

Final Report

Attachment 1

Brampton Parking Plan – Final Report

Document Control Page

CLIENT:	City of Brampton
PROJECT NAME:	Brampton Parking Plan
REPORT TITLE:	Brampton Parking Plan – Final Report
IBI REFERENCE:	134185
VERSION:	Final Report
DIGITAL MASTER:	
ORIGINATOR:	Amjad Dehman, Janice Zhang, Qing Su
REVIEWER:	Peter Richards
AUTHORIZATION:	Peter Richards
CIRCULATION LIST:	City of Brampton
HISTORY:	1.0 Draft Report #1 (August 2022) 2.0 Draft Report #2 (September 2022) 3.0 Draft Report #3 (October 2022) 4.0 Draft Report #3.1 (October 2022) 5.0 Draft Report #3.2 (November 2022) 6.0 Draft Report #3.3 (November 2022) 7.0 Final Report (March 2023) 8.0 Final Report (August 2023) 9.0 Final Report (October 2023)

Table of Contents

Executive Summary	3
Background Document Review	3
Best Practices Review	3
Public and Stakeholder Engagement	4
Parking Supply and Demand in Downtown Brampton	5
Parking Policy Framework	6
Financial Review.....	8
Parking Management Plan	8
Parking Implementation Plan.....	10
1 Introduction	15
2 Background Document Review.....	17
3 Best Practices Review.....	19
4 Public and Stakeholder Engagement	21
4.1 Engagement Plan Objectives	21
4.2 Key Messages Heard.....	22
5 Parking Supply and Demand in Downtown Brampton	24
5.1 Existing Parking Conditions	24
5.2 Future Parking Operations - Base Scenario	26
5.3 Future Parking Operations - Other Scenarios	28
6 Parking Policy Framework.....	29
6.1 Vision Statement.....	29
6.2 Guiding Principles	30
6.3 Comprehensive Zoning By-Law (ZBL) Review.....	30
6.4 Parking Policies and Strategies	31
6.5 Truck Parking Policies and Strategies	36
7 Financial Review.....	37
7.1 Current Parking Revenues and Expenses.....	37
7.2 Parking Price Scenarios.....	38
7.3 Alternative Parking Price Scenarios Key Findings	39
7.4 Cash-in-Lieu of Parking Program Evaluation.....	40
7.5 Financial Conclusions and Recommendations.....	43

Table of Contents (continued)

8	Parking Management Plan	44
8.1	Downtown Parking Management.....	44
8.2	Parking Enforcement	45
8.3	Paid On-Street Parking Permit Program.....	47
8.4	Curbside Decision Making Framework	48
8.5	Parking Partnerships.....	53
8.6	Transportation Demand Management	54
9	Parking Implementation Plan	57

Attachments

Attachment 1 – This Final report is Attachment 1 to the City of Brampton staff Recommendation Report – Brampton Parking Plan (RM44/2022) dated October 25, 2023.

Attachment 2 – Public and Stakeholder Engagement – Meetings and Sessions

Attachment 3 – Public and Stakeholder Engagement – Written Comments

Attachment 4 – Supplementary Downtown Parking Implementation Strategy

Executive Summary

The Brampton Parking Plan intends to implement the vision of the City and address the Brampton Plan, the Transportation Master Plan, and other relevant City Department objectives. It also helps to meet the needs of the significant population and employment growth, support more sustainable modes of transportation and a more electrified transport network, integrate land use and transportation policies, promote housing affordability, and propose strategies to manage parking resources, finances, and operations. The Brampton Parking Plan is divided into two phases:

Phase One: includes background document review, best practices review, analysis of parking operations in Downtown Brampton, parking policy framework, and public and stakeholder engagement – phase one.

Phase Two: includes financial review, parking management plan, parking implementation plan, and public and stakeholder engagement – phase two.

This report, “The Final Report”, intends to present a summary of the key findings and recommendations of all previous phases and tasks of Brampton Parking Plan. It also includes an implementation plan that lays out the recommended actions and activities with information related to their timing, priority, resources needed, performance metrics, and targets. This “Executive Summary” provides the main points and key takeaways for each task included in Brampton Parking Plan.

Background Document Review

The background document review helped to understand Brampton’s parking context and align the Brampton Parking Plan with the broader strategic directions taken by the City and higher-tier government agencies. In general, provincial, regional, and municipal planning are all shifting towards supporting transit and active modes of transportation (walking and cycling), and the intensification of urban areas. When it comes to parking, the reviewed documents recommended several policies and directions such as managing parking demand by promoting modes of transport alternative to the private automobile, relaxing parking requirements within intensification areas, accommodating alternative types of vehicles (e.g., electric vehicles (EVs) and micromobility devices), converting surface public parking to structured facilities, and promoting housing affordability through reduced parking or shared-parking arrangements.

Best Practices Review

The best practices review examines parking policies, strategies, and practices successfully implemented in municipalities that are generally representative of Brampton’s development pattern. The following are the key best practice review findings:

- **Parking Price:** Brampton’s parking price rates are lower than all other comparator municipalities, and this applies to both the transient parking and long-term (e.g., monthly) permits.
- **Parking Enforcement:** Graduated parking penalties provide an opportunity to target repeat offenders through increasing penalty costs, though it has limited adoption to date. Parking enforcement focused towards designated areas and special events has been applied in some jurisdictions. As for parking enforcement activities after-hours or overnight, parking departments or offices either continue to do both patrolling and complaint handling, only do patrolling, or divert citizens to report parking issues to alternative City’s divisions such as police departments or general public service divisions.

- **Parking Permit:** All comparator municipalities were determined to offer a variety of residential parking permits, which are currently unavailable in Brampton except in one limited area.
- **Parking Technology:** Several emerging parking technologies (e.g., smart parking meters, pay-by-plate technology, smartphone parking apps, parking occupancy technology, and electric vehicle charging stations) can be used to improve the parking system’s efficiency and user friendliness.
- **Parking Minimum & Maximum Required Rates:** With regards to parking requirements for developments, most of the comparator municipalities have reduced or removed parking minimums and adopted parking maximums either in selected areas or citywide.
- **Truck Parking:** A wide range of strategies have been recommended across North America to mitigate the shortage in truck parking supply. These include sharing commuter parking lots, off-peak use of large venues, truck parking permits in industrial and commercial areas, truck parking availability systems, adding new ZBL truck parking requirements, amending the business licensing application for trucking companies, off-peak delivery, and the construction of new parking facilities through public private partnership, brownfield redevelopment, and initiatives that reduce the cost of construction (e.g., waiving requirements, economy-of-scale programs).
- **Parking Finance:** Most municipalities aim for a financially sustainable parking system where the collected parking revenues are sufficient to fund parking expenses.
- **Emerging Trends:** Other emerging trends identified in the best practice review include shared mobility, micromobility devices, connected and automated vehicles, parking partnerships, and future proofing new parking facilities where a parking facility could be converted to an alternative use in the future.

Public and Stakeholder Engagement

Several public and stakeholder engagement activities were undertaken including online surveys, public engagement sessions, focus group meetings, and other activities. The key takeaways from these activities are outlined below by different subjects.

- **Transportation Demand Management:** The public and stakeholder were generally supportive of using modes of transport alternative to the private automobile. They also raised the need to continue expanding the transit, micromobility, and active transportation networks and that the transit frequency and quality-of-service need to be improved in some areas. These actions will increase the use of non-auto modes of travel, reducing the need to park.
- **Parking on Residential Streets:** Some neighbourhoods experience parking capacity constraints, especially in neighbourhoods with relatively high average number of persons per household. Attendees suggested that an on-street parking permit system be implemented in these neighbourhoods to increase parking availability. While some residents supported the on-street parking permit program, others have expressed some concerns regarding the program.
- **Parking Enforcement:** There is a need to make the parking enforcement more proactive and less complaint-based in respond to the increasing parking violations.
- **Truck Parking:** Truck drivers reported insufficient safe and secure truck parking supply.
- **Other Parking-Related Issues included the following:**
 - ✓ Businesses rely on downtown municipal parking because they lack on-site parking facilities,

- ✓ Parking facilities in Downtown Brampton are underutilized,
- ✓ There are parking capacity constraints at GO parking lot,
- ✓ Parking has a significant impact on house affordability, and
- ✓ Considering shared parking as a possible and promising parking strategy.

Parking Supply and Demand in Downtown Brampton

Existing Parking Conditions

Based on parking demand data in 2019, the Downtown parking system experienced peak parking demand at 10:00 AM on a weekday, where 58% of all parking spaces were occupied. The on-street system was 41% occupied, with some street segments more than 85% occupied but with adjacent street segments having capacity to accommodate the excess parking demand. The off-street parking lots were 60% occupied, with only the GO Transit parking lot operating above 85% occupancy.

Parking Operation Forecast

A future parking assessment was conducted for 2040, which was based on the existing parking demand. Factors such as population growth, modal share targets, municipal supply changes, and impacts of the COVID-19 pandemic were considered to arrive at a future parking conditions scenario. Three scenarios were created – the 2040 base scenario, COVID-19 analysis, and the Nelson Square Garage Closure. The 2040 base scenario experienced a system wide utilization of 63% which was slightly higher compared to the existing conditions (which was to be expected). Like the existing conditions, some on-street segments are projected to operate above 85% utilization, but nearby facilities are anticipated to accommodate the excess demand. The COVID-19 scenario assumed a 20% reduction to the 2040 base demand to account for the possibility of increased remote working arrangement in the future. This scenario had a system wide utilization of 45%, with only one on-street segment that operated above effective capacity. In the Nelson Square Garage closure scenario, all parking demand from the Nelson Square Garage was allocated to nearby municipal garages due to the potential closure. All garages were still able to accommodate the parking demand while remaining below the 85% effective capacity threshold.

On-street parking supply may be impacted by future streetscaping projects. Due to the streetscaping and sidewalk widening work on Main St. and Queen St., it is anticipated that approximately 100 on-street parking spaces will no longer be available on Main St., from Wellington St to Nelson St W, and Queen St, from Mill St S. to Theatre Lane. The potential loss of on-street parking was not analyzed in detail as a separate scenario since the ultimate loss of parking is subject to change when all future transit and streetscaping projects are finalized.

The underutilization of the Downtown off-street parking system calls for a review of the possible strategies that can make this system more efficiently operated, given the expected growth in employment and population in Downtown Brampton. In addition, with the removal of the minimum parking requirements in Downtown Brampton, prospective developers may become interested in shared parking arrangements in the available parking facilities which may generate a considerable parking demand and change the parking demand/supply profile in the future. A Downtown Parking Implementation Strategy study was undertaken, supplementary to the Brampton Parking Plan, and intended to: 1) investigate strategies that can optimize off-street parking utilization in the Downtown area through shared-use/reservation parking agreements, 2) address existing and potential requests made by employment-related developers for shared off-site parking, and 3) identify potential parking supply opportunities in the Downtown area focusing on structured or below ground parking. This supplementary study, which also includes more recent parking surveys (carried out in October 2022), discusses several shared-parking implementation scenarios in the

short-to-medium and long terms, and also further discusses the future needs to expand the parking system and the associated challenges and implications.

Parking Policy Framework

The Vision Statement

The following vision statement tailored to Brampton's identified needs and opportunities was developed: *"To manage parking provision in a rapidly growing City through the adoption of forward thinking and innovative parking policies and strategies consistent with Brampton's planning objectives and priorities. Parking is envisioned to strike a just balance between affordability and accessibility, and support for sustainable forms of development and transportation."*

Guiding Principles

Building upon the vision, the following ten guiding principles were developed:

- Align parking improvements with these guiding principles, and support Brampton's broader policies, objectives, and initiatives.
- Manage parking provision, including accessible parking, while prioritizing and promoting alternative modes of transportation such as transit, walking, cycling, and shared economy.
- Prepare to accommodate different types of vehicles such as micromobility vehicles and expand EV charging supply.
- Explore opportunities to consolidate surface parking facilities into structured parking to support redevelopment and intensification, and integrate structured parking facilities into the urban fabric to complement the surrounding area's character through the development approval process and public private partnerships.
- Balance curbside access between the many user groups (parking, transit, micromobility, cycling, pick-up/drop-off, etc.).
- Encourage innovative parking strategies that optimizes a facility's utilization and performance such as shared, off-site, and unbundled parking and improves housing affordability.
- Establish an on-street residential parking permit program for neighbourhoods experiencing off-street parking capacity constraints or are appropriate for gentle densification through missing middle typologies.
- Explore opportunities to increase truck parking supply and to improve truck parking wayfinding.
- Implement practices and strategies aimed at financially sustainable parking operations where revenues are sufficient to fund expenses.
- Strategically set parking prices at rates that are affordable, in-line with market value, and promote alternative modes of transportation and the distribution of parking to available nearby locations.

Comprehensive Zoning By-law Review

Brampton Parking Plan recommended several updates or additions to the draft Zoning By-law (ZBL). These include adding a requirement for accessible parking spaces and electric vehicle charging stations, considering affordable housing units as a special land-use with reduced parking requirements, adding a reduced parking requirement for developments unbundling their parking spaces, and removing parking minimums and applying parking maximums for select land uses in Intensification Areas.

Parking Policies

Recognizing that parking patterns vary throughout the City and that a uniform parking policy framework is therefore not appropriate, the City is divided into two types of policy areas, i.e., Intensification Areas (IAs) and Rest-of-the-City.

IAs are areas with existing or planned high population and employment densities and low personal vehicle mode share. In Brampton, Intensification Areas are proposed to include the following: areas already granted parking exemptions as per By-law 45-2021, the future and planned Major Transit Service Areas (MTSAs) as per the Region of Peel Official Plan, Urban and Town Centres and Primary and Secondary Boulevards as per the ongoing Brampton Plan study. It is to be noted that some of the planned MTSAs and intensification centres/corridors will achieve their high-density characteristics over time. However, the pre-zoning of these lands from now would better achieve the targeted sustainability and intensification goals.

IA policies include rescinding parking minimums, setting parking maximums for select land uses, consolidating surface parking into parking structures, prioritizing curbside uses other than parking, increasing EV charging station supply, implementing car share services, improving transit, cycling, and micromobility services, and supporting a hybrid telecommuting business model.

Changing the focus of parking regulations by removing parking minimums and converting them into parking maximums can be a very prominent and influential policy. The intention of this policy is to prevent the oversupply of parking, reduce auto-dependence, promote alternative modes of transportation, preserve the urban fabrics and the space for more useful land uses, increase the supply of affordable housing, achieve the targeted densities, and join a growing list of cities that have already adopted such a policy. This policy requires recognizing that the removal of parking minimums does not prevent developers from providing parking based on their assessment of parking demand, a well-resourced and strict parking enforcement is needed, public parking and shared parking partnerships will become more important, and the political will is essential to support the policy.

The Rest of City are all other areas not included in IAs. These areas typically have higher vehicle ownership and personal vehicle mode share and are typically lower density residential, commercial, and industrial areas. Recognizing the personal vehicles remain a primary mode of travel, parking demand should be met but balanced with improvements to alternative modes of transportation. Policies and strategies include setting tailored parking minimums as the City continues to improve alternative modes of transportation, setting parking maximums for select land-uses and zones, developing a point-based TDM checklist, improving public transit and micromobility, and developing a residential parking permit program and adopting it in selected strategic neighbourhoods and streets.

Truck Parking Policies

The Region of Peel is well known to be a centre for logistics and trucking activities. However, truck parking has become a major challenge in the region and especially in Brampton which has 11,000 employers and 24,000 employees in “transportation and warehousing.” To maintain the trucking activities and their economic contributions, creative strategies are needed to increase the supply of truck parking and meet the demand.

Mitigating the truck parking supply shortage can rely upon either short-to-medium term strategies, aiming to better utilize existing parking facilities through parking partnerships and wayfinding technologies, or long-term strategies, aiming to increase truck parking through the construction of new parking facilities. Amending the ZBLs and business licensing applications for trucking

companies and developments to require parking identification can also be a short-term and on-going strategy. Truck parking strategies were discussed in greater detail in Phase 1 report. However, a recommendation is made herein to conduct a study to further assess the feasibility of these truck parking strategies from the engineering, financial, implementation, and regulatory perspectives.

Financial Review

As of 2022, Brampton’s municipal parking operations are expected to remain in an operational deficit until the year 2035. Based on historical data provided by the City of Brampton and projected by IBI Group, municipal parking operations are expected to begin generating positive revenue surpluses beginning in the year 2027, without any intervention. Several Pricing Scenarios were examined to determine future municipal parking operations. By 2040, all Scenarios, including the “No Change” Scenario are expected to achieve positive operational balances. This return to a positive operational balance is driven exclusively by anticipated population growth and the resultant increase in users of municipal parking operations.

IBI Group’s alternative pricing scenario 2 (\$2.50 hourly rate & \$100.00 for monthly permit) and scenario 3 (\$3.00 hourly rate & \$120.00 for monthly permit) are the preferred scenarios, because they would closer align the cost of parking downtown with the cost of using transit in Brampton, which as of 2019 is \$3.10 per trip and \$128.00 for an adult monthly pass. Pricing Scenarios 2 and 3 also achieve similar surplus revenue balances by the plan horizon in 2040. IBI Group recommends that the City of Brampton implement the hourly and monthly parking price increases as soon as possible in order to achieve financial stability of parking operations. It is to be noted that the Downtown daily maximum rate, which presently stands at \$9.00, should also be increased proportionally to the hourly price increase rate.

Cash-in-Lieu (CIL) of Parking

Based on the funding currently available to the parking program, which as of 2020 totalled \$43,225, the City reserves will not reach an amount sufficient to fund any parking infrastructure by the 2040 planning horizon. In addition, given the high cost of CIL of parking programs and the cost of land in downtown Brampton, a CIL program is unlikely to garner much attraction from developers. Moreover, the recently granted parking exemptions in the downtown area (e.g., By-laws 259-2020 and 45-2021) also mean that the CIL of parking has become redundant in the downtown area since no more contributions will be made. Therefore, the CIL of parking is no longer feasible or applicable in the downtown area.

Parking Management Plan

The parking management plan intends to optimize parking operations in Brampton, better use existing parking facilities, enhance parking enforcement, work towards achieving a financially sustainable parking system, consider all curbside users and functions, leverage parking partnership arrangements, and manage parking demand.

Downtown Parking Management

Several parking management schemes and strategies were discussed and recommended for Downtown Brampton. The most important schemes are those related to parking pricing and finance of the municipal parking system which require major changes to the existing practices. Recommended changes to parking price include:

- Removing the one-hour free parking at municipal garages.
- Increasing the hourly price rate of metered on-street parking.

- Increasing the cost of the monthly and annual parking permits.

As noted, the CIL of parking is no longer feasible in Downtown Brampton and alternative sources of fund need to be established which may include the Community Benefits Charges, increased parking prices, parking partnerships, and leasing the underutilized parking facilities.

Parking Enforcement

There is an increasing demand for enhanced parking enforcement in Brampton due to the increasing use of multi-tenant houses and the resulting parking demand surge. In order to improve the practice and efficiency of parking enforcement in Brampton, handle the increasing number of parking offences, and move gradually into a more proactive enforcement approach, the City is recommended to consider several strategies and technologies. These include establishing priorities among service requests and complaints, improving the complaints registration system, building a system to track and map parking complaints and violations, adding more human resources in terms of enforcement officers and court clerks as needed, increasing the parking penalty rates mainly to target repeat offenders, special events, and strategic enforcement areas, expanding the adoption of License Plate Recognition (LPR) technology, using digital parking permit system, and collaborating with a third-party parking app provider.

Paid On-street Parking Permit Program

Guidelines to implement the on-street paid parking permit program include the general phases that can be established to implement such a program and some key considerations that are required to be resolved in the residential parking permit program's development and implementation. However, Brampton is recommended to launch a detailed study to serve as "Phase One" of the implementation of the program. This Phase One study intends to further evaluate several aspects such as actual parking demand versus available supply, resources needed, program cost, public support, and the impact on existing parking considerations. This should further evaluate the on-street program feasibility and the best practices and prepare the City for a pilot permit program. Brampton Parking Plan Phase 1 report recommended considering the postal zones with the codes L7A, L6R, and L6X as candidates for the pilot program.

Curbside Decision Making Framework

In order to address competing uses at the curbside and ensure efficient use of public space, a curbside decision-making framework was developed. This framework can aid decision makers in determining where, when, and whether it is appropriate to modify the design of a corridor to better serve a given area. The framework relies on establishing different typologies, users (or stakeholders), and functions of the curbside along with priorities.

Parking Partnerships

Parking partnerships will become more important in strategic areas where parking requirements are reduced or rescinded in order to provide more off-site parking supply opportunities and optimize the use of parking facilities. Several types of parking partnerships were discussed, including granting a density bonus for developments adding public parking, entering into operation contracts with private owners and share the revenue, entering into finance contracts and be either a lessee or lessor, and building new parking facilities throughout the P3 projects. A combination of different types of agreements may be considered in the same area. The on-going initiatives to generate funding support for public parking, such as the Community Benefit Charges in the Downtown and other Major Transit Station Areas, can further promote the use of shared-parking schemes.

