbside.

24. Monitor how CAVs evolve related to the impact on parking operations

CAVs have the highest potential to dramatically shift how our cities look and function in the next 20 years, possibly obviating the need for large quantities of parking in our urban centres in favour of curbside drop-off and off-site parking. HMPS should monitor the evolution of CAVs and develop a plan for CAVs as their impact on parking comes into greater clarity.





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