Transportation Demand Management

TDM initiatives are effective tools to influence travel behaviour by improving and promoting modes of transportation alternative to single occupancy vehicles. Bicycle parking and infrastructure, carshare programs, shared parking, unbundled parking, dynamic pricing, and TDM in new development were discussed as these are considered among the best TDM practices and initiatives that impact parking demand. Requiring new developments to implement TDM measures is an emerging policy that can integrate and promote a wide set of TDM measures in one procedure.

Parking Implementation Plan

A cohesive parking implementation plan was developed to consolidate all the recommendations made in all the study phases, tasks, and sections. This plan should pave the way forward for the next steps and actions, as well as organize their implementation. The implementation plan is divided into activities (or actions) that fall under the following ten themes:

- A. Downtown Parking Management and Finance.
- B. Parking Technologies and Enforcement.
- C. Paid On-Street Parking Program.
- D. Parking Partnerships and Governance.
- E. Transportation Demand Management (TDM).
- F. Truck Parking Management Strategies.
- G. ZBL and Traffic By-Law Updates.
- H. Parking and Affordable Housing.
- I. Electric Vehicle Charging Stations Supply.
- J. Miscellaneous Actions and Activities.

In total, 49 activities or actions were included in the implementation plan and these outline the study recommendations. Some of these activities may belong to other programs or initiatives, e.g., expanding the transit and cycling networks, the Community Benefit Charges, etc. However, such activities were also included as they can be influential and integral to the parking implementation plan. It is recommended that the City focuses more on the activities that have “high” impact and that can be implemented in the “Short-term.” The following exhibit summarizes the activities included in the implementation plans. For the timeline, activities are categorized as either short term (1-2 years), medium term (3-5 years), long term (6-10 years), or on-going. More detailed information about each activity can be found in Section 9 “Parking Implementation Plan”.

Executive Summary Exhibit 1: Recommended Activities as per the Implementation Plan

ACTIVITY ID	ACTIVITY DESCRIPTION	IMPACT (PRIORITY) LEVEL	TIMELINE
A. Downtown Parking Management and Finance			
A1	Remove the one-hour free parking at municipal garages.	High	Short
A2	Increase the hourly parking price rates of the metered on-street parking and the cost of the monthly and annual parking permits.	High	Short

ACTIVITY ID	ACTIVITY DESCRIPTION	IMPACT (PRIORITY) LEVEL	TIMELINE
A3	Continue to provide parking spaces in municipal parking garages dedicated for short-term (hourly or less than hourly) purposes.	High	Short and On-going
A4	Convert downtown on-street parking meters from pay-and-display into pay-by-plate and smart parking meters.	Medium	Medium
A5	Upgrade the payment technology at the municipal parking garages in the downtown area, use pay-by-plate machines and LPR cameras.	Medium	Medium
A6	Cancel the CIL of parking program in Brampton Downtown	Medium	Short
A7	Encourage and incentivize private development of public parking facilities within key strategic areas and Major Transit Station Areas. Public/private partnership may also be considered for this purpose.	High	Short
A8	Continue to carry out parking demand and supply surveys frequently.	High	On-going
A9	Consider establishing a Parking Benefits District (PBD) in the downtown area. Start with a feasibility study that can be followed by a pilot program.	Medium	Medium
B. Parking Technologies and Enforcement			
B1	Establish priorities among service requests and improve the complaints registration system.	High	Short
B2	Build a system to track and map parking complaints and violations.	High	Short to Medium
B3	Recruit more enforcement officers (full-time and part-time) and court clerks as needed.	High	Short
B4	Expand the adoption of the LPR technologies.	High	Short and On-going
B5	Establish and expand a pay-by-plate system.	Medium	Short and On-going
B6	Use digital license-plate-based parking permits.	Medium	Short
B7	Collaborate with a third-party parking app provider, and consider prioritizing and encouraging local startups and businesses working in parking technologies.	Medium	Short and On-going
B8	Increase the parking penalty rates and adopt graduated (progressive) parking penalties.	Medium	Short
C. Paid On-Street Parking Program			
C1	Phase one: conduct a detailed feasibility study.	High	Short
C2	Phase two: implement a pilot small-scale program.	High	Short to Medium
C3	Phase three: program expansion or adjustment.	High	Medium to Long

ACTIVITY ID	ACTIVITY DESCRIPTION	IMPACT (PRIORITY) LEVEL	TIMELINE
C4	Consider the introduction of paid short-term residential parking permits (i.e., for parking beyond the free 14 days of parking considerations).	Medium	Short
D. Parking Partnerships and Governance			
D1	Conduct studies to develop parking partnership implementation strategy in strategic areas such as Downtown Brampton and other key Major Transit Station Areas.	High	Short
D2	Execute the parking partnership agreements and monitor/administer the contracts.	High	Short and On-going
D3	Encourage the inclusion of public parking in new developments in the Intensification Areas.	Medium	Medium and On-going
E. Transportation Demand Management (TDM)			
E1	Continue to upgrade and expand the transit, cycling, and pedestrian networks, and provide sufficient and secure bike parking including e-bike if needed.	High	Short, Medium, Long, and On-going
E2	Implement transit-oriented TDM measures that can further promote transit and manage parking demand, including (1) ensuring transit service is frequent, regular, reliable, and accommodating the demand, (2) using transit fares that are more attractive than the cost of parking, and (3) reducing the transit trip duration by using dedicated lanes, signal priority, etc.	High	Short, Medium, Long, and On-going
E3	Establish TDM requirements for new developments.	High	Short
E4	Expand car share program.	Medium	Short and On-going
E5	Assess the e-scooter pilot program.	Medium	Short-Medium
E6	Assess the feasibility of bikeshare and e-bike programs.	Medium	Medium-Long
E7	Add a reduced parking (minimum) requirement for developments unbundling their parking spaces.	Medium	Short
F. Truck Parking Management Strategies			
F1	Explore opportunities and mechanisms to construct new truck parking facilities potentially within designated employment areas.	High	Medium-Long
F2	Explore shared parking opportunities to accommodate off-peak and overnight truck parking.	Medium	Short-Medium
F3	Develop truck parking availability system to provide truck drivers with updated information on truck parking locations and their utilization.	Medium	Short-Medium
F4	Conduct a study to further assess the feasibility of the truck parking supply strategies identified in Brampton	High	Short

ACTIVITY ID	ACTIVITY DESCRIPTION	IMPACT (PRIORITY) LEVEL	TIMELINE
	Parking Plan (Section 7 of Phase One report), including Activities F1 to F3.		
F5	Establish specific enforcement measures for truck parking.	High	Short and On-going
G. ZBL and Traffic By-Law Updates			
G1	Change the focus of parking regulations by removing parking minimums and converting them into parking maximums for select land uses in Intensification Areas.	High	Short
G2	Continue the work on updating the ZBL and parking requirements.	High	Short
G3	Update the traffic by-law to accommodate the paid on-street parking program (if implemented).	Medium	Short
H. Parking and Affordable Housing			
H1	Leverage the removal of parking minimums in Intensification Areas to increase the supply of affordable housing.	High	Short
H2	Grant parking requirement exemption or reduction on a case-by-case review basis using preset evaluation criteria (until Activity H4 is implemented).	Medium	Short
H3	Identify affordable housing as a type (or several types) of land-use and assign these land-uses specific parking requirements that are lower than other residential developments.	Medium	Short
I. Electric Vehicle Charging Stations Supply			
I1	Provide more on-street and off-street EV charging stations.	High	Short and On-going
I2	Update the ZBL to require a proportion of the parking spaces to be equipped with EV charging equipment, including residential and non-residential buildings and street-level dwellings with dedicated garages.	High	Short and On-going
I3	Establish design standards and guidelines for parking facilities so they can accommodate EVs.	Medium	Short to Medium
J. Miscellaneous Actions and Activities			
J1	Ensure sufficient number of accessible parking spaces are provided, including accessible spaces with EV charging stations.	High	Short and On-going
J2	Consider conducting a curbside management study in strategic areas.	Medium	Short to Medium
J3	Encourage future-proofing of new parking facilities.	Medium	Medium and Long
J4	Encourage the designation of some parking spaces for courtesy and limited mobility reasons.	Medium	Short and On-going

1 Introduction

The City of Brampton has experienced significant growth since the development of the last Downtown Parking Strategy in 2009, and its population is expected to grow continuously. Between 2016 and 2021, the City added approximately 87,400 people and 19,100 jobs. In 2021, the City’s population and jobs were around 703,000 and 210,500 respectively. The City’s growth is projected to reach 865,000 people and 273,400 jobs by 2031, and 929,000 people and 314,100 jobs by 2041. The private vehicle has remained the primary mode of transportation within the City and multi-generational households have resulted in an increase in the number of vehicles per home. This has placed significant demand on the City’s limited supply of on-street parking in residential areas, Downtown, and in areas that are adjacent to major destinations.

In recent years, Brampton has shifted towards greater intensification along transportation corridors that have experienced significant increase in transit ridership. These corridors are also planned for major rapid transit investment. In May 2018, City Council endorsed the Brampton 2040 Vision. Vision #4 of the Brampton 2040 Vision states that in 2040, Brampton will be a mosaic of safe, integrated transportation choices and new modes contributing to civic sustainability and emphasizing walking, cycling, and transit. The 2040 Vision identifies the need for a comprehensive Downtown parking strategy. In December 2019, City Council directed staff to undertake a comprehensive citywide parking plan, i.e., the Brampton Parking Plan, to identify potential actions, programs, and strategies beyond the comprehensive zoning by-law (ZBL) to address citywide parking issues. The Brampton 2040 Vision and the 2018-2022 Term of Council Priorities (TOCPs) set the direction for the Brampton Parking Plan. Several of the priorities identified in the TOCPs, such as Creating Complete Communities, Equalizing All Forms of Transportation, and Streets for People are pertinent to Brampton Parking Plan.

The Brampton Parking Plan helps implement the Vision and address the Brampton Plan, the Transportation Master Plan, and other relevant City Department objectives. It will also help to meet the needs of the significant population and employment growth, support more sustainable modes of transportation and a more electrified transport network, integrate land use and transportation policies, promote housing affordability, and propose strategies to manage parking resources, finances, and operations. Brampton Parking Plan is divided into several tasks and two phases as outlined in Exhibit 1.1.

Exhibit 1.1: Brampton Parking Plan Phases and Tasks

Phase	Task	Objective
One	Background Document Review	Align the study with the broader strategic directions taken by the City and higher-tier government agencies.
	Best Practices Review	Identify parking policies, strategies, and practices successfully implemented in comparable municipalities
	Parking Supply and Demand in Downtown Brampton	Analyse parking demand and supply in Downtown Brampton quantitatively
	Parking Policy Framework	Identify parking policies and principles that can better guide the future of parking operations in Brampton
	Public and Stakeholder Engagement – Phase One	Consult the public and stakeholders to better understand parking issues, challenges, and opportunities.
Two	Financial Review	Assess the financial performance of Brampton’s municipal parking system, mainly in the downtown area.
	Parking Management Plan	Establish management schemes and strategies to optimize and improve parking operations in Brampton.

Phase	Task	Objective
	Parking Implementation Plan	Synthesize the findings/recommendations of all the study tasks and phases into a cohesive implementation plan.
	Public and Stakeholder Engagement – Phase Two	Continue to consult the public and stakeholders and share the study results.

Brampton Parking Plan produced the following reports:

Phase 1 Report: reviews several background documents, emerging trends, and best practices, examines the existing and forecasted parking demand and supply in Downtown Brampton, identifies parking issues through several public and stakeholder consultation activities, and develops a policy framework that guides the evolution of parking provision and operations in Brampton and aligns the recommendations with the City’s strategic direction.

Phase 2 Reports: includes 1) a financial review report that examines the financial performance of Brampton’s parking system and 2) a parking management plan report that discusses several strategies and procedures to optimize parking operations in Brampton.

Final Report (this report): presents a summary of the key findings and recommendations of all previous phases and tasks of Brampton Parking Plan. It also includes an implementation plan that lays out the recommended actions and activities with information related to their timing, priority, resources needed, performance metrics, and targets.

2 Background Document Review

The background document review helped to establish the foundation of this study, understand Brampton's parking context, and align the Brampton Parking Plan with the broader strategic directions taken by the City and higher-tier government agencies. This review identified parking issues, policy constraints, and the City's growth, development, and ultimate goals. The main documents reviewed include but not limited to the following:

- Provincial and Regional Plans and Policies:
 - A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020).
 - Provincial Policy Statement (PPS) (2020).
 - Metrolinx 2041 Regional Transportation Master Plan (RTP) (2018).
 - Draft Peel 2051 Municipal Comprehensive Review.
 - Region of Peel Goods Movement Strategic Plan 2017-2021.
- Brampton Planning Documents:
 - Brampton Official Plan (2006).
 - Brampton Plan – Transportation and Connectivity Discussion Paper (2022).
 - Living the Mosaic - Brampton 2040 Vision (2018).
 - Major Transit Station Areas Framework (2022 – ongoing).
 - Transportation Master Plan (TMP) Update (2015).
 - Term of Council Priorities (TOCP) (2018-2022).
 - Active Transportation Master Plan (ATMP) (2019).
 - City-wide Community Improvement Plan (2021).
- Downtown Brampton Plans and Policies:
 - Downtown Parking Strategy (2009).
 - Integrated Downtown Plan (IDP) (In-Progress).
 - Downtown Brampton Special Policy Area Comprehensive Flood Risk and Management Analysis (2014).
 - Main Street North Development Permit System.
- Brampton Secondary Plans for the following areas:
 - SPA 7 Downtown Brampton.
 - SPA 36 Queen Street Corridor.
 - SPA 37 Airport Road and Highway 7 Business Centre.
 - SPA 54 Kennedy Road South.
 - SPA 55 Hurontario Main Corridor.
 - SPAs 52/53 Heritage Heights Community.
- Brampton Zoning and Other By-laws
 - Comprehensive ZBL.
 - Comprehensive ZBL Review Technical Paper #9: Parking and Loading Standards Review.
 - Traffic and Parking By-law (By-law 93-93).
 - Modernizing City-wide Parking Standards (By-law 259-2020).
 - Zoning By-Law Amendment 45-2021 – amending parking standards in the Downtown, central Area and the Hurontario-Main Corridor.
 - Queen Street Community Planning Permit System – Report and Presentation.
 - Brampton Accessible Parking Manual (2014)
 - Draft Comprehensive ZBL Update (2020).
- Other Relevant Studies, Projects and Proposals
 - Queen Street Bus Rapid Transit Initial Business Case (2020).

- Urban Community Hub Design Concepts and Initiation of Pilots at Uptown Brampton and Queen Street East (2021).
- Light Rail Transit (LRT) Extension Study.
- A Shared Electric Kick Scooter (Micromobility) Pilot Program.

Through review of the background documents, it was noted that the City of Brampton has a strong policy framework to help guide the growth and development of the evolving City (Official Plan, Vision 2040, Transportation Master Plan, Term of Council Priorities, Housing Brampton, etc.). In addition to municipal plans, there are numerous Regional and Provincial Plans to help further guide Brampton development (Places to Grow, Provincial Policy Statement, Region of Peel 2051 MCR ROPA, Regional Transportation Master Plan, etc.). In general, provincial, regional and municipal planning are all shifting towards supporting transit and active modes of transportation (walking and cycling), and the intensification of urban areas. When it comes to parking, these policies translate to:

- Building transit-oriented complete communities and expanding the transit, cycling, and pedestrian networks. This should change the modal split in favour of reducing the share of the private auto and managing the demand of parking.
- Reducing (or rescinding) parking requirements around major transit station areas and potentially adopting maximum parking requirements.
- Paving the way forward to accommodate alternative types of vehicles (e.g., securing bicycle parking, expanding the EV network, and implementing micromobility pilot programs such as the e-scooter).
- Promoting affordable housing through parking-related actions, e.g., reducing parking requirements and leveraging shared-parking arrangements.
- Redeveloping surface parking and converting public parking to structured facilities.
- Minimizing on-street parking to support the development of active transportation networks.

3 Best Practices Review

The best practices review examines parking policies, strategies, and practices successfully implemented in municipalities that are generally representative of Brampton’s development pattern. The aim is to inform the present study by lessons learned in other jurisdictions, identify emerging trends that are changing the status quo of parking systems, determine how other municipalities are managing their parking systems, and establish benchmarks and identify areas where improvement can be made. Exhibit 3.1 illustrates the subjects included in the best practice review. The list of comparator municipalities was determined in collaboration with City staff and it included the following cities:

Buffalo	Columbus	Ottawa
Hartford	Austin	Calgary
San Francisco	San Antonio	Winnipeg
Seattle	New Orleans	Windsor
Cleveland	Edmonton	

Exhibit 3.1: Subjects Included in the Best Practice Review



Based on the review findings, the following conclusions are drawn:

- Brampton’s parking price rates, both inside and outside the Downtown, are significantly lower than all other comparator municipalities. This conclusion applies to the metered on-street parking, off-street parking garages, and the long-term parking permits.
- Most comparator municipalities use location based and time-based pricing, with the performance-based pricing model (dynamic pricing) gaining popularity.
- Graduated parking penalties, where the penalty increases by the number of violations received, has seen limited adoption to date but provide an opportunity to target repeat offenders if a small amount of offenders represent a disproportionately high amount of violations.

- A full-service of parking enforcement is typically provided during normal business hours and this includes patrolling and handling complaints. When it comes to after-hours, parking enforcement services differ across municipalities. Some municipalities, mainly those where parking enforcement falls under the jurisdiction of police divisions, maintain all services including patrolling and complaint handling. Other municipalities may continue parking enforcement through patrolling but stop handling the complaints by the regular parking enforcement office. Finally, some municipalities stop all parking enforcement activities overnight. However, most municipalities and cities that do not provide after-hours parking enforcement still give the citizens the option to report parking issues to the police departments or other City's divisions that provide general public services.
- Parking permits are commonly available for residential and visitor uses. All comparator municipalities were determined to offer residential parking permits (at varying prices, conditions and locations), which are currently unavailable in Brampton except at the Authorized Resident Parking Zone (ARPZ) near the Brampton Civic Hospital.
- Many of the comparator municipalities use parking technologies to improve the parking system's efficiency and user friendliness. Common technologies include smart parking meters, pay-by-plate technology, smartphone parking apps, parking occupancy technology, and electric vehicle charging stations.
- Some municipalities are requiring private developers to provide EV infrastructure as part of the development application process. The requirement can be such as a ratio of the total number of parking spaces is to be equipped with EV charging equipment. In addition, the remaining spaces may be designed in a manner that allows for future EV charging equipment.
- Removing parking minimums can be implemented in high density areas to increase parking system efficiency while providing flexibility to developers and land owners. Twelve out of the fourteen comparator municipalities have rescinded or relaxed parking minimums either citywide or in strategic areas of the city.
- Adopting parking maximums provide several benefits such as limiting the oversupply of parking, preserving the urban landscape, offering lands for other uses, reducing the reliance on private autos, and promoting the use of alternative and more sustainable modes of transport. Nine of the fourteen comparator municipalities have applied parking maximums either citywide or in strategic areas of the city.
- A lack of truck parking supply is a key issue, and a wide range of strategies have been recommended across North America. These include sharing parking lots and large venues during off-peak hours, developing truck parking availability system, improving zoning policies, and building new parking facilities through Public-Private Partnerships and brownfield development.
- Most municipalities aim for a financially sustainable parking system where the collected parking revenues are sufficient to fund parking expenses. All comparator municipalities, excluding Austin, have achieved financial sustainability for their parking system.
- Key emerging trends related to parking include micromobility devices, connected and automated vehicles, parking partnerships, and future proofing new parking facilities where a parking facility could be converted to an alternative use in the future.

4 Public and Stakeholder Engagement

4.1 Engagement Plan Objectives

An essential study task is the engagement of stakeholders and the general public to help shape the Brampton Parking Plan. The intention was to give the public and stakeholder the chance to express their concerns and opinions, which serves as a valuable source of information to better understand Brampton’s parking challenges. Specifically, the public and stakeholder engagement aimed to:

- Provide the public and stakeholders with an overview of the on-going tasks and up-to-date key findings.
- Educate the public and stakeholders about on-going parking initiatives, evolving parking technologies, the cost of parking, and the role of parking requirements in a growing City.
- Understand the public and stakeholder perceptions on Brampton’s parking issues and identify parking concerns and potential solutions.
- Reach as many stakeholders and members of the public as possible.
- Use the received feedback to inform the study objectives.

Throughout the study, several public engagement and consultation activities were undertaken as outlined in Exhibit 4.1. These included online surveys, public engagement sessions, focus group meetings, and others.

Exhibit 4.1: List of Public and Stakeholder Activities

No.	Activity	Date and Time	Targeted Outcome
1	Public parking survey (online questionnaire)	January 4 to 28, 2022	General data from the public regarding Brampton’s parking issues (e.g., parking challenges, opportunities, modal shift).
2	Truck parking survey (online questionnaire)	January 4 to 28, 2022	General data from truck drivers about truck-specific parking issues and potential solutions.
3	Public Engagement Session #1	January 13, 2022 (6:00 to 8:00 PM)	General feedback from the public regarding Brampton’s parking issues.
4	Ward 3 & 4 Town Hall	January 25, 2022 (7:00 to 8:30 PM)	General feedback from the Ward 3 & 4 residents regarding parking issues.
5	Truck Focus Group Meeting	January 31, 2022 (11:00 AM to 12:00 PM)	The perception of trucking stakeholders concerning truck-specific parking issues.
6	Institutional Focus Group Meeting	February 2, 2022 (11:00 AM to 12:00 PM)	The perception of institutional stakeholders concerning Brampton’s parking issues.
7	Development Focus Group Meeting	February 2, 2022 (3:00 PM to 4:00 PM)	The perception of developers concerning parking requirements and challenges.

No.	Activity	Date and Time	Targeted Outcome
8	Public Engagement Session #2	June 13, 2022 (6:00 to 8:00 PM)	To share key takeaways from Phase 1 tasks and collect feedback related to Phase 1’s findings and desired study outcomes.

4.2 Key Messages Heard

During the various public and stakeholder engagement activities, different messages, ideas, and opinions were heard. The main takeaways are summarized below by different subjects.

Transportation Demand Management

- Public and stakeholders were generally supportive of using modes of transport alternative to the private automobile.
- Strong desire for improvements to alternative modes of transportation including transit, carsharing, and cycling.
- When considering incentives to promote alternative modes of transportation, the “improved transit service” solution received the highest ratings. Other incentives such as free transit passes, improved cycling infrastructure, and carsharing services received an average rating.
- The increased adoption of teleworking was also highly rated as a promising strategy to reduce parking demand and achieve external benefits, e.g., reduced congestion and emissions.
- Lack of safe and secure micromobility parking (bicycles, e-bikes, e-scooters, segways, etc.) especially in Downtown Brampton and parking requirements for EVs were noted.
- Concerns about inadequate transit service in new development subdivisions and recognition that improved transit results in increased ridership and reduced parking demand.

Truck Parking

- Most surveyed truck drivers reported insufficient safe and secure truck parking for both short-term and long-term purposes.
- When assessing several truck parking solutions, the highly rated solutions by truck drivers were increasing the amount of off-street truck parking that shippers and receivers are required to provide and using a smartphone truck parking app that provides or offers a real-time truck parking information system.
- Truck traffic has increased in Brampton over the last decade and truck parking constraints have resulted in demand spilling into residential areas.
- The potential adverse impacts of truck parking on residential zones were mentioned, e.g., noise and congestion creation.
- Questions regarding how the Zoning Bylaw regulates truck parking in residential zones.
- Trucking companies should provide for their own long-term truck parking as part of their businesses.

Parking Enforcement

- Concerns with respect to the amount of illegal on-street parking and support for increasing parking enforcement.
- The need for increased parking enforcement in some areas, such as the downtown.
- The need to make parking enforcement more proactive and less complaint-based in response to the increasing parking violations.

Parking on Residential Streets

- Many residents raised the challenges the City is facing regarding the multi-tenant dwellings, rooming houses, and the illegal occupancy of housing units, and how this results in large illegal on-street parking surge.
- Around one-fifth of the surveyed residents indicated having a difficulty finding parking at their place of residence, a higher proportion was observed for some particular zones.
- Some neighbourhoods experience parking capacity constraints, especially in neighbourhoods with relatively high average number of persons per household. Attendees suggested that an on-street parking permit system be implemented in these neighbourhoods to increase parking availability.
- Some residents expressed their concerns regarding the proposed on-street paid parking permit program. These concerns mainly include potential adverse safety impacts (conflicts with cyclists (e.g., dooring), speed limits, impacts on pedestrian movements, etc.), reducing the available sidewalk width, and blockage to the street traffic.
- On the other hand, some residents supported the on-street parking permit program since it provides parking supply for the legally added units and may reduce the number of penalties issued to illegal parkers. The program was also seen as a measure to welcome new students and offer them more high-quality housing options in the City.

Other Parking-Related Issues

- Businesses in the downtown area rely on municipal and public parking for their employees, customers, and deliveries. Only 24% of the respondents indicated having an on-site parking provision at their businesses or organizations.
- The vast majority of respondents indicated that their parking costs are not subsidized by their businesses or organizations.
- Parking planning should consider affordable and transitional housing, active transportation, and EV charging stations.
- Parking is underutilized in the City's Downtown parking facilities. As such, the City could raise funds by selling overnight parking permits and by providing carsharing services.
- The parking capacity constraints at the GO parking lot was also identified.
- Suggestion was made to adopt shared parking as a strategy.

The feedback and the key messages received from the public and stakeholders helped to better understand their perception regarding Brampton's parking issues and their reflection on the study findings. This also helped to guide the recommendations of this study so they can be more considerate of the public needs and concerns.

5 Parking Supply and Demand in Downtown Brampton

Downtown Brampton plays an essential role in the social, employment, and economic development of the City, and parking in the downtown is especially important. This section focuses on analyzing quantitatively the on-street and off-street parking operations in the Downtown area. Parking issues outside of the Downtown were identified and potential solutions assessed through the public engagement process.

5.1 Existing Parking Conditions

Existing Parking Inventory

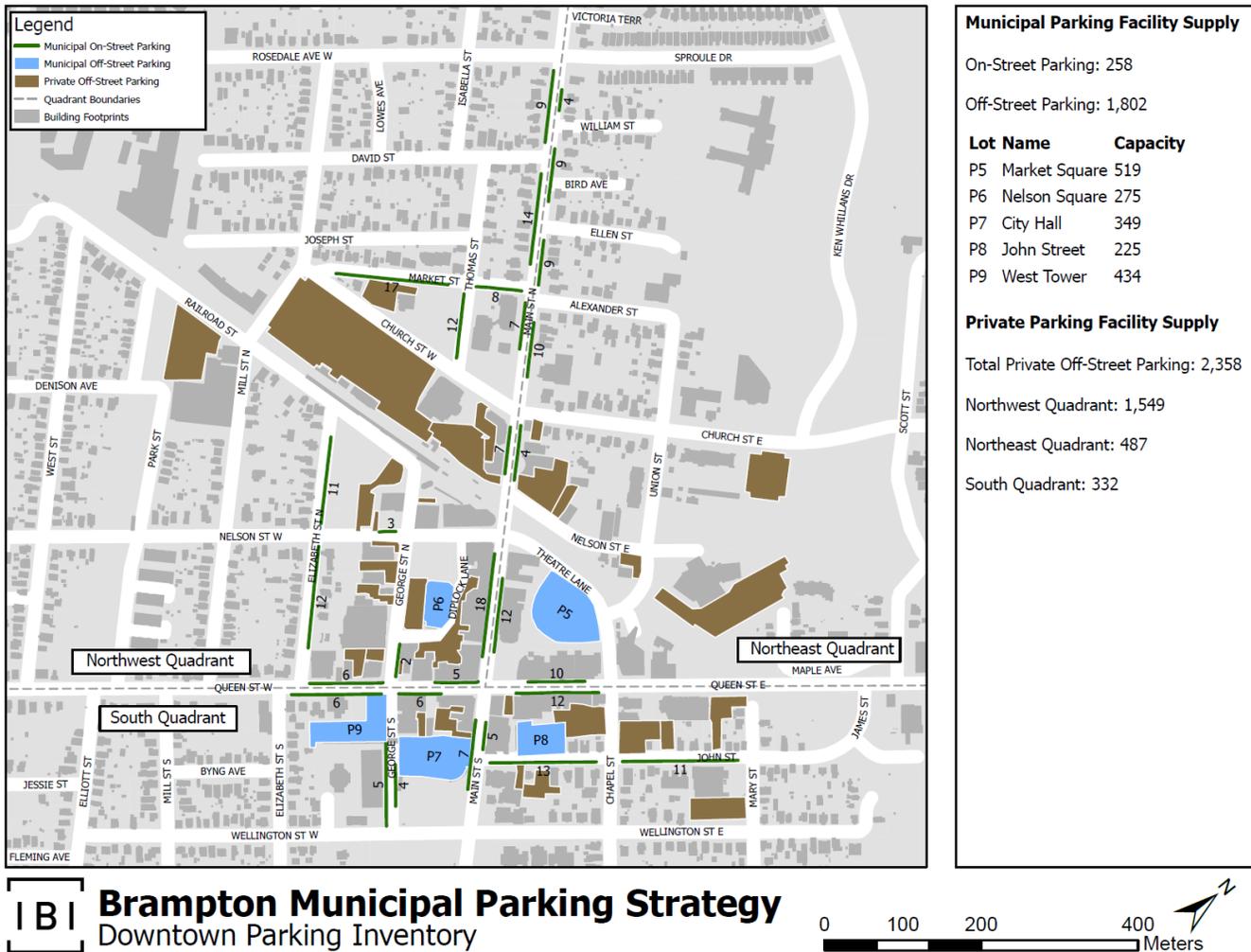
The Brampton municipal parking supply consists of on-street and off-street parking in the downtown area. Paid off-street parking at lots and garages is in effect between 9:00 AM and 7:00 PM Monday to Friday. The first hour of parking is free, while each subsequent half hour of parking costs \$1.00 up to a daily maximum of \$9.00. Annual and monthly parking permits are available for \$308 and \$44, respectively. There is no charge for parking on evenings, weekends, and holidays.

The on-street parking system includes metered parking opportunities which are in effect between 9:00 AM and 6:00 PM Monday to Saturday at a rate of \$2.00 per hour and a maximum duration of 90 minutes on most streets. A few streets permit on-street paid parking between 7:00 AM and 6:00 PM Monday to Friday at a rate of \$1.00 per hour or a flat rate of \$4.00. Market Street and Thomas Street, for example, offer all-day parking for \$4. This was meant to assist with the capacity issues at the GO Parking lot. A maximum parking duration of 3 hours is permitted during free parking periods.

As shown in Exhibit 5.1, Brampton's municipal parking supply consists of 4,518 parking spaces divided in the following manner:

- 258 municipally-owned on-street metered parking spaces.
- 1,802 municipally-owned off-street parking spaces.
- 2,358 privately-owned off-street parking spaces.

Exhibit 5.1: Brampton Downtown Parking Supply

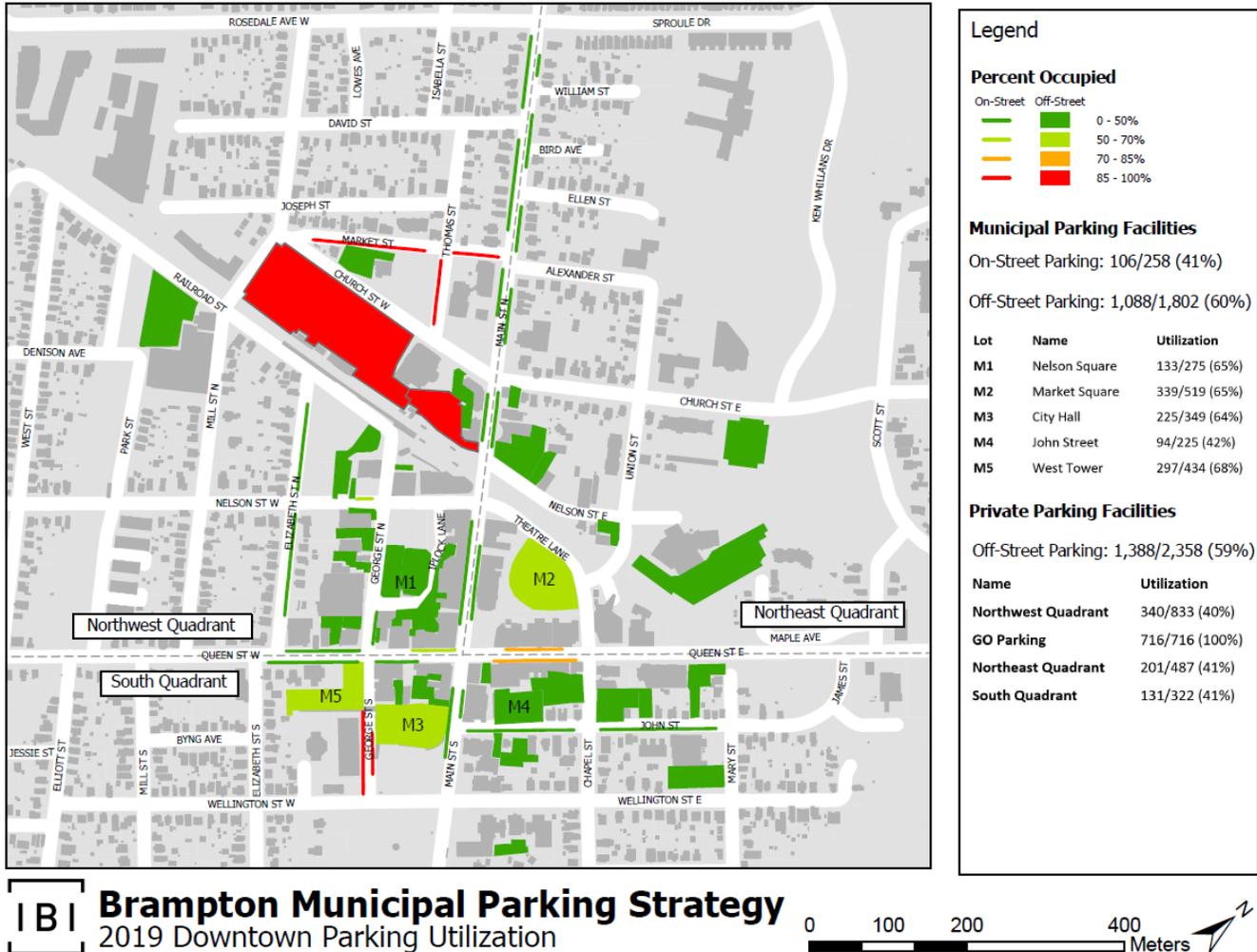


Existing Parking Operations (Downtown Brampton)

The analysis of the existing conditions of the Downtown Brampton parking system was based on parking utilization surveys conducted by City staff in 2019. Exhibit 5.2 geographically displays the lot-by-lot and street-by-street parking utilization observed during the systemwide peak hour, which occurred at 10:00 AM. The following are the main takeaways from the analysis of the existing parking operations:

- The Downtown systemwide parking utilization is 58%, which is well below the 85-90% effective capacity threshold.
- The on-street parking system is observed to be 41% utilized; some individual segments however operate above 85% utilization.
- The municipal off-street parking lots and private off-street parking lots experienced very similar utilizations (60%) during the peak period. Only the GO Transit parking lot experienced more than 85% utilization.
- Overall, the Downtown Brampton parking system is underutilized with only a few individual parking facilities operating at capacity.

Exhibit 5.2: Brampton 2019 Downtown Parking Utilization (10:00 AM)



5.2 Future Parking Operations - Base Scenario

The Future Parking Assessment projects the 2040 future parking operations in Downtown Brampton. The results of the assessment will be used to inform general principles and policy recommendations to help guide Brampton in meeting long-term parking needs.

Downtown Brampton's 2040 future parking supply and demand was estimated based on the existing conditions demand with consideration for the following factors:

- Existing parking patterns.
- Parking demand growth due to population growth.
- Parking demand decreases due to reduced mode share of personal vehicles.
- Municipal parking supply losses and gains.

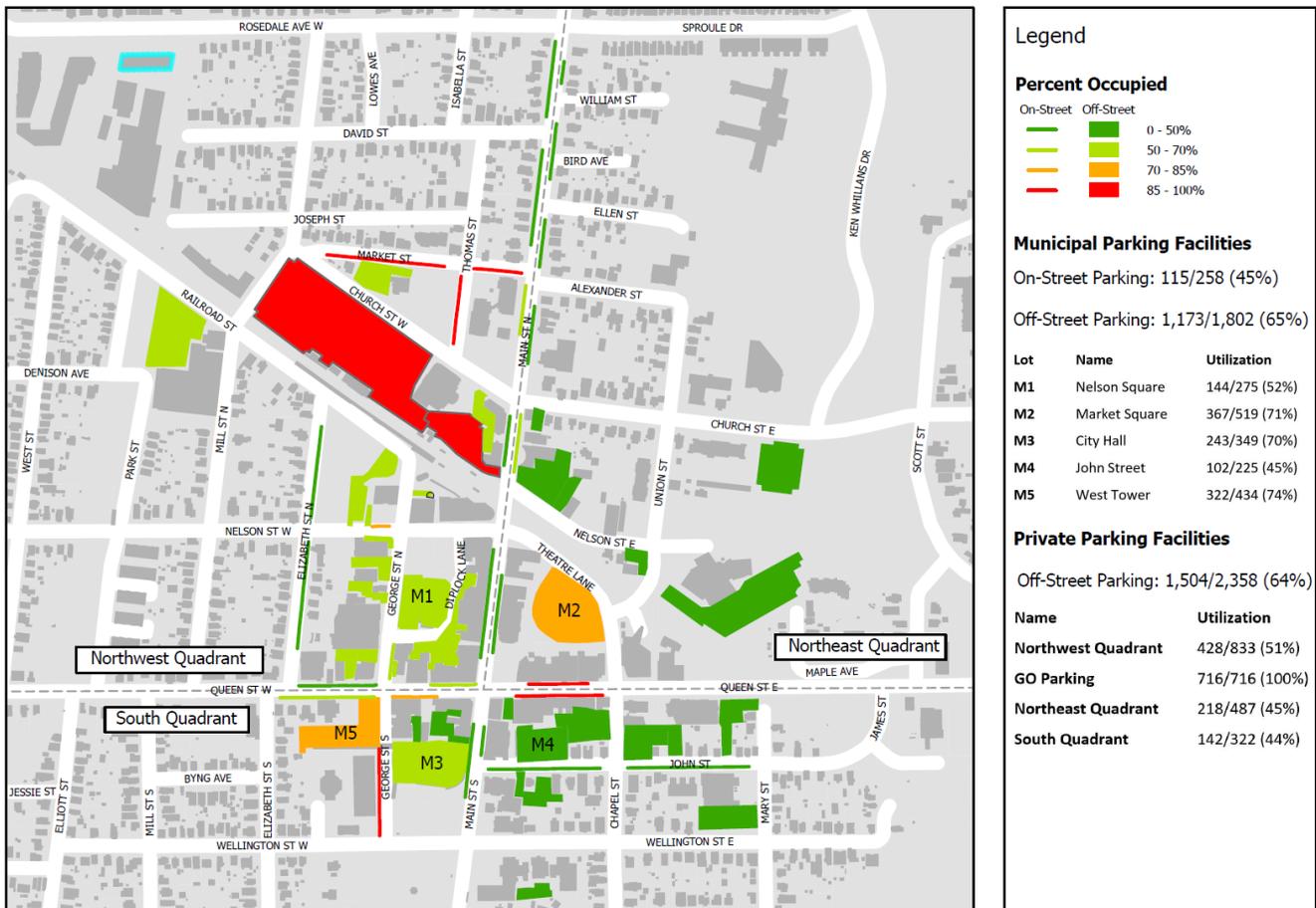
It should be noted that the future parking projections are estimated based on the best data available at the time of this study. Brampton is recommended to continue collecting new parking supply and demand data on a quarterly basis to evaluate the resulting parking demand. Between

the time of writing and the horizon year, many changes are anticipated to take place within Brampton that can significantly alter parking demand within Brampton. The findings and recommendations made as part of this study are intended to be updated by the City on an as needed basis to reflect the parking demand achieved.

Exhibit 5.3 shows the estimated parking demand and utilization for Downtown Brampton in the 2040 horizon year. Based on the information provided in this Exhibit, the following conclusions can be drawn:

- System-wide parking utilization is anticipated to be 63%, which is below the 85-90% effective capacity threshold.
- Municipal off-street parking is operating at 65% utilization and privately owned off-street facilities are operating at 64% utilization. The GO Transit parking lot is anticipated to continue operating at 100% capacity.
- On-street parking is anticipated to operate at 45% capacity, with 6 out of 29 on-street segments operating above the effective capacity threshold.
- Overall, the Downtown Brampton parking system appears to be operating below effective capacity.

Exhibit 5.3: Brampton 2040 Downtown Parking Utilization (Base Conditions)



IBI Brampton Municipal Parking Strategy
 2040 Downtown Parking Utilization



5.3 Future Parking Operations - Other Scenarios

In addition to the base scenario, the future parking operations were further assessed to consider some possible scenarios as outlined below.

2040 COVID-19 Scenario: this was estimated by applying a 20% reduction to the 2040 Base Scenario demand to account for the possibility of increased remote working arrangements in the future. The resulting parking system was operating at 54% utilization, and the on-street and off-street systems were 36% and 56% occupied, respectively. There was only one on-street segment that operated above the effective capacity threshold.

2040 Nelson Square Closure Scenario: this was based on the 2040 Base Scenario but included the removal of the Nelson Square Garage. All of the forecasted demand from the Nelson Square Garage was reallocated to nearby municipal garages. The Downtown parking system was estimated to be 68% utilized, and off-street facilities increased to 69% utilized. The Market Square, City Hall, and West Tower Garages experienced increases in parking demand, but still operated below the effective capacity threshold.

On-street parking supply may be impacted by future streetscaping projects. Due to the streetscaping and sidewalk widening work on Main St. and Queen St., it is anticipated that approximately 100 on-street parking spaces will no longer be available on Main St., from Wellington St to Nelson St W, and Queen St, from Mill St S. to Theatre Lane. The parking supply loss forecasts are current as of March 2022 and are subject to change as project details are finalized. Therefore, the potential loss of on-street parking was not analyzed in detail as a separate scenario. However, it is recommended that the City continuously monitor impacts to Downtown Brampton's parking inventory to determine if it can meet the demands for Downtown visitors, employees, and residents.

The underutilization of the Downtown off-street parking system calls for a review of the possible strategies that can make this system more efficiently deployed especially with the expected growth in employment and population in Downtown Brampton. In addition, with the removal of the minimum parking requirements in Downtown Brampton, prospective developers may become interested in shared parking arrangements in the available parking facilities which may generate a considerable parking demand and change the parking demand/supply profile in the future. A Downtown Parking Implementation Strategy study was undertaken, supplementary to the Brampton Parking Plan, and intended to: 1) investigate strategies that can optimize off-street parking utilization in the Downtown area through shared-use/reservation parking agreements, 2) address existing and potential requests made by employment-related developers for shared off-site parking, and 3) identify potential parking supply opportunities in the Downtown area focusing on structured or below ground parking. This supplementary study, which also includes more recent parking surveys (carried out in October 2022), discusses several shared-parking implementation scenarios in the short-to-medium and long terms, and also further discusses the future needs to expand the parking system and the associated challenges and implications.

6 Parking Policy Framework

The parking policy framework will be the key tool that guides the evolution of parking operations throughout the City of Brampton to the 2040 horizon year. The framework is informed by the relevant Provincial, Regional, and Municipal level policies and plans (ex: 2040 Vision, Transportation Master Plan, Ontario Growth Plan, and 2018-2022 Term of Council Priorities), public and stakeholder feedback, analysis of background data, best practices review and SWOT analysis. The framework consists of the following components:

Vision Statement: An overarching statement intended to set an aspirational goal for citywide parking operations.

Guiding Principles: A set of principles or precepts, that when combined with the vision statement, help guide Citywide parking policy decision making.

ZBL Review: A review of Brampton’s in-progress comprehensive ZBL update.

Parking Policies: A comprehensive set of parking policy recommendations tailored to Brampton’s local planning, access, mobility, affordability and urban design objectives. The parking policies are divided into two sets of policy areas acknowledging that different parking policies are appropriate for existing and planned Intensification Areas (Downtown, Central Area, Hurontario-Main Corridor, MTSAs, Urban and Town Centres, and Urban Boulevards) that would be characterized by relatively high population and employment densities and low vehicle ownership, and the Rest of City where densities are lower and vehicle ownership is higher. It is to be noted that some of the planned MTSAs and intensification centres/corridors will achieve their high-density characteristics over time.

Truck Parking Policies: Policies and strategies tailored to Brampton’s local context intended to increase the supply of truck parking opportunities.

6.1 Vision Statement

Based on the findings of Tasks 2 through 5 (Background Document review, Best Practices assessment, Parking Supply and Demand assessment, and Public and Stakeholder engagement findings), the following key overarching themes were identified:

- Prioritize alternative modes of transportation.
- Sustainable forms of development.
- Future parking needs.
- Innovative parking policies and strategies.
- Affordability.
- Accessibility.

Using these key themes, the following vision statement tailored to Brampton’s identified needs and opportunities was developed:

To manage parking provision in a rapidly growing City through the adoption of forward thinking and innovative parking policies and strategies consistent with Brampton’s planning objectives and priorities. Parking is envisioned to strike a just balance between affordability and accessibility, and support for sustainable forms of development and transportation.

6.2 Guiding Principles

Building upon the vision statement, a set of 10 guiding principles was developed to help guide Brampton's parking decisions. These guiding principles are also based upon the key themes identified through Tasks 2 through 5.

- Align parking improvements with these guiding principles, and support Brampton's broader policies, objectives, and initiatives.
- Manage parking provision, including accessible parking, while prioritizing and promoting alternative modes of transportation such as transit, walking, cycling, and shared economy.
- Prepare to accommodate different types of vehicles such as micromobility vehicles and expand the EV charging supply.
- Explore opportunities to consolidate surface parking facilities into structured parking to support redevelopment and intensification; and integrate structured parking facilities into the urban fabric to complement the surrounding area's character through the development approval process and public private partnerships.
- Balance curbside access between the many user groups (parking, transit, micromobility, cycling, pick-up/drop-off, etc.).
- Encourage innovative parking strategies that optimizes a facility's utilization and performance such as shared, off-site, and unbundled parking and improves housing affordability.
- Establish an on-street residential parking permit program for neighbourhoods experiencing on-site parking capacity constraints and to address barriers to strategic, gentle densification through missing middle housing typologies
- Explore opportunities to increase truck parking supply and to improve truck parking wayfinding.
- Implement practices and strategies aimed at financially sustainable parking operations where revenues are sufficient to fund expenses.
- Strategically set parking prices at rates that are affordable, in-line with market value, and promote alternative modes of transportation and the distribution of parking to available nearby locations.

6.3 Comprehensive Zoning By-Law (ZBL) Review

Brampton's Comprehensive Zoning By-Law (ZBL) Review that was undertaken by the firm WSP is currently on-hold until Council adoption of the City's new Official Plan – the Brampton Plan. The latest draft ZBL (June 2020) was reviewed in detail to inform the Parking Policy Framework development. The provided recommendations pertaining to the ZBL review will require further discussion and evaluation by the City and WSP prior to being implemented, should the City wish to proceed.

Based on the comparator municipality review, the draft ZBL residential parking requirements were determined to be relatively high. Reducing or rescinding residential parking requirements is feasible within Intensification Areas where population and employment densities are higher and vehicle ownership is lower. Additionally, increasing the requirements are also not considered appropriate since this would result in an oversupply of parking in all other neighbourhoods. The recommendation is to remove parking minimums and implement parking maximums for select land uses within Intensification Areas and to revisit and review the minimum and maximum parking requirements outside of the Intensification Areas based on parking demand surveys.

The draft ZBL was also compared with the comparator municipalities for some non-residential land uses. For office, medical office, restaurant, retail, recreation centre, and general manufacturing land uses, the draft ZBL's rates were higher than most of the other municipalities. It is recommended that these rates be revisited and reviewed against the actual parking demand surveys, since Brampton is moving towards promoting alternative modes of transport other than the private auto.

The draft ZBL allows developers to reduce parking requirements by adopting shared parking, providing dedicated carsharing spaces, and adding more bicycle parking spaces than required. These parking reductions are in-line with best practices to promote sustainable and affordable developments. To build upon these strategies, Brampton is recommended to develop a point-based TDM checklist to provide developers with greater flexibility for larger parking requirement reductions (ex: flexible working hours, unbundled parking, and nearby rapid transit).

Parking policies can support affordable housing by granting parking requirement reductions. In the short-term, Brampton is recommended to grant parking reductions or exemption based on a case-by-case review. This provides a flexible approach that can accommodate the wide variety of affordable housing types and locations. If more definitive types of affordable housing are established and more on-site parking demand data become available, affordable housing requirements can be added as a land use with specific ZBL parking requirements once the parking demand generation is better understood. It is to be noted that area-wide parking exemptions, granted to strategic and intensification areas, will benefit affordable housing units by default. As such, there is little opportunity for consideration of parking incentives as part of promoting affordable housing through Inclusionary Zoning.

Several parking provisions are recommended to be added to the draft ZBL, these include requirements for accessible parking spaces and electric vehicle charging stations. The accessible parking requirement can be still maintained in areas where parking minimums are rescinded, i.e., the number required can be a ratio of a hypothetical number of required parking spaces. In addition, a ratio of the total parking spaces can be required to be equipped with EV charging equipment.

6.4 Parking Policies and Strategies

This section develops parking policies and strategies that are in-line with the developed vision and guiding principles. Recognizing that parking patterns vary throughout the City and that a uniform parking policy framework is therefore not appropriate, the City is divided into different policy areas, i.e., Intensification Areas and Rest-of-the-City. Based on the review of Brampton and Peel policy documents, the WSP draft ZBL, and recent ZBL amendments, Brampton's policy areas were assigned a different set of parking policies and strategies as described below.

Intensification Areas (IAs)

IAs are areas with existing or planned high population and employment densities and low personal vehicle mode share. The parking supply in these areas are minimized and alternative modes of transportation are incentivized and promoted. Several ongoing and future transit projects will enhance the quality-of-service of the transit lines serving these areas, e.g., new Züm, new LRT and new rapid transit, in addition to the existing BRT, transit lines and the GO stations. In Brampton, IAs are recommended to include the following four categories:

First: areas already granted parking exemptions as per By-law 45-2021.

Second: the future and planned Major Transit Service Areas (MTSAs) as per the Region of Peel Official Plan.

Third: Urban and Town Centres as per the ongoing Brampton Plan Study (official Plan Update).

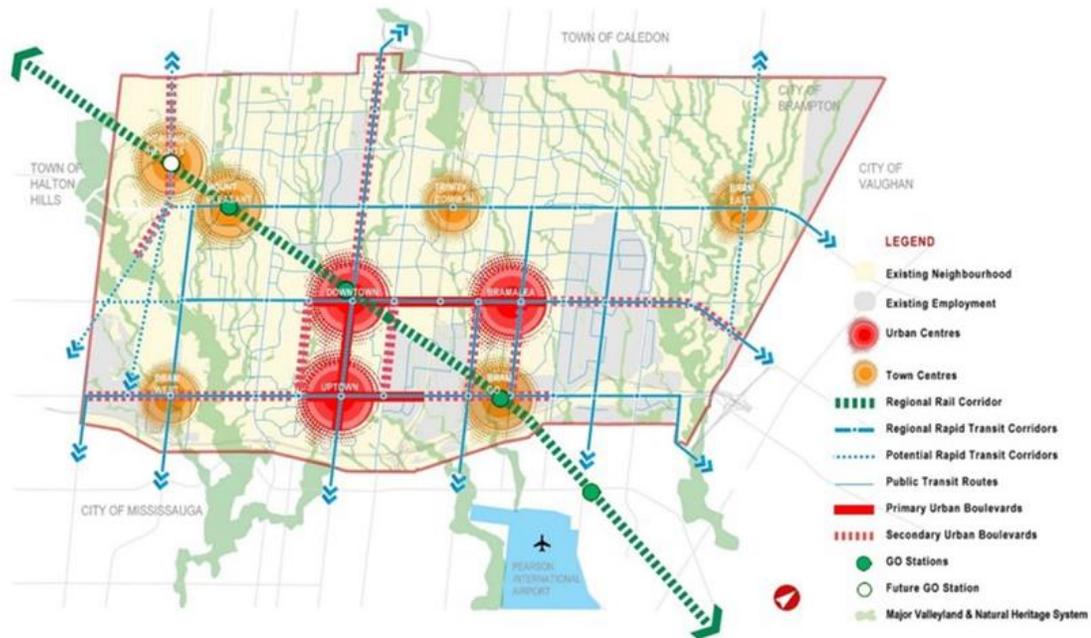
Fourth: Primary and Secondary Boulevards as per Brampton Plan.

The first and second categories of IAs are illustrated geographically in Exhibit 6.1, whereas the third and fourth categories are illustrated in Exhibit 6.2. Some of the identified IAs in the two Exhibits might overlap, e.g., some MTSAs overlap with the Urban or Town Centres. Delineating the exact boundaries of the IAs is left for future zoning and planning efforts.

Exhibit 6.1: Proposed Intensification Areas: By-Law 45-2021 Areas and MTSA



Exhibit 6.2: Proposed Intensification Areas: Urban and Town Centres and Urban Boulevards



It is to be noted that some of the planned MTSA and intensification centres/corridors will achieve their high-density characteristics over time. The ZBL review could consider the pre-zoning of these lands so that the targeted sustainability and intensification goals can be better achieved.

To promote sustainable modes of transportation and to increase the efficiency of parking facilities in IAs, Brampton is recommended to adopt the following policies and strategies:

Minimize on-site parking through rescinding parking minimums and setting parking maximums for select land uses. Changing the focus of parking regulations by removing parking minimums and converting them into parking maximums can be a very prominent and influential policy. The intention of this policy is to:

- Prevent the oversupply of parking: public and private parking are presently underutilized in Downtown Brampton, which is the only area where periodic parking surveys have been undertaken.
- Reduce the auto-dependence and promote alternative modes of transportation which are already being improved and expanded in Brampton.
- Preserve the urban fabric and the space for other land uses that can be more useful for the community.
- Increase the supply of affordable housing by reducing the total construction cost.
- Assist in achieving the targeted densities in intensification areas.
- Join a growing list of cities that have already rescinded their parking minimums and established parking maximums either citywide or in strategic areas.

This policy requires recognizing the following:

- The removal of parking minimums does not prevent developers from providing parking based on their assessment of parking demand and business needs.
- Well-resourced, strategic, and strict parking enforcement is needed in areas where parking minimums are rescinded to ensure the supply of parking is used optimally and as planned.

- Public parking will become more important and more shared-parking partnership agreements are needed to optimize the use of parking.
- The political will is needed to support such policy.

It is worth noting that Brampton has already rescinded/reduced parking minimums in the Downtown core, Hurontario corridor, and Queen Street corridor as part of the recent ZBL amendments. In addition, support for reducing or rescinding parking minimums and implementing parking maximums was expressed as part of the public engagement.

Consolidate surface parking into parking structures integrated in the urban fabric. Design parking structures in a green and “future proofed” manner, i.e., parking structures constructed in a manner that facilitates conversion to an alternative use in the future. With higher densities in the IAs, the efficient use of available space is a priority. Surface parking lots occupy a considerable amount of space that can be better utilized through redevelopment. Above and below ground public parking structures can be integrated with new developments in a visually appealing manner.

Prepare to accommodate different types of vehicles. Given the new modes of transportation such as e-bikes, e-scooters, and other micromobility vehicles, parking facilities should be prepared to accommodate a variety of vehicles.

Prioritize alternative curbside uses over parking (transit access, bicycle lanes, ride hailing zones, patios, and passenger pick-up and drop-off). The curbside is a limited and valuable resource that serves ever increasing demand from numerous user groups. Within IAs, prioritizing sustainable forms of transportation and allocating curbside space for non-parking users should be prioritized.

Expand EV charging station supply. Electric vehicles are more environmentally friendly when compared to traditional combustion engine vehicles by eliminating tailpipe emissions. Given Canada’s EV sales targets, EV mode share is anticipated to rapidly increase in the near future. To meet the demand, municipalities should begin installing EV charging stations in publicly accessible locations.

Provide car share services in municipal parking facilities. Providing car share services promotes lower vehicle ownership by providing users with convenient access to a vehicle when needed. This strategy is particularly effective in reducing vehicle ownership in 15-minute neighbourhoods where most daily trips can be completed by walking or cycling.

Ensure sufficient accessible parking spaces are provided. To ensure accessible parking spaces are still provided, some Cities that rescinded parking minimums are still requiring the provision of accessible parking spaces.

Expand transit network and increase service frequency and reliability. By improving transit service, Brampton residents are more likely to select transit over personal vehicles for certain trips, which can reduce vehicle ownership and manage parking demand.

Implement shared micromobility services. Similar to transit improvements, implementing shared micromobility services can help reduce personal vehicle ownership. Efforts are currently underway to proceed with the Brampton’s e-scooter pilot program and assess its impact. The success of this program may pave the way for the adoption of more micromobility and emerging modes of transport in the future (e.g., e-bike, bikeshare, etc.).

Expand bicycle lane network to provide dedicated cycling right-of-way. Providing dedicated bicycle lanes and a well-constructed network improves cyclist safety, which helps promote this mode of travel and reduce personal vehicle ownership.

Support a hybrid telecommuting business model. The telecommuting business model reduces parking demand by allowing employees to work from home. Not all professions can support a

telecommuting model (ex: health care and construction) and employees will likely travel to their place of business occasionally, but the COVID-19 pandemic has shown that many professions can support a telecommuting business model.

Consider parking as a benefit from the upcoming Community Benefits Charges (CBCs) regime in Brampton. CBC is a financial contribution that is required to be paid when a land is developed to help the City pay for the capital costs of facilities and services of high-density developments. For areas where parking minimums are rescinded or reduced, the City may need to build and operate municipal parking facilities, and since these facilities serve the public including the new developments, their cost can be considered in the CBC contributions.

Consider activating the Citywide Community Improvement Plan (CIP) for Employment. The City is currently in the process of completing the Citywide CIP, which has included the ability for Council to activate a future capital grant of up to \$25,000 per parking space for projects pursuing underground parking. To maximize the use of limited space, underground parking is considered most appropriate in Brampton's Intensification Areas. Note that the cost of such a program still needs to be considered by the CIP.

Prohibit and enforce no trucking or warehousing in highly visible strategic areas and along primary urban boulevards. This is in order to preserve the landscape architecture and the densification of these areas.

Rest of City

The Rest of City policy area applies to all other areas not included in IAs. These areas have higher vehicle ownership and personal vehicle mode share and are typically lower density areas. Recognizing that personal vehicles remain a primary mode of travel, parking provision should be balanced with improvements to alternative modes of transportation. The City of Brampton Transportation Master Plan Update (TMPU) report promotes a strategy aiming to achieve the following modal split targets by 2041: 16% Brampton transit, 6% Active Transportation, 28% auto passenger, and 50% single-occupancy vehicles.

Brampton is recommended to adopt the following policies and strategies for the Rest of City:

Meet on-site parking demand through parking minimums tailored to Brampton. As Brampton continues to improve citywide access to alternative modes of transportation, citywide personal vehicle ownership and parking demand are anticipated to decrease. The ZBL parking requirements must therefore be updated periodically to accurately reflect parking demand generation rates without an oversupply of parking.

Develop parking maximums tailored to Brampton. Parking maximums are more needed in IAs. However, they can be still applied citywide and offer their benefits outside the IAs. A detailed ZBL update study is needed to set the parking maximum rates and select the land uses that are subject to or exempted from the maximums.

Develop a formalized point-based TDM checklist that developers can use to reduce parking requirements. To continue promoting alternative modes of transportation in an effort to reduce personal vehicle mode share and manage parking demand, Brampton is recommended to develop a formalized point based TDM checklist.

Balance parking with public transit and micromobility improvements. With parking demand met through tailored parking minimums, improvements to alternative modes of transportation can still be anticipated to reduce personal vehicle mode share. With less personal vehicles on the roads, parking demand can also be anticipated to be managed.

Adopt residential parking permit program in neighborhoods with parking capacity constraints. Some residential neighborhoods with a high persons per household rate do not have sufficient space on their driveway or within their garage to accommodate all of their personal

vehicles. To help alleviate the parking capacity constraints and the widening of driveways beyond the maximum size permitted by the Zoning By-law, Brampton is recommended to adopt an on-street residential parking permit program.

Explore and promote opportunities to facilitate building more affordable housing units.

Parking is a major barrier to affordable housing of all kinds and in all geographies. Section 6.3 provides recommendations to establish special parking requirement reductions for affordable housing units in the ZBL. In addition, opportunities for affordable housing may arise through partnership with not-for-profit groups, affordable housing on public lands, adaptive reuse of heritage sites, various supportive housing models, as well as through the upcoming missing middle (lodging houses/triplex/fourplex) model that the City is preparing.

6.5 Truck Parking Policies and Strategies

The Region of Peel is well known to be a centre for logistics and trucking activities. However, truck parking has become a major challenge in the region and especially in Brampton which has 11,000 employers and 24,000 employees in “transportation and warehousing.” To maintain the trucking activities and their economic contributions, creative strategies are needed to increase the supply of truck parking and meet the demand.

The best practices review identified several truck parking strategies that are being used in different jurisdictions to increase the supply of truck parking. These strategies were further evaluated and considered for adoption in Brampton.

Short-term and medium-term strategies aim to better utilize existing parking facilities. These include shared commuter parking lots, off-peak use of large venues, truck parking permits in industrial and commercial areas, and truck parking availability systems. The effectiveness of these strategies increases if implemented in parallel. For example, the utilization of shared parking facilities can be optimized if a truck parking availability system is also adopted. Additionally, this system could notify truck drivers when parking is permitted in the shared parking facilities.

Long-term strategies aim to increase truck parking opportunities through the construction of new parking facilities potentially within designated employment areas. These strategies include new ZBL truck parking requirements, brownfield redevelopment, and new truck parking through P3s.

As informed from the City of Surrey’s experience, *additional initiatives* may include amending the business licensing application for trucking companies to require parking identification, reducing the cost of new truck parking facilities by waiving some requirements (e.g., to partially pave the facility instead of fully), and initiating a City’s program to achieve economies of scale through P3s (e.g., the City manages the servicing process and share the cost).

Truck parking *strategies not considered appropriate* for adoption in Brampton include truck parking in weigh stations and truck parking in large rural residential lots.

Off-peak delivery can spread truck parking demand over more periods of the day, and this can reduce the pressure on the limited available truck parking while also reducing traffic congestion, travel time, and emissions. However, the wide adoption of off-peak delivery may face some challenges (e.g., conflicts with federal hours of service, labour rights of the drivers and their unions, etc.). It is worth noting that changes were made to the Municipal Act, 2001 and stated that from September 19, 2021, municipal governments will not be able to regulate noise related to the delivery of goods to retail businesses, restaurants, hotels, and goods distribution facilities.

Truck parking strategies were discussed in greater detail in Phase 1 report. However, a recommendation is made herein to conduct a study to further assess the feasibility of these truck parking strategies from the engineering, financial, implementation, and regulatory perspectives.

7 Financial Review

7.1 Current Parking Revenues and Expenses

The financial performance of Brampton’s current parking system is examined in this section. IBI Group conducted an analysis of five years of financial data from the City of Brampton’s municipal parking program from the years 2015-2019. This analysis does not include financial data collected between 2020 and 2021, as it may not offer an accurate reflection of the financial operations of the City’s parking program due to the pandemic.

Our analysis determined that the City’s parking operations are currently operating at a deficit and that based on the program’s current revenue and expenditure trends, this deficit is expected to continue increasing until 2027, at which point positive net surpluses beginning in the year 2028 caused by expected population growth, are projected to result in a revenue surplus by the year 2035. To determine this, IBI Group developed a detailed financial model to forecast the projected balance of parking operations to the year 2040. IBI Group also investigated the effects of changing the rates for permit and hourly parking within downtown Brampton. These proposed pricing changes are intended to ensure the long-term financial stability of Brampton’s parking program.

Exhibit 7.1 outlines the projected 2021 annual operational summary based on existing conditions. Note that the historical data presented in this section is provided by the City of Brampton.

Exhibit 7.1: 2021 Projected Annual Operations and Capital Summary

Category	Amount	%
Expenses		
Parking Garage Maintenance - Facilities, Operations & Maintenance	\$ 235,350	3%
Parking Operations - Road, Maintenance, Operations & Fleet - Labour	\$ 548,029	6%
Parking Operations - Road, Maintenance, Operations & Fleet - Other	\$ 68,417	1%
Parking Enforcement - Court Administration	\$ 389,000	4%
Parking Enforcement - By-law Services	\$ 6,671,526	75%
Approved Capital Expenditures	\$ 1,000,000	11%
Total Expenses	\$ 8,912,322	100%
Revenues		
Parking Lots	\$ 215,000	3%
Parking Monthly Permits	\$ 288,000	4%
Parking Meters (Hourly)	\$ 180,000	3%
Rentals- Auditorium/Theatre	\$ -	0%
Parking Enforcement	\$ 5,992,609	90%
Total Revenues	\$ 6,675,609	100%
Net	\$ (2,236,713)	

Based on Exhibit 7.1, the following is observed:

- The parking system is projected to generate \$6,675,609 in revenue and incur \$8,912,322 in expenditures in 2021.
- Parking operations are not projected to be financially sustainable until at least 2035 without pricing increases to the hourly and monthly parking rates.
- 74.8 per cent of the City’s parking program’s expenditures were recovered through revenue during the analysis period. It is desirable for parking operations to be 100 per cent funded through parking user fees.

- By-law Services related to parking enforcement accounts for 75 per cent of existing expenditures and penalties received through parking enforcement represent 90 per cent of revenues.

7.2 Parking Price Scenarios

IBI Group in discussion with the City, selected five parking price scenarios to examine for their long term financial effect on Brampton’s municipal parking operations.

Parking Price Scenarios:

- Scenario 1: Status Quo no change to hourly or monthly parking rates.
- Scenario 2: Hourly Price \$2.50, Monthly Permit \$100.00.
- Scenario 2: Hourly Price \$3.00, Monthly Permit \$120.00.
- Scenario 3: Hourly Price \$3.50, Monthly Permit \$140.00.
- Scenario 5: Hourly Price \$4.00, Monthly Permit \$160.00.

The input and assumptions for this financial model have been developed based on industry best practice and research of comparator municipalities in collaboration with City of Brampton staff. Exhibit 7.2 provides an overview of the incremental implementation plan for each parking price Scenario.

Exhibit 7.2: Incremental Parking Price Optimization Scenarios

Parking Pricing Optimization						
Scenarios	2022	2023	2024	2025	2026	2027
Scenario 1	Status Quo	Status Quo	Status Quo	Status Quo	Status Quo	Status Quo
Scenario 2	Monthly Permit: \$60.00 / Hourly Rate \$2.50	Monthly Permit: \$80.00 / Hourly Rate: \$2.50	Monthly Permit: \$100.00 / Hourly Rate: \$2.50			
Scenario 3	Monthly Permit: \$60.00 / Hourly Rate \$2.50	Monthly Permit: \$80.00 / Hourly Rate: \$3.00	Monthly Permit: \$100.00 / Hourly Rate: \$3.00	Monthly Permit: \$120.00 / Hourly Rate: \$3.00		
Scenario 4	Monthly Permit: \$60.00 / Hourly Rate \$2.50	Monthly Permit: \$80.00 / Hourly Rate: \$3.00	Monthly Permit: \$100.00 / Hourly Rate: \$3.00	Monthly Permit: \$120.00 / Hourly Rate: \$3.00	Monthly Permit: \$140.00 / Hourly Rate: \$3.50	
Scenario 5	Monthly Permit: \$60.00 / Hourly Rate \$2.50	Monthly Permit: \$80.00 / Hourly Rate: \$3.00	Monthly Permit: \$100.00 / Hourly Rate: \$3.00	Monthly Permit: \$120.00 / Hourly Rate: \$3.00	Monthly Permit: \$140.00 / Hourly Rate: \$3.50	Monthly Permit: \$160.00 / Hourly Rate: \$4.00

In an effort to gradually increase parking prices, each of IBI Group’s five Scenarios propose yearly, incremental price increases to better align the cost of parking with the cost of transit in Brampton.

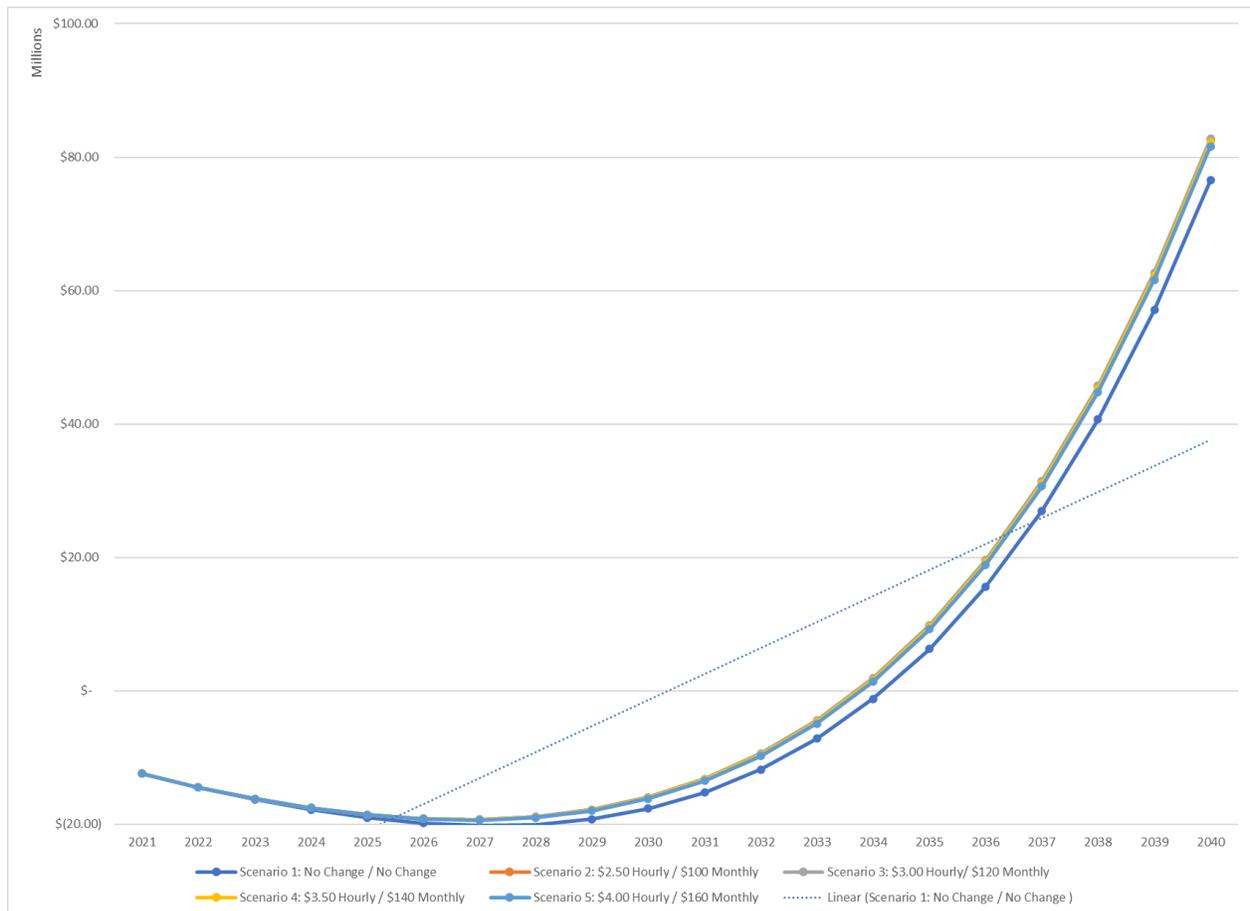
The parking price increases in each Scenario begins in 2022 with a \$0.50 increase to the hourly parking rate and a \$16.00 increase to the cost of a monthly parking permit. The following year the hourly rate increases proportionally by \$0.50 and the monthly rate increases by \$20.00. As a result, Scenario 2 would reach its final rate in 2024, Scenario 3 in 2025, Scenario 4 in 2026, and Scenario 5 in 2027. This incremental approach to pricing increases is intended to reduce the

financial strain on customers while aligning the cost of parking more closely with the cost of transit services in Brampton.

The findings of the financial model are presented in Exhibit 7.3, where the projected balance of all five alternative pricing scenarios is illustrated on an annual basis. All of the Scenarios are projected to achieve positive operational balances by 2035. However, Scenarios, 2, 3, 4, and 5 are projected to achieve positive balances by 2034, one year ahead of the “No change” Scenario 1.

It is to be noted that the Downtown daily maximum rate, which presently stands at \$9.00, should also be increased proportionally to the hourly price increase rate.

Exhibit 7.3 Annual Projected Surplus Balances based on Alternative Parking Price Scenarios



7.3 Alternative Parking Price Scenarios Key Findings

The alternative pricing Scenarios demonstrate that if the City takes no action, the parking program’s operational balance is anticipated to reach a deficit \$20,214,397 by the year 2027. If this route is pursued, the City would have to fund the program’s deficits from its other revenue sources such as property taxes. Barring an unexpected increase in operational and capital expenditures, with no intervention, driven by population growth, Brampton’s municipal parking operations are projected to return to a positive balance by the year 2035.

Our financial analysis, based on the data provided by the City, determined that Brampton’s parking operations are currently operating in a net deficit. This net deficit is expected to increase until the year 2028, at which point, population growth in Brampton (based on a net growth factor of 1.08) would result in more people living and parking downtown and gradually reduce the parking deficit to 2035. At which point, based on our analysis, the

City’s parking program could reach a moderate net surplus. However, this return to a positive balance is entirely dependent on two factors; 1) downtown Brampton achieving an annual population growth factor of 1.08, and 2) the proportion of people parking and driving in Brampton continuing at current levels to 2035.

IBI Group recommends that the City of Brampton adopt the pricing increases of Scenario 2 (\$2.50 hourly parking and \$100.00 monthly permit) or Scenario 3 (\$3.00 hourly parking and \$120.00 monthly permit), as a future strategy to manage parking demand, achieve financial stability for the parking system, and support the development of future parking infrastructure.

The parking price increases included in Scenarios 2 and 3 are the preferred scenarios, because they would closer align the cost of parking downtown with the cost of using transit in Brampton, which as of 2019 is \$3.10 per trip and \$128.00 for an adult monthly pass. Pricing Scenarios 2 and 3 also achieve similar surplus revenue balances by the plan horizon in 2040.

7.4 Cash-in-Lieu of Parking Program Evaluation

IBI Group compared Brampton’s Cash-in-Lieu (CIL) revenue generated to date against the costs of constructing a new parking facility to determine if the City could reasonably collect sufficient funds within the 2040 planning horizon to fund the construction of new parking infrastructure. Based on the funding currently available to the parking program, which as of 2020 totalled \$43,225, the City reserves will not reach an amount sufficient to fund any parking infrastructure by the 2040 planning horizon as illustrated in Exhibit 7.4.

Exhibit 7.4: Projection of Brampton’s C-I-L Revenue to 2040 based on 2021 values

Year	Estimated Balance	# Surface Spaces*	# Freestanding Garage Spaces*	# Underground Spaces*
2021	\$ 43,244.67	10	2	1
2022	\$ 44,093.09	10	2	1
2023	\$ 44,958.15	11	2	1
2024	\$ 45,840.18	11	2	1
2025	\$ 46,739.52	11	2	1
2026	\$ 47,656.50	11	2	1
2027	\$ 48,591.47	11	2	1
2028	\$ 49,544.79	12	2	1
2029	\$ 50,516.81	12	2	1
2030	\$ 51,507.90	12	2	1
2031	\$ 52,518.43	12	2	1
2032	\$ 53,548.79	13	2	1
2033	\$ 54,599.36	13	2	1
2034	\$ 55,670.54	13	2	1
2035	\$ 56,762.74	13	2	1
2036	\$ 57,876.37	14	2	1
2037	\$ 59,011.85	14	3	1
2038	\$ 60,169.60	14	3	1
2039	\$ 61,350.06	15	3	1
2040	\$ 62,553.69	15	3	2

**Highest 2022 cost of construction is assumed. Does not include the cost of land.*

Based on the practices of comparator municipalities, such as Hamilton Ontario, IBI Group has devised an example CIL of parking program for Downtown Brampton shown below in Exhibit 7.5.

IBI's example CIL of parking calculation is intended for illustrative purposes only and uses the anticipated household growth in Downtown Brampton between 2021 and 2040 to derive an average charge per unit as part of a future CIL of parking program.

Of a projected 14,760 additional households in Downtown Brampton between 2021 and 2040, between 5 and 10 per cent could potentially opt for CIL of parking. However, it should be noted that a rate of 10 or even 5 per cent participation in a CIL of parking program is unlikely in the Brampton context of inexpensive and relatively accessible downtown parking.

IBI Group's example cash-in-lieu calculation produces a per unit charge of \$4,900 (\$ 2022) towards the construction of a surface lot, a \$24,900 per unit charge towards a free-standing garage, and a \$43,550 per unit charge towards the cost of underground parking infrastructure. This CIL of parking framework is projected to result in a revenue of between \$3.6 and \$64.45 million dollars towards a CIL of parking program.

The charge per unit amount is derived from the number of units contributing to the CIL of parking program, multiplied by the average cost of construction per space which is sourced from the Altus Construction Cost Guide (2022). Typically, for CIL of parking programs, the standard charge applied on a per unit basis, is half of the average cost of one parking space based on the type of parking structure. In this example, the charge per unit is based on the highest cost of construction. The full breakdown of how the CIL costs were derived for the CIL example is included below in Exhibit 7.5.

Exhibit 7.5: Breakdown of Example CIL Program Cost

Surface parking lot	Low	High
Price Per Square Foot	\$ 11.00	\$ 27.00
Construction Cost per parking space	\$ 3,575.00	\$ 8,775.00
Land Cost (10,000 sf) based on \$100/sf downtown average	\$	1,500,000
Parking Spaces to be Constructed	1,500	1,500
Cost of Surface Lot Construction	\$ 5,362,500.00	\$ 13,162,500.00
Potential Charge Based on Different Participaton Levels		
Estimated Brampton Centre Parking Demand Increase 2021 - 2040		14,756
P-I-L Contribing Units (5%)		738
Total Cost per Unit	\$ 4,575.00	\$ 9,775.00
Estimated Brampton Centre Parking Demand Increase 2021 - 2040		14,756
P-I-L Contribing Units (10%)		1,476
Total Cost per Unit	\$ 4,575.00	\$ 9,775.00
Recommmed Charge per Unit		\$ 4,887.50
Freestanding Parking Garage (above grade) (\$2022)		
	Low	High
Price Per Square Foot	\$ 110.00	\$ 150.00
Construction Cost per parking space	\$ 35,750.00	\$ 48,750.00
Land Cost (10,000 sf) based on \$150/sf	\$	1,500,000.00
Parking Spaces to be Constructed	1500	1500
Cost of above grade	\$53,625,000.00	\$ 73,125,000.00
Potential Charge Based on Different Participaton Levels		
Estimated Brampton Centre Parking Demand Increase 2021 - 2040		14,756
P-I-L Contribing Units (5%)		738
Total Cost per Unit	\$ 36,750.00	\$ 49,750.00
Estimated Brampton Centre Parking Demand Increase 2021 - 2040		14,756
P-I-L Contribing Units (10%)		1,476
Total Cost per Unit	\$ 36,750.00	\$ 49,750.00
Recommmed Charge per Unit		\$ 24,875.00
Underground Parking Garages (below grade) (\$2022)		
	Low	High
Price Per Square Foot	\$ 195.00	\$ 265.00
Construction Cost per parking space	\$ 63,375.00	\$ 86,125.00
Land Cost (10,000 sf) based on \$150/sf	\$	1,500,000.00
Parking Spaces to be Constructed	1500	1500
Cost of Surface below grade	\$95,062,500.00	\$ 129,187,500.00
Potential Charge Based on Different Participaton Levels		
Estimated Brampton Centre Parking Demand Increase 2021 - 2040		14,756
P-I-L Contribing Units (5%)		738
Total Cost per Unit	\$ 64,375.00	\$ 87,125.00
Estimated Brampton Centre Parking Demand Increase 2021 - 2040		14,756
P-I-L Contribing Units (10%)		1,476
Total Cost per Unit	\$ 64,375.00	\$ 87,125.00
Recommmed Charge per Unit		\$ 43,562.50

Given the high cost of CIL of parking programs and the cost of land in Downtown Brampton, a CIL program is unlikely to garner much attraction from developers. For example, the City of Hamilton has collected payments toward their program just twice since their CIL of parking policy was

adopted in 2015. In 2021 Council voted to suspend the policy entirely citing a lack of developer interest as the reason for suspending the policy.

Exhibit 7.6: Example of Cash or Payment-in-Lieu Program Required Charge Per Unit

Parking Structure Type	Estimated Growth Households in Brampton Centre* (2021-2040)	% Opting for Payment-in-Lieu	Units Contributing to Payment-in-Lieu	Average Cost Per Parking Space (land costs and construction)*	Estimated Charge Per Unit**	Total Collected***
Surface Lot	14,760	5%	740			\$ 3,630,000
	14,760	10%	1,480	\$ 7,200	\$ 4,900	\$ 7,250,000
Freestanding Garage	14,760	5%	740	\$ 43,300	\$ 24,900	\$ 32,040,000
	14,760	10%	1,480			\$ 36,850,000
Underground Parking	14,760	5%	740	75,800	\$ 43,550	\$ 32,230,000
	14,760	10%	1,480			\$ 64,450,000

*Rounded. Reflects an average of the low and high construction cost range.

**Based on an average of construction and land costs of a 10,000 sf site at \$150/sqft (approximately \$1.5 million).

Assumes the highest cost of construction. 50% of total construction and land costs.

***Includes both the construction and land costs of an offsite parking lot.

7.5 Financial Conclusions and Recommendations

IBI Group developed a financial model that projects Brampton’s financial operations to the year 2040. A parking price plan was then identified through five alternative pricing Scenarios, which is intended to help Brampton’s parking operations achieve long term financial stability to the 2040 planning horizon and beyond.

As of 2022, Brampton’s municipal parking operations are expected to remain in an operational deficit until the year 2027. Based on historical data provided by the City of Brampton and projected by IBI Group, municipal parking operations are expected to generate positive revenue surpluses beginning in the year 2027, without any intervention. IBI Group’s pricing Scenarios 2 through 5 are projected to eliminate the cumulative operational deficit incurred by the parking program by the year 2035, if the pricing changes are implemented in 2022.

By the plan horizon year, 2040, all Scenarios, including the “No Change” Scenario are expected to achieve positive operational balances. This return to a positive operational balance is driven exclusively by anticipated population growth and the resultant increase in users of municipal parking operations. IBI Group’s alternative pricing scenarios 2 and 3 are projected to achieve the highest revenue surpluses at the 2040 horizon year.

IBI Group recommends that the City of Brampton implement the recommended hourly and monthly parking price increases as soon as possible in order to achieve financial stability of parking operations. IBI Group recommends that the City of Brampton implement the pricing in either Scenario 2 or 3 or \$2.50 hourly/\$100.00 monthly and \$3.00 hourly/\$120.00 monthly, respectively.

8 Parking Management Plan

8.1 Downtown Parking Management

Parking is an important component of public policy in any city, but is especially important for downtown districts where different competing social, employment, commercial and touristic objectives need to be considered and maintained. Several parking management schemes and plans tailored for Downtown Brampton were recommended as outlined below. It is to be noted that some of these schemes may also be considered in the future for other Intensification Areas.

Future Parking Supply. As informed from Phase 1 of the Brampton Parking Plan, the Downtown Brampton parking system is anticipated to be 63% occupied by 2040, with the on-street and off-street systems occupied by 45% and 65%, respectively. However, monitoring and reassessing the parking demand and supply in the downtown area frequently and consistently is needed (e.g., every 2-3 years) to account for any unexpected changes in the future parking demand and supply profiles (e.g., closure of some garages, streetscaping, future developments).

Parking Partnership. Since downtown parking utilization is anticipated to be underutilized, Brampton is recommended to explore opportunities to lease a part of these facilities to other public and private developers. This can help to better utilize the existing parking facilities and generate revenue that can be used for other parking initiatives or to build new facilities in the future. Establishing parking partnership agreements should always consider the up-to-date parking utilization in the area and the recent or forthcoming changes in the parking demand or supply.

A Downtown Parking Implementation Strategy study was undertaken, supplementary to the Brampton Parking Plan, and intended to: 1) investigate strategies that can optimize off-street parking utilization in the Downtown area through shared-use/reservation parking agreements, 2) address existing and potential requests made by employment-related developers for shared off-site parking, and 3) identify potential parking supply opportunities in the Downtown area focusing on structured or below ground parking. This supplementary study, which also includes more recent parking surveys (carried out in October 2022), discusses several shared-parking implementation scenarios in the short-to-medium and long-terms, and also further discusses the future needs to expand the parking system and the financial challenges and implications. **Transient Parking Purposes.** Several on-street facilities are expected to operate above the 85-90% utilization threshold. In addition, on-street parking supply may be further impacted by future streetscaping, sidewalk widening, and bike lane projects. To support transient parking in the downtown area, parking garages should continue to serve short-stay parking and parking spaces should be reserved for this purpose.

Parking Price Rate. The best practice review revealed that parking price rates in Downtown Brampton are significantly lower as compared to the comparator municipalities. Increasing the parking price rates in Downtown Brampton is recommended for several reasons, such as the municipal parking system is currently operating at a deficit, the added revenue can be used to support other parking initiatives, and increasing parking price would encourage the use of alternative modes. Significant changes in parking price rates and policies are needed in Brampton Downtown, including:

- Removing the one-hour free complimentary parking offered at the municipal parking garages.
- Increasing the hourly price rate for on-street parking.
- Increasing the price of the monthly and annual parking permits in the downtown area.

- Parking price rate increase should be implemented gradually, but a higher (sharper) increase rate may be given to the parking permits as compared to the on-street transient parking.

Financing the Parking System. Existing data and the Financial Analysis revealed that the cash-in lieu (CIL) of parking is not generating sufficient funds to support the construction of a new municipal parking facility. The recently granted parking exemptions in the downtown area (e.g., By-laws 259-2020 and 45-2021) also mean that the CIL of Parking is no longer feasible or applicable in Downtown Brampton. Other sources of fund should be established, including the Community Benefits Charges, increased parking price rates, parking partnerships, and leasing the underutilized parking facilities.

Downtown-Tailored TDM Measures. Downtown areas have a special composition of parking users, i.e., they are mainly composed of employees (long-term stay), and visitors (short-term stay). Special TDM measures that are tailored for Downtown Brampton may include the following:

- Consider parking price rate, for both transient parking and long-term permits, as a way to manage parking demand.
- Set the monthly parking permit price rate such that it exceeds the cost of the monthly transit pass.
- Encourage employers to provide their employees with transit pass cost sharing as a measure to reduce their parking demand. This may also be in the form of a general subsidy for any transit-related expenses, i.e., including out-of-City transit trips. Such a subsidy may replace the employee parking subsidy that is presently used.
- Support parking for alternative modes of transport (e.g., parking for bicycle, e-bike, bikeshare, carshare, and micromobility).
- Require new developments to achieve a minimum score based on a TDM checklist. The development's permit may not be granted if a minimum score is not achieved and some incentives may be given to developers achieving high TDM scores (see Section 7.1.6 for more details).
- Consider revisiting the City's employee free parking program and using different policies such as: providing some on-site vehicles that can be available and ready for staff use for work purposes or reimbursing the employees for their parking fees if they demonstrated that the auto-trip was made for specific work purposes.

It is worth noting that the above TDM measures may also be applied in other Intensification Areas especially when they achieve their targeted densities. In such areas, the plan is to minimize parking supply, facilitate shared-parking, enhance transit services, and reach high density targets. These are appropriate conditions for the TDM measures to create significant changes in modal share.

8.2 Parking Enforcement

In Brampton, parking enforcement is administered by the Enforcement and By-law Services Division of the City. The City relies on full-time and part-time enforcement officers in addition to court clerks who assist in resolving the post-ticketing disputes. The City has recently started using the Automatic License Plate Reader (ALPR) technology, which allows an ALPR camera to be mounted on enforcement vehicles and automatically capture license plates. Only one ALPR vehicle is being used as a pilot program and the City is planning to assess the feasibility of adding additional equipped vehicles in the future. As for parking payment technologies in the downtown, most parking meters were switched to pay and display machines (solar powered, accept coins and credit card) and only few streets still use traditional coin-based parking meters.

Existing parking enforcement challenges include the following:

- Concerns with respect to the amount of illegal on-street parking and support for a more proactive parking enforcement were repeatedly heard at the public engagement sessions and activities.
- There is a growing demand for an enhanced parking enforcement in Brampton due to the increasing use of multi-tenant houses and the resulting parking demand surge.
- A large number of parking violations are recorded every year citywide. According to the City of Brampton, the City responded in 2021 to 41,406 parking service requests out of which 26,071 were for timed offences (i.e., vehicles parked longer than 3 hours or parked during the prohibited time of 2 am to 6 am).
- Significant human resources are being consumed to respond to parking violations and also for dispute resolution and post-ticketing litigation.
- Although the City has started using LPR technology, the adoption of this technology is still limited, and the City can further leverage this technology and use it more widely.

In order to improve the practice and efficiency of parking enforcement in Brampton, handle the increasing number of parking offences, and move gradually into a more proactive enforcement approach, the City is recommended to consider several strategies and technologies as outlined below.

Establish priorities among service requests and complaints. Establishing priorities, such as to respond first to offences related to safety and traffic blockage, is needed when the number of service request is very large. Prioritizing the requests can be done simply by training the staff responding to the requests and designating limited number of staff for the unurgent or low-priority requests.

Improve the complaints registration system. The complaints registration system is recommended to explicitly encourage the constituents to provide the license plate number of the suspect vehicles. This way, the enforcement team can assess the situation remotely and decide if the vehicle already has a “parking considerations” permit or a site visit is needed to report the violation.

Build a system to track and map parking complaints and violations. This system intends to record all parking complaints and violations in a systematic way with the possibility to create heat maps that illustrate parking complaints and violations by type, area, day, and time-of-day. A proactive enforcement patrolling would thereby focus on areas having high violation frequency and safety-related parking offences, and such patrolling would be scheduled ideally during the peak days and times as informed by the tracking system.

Add more enforcement staff as needed. In order to address the increasing number of parking violations, the City is recommended to add more resources in terms of full-time and part-time officers and as needed. This may also include court clerks.

Increase the parking penalty rates. In order to reduce the number of parking violations, the City should consider increasing the parking penalty rates and adopt graduated parking penalties which provide an opportunity to target repeat offenders. In addition, higher parking penalties may be considered in some strategic areas encountering high frequency of offenses or during special events where parking offences create traffic blockage and safety concerns (e.g., around the Canada Day celebration at Chinguicousy Park).

Expand the adoption of LPR technologies. This can involve two types of devices: hand-held LPR devices and ALPR vehicles. The use of ALPR vehicles is more efficient as compared to hand-held devices but their cost may require using a combination of the two types of devices.

Establish a pay-by-plate system. By implementing a pay-by-plate system, parking enforcement can leverage LPR technology to improve enforcement efficiency not only for the “parking considerations” but also for the paid parking.

Use digital license-plate-based parking permits. To increase enforcement efficiency and facilitate mobile LPR enforcement, Brampton is recommended to adopt electronic (digital) permits to facilitate mobile LPR enforcement.

Consider collaborating with a third-party parking app provider. Third party providers of parking apps may not only provide the pay-by-phone services (for hourly or digital monthly permits), but many can also offer a set of LPR services by partnering with enforcement agencies. The services typically include providing LPR technology (hand-held devices and cameras), integrating the LPR system with the mobile app and permitting system, and providing training to municipal enforcement officers.

Establish specific enforcement measures for truck parking. Enforcement of unauthorized truck parking is needed to regulate truck parking city-wide and especially in strategic areas. Officers enforcing truck parking may focus on intensification areas and residential zones.

Consider adding enforcement resources if a paid residential parking permit program is implemented. Efficient enforcement is key for the success of the suggested paid residential on-street parking permit program.

8.3 Paid On-Street Parking Permit Program

Residential parking constraints were commonly heard and reported in the public and stakeholder consultation activities and the online public parking survey. Brampton Parking Plan suggests developing a residential paid on-street parking permit program to unlock on-street parking for long-term parking purposes and alleviate the widening of driveways beyond the maximum size permitted by the Zoning By-law. The implementation of the program requires following some specific phases and also paying attention to several important considerations as described below.

Program Implementation Phases: the program may be carried out throughout several phases as outlined below:

Phase One – Program Feasibility Assessment: Evaluates actual parking operations, resources needed, program cost, and public support, conducts best practices review, and identifies potential areas for a pilot program.

Phase Two – Implement a Pilot Small-Scale Program: Examines how the program works in practice and identifies areas for improvement.

Phase Three – Program Expansion or Adjustment: Adjusts program regulations, policies, and boundaries based on findings from previous phases.

Program Considerations and Policies: the City should consider the following when developing the program:

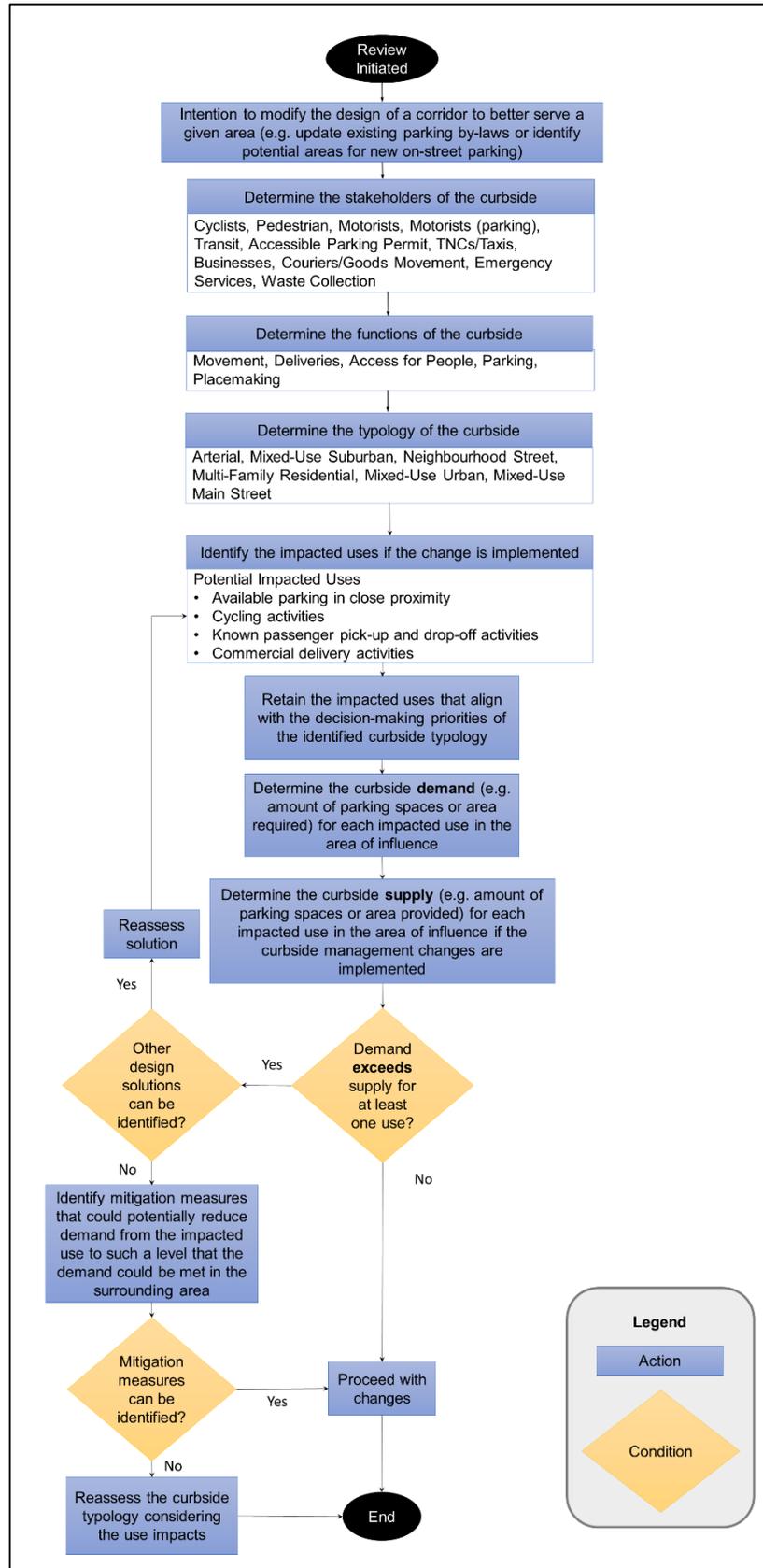
- **Safety and Operation Impacts:** Concerns with potential adverse safety and operation impacts resulting from the program, such as conflicts with cyclists and pedestrians, impact on sidewalk width, adding friction to the street traffic, sight distance reduction at driveways and intersections, and any implications to waste collection. A case-by-case review of each application is recommended to evaluate these considerations. The program will require the evaluation of any changes that need to be made to the ZBLs and City’s Traffic By-law.
- **Awareness Campaign:** Clarifications should be given to the public regarding who can benefit from the program and how the adverse impacts will be considered and mitigated.

- **Program Support:** The implementation of such programs requires the support of the majority of homeowners affected by the residential permit program application, which can be evaluated through a survey of affected residents. In order to carry out a rigorous survey, a minimum response rate (i.e., percent of questionnaires returned) should be established along with the percentage of respondents who need to be in favour of the program.
- **Number of Permits Issued:** The number of permits issued per area is recommended to be determined based on the actual parking demand and supply of each subject area and should be continuously monitored for any updates required.
- **Impact on Existing Parking Considerations:** The utilization of the residential permit program may become high and create an impact on the existing parking considerations. The supply of the residential parking permits should be always managed so that at least a reasonable parking provision is reserved for visitors, short-term parking purposes, and deliveries. To manage the interaction between the long-term paid permits and the existing parking considerations, then the following situations can be considered:
 - *First:* if the friction between parking considerations and long-term parking permits remains light or moderate, then maintaining the 14-day parking consideration permit is deemed appropriate with the possibility to require anyone who wants additional days to pay an additional amount per day.
 - *Second:* if the demand of parking considerations is high and hindering the permit program, then stopping completely the complementary parking considerations and setting parking prices for short periods (e.g., 24-hour, 48-hour, or 7 days) may be considered to manage the demand in some areas.
- **Permit Cost:** Permit costs are recommended to be set at a point where the collected revenue offsets the cost of operating and maintaining the program. The cost should also be affordable, but at a rate that promotes reduced vehicle ownership and alternative modes of transportation (e.g., consider monthly transit pass costs). In addition, residents who already have access to on-site parking may be charged a higher permit cost.
- **Technology Requirements:** Brampton is recommended to adopt digital (electronic) permits to facilitate mobile LPR enforcement. Using the digital permit system and the license plates as proof of payment for parking permit also inhibit the illegal resale or transfer of permits as they are tied to specific license plates.
- **Winter Maintenance:** Based on a review of comparator municipality practices, winter snow clearing either requires vehicles to park on one side of the street, restricts on-street parking during heavy snow events, or is not addressed. Snow clearing or removal is a major process that requires significant resources (mechanical and human). The cost of this process is significant and should be considered in advance when planning the on-street parking program. The impact of on-street parking on winter maintenance is better to be explained during the public survey stage and public awareness campaign.

8.4 Curbside Decision Making Framework

The curbside is a scarce resource that serves ever increasing demands from various user groups, such as drivers, couriers and goods delivery vehicles, cyclists, taxis, waste collection, and transit operators. In order to address competing uses at the curbside and ensure efficient use of public space, a decision-making framework was developed. This framework will aid decision makers in determining where, when and whether it is appropriate to modify the design of a corridor to better serve a given area. The developed framework could be applied to update existing parking by-laws and identify potential areas for new on-street parking or other curbside uses, such as loading or transit access. The framework is shown as a flowchart in Exhibit 8.1.

Exhibit 8.1: Decision Making Framework Flowchart



This framework first establishes different curbside concepts including curbside stakeholder (Exhibit 8.2), curbside function (Exhibit 8.3), and curbside typology (Exhibit 8.4) to better identify the priorities among various curbside uses. This material is drawn from Best Practices (such as the Institute of Transportation Engineers Curbside Practitioner’s Guide), and other North American cities or regions (such as Toronto, Seattle, Washington DC, and the Southern California Association of Governments). The curbside typologies also align well with directions of the City of Brampton Complete Streets Guide: each curbside typology corresponds to a subset of the Brampton Complete Street Typologies. The detailed descriptions of the curbside concepts including recognition to the Brampton Complete Streets Guide are shown in Task 8 Report. Common curbside uses in Brampton include:

- Available parking supply in close proximity.
- Cycling activities.
- Known passenger pick-up and drop-off activities.
- Commercial delivery activities.

Once the curbside priorities are identified, the framework relies on the demand-supply comparisons to further determine where, when and whether it is appropriate to modify the design of a corridor.

By determining the curbside priority through this typology concept, the City is recommended to better define the corridor’s context, primary functions, and understand design considerations, while promoting consistency across the region. It is recommended that the City identifies the curbside typology according to the surrounding land uses, street functions, as well as road classifications and policy documents to reflect both current street designs and future design inspiration.

It is to be noted that the “access for people” function does not only consider pedestrians, cyclists, and taxis, but it also aims at providing unimpeded access to transit stops. As can be seen in Exhibit 8.4, the “access for people” function is well prioritized especially in the mixed-use urban and main streets and this should be in line with the transit system improvement plans in the City.

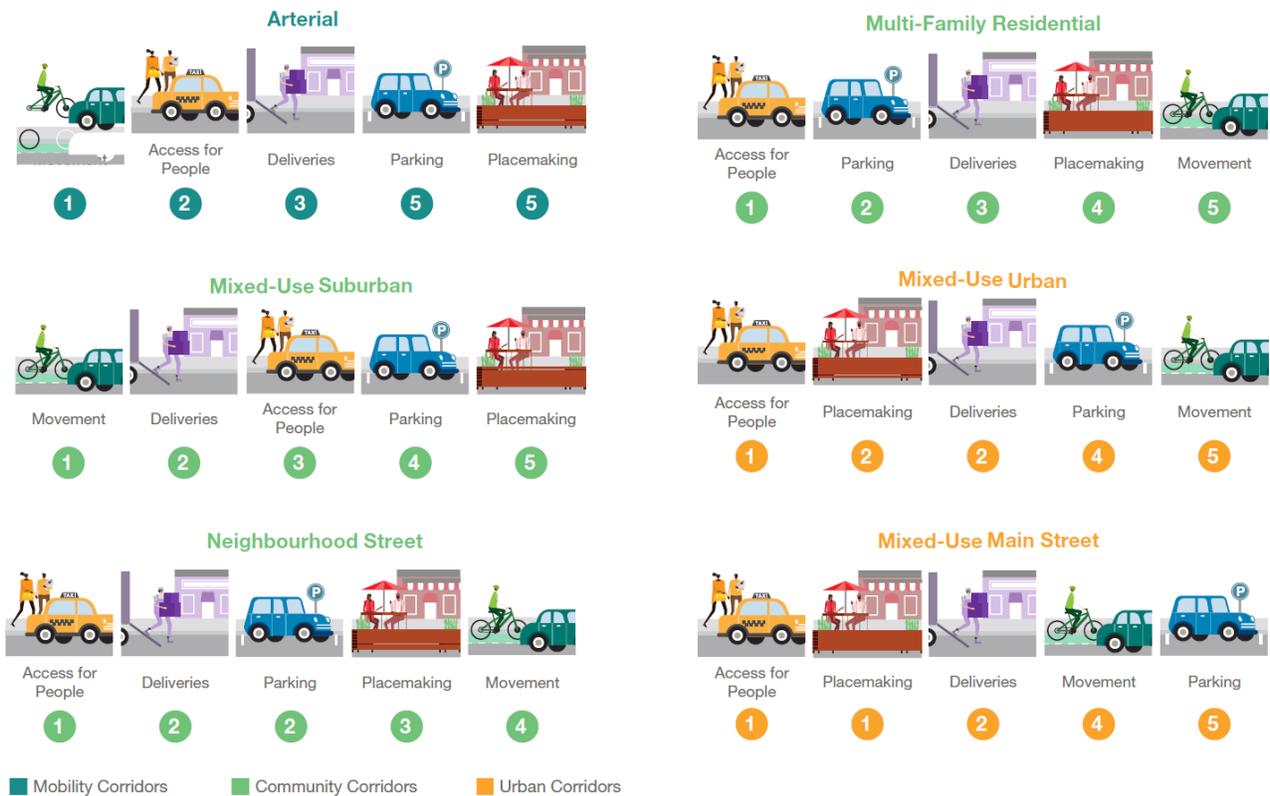
Exhibit 8.2: Curbside Stakeholder Profiles



Exhibit 8.3: Curbside Functions



Exhibit 8.4: Curbside Typologies with Function Priorities



8.5 Parking Partnerships

Brampton has begun moving towards reducing or rescinding parking requirements for new developments located inside intensification areas, e.g., By-laws 45-2021 and 259-2020 for Downtown Brampton. Brampton Parking Plan also recommended expanding this policy to other existing or planned intensification areas. Parking partnership becomes very important in these strategic areas to provide more off-site and shared parking supply opportunities, optimize the use of available parking facilities, and achieve the targeted densities. In addition, the concept of shared parking has been highlighted and promoted in Brampton’s planning documents, secondary plans, and the draft zoning by-law update and was also heard in the public and stakeholder engagement activities. Parking partnerships may take several forms and arrangements. Exhibit 8.5 below discusses different types of parking partnerships and their applicability in Downtown Brampton.

Exhibit 8.5: Types of Parking Partnership Agreements

Parking Partnership Schemes	The Purpose and Benefit	Arrangements	Opportunities in Downtown Brampton
Including Public Parking in New Developments	Consider the new developments as opportunities to provide new public parking spaces.	<ul style="list-style-type: none"> • The City may carry out the maintenance and operations of the public parking spaces, and the profit is then shared with the development owner. • The City may alternatively grant density bonus to the existing ZBL if the developer agrees to add on-site public parking. 	In new development applications and potential sites for future developments.
Partnering with Existing Parking Facility Owners	To optimize the use (utilization) of existing privately owned parking facilities and generate potential revenue to support the parking system.	<ul style="list-style-type: none"> • The City takes over all parking management services, recovers its cost, and then the profit is shared 50/50 with the private parking owner. • The agreements are generally for short periods (e.g., 3 years) and can be renewed and updated frequently. 	The existing private parking facilities are underutilized in Downtown Brampton and forecasted to remain underutilized by 2040 (except the Brampton GO Station lot).
Leasing the Underutilized Municipal Parking Facilities	To optimize the use (utilization) of municipal parking facilities and generate potential revenue to support the parking system.	<ul style="list-style-type: none"> • The agreement may be for long-term but determinate periods (e.g., 10-20 years). • The lease rate should be flexible and adjusted annually to match the prevailing parking prices. • The overall utilization of the facility is recommended not to exceed 85-90%. 	The municipal parking facilities in Downtown Brampton are presently underutilized and forecasted to remain underutilized by 2040.
Partnering with Public Sector Stakeholders	To open partnership opportunities with the public sector.	<ul style="list-style-type: none"> • The City can be a lessor and offer sharing its parking facility with other public organizations. • The City can offer parking management services (needs a specialized parking department or authority). • The City can be a lessee and operate parking facilities of other public organizations. 	May require communicating with other public organizations who have presently or will have activities in the downtown area.

Public Private Partnership	To build new parking facilities while reducing the risk on the public sector side and benefitting from the private sector experience.	<ul style="list-style-type: none"> • Different forms of agreement. Typically, the private entity completes construction and owns/operates the development for a predefined period, then the private parking facility's ownership transfers to the City. • Can be considered for all types of vehicles (i.e., conventional cars, trucks, micromobility devices). 	May require undertaking a request for proposal (RFP) to gauge the interest of the private sector.
----------------------------	---	---	---

The following are the main remarks pertaining to parking partnership in Brampton:

- Parking partnerships are important in strategic areas where parking requirements are reduced or rescinded. Several types of parking partnerships and agreements exist in practice. While such agreements are more applicable to Downtown Brampton, they may also be considered for future intensification areas.
- A combination of different types of agreements may be implemented in the same area. For example, in Downtown Brampton, if the City's municipal parking facilities are underutilized and the City decided to lease some of the available parking spaces, the City can still in parallel seek to expand the parking supply through other types of agreements (e.g., partnering with existing private parking facility owners, adding public parking spaces to new developments through business agreements or density bonuses, using the Community Benefit Charges generated revenue to expand the parking system, etc.).
- The City should explore the ideal combination of partnerships that increases the revenue to the level that promotes the financial sustainability of the parking system while also serving the parking demand.
- The City should keep monitoring the frequent changes in parking demand and supply profiles and efficiently managing the parking system to accommodate future developments and the long-term growth in population and employment.
- The on-going initiatives to generate funding support for public parking, such as the Community Benefit Charges in the Downtown and other Major Transit Station Areas, can further promote the use of shared-parking schemes.

8.6 Transportation Demand Management

Transportation demand management (TDM) initiatives are used by municipalities and institutions to influence travel behaviour by improving and promoting modes of transportation alternative to single occupancy vehicles. This improves transportation system efficiency and helps manage parking demand by decreasing the volume of single occupancy vehicles on roads and in parking lots. These initiatives take many forms, including policies, programs, services, and products to influence why, when, where, and how people travel. The following are various TDM strategies that may impact parking operations.

Bicycle Parking and Infrastructure. Improvements are being planned to further promote the use of cycling in Brampton. From the infrastructure side, the City of Brampton's Active Transportation Master Plan (ATMP) (2019) and Transportation Master Plan (TMP) Update (2015) outline extensive recommended expansion plans of the existing cycling networks. The City of Brampton is recommended to continue improving the cycling network as per the ATMP. This is expected to change the transport mode split in favour of the active and sustainable transportation modes. Bicycle-supportive guidelines should also specify requirements for short-term (outdoor) and long-term (secured indoor) bicycle parking, wash basins, and showers.

Micromobility Programs. Micromobility is a range of small, lightweight devices operating at speeds typically below 25 km/h and is ideal for trips up to 10km. This commonly includes e-

scooters, bikeshare, and e-bikeshare. These services have experienced rapid growth and adoption in many North American cities over the last decade. A Shared Electric Kick Scooter (Micromobility) Pilot Program was approved by City Council in February 2022 to permit and regulate the use of personal electric kick scooters in the City of Brampton. Through the pilot program, the City will assess the uptake and impact of an electric kick scooter-share system in the City. It must be emphasized that some concerns and challenges were raised regarding the e-scooter programs which deserve attention. These mainly include safety and accessibility concerns (e.g., illegal sidewalk riding, conflicts with persons with disabilities, added obstructions to the sidewalk by the “lock-to” e-scooters), the difficulty to provide sufficient and efficient enforcement, and insurance and liability issues (coverage and type should include full indemnification and first and third party insurance that covers riders and pedestrians).

With the expected expansion of the cycling network in Brampton, the City may consider assessing the feasibility of establishing a bikeshare program. Such assessment however should consider the cost and also the potential overlap with other programs such as the e-scooter pilot program. With improved micromobility infrastructure, personal vehicle mode share can be expected to decrease resulting in decreases in parking demand as well. Public transit agencies can integrate scooter sharing, bikesharing, and carsharing into train stations and other mobility hubs.

Transit Network Improvements. Several ongoing and future transit projects will enhance the quality-of-service of the transit lines in Brampton and mainly in the Intensification Areas. Improving the transit network is a key step towards achieving the City’s sustainability modal split target, i.e., 50% of trips to be made using transit or other sustainable modes of transportation by 2041. Besides infrastructure expansion activities and adding more transit lines, transit-oriented TDM measures that can further promote transit and manage parking demand may include the following:

- Enhance the quality of service by increasing the service frequency and reduce the congestion onboard the vehicles.
- Use more tools to share information about the transit service, including nearby lines and stops, operation schedules, and any service change updates. For example, this information may be posted in visible place inside large developments.
- Use transit priority measures, e.g., transit signal priority, exclusive lane, etc.
- Use transit fare incentives, e.g., discounted transit fares programs, converting parking subsidies into transit fare subsidies for employees, etc.
- Require large developments to promote transit-oriented TDM measures, e.g., by posting transit information and purchasing a bulk of transit passes.

Carshare Programs. Carsharing is a system which enables members to borrow vehicles for short periods of time (i.e., hours rather than days). They fill a gap within the transportation network by helping individuals meet their daily needs when other transportation options are not practical options for their trip. There has been a trend in the increased use of carsharing as the number of carshare vehicles has steadily increased in Canada over the past decade. In recognizing the limited availability of carshare services in Brampton today, it is likely that as Brampton works towards improving alternative transportation options and citizens become more multi-modal, the demand for carshare services will emerge. It is also recognized that parking standards can play an important role in attracting carshare suppliers to an area by allowing parking reductions to developers. Based on Brampton’s draft ZBL, two parking spaces can be reduced for each dedicated car sharing space up to a maximum reduction of 10%.

Shared Parking. Shared parking involves the use of one parking facility by more than one land use, taking advantage of different parking demand patterns by time of day to reduce the total parking that would be required if facilities were not shared. Shared parking ensures that parking spaces are not designated for any particular user but operate as a pooled parking resource. The

biggest benefits are realized with mixed-use developments, where uses have different peak demand times. Brampton's draft ZBL includes a provision for shared parking with detailed calculations and these are applicable to any zone in the City.

Unbundled Parking. Unbundling parking means to sell or lease parking spaces separately from selling or leasing the units. This can lead to maximizing the utilization of the residential parking supply and promoting housing affordability. Brampton may start with a 5-10% parking requirement reduction for developers unbundling parking residential units. Should the strategy prove successful, a larger reduction may be considered in the future.

Dynamic Parking Pricing. Dynamic pricing intends to change parking prices according to the observed parking demand to maintain a desired utilization. Under this scheme, parking prices become performance-based or demand-responsive, i.e., if the utilization goes up, then the parking price increases, and vice versa. The main benefits of dynamic pricing are managing parking demand at high demand locations, increasing the parking turnover, optimizing capacity utilization, and reducing cruising and circling time to find parking spaces, and encouraging the use of alternative modes of transport. Brampton is recommended to consider applying the dynamic pricing strategy in intensification areas having considerable parking demand, e.g., Downtown Brampton. Different pricing rates may be considered for different streets, blocks, or garages and by different times of day. Parking price update should not necessarily be done continuously based on the real-time parking demand. A periodic pricing update, i.e., every several weeks or months, can still be useful to achieve the main program targets.

TDM in New Development. Requiring new developments to implement TDM measures is an emerging policy undertaken by many municipalities. The City of Brampton is recommended to consider requiring large scale office, institutional, and residential developments to prepare TDM plans that demonstrate how they will support reductions in single-occupant vehicle travel. A point-based TDM checklist can be established to assign a total score for each development and incentives such as reducing parking requirements or reducing the Community Benefit Charges can be granted accordingly. TDM Score programs can be especially beneficial when undertaking precinct-level plans for the Intensification Areas identified in Phase 1 report (as per Brampton Plan). The cumulative impact of development-level TDM plans can be significant and is needed in such high-density areas.

9 Parking Implementation Plan

The main objective of this task is to synthesize the findings of all previous tasks, Tasks 1 through 8, into a cohesive implementation plan. This plan should pave the way forward for the next steps and actions and organize their implementation. The best way to present the implementation plan is to use a matrix that outlines all the actions and activities as illustrated in Exhibit 9.1. The implementation plan is divided into activities (or actions) that fall under the following ten themes:

- A. Downtown Parking Management and Finance.
- B. Parking Technologies and Enforcement.
- C. Paid On-Street Parking Program.
- D. Parking Partnerships and Governance.
- E. Transportation Demand Management (TDM).
- F. Truck Parking Management Strategies.
- G. ZBL and Traffic By-Law Updates.
- H. Parking and Affordable Housing.
- I. EV Charging Stations Supply.
- J. Miscellaneous Actions and Activities.

To organize the presentation of the implementation plan, each action or activity is provided with the following information:

A unique identifier (ID): to make it easy to refer to each activity and also to explain the correlation between different activities. The identifier contains a letter and a number, the letter is used to refer to the activity theme.

A description of the activity: to provide a brief definition of the activity and its scope.

The targeted issues: to highlight the rationale behind the activity and its objectives.

The impact (priority) level: to refer to the priority and the impact associated with each activity.

The timeline: activities are categorized as either short term (1-2 years), medium term (3-5 years), long term (6-10 years), or also on-going.

High-level cost estimate: to give a general idea about the costs and resources needed. The actual cost may vary based on several factors (e.g., technology used, economies of scale, overlap between several actions, etc.). The provided cost estimate only reflects the implementation cost and does not consider the economic cost, e.g., opportunity cost, potential added or lost revenue, etc. Some of these implications are referred to within the “targeted issues.”

Performance monitoring: to define how each activity’s performance can be measured or monitored and what are the desired goals.

Synergy or integration with other activities: to highlight that some activities are synergistic or may rely on the implementation of other activities. This should illustrate how the activities are tied together in a holistic parking implementation plan.

In total, 48 activities or actions were included in the implementation plan and these outline the study recommendations. Some of these activities may belong to other programs or initiatives, e.g., expanding the transit and cycling networks, the Community Benefit Charges, etc. However, such initiatives and their relationship to parking were also included as they can be influential and integral to the implementation plan. It is recommended that the City focuses more on the activities that have “high” impact and that can be implemented in the “Short-term.”

Exhibit 9.1: Parking Implementation Plan

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
A. Downtown Parking Management and Finance								
A1	Remove the one-hour free parking at municipal garages.	<ul style="list-style-type: none"> • Manage parking demand and promote other modes of transport. • Optimize the use of available parking supply in intensification areas. • Generate revenue that can be used to reduce the parking system financial deficit and fund other parking initiatives. 	High	Short	<p>\$10,000 to \$14,000: around 140 staff-hours to coordinate and communicate the changes and update the website information. Also, adjusting the prices in the existing parking meters or machines is needed.</p> <p>\$3,000 to \$4,000: changes to signage at the garages, new signs with updated information are needed. Varies according to the number of signs that need replacement or addition.</p>	Update parking utilization and turnover data post implementation. The targets are optimized parking utilization with larger turnover, and increased use of active transportation and transit.	Activity A6	
A2	Increase the hourly parking price rates of the metered on-street parking and the cost of the monthly and annual parking permits.	<ul style="list-style-type: none"> • Manage parking demand and promote other modes of transport. • Optimize the use of available parking supply in intensification areas. • Generate revenue that can be used to reduce the parking system financial deficit and fund other parking initiatives. 	High	Short	<p>\$10,000 to \$14,000: around 140 staff-hours to coordinate and communicate the changes, update the website information, and adjust the meters and the pay-and-display machines. The cost can also be reduced if this activity is integrated with Activity A1.</p>	Update parking utilization and turnover data post implementation. The targets are optimized parking utilization with larger turnover, and increased use of active transportation and transit.	Activity A6	
A3	Continue to provide parking spaces in municipal parking garages dedicated for short-term (hourly or less than hourly) purposes.	<ul style="list-style-type: none"> • Maintain an appropriate provision of transient parking in the downtown area. • Prepare for a potential reduction (loss) in the nearby on-street parking spaces caused by streetscaping, cycling, and transit projects. 	High	Short and On-going	Negligible cost. May require on-going parking demand & supply surveys to assess the required number of short-stay parking spaces. The Cost of such surveys can be integrated into Activity A8.	Update parking utilization data of the short-stay parking spaces. The utilization ratio should remain at or below 85-90%.	Activity A8	
A4	Convert downtown on-street parking meters from pay-and-display into pay-by-plate and smart parking meters.	<ul style="list-style-type: none"> • Enhance the customer's convenience and exempt drivers from walking back to the vehicle to display the receipt. • Integrate the pay-by-plate machines into the LPR enforcement technology. • Pay-by-phone using parking app can also be used through a third-party provider to supplement the meters. • Leverage some features of the smart meters such as changing parking prices remotely, tracking historic parking utilization (occupancy) data, and sending alerts to various user groups. 	Medium	Medium	<p>> Hardware costs: \$8,000 to \$11,000 per device.</p> <p>> Annual operational costs: \$650 to \$1,000 per device.</p> <p>> Parking app cost: \$0.20 to \$0.30 per transaction or \$20 to \$30 per user per year. These fees can be paid by the user or the City.</p>	<p>- Customer satisfaction.</p> <p>- Enforcement efficiency, e.g., number of screened plates per hour.</p>	Activities B4 and B5	
A5	Upgrade the payment technology at the municipal parking garages in the downtown area, use pay-by-plate machines and LPR cameras.	<ul style="list-style-type: none"> • Provide a frictionless experience for permit holders (with the LPR cameras). • Enhance the customer's convenience for transient parking and exempt drivers from walking back to the vehicle to display the receipt (with the pay-by-plate machines). • Integrate the pay-by-plate machines into the LPR enforcement technology. • Pay-by-phone using parking app can also be used through a third-party provider to supplement the meters. • Leverage some features such as changing parking prices remotely, tracking historic parking utilization (occupancy) data, and sending alerts to various user groups. 	Medium	Medium	<p>> For the cost of pay-by-plate machines, refer to Activity A4.</p> <p>> For a parking garage, the fixed mounted LPR camera system costs around \$15,000 to \$20,000 per lane.</p> <p>> The cost of backend software varies widely based on the provider and the number of parking garages, estimated at \$60,000 to \$100,000.</p> <p>> Annual operation cost: 15-20% of the total hardware/software cost.</p>	<p>- Customer satisfaction.</p> <p>- Enforcement efficiency, e.g., number of screened plates per hour.</p>	Activities B4 and B5	Only the City Hall garage is currently using such an advanced system. The West Tower, Market Square, Nelson Square, and John Street garages need upgrade.
A6	Cancel the CIL of parking program in Brampton Downtown.	<ul style="list-style-type: none"> • Minimum parking requirements were rescinded in the downtown area. • The program is no longer feasible or applicable. 	Medium	Short	Regulation change, no direct cost. The CIL of parking has not been able to generate significant fund (when it was available), the loss of cancelling the program is therefore low.	Substitute the CIL of parking with other sources to fund the parking system.	Activities A1, A2, and A7	

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
A7	Encourage and incentivize private development of public parking facilities within key strategic areas and Major Transit Station Areas. Public/private partnership may also be considered for this purpose.	<ul style="list-style-type: none"> Rescinding parking requirements requires the provision of publicly shared parking spaces. The cancellation of the CIL of parking requires alternative sources to fund the parking system and alternative means to expand the parking system supply. 	High	Short, Medium, Long, and On-going	Regulation changes are for the short term with no direct cost. May require further assessment as part of a broader CBC study. The cost of building or adding the parking facilities depends on the size/type of the parking supply needed/added. See the supplementary Downtown Parking Implementation Strategy for more information.	Evaluate the number of parking spaces that can be added as part of new developments, based on the CBCs, and any other funding resources.	Activity A6	
A8	Continue to carry out parking demand and supply surveys frequently.	<ul style="list-style-type: none"> Update parking utilization data in Downtown Brampton. Identify any surplus or shortage in the available parking supply. Recommend adding parking supply (if overutilized) or leasing the existing facilities (if underutilized). Support all other downtown parking activities with updated information. 	High	On-going	<p>\$20,000 to \$30,000 per survey. The estimated cost is for one survey covering the downtown area. This survey involves: on-street and off-street parking facilities in the downtown area, two days (a weekday and a weekend), and 10-12 hours per day. The cost can be lowered if parking utilization data in the parking garages are automated and made available. Surveys are recommended to capture different seasons and be updated every 1-3 years.</p>	Parking utilization ratio is recommended to remain below 85-90%.	Activities A1 to A7	
A9	Consider establishing a Parking Benefits District (PBD) in the downtown area. Start with a feasibility study that can be followed by a pilot program.	<ul style="list-style-type: none"> Use parking revenues to fund local public improvements, e.g., improving alternative modes of transport (walking, cycling, public transit), greenery, public art, landscaping, street furniture, and public safety and services. Centralize parking operations by creating a shared pool of public parking. Integrate parking information, marketing, signage, and wayfinding (on the ground and on the web). 	Medium	Medium	\$80,000 to \$100,000 to prepare a feasibility study, that addresses the public support, financial feasibility, resources needed, etc.	Analyze the added revenue, public improvements made, financial sustainability, and public support/perception.	Activities A1 to A8 and C1 to C3.	
B. Parking Technologies and Enforcement								
B1	Establish priorities among service requests and improve the complaints registration system.	<ul style="list-style-type: none"> Optimize the use of resources and focus on offences related to safety and traffic blockage as compared to solely time-limit offences. Encourage constituents to provide details of the incident including the license plate number of the suspect vehicle. This enables officers to assess the situation remotely and decide if the vehicle is parking illegally or has a permit. Make the complaints registration system compatible with the mapping tools of Activity B2. 	High	Short	Limited cost if the priority is assigned through training or by limiting the number of staff assigned for unurgent requests. Limited cost to update the complaints registration form. Integrating the complaints registration system with the mapping tools can be part of Activity B2.	Increased enforcement efficiency in terms of the number and type of offences handled by each officer.	Activities B2 and B3	
B2	Build a system to track and map parking complaints and violations.	<ul style="list-style-type: none"> Record all parking complaints and violations in a systematic way. Create heat maps to illustrate and sort offences by type, area, day, and time-of-day. Focus enforcement patrolling on areas having high violation frequency and safety-related offences and during peak days and times as informed by the system. 	High	Short to Medium	The cost of software and training: \$15,000 to \$30,000 for the setting up and \$10,000 to \$15,000 as an annual recurrent cost.	The deployment of the produced maps	Activities B1 and B3	
B3	Recruit more enforcement officers (full-time and part-time) and court clerks as needed.	<ul style="list-style-type: none"> Better handle the large number of parking violations. Make the enforcement more proactive. 	High	Short	Average annual salary estimates: > \$110,000 to \$120,000 per officer (full-time) > \$90,000 to \$95,000 per court clerk (full-time) > \$50,000 to \$60,000 per officer (part-time)	Measure the reduction in the number of received public complaints (for vehicles parked illegally), and the reduction in the monthly/annual parking violations.	Activities B1 and B2	

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
B4	Expand the adoption of the LPR technologies.	<ul style="list-style-type: none"> • Increase the enforcement efficiency. 	High	Short and On-going	> \$1,000 to \$4,500 per handheld LPR device. > \$40,000 to \$60,000 per vehicle-mounted LPR device (does not include the procurement of the vehicle itself and the cost of hiring the driver/officer). > Additional operational costs should be added if enforcement is done by a third-party.	Measure enforcement efficiency in terms of the number of screened vehicles per hour.	Activities A4, A5, and B5	
B5	Establish and expand a pay-by-plate system.	<ul style="list-style-type: none"> • Use the license plate as a proof of payment for both the transient parking and parking permits. All types of parking permits (paid on-street residential permits, monthly/annual permits in municipal garages) can be paid and registered based on the license plate. • Integrate the pay-by-plate system into the LPR enforcement technology. • Pay-by-phone using parking app can also be used through a third-party provider. 	Medium	Short and On-going	Refer to Activities A4 and A5 for the cost of pay-by-plate and pay-by-phone technologies.	- For parking permits, establish a system to register all parking permits based on the license plate. - For transient parking, continue to increase the proportion of parking transactions that are paid based on the license plate.	Activities A4, A5, and B4	
B6	Use digital license-plate-based parking permits.	<ul style="list-style-type: none"> • Integrate the digital permit system with payment technologies and LPR enforcement. 	Medium	Short	The cost of backend software varies widely based on the provided services. The basic cost for the basic functions (software as a service) is estimated at: 15,000 to 25,000\$ per year + 5,000\$ for the residential permits module + 5,000\$ for the moderated permits + 3.0% merchant processing fees per transaction.	- Customer satisfaction, and the ease of issuing and renewing the permits. - Enforcement efficiency, e.g., number of screened plates per hour.	Activities B4, B5, and A5.	
B7	Collaborate with a third-party parking app provider, and consider prioritizing and encouraging local startups and businesses working in parking technologies.	<ul style="list-style-type: none"> • Expand the services beyond the pay-by-phone to include integrating the LPR system with the mobile app and assisting in the ticket dispute resolution. • The third-party may also assist in providing the LPR devices and setting up the backend software. 	Medium	Short and On-going	The cost varies based on the provided bundle of services. The cost of the pay-by-phone service is provided in Activity A4.	- Customer satisfaction, and the ease of issuing and renewing the permits. - Enforcement efficiency, e.g., number of screened plates per hour.	Activities B4 to B6.	
B8	Increase the parking penalty rates and adopt graduated (progressive) parking penalties.	<ul style="list-style-type: none"> • Manage the sharply increasing number of parking offences citywide. • Target repeat offenders. • Can also involve the consideration of applying area-based or event-based parking penalty rates where or when parking offences are too many (e.g., around Canada day celebration at Chinguacousy Park). 	Medium	Short	Limited cost to update parking penalties and their rules and publicize these changes. Area-specific or event-specific parking penalty rates may require additional cost for signage and communication efforts.	Measure the reduction in the number of parking offenses and the received public complaints (for vehicles parked illegally).		
C. Paid On-Street Parking Program								
C1	Phase one: conduct a detailed feasibility study.	<ul style="list-style-type: none"> • Ensure that the paid on-street parking permit program is feasible based on the actual demand and supply, program cost, resources needed, and public support. • Conduct a 6- to 12-month study that includes best practice review, field surveys of parking demand and supply, review of the ZBL and traffic by-law, public consultation and surveys, detailed analysis of the program cost and resources, and a selection of some areas to pilot the program. 	High	Short	\$100,000 to \$160,000 to conduct the study.	Detailed evaluation of cost, safety, and public support implications in order to better inform the next steps.		

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
C2	Phase two: implement a pilot small-scale program.	<ul style="list-style-type: none"> Implement and monitor a 12-month pilot program in select few neighborhoods. Learn how the program is working in practice and identify areas for improvement. 	High	Short to Medium	<ul style="list-style-type: none"> > \$60,000 to \$80,000: one part-time officer to manage the program (with some supports from other departments and services). > \$30,000 to \$40,000: part-time enforcement officer. > \$10,000 to \$16,000: to carry out an awareness campaign (can also be integrated into phase one). > Add or update the road signs: \$100 to \$200 per sign. 	Evaluation of the running cost, safety implications, and public support.	Activity C1	
C3	Phase three: program expansion or adjustment.	Adjust the program regulations, policies, and geographic boundaries.	High	Medium to Long	Based on the program changes, mainly those related to the program areas and boundaries.	Evaluation of the running cost, safety implications, and public support.	Activities C1 and C2	
C4	Consider the introduction of paid short-term residential parking permits (i.e., for parking beyond the free 14 days of parking considerations).	To serve parking needs of residents who only need few days beyond the complimentary 14 days and who do not need year-around or monthly permits. Can be introduced using daily and weekly rates.	Medium	Short	> Limited administration cost might be needed to integrate the paid permits into the system handling the complementary ones.	Evaluate the usage of this permit type and its cost, generated revenue, and enforcement needs. Monitor continuously the demand of all permit types and set restrictions, as needed, to resolve any demand conflict.	Activities C1 to C3	
D. Parking Partnerships and Governance								
D1	Conduct studies to develop parking partnership implementation strategy in strategic areas such as Downtown Brampton and other key Major Transit Station Areas.	<ul style="list-style-type: none"> Establish practical and financially feasible parking partnership agreements. Optimize the utilization of the available off-street public and private parking facilities. Identify opportunities for new structured/below-ground parking facilities. 	High	Short	As a starting point, \$100,000 to \$120,000 to conduct a study focusing on Downtown Brampton and to prepare a delivery mechanism and an implementation strategy.	<ul style="list-style-type: none"> Monitor the updated parking utilization in the parking facilities. Generate revenue to support the parking financial system. 		A Downtown Parking Implementation Strategy is being undertaken, supplementary to the Brampton Parking Plan.
D2	Execute the parking partnership agreements and monitor/administer the contracts.	<ul style="list-style-type: none"> Execute the agreements and monitor and maintain the operational, financial, and legal aspects of the contracts. Search for new parking partnership opportunities. 	High	Short and On-going	> Varies based on the recommendations of Activity D1. > Cost should include services related to contract management, financial analysis, accounting, legal aspects, and management of the operation and maintenance activities if applicable.	Monitor the economic and operational benefits from the agreements, for example: parking utilization ratios, revenue collected and used to support the parking financial system.	Activities D1 and A8.	
D3	Encourage the inclusion of public parking in new developments in the Intensification Areas.	<ul style="list-style-type: none"> Make public parking the primary type of parking in Intensification Areas. Promote the concept of shared-parking. Optimize parking utilization. 	Medium	Medium and On-going	<ul style="list-style-type: none"> > May require changes to the zoning by-laws, e.g., the City may grant density bonuses for developers adding on-site public parking. > Or, it may require entering into operations contract with the developers. 	Monitor the added supply of public parking in Intensification Areas.	Activities G2 and D1	
E. Transportation Demand Management (TDM)								
E1	Continue to upgrade and expand the transit, cycling, and pedestrian networks, and provide sufficient and secure bike parking including e-bike if needed.	<ul style="list-style-type: none"> Promote modes of transport alternative to the private auto. Continue the plans as set in the Brampton's Transportation Master Plan Update (2015) and Active Transportation Master Plan (2019). Achieve the City's targeted modal split in the peak travel periods by 2041, i.e., 16% Brampton Transit, 6% active transportation. 	High	Short, Medium, Long, and On-going	The cost of these projects should be provided elsewhere as part of these large infrastructure projects. This would likely also be covered under a TDM or other departmental budget.	Monitor the changes in the modal split, the use of private auto, and the resulting changes in parking demand.		The City's goal is to increase Brampton Transit ridership from 6% of peak hour trips to 16% of peak hour trips.
E2	Implement transit-oriented TDM measures that can further promote transit and manage parking demand, including (1) ensuring transit service is frequent, regular, reliable, and accommodating the demand, (2) using transit fares that are more attractive than the cost of parking, and (3) reducing the transit trip duration by	<ul style="list-style-type: none"> Make transit trips more attractive as compared to auto trips. Improve the public perception towards public transportation and its quality of service. 	High	Short, Medium, Long, and On-going	The cost of these initiatives can be part of transit improvement projects.	<ul style="list-style-type: none"> Monitor the quality-of-service measures offered by the transit system, e.g., frequency, reliability, spacing on board, trip duration, etc. Monitor the changes in the modal split, the use of private auto, and the resulting changes in parking demand. 	Activity E1	

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
	using dedicated lanes, signal priority, etc.							
E3	Establish TDM requirements for new developments.	Require large developments to demonstrate how much they are TDM-supportive and how they will minimize the use of private automobile vehicles. Integrate TDM requirements into the development approval process and establish a pointed-based TDM checklist.	High	Short	> \$40,000 to \$50,000 for a study that includes best practice review, checklist formulation, procedural guidelines, and recommendations. > Can be a scope-of-work expansion for the ZBL update study.	- Implement the TDM requirements in new development applications. - Monitor the reduction in auto-dependence and parking demand.		
E4	Expand car share program.	<ul style="list-style-type: none"> Promote and encourage the use of car sharing. Provide car share services in municipal parking facilities. 	Medium	Short and On-going	A third-party provider can operate the car sharing program. The City can undertake a Request of Proposal.	Monitor: - The growth in car share use. - Number of parking spaces reserved for car share, and the number of trips done daily per space.		
E5	Assess the e-scooter pilot program.	<ul style="list-style-type: none"> Evaluate the impact of e-scooter pilot program on the modal split and future parking demand. Assess any resulting challenges or concerns and how these can be mitigated (e.g., safety, conflicts with pedestrians, insurance, liability, etc.). Use the study/assessment findings to inform other projects and other decisions. 	Medium	Short-Medium	A 6-month study that includes field surveys and questionnaires (\$50,000 to \$80,000).	- Monitor the popularity of the e-scooter and its impact on the modal split. - Use the study findings to inform other projects and other decisions.		
E6	Assess the feasibility of bikeshare and e-bike programs.	<ul style="list-style-type: none"> Assess the cost and timeline of implementing a bikeshare program and the resulting impact on parking facilities. 	Medium	Medium-Long	\$100,000 to \$200,000 to prepare the study.	Use the study findings to inform other projects and other decisions.		The bikeshare program is better to be assessed assuming a significant progress is made in transit and cycling network expansion plans and intensification projects.
E7	Add a reduced parking (minimum) requirement for developments unbundling their parking spaces.	<ul style="list-style-type: none"> Encourage the use of active and transit transportation systems and reduce the reliance on private auto. Reduce the cost of housing. 	Medium	Short	The cost can be integrated into Activity G2.	Monitor the changes in modal split and the reduction in housing cost.	Activity G2	
F. Truck Parking Management Strategies								
F1	Explore opportunities and mechanisms to construct new truck parking facilities potentially within designated employment areas.	<ul style="list-style-type: none"> Assess several mechanisms to construct new truck parking facilities, including public private partnership, brownfield redevelopment, using sites along hydro corridors or 400-series and other major highways. Consider locations suitable for different truck parking purposes, e.g., long-term parking, rest areas inside and outside the City, and on-route parking. 	High	Medium-Long	The cost depends on each mechanism and the associated conditions, e.g., funding resources (public vs private), size of the parking facility, location, land ownership, etc. A separate activity, such as Activity F5, can better estimate the feasibility and the cost of this activity.	Monitor the added truck parking supply and its utilization.	Activities F3 and F4	
F2	Explore shared parking opportunities to accommodate off-peak and overnight truck parking.	<ul style="list-style-type: none"> Many existing parking facilities are underutilized during off-peak periods, e.g., commercial plazas, park-and-ride and carpool lots, large sports venues, convention centers, etc. Truck drivers experience the most difficulty in finding available truck parking during weekday evenings and nights, these times are complementary with other parking lots. 	Medium	Short-Medium	The cost depends on each agreement and its conditions, e.g., number of parking spaces, days and times of sharing the facility, etc. A separate activity, such as Activity F5, can better estimate the feasibility and the cost of this activity.	Monitor the added truck parking supply and its utilization.	Activities F3 and F4	

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
F3	Develop truck parking availability system to provide truck drivers with updated information on truck parking locations and their utilization.	<ul style="list-style-type: none"> Consider the use of smartphone truck parking app and real-time truck parking information system. Help truck drivers avoid cruising and circling to search for truck parking. Integrate and update the system with any added truck parking supply or facility. 	Medium	Short-Medium	The standards and requirements of the truck parking app may be first developed. Expressions of interest to develop/offer the app can be then solicited.	Customer satisfaction, the ease of using the truck parking app, and the number of drivers using the app regularly.	Activities F1, F2, and F4	
F4	Conduct a study to further assess the feasibility of the truck parking supply strategies identified in Brampton Parking Plan (Section 7 of Phase One report), including Activities F1 to F3.	<ul style="list-style-type: none"> Assess the feasibility of several truck parking strategies from the engineering, financial, implementation, and regulatory perspectives. Estimate the potential added parking supply by each strategy. Analyze truck parking demand by different segments/types of employers and drivers. Consult/engage the public and stakeholders. 	High	Short	A 12-month study. \$100,000 to \$200,000 to prepare the study, depending on the precise scope.	<ul style="list-style-type: none"> Expand the truck parking supply. Other study findings and recommendations and their ability to address truck parking challenges. 	Activities F1 to F3	
F5	Establish specific enforcement measures for truck parking.	<ul style="list-style-type: none"> Target illegal truck parking particularly in intensification areas and residential zones. 	High	Short and On-going	<ul style="list-style-type: none"> Add one full-time officer or two part-time officers as a starting point. See B1 for the cost of recruiting enforcement officers. 	Monitor the number (and type) of truck parking violations per month or year.	Activity B3	
G. ZBL and Traffic By-Law Updates								
G1	Change the focus of parking regulations by removing parking minimums and converting them into parking maximums for select land uses in Intensification Areas.	<ul style="list-style-type: none"> Prevent the oversupply of parking and preserve the urban fabrics and the space for more useful uses. Reduce auto-dependence and promote other modes of transport. Increase the supply of affordable housing. Achieve the targeted densities. 	High	Short	Can be part of Activity G2.	Monitor parking demand, supply, and utilization in the areas where the policy is implemented.	Activity G2 and H1	
G2	Continue the work on updating the ZBL and parking requirements.	<ul style="list-style-type: none"> Remove parking minimums and establish parking maximums for select land uses in Intensification Areas. Further delineate the boundaries of the Intensification Areas based on the updated City's plans. Address parking requirements for affordable housing units. Consider the other ZBL recommended updates/improvements as per the Brampton Parking Plan. 	High	Short	<ul style="list-style-type: none"> Continue the ongoing ZBL update study. A scope-of-work expansion to that study might be needed (based on the TORs). Some (limited) resources are needed by the City to organize, publish, and implement the ZBL amendments. 	Prepare and publish the final ZBL amendments.	Activities C1, D3, E3, E7, H1 to H3, I2, and J1.	
G3	Update the traffic by-law to accommodate the paid on-street parking program (if implemented).	Assess the required changes or additions that need to be incorporated in the traffic by-law to accommodate the on-street parking permit program.	Medium	Short	<ul style="list-style-type: none"> Can be integrated into Activity C1. Some (limited) resources are needed by the City to organize, publish, and implement the traffic by-law amendments. 	Prepare and publish the final traffic by-law amendments.	Activity C1	
H. Parking and Affordable Housing								
H1	Leverage the removal of parking minimums in Intensification Areas to increase the supply of affordable housing.	Reduce the cost of building construction and promote housing affordability in Intensification Areas.	High	Short	Included in Activity G2.	Evaluate the impact on affordable housing prices.	Activities G1 and G2	
H2	Grant parking requirement exemption or reduction on a case-by-case review basis using preset evaluation criteria (until Activity H4 is implemented).	Promote housing affordability in the Rest-of-the-City (outside Intensification Areas).	Medium	Short	Included in Activity G2.	Evaluate the impact on affordable housing prices.	Activity G2	
H3	Identify affordable housing as a type (or several types) of land-use and assign these land-uses specific parking requirements that are lower than other residential developments.	Promote housing affordability in the Rest-of-the-City (outside Intensification Areas).	Medium	Short	Included in Activity G2.	Evaluate the impact on affordable housing prices.	Activity G2	
I. Electric Vehicle Charging Stations Supply								

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
I1	Provide more on-street and off-street EV charging stations.	<ul style="list-style-type: none"> • Increase the supply of EV charging stations citywide. • Encourage drivers to switch to EVs. • Promote a more electrified transport network. 	High	Short and On-going	Cost estimates of new EV charging stations: > \$6,000 - \$9,000 per single-port Level 2 charger; > \$8,000 - \$14,000 per dual-port Level 2 charger; and > \$20,000 - \$100,000 per Level 3 charger, depending on existing electrical distribution system.	Evaluate the increase in the supply of EV charging stations.		
I2	<p>Update the ZBL to require a proportion of the parking spaces to be equipped with EV charging equipment, including residential and non-residential buildings and street-level dwellings with dedicated garages. A combined ZBL-based and incentive-based approach can be considered as well.</p> <p>The following can be considered as initial guidelines, they can be further assessed for incorporation into the ZBL:</p> <ul style="list-style-type: none"> • 20% of the required parking supply for apartment residential and mixed use buildings should accommodate electric vehicle parking by having charging stations installed • All other required parking spaces within multi-unit residential and mixed use buildings should be designed to accommodate electric vehicle supply equipment in the future. • At least 10% of indoor or outdoor parking stalls for non-residential uses should also be installed with electric charging station receptacles and an additional 20% should be designed to accommodate electric vehicle supply equipment in the future. • One space to be EV-ready for ground-level dwelling units that have dedicated garages. • A certain number of parking spaces with EV charging facilities should be designed to accommodate the larger accessible van parking. This intends to ensure that accessible parking requirements are also applied and integrated into the EV parking supply. 	<ul style="list-style-type: none"> • Ensure that new developments are supportive of and can accommodate EVs. 	High	Short and On-going	Included in Activity G2.	Evaluate the increase in the supply of EV charging stations.	Activity G2	
I3	Establish design standards and guidelines for parking facilities so they can accommodate EVs.	<ul style="list-style-type: none"> • Ensure that parking facilities adhere to uniform and well-established EV design standards. 	Medium	Short to Medium	Can be part of other zoning and planning studies.	Apply the design guidelines in parking facilities.		
J. Miscellaneous Actions and Activities								
J1	Ensure sufficient number of accessible parking spaces are provided, including accessible spaces with EV charging stations.	<ul style="list-style-type: none"> • Serve all segments of parking users. • Include a provision for accessible parking requirements in the updated ZBL. • Ensure that accessible parking requirements are also applied and integrated into the EV parking supply. 	High	Short and On-going	Included in Activity G2.	Apply accessible parking requirements in practice.	Activity G2	

Activity ID	Activity Description	Targeted Issues	Impact (Priority) Level	Timeline	High-level Cost Estimate	Performance Metrics and Monitoring	Synergy or integration with other Activities?	Comments
J2	Consider conducting a curbside management study in strategic areas.	<ul style="list-style-type: none"> • Prioritize the curbside functions in select strategic streets or areas. • Identify curbside operational challenges. • Optimize the use of the curbside space. 	Medium	Short to Medium	The study cost depends on the scale of the targeted area. Typically in the \$200,000 to \$300,000 range.	Monitor the services offered to different curb users.		
J3	Encourage future-proofing of new parking facilities.	To convert part or the entire parking facility to an alternative land-use if parking demand decreases in the future.	Medium	Medium and Long	Parking structures need to be designed to higher standards which increases the construction cost.	Assess if such structures were utilized to offer alternative land-uses.		
J4	Encourage the designation of some parking spaces for courtesy and limited mobility reasons.	<ul style="list-style-type: none"> • Assign some parking spaces that are located near doors and entry ways for courtesy purposes, e.g., to serve senior citizens, pregnant women, and people with temporary injuries. • Target large parking lots and garages where walking distance can be long. 	Medium	Short and On-going	Minor cost for additional signage and wayfinding elements.	Customer satisfaction, the increase and consistency of the adoption of this initiative.		