Attachment 2

Final Report

Brampton Parking Plan – Supplementary Downtown Parking Implementation Strategy

Prepared for City of Brampton
by Arcadis IBI Group

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1 Introduction

Through the development of the Brampton Parking Plan, the existing public and private parking in the Downtown area was noted to be underutilized. A 2019 analysis scenario indicated that the Downtown systemwide parking utilization is 58%, which is well below the 85-90% effective capacity threshold. The future 2040 projection analysis also indicated little to no parking supply issues, with a system wide utilization of 63%, which is below the noted effective capacity. The City of Brampton has recently received requests from private developers to share some of the anticipated underutilized parking spaces for use in development that are expected to bring significant employment to the Downtown. The City recognized the potential opportunity for introducing a shared parking arrangement and wished to expand on the original Scope of Work for the Brampton Parking Plan to include a Supplementary Downtown Parking Implementation Strategy.

Parking partnerships are very important in strategic areas to provide additional off-site parking supply opportunities, to optimize the use of available parking facilities, and to 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 (ZBL) update and was also heard in the public and stakeholder engagement program.

This study, the "Downtown Parking Implementation Strategy," is intended to investigate strategies that can optimize off-street parking utilization in the Downtown area through shared-use/ reservation parking agreements. In addition, the study aims to:

- Identify the relevant parties in parking partnerships and their roles.
- Identify the type and the structure of parking partnership agreements.
- Identify potential parking supply opportunities in Downtown core area.
- Prepare a delivery mechanism for the shared parking strategy.

This report is the final report of the study and it consolidates and documents all the study phases and tasks, including the background information review, the best practices review, clarifying the existing parking request, investigating the available parking supply surplus, an assessment of the site opportunities in Downtown Brampton which can be used to expand the off-street parking system, and preparing a shared parking implementation strategy in Downtown Brampton. This report is divided into the following sections:

Introduction: summarizes the purpose and the structure of this report.

Background Information Review: to review relevant Downtown development projects and gain an understanding of the anticipated impacts of these developments on municipal and private parking operations.

Best Practices Review: to gain an understanding of the procedures and regulations that have been successfully implemented by other comparable municipalities in coordinating and managing shared-use / reservation of public and private parking facilities in downtown areas.

Parking Utilization Surveys: to measure and evaluate the existing parking utilizations at all public and private parking facilities in the Downtown area. This should be based on recent parking surveys that are expected to capture not only the existing parking demand trends but also the resulting impact of the hybrid work environment.

Off-site Parking Opportunities: to explore the potential sites and opportunities to expand the off-site parking system in the future. This includes policy review, analysis of the existing site plans

and development applications, and assessing the viability of several sites to build new parking facilities and expand the off-street parking supply.

Shared Parking Implementation Scenarios: to highlight the context of the Downtown parking system and assess three implementation scenarios for the concept of shared parking, including short-term, long-term with normal growth, and long-term with expansive growth. Recommendations and actions as part of the implementation strategy are also consolidated.

Considerations for Shared Parking Implementation: explores other shared parking considerations, including the city role, available partnership options, guidelines to set or update parking price rate, the performance monitoring plan, the need for third-party providers, and a draft agreement template.

Summary Findings and Conclusions: to provide a summary of the main conclusions and recommendations coming out of this strategy.

2 Background Information Review

The background information review intends to gain an understanding of the relevant Downtown development projects and their anticipated impacts on municipal and private parking operations. These projects include the Integrated Downtown Plan, Centre for Innovation, Downtown Transit Hub, LRT Extension, the Queen Street BRT, and others. The review also included the other reports or deliverables produced as part of the Brampton Parking Plan and a brief description of the existing parking requests submitted or expressed by private developers.

2.1 Brampton Parking Plan Reports

Phase 1 Report

Phase 1 report of the Brampton Parking Plan carried out a quantitative analysis of the on-street and off-street parking operations in the Downtown area. This involved existing conditions represented by 2019 scenario and future conditions forecasted for a 2040 scenario. The 2019 scenario revealed that the Downtown system-wide parking utilization is 58%, and utilization was forecasted to only increase to 63% by 2040. The resulting parking utilization, in both 2019 and 2040 scenarios, is well below the 85-90% effective capacity threshold and it indicates an underutilized parking system. Based on the assessment of future conditions (2040 – base condition), presented in Section 5.1.4 in Phase 1 report, an additional 850 vehicles are expected to be accommodated in Downtown Brampton's off-street facilities before utilization reaches 85%, assuming the Nelson Square Garage is not closed (i.e., around 350 vehicles in municipality-owned off-street parking and 500 vehicles in private (non-municipal) off-street parking).

The 2040 future scenario relied upon existing parking demand patterns, future population growth, and parking demand decrease due to reduced mode share of personal vehicles. Based on Brampton's Transportation Master Plan (TMP) Update (2015), the plan aims to extensively improve the transit system and active transportation networks and to achieve the following modal split targets by 2041: 16% Brampton transit, 6% active Transportation, 28% auto passenger, 50% single-occupancy vehicles (SOV). Through interpolation, the SOV mode share is anticipated to decrease by approximately 1.15% annually, and an annual parking demand decrease of 1.15% represents a total decrease of 21.5% between 2019 and 2040. This means that the 2040 scenario considers improving the transit and active transportation networks extensively as planned in Brampton's Transportation Master Plan.

In addition to the "base" 2040 future scenario, the future parking operations were further assessed to consider other 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.

2040 Nelson Square Closure Scenario: this was based on the 2040 Base Scenario but assumed 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.

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.

On-street parking supply will also be impacted by future transit projects. As part of the LRT Extension EA, both the surface and underground options indicate that there will be no on-street parking spaces provided along the extended LRT route. More information on this project can be found in Section 2.2.

Based on the analysis findings noted above, there does not appear to be major supply concerns associated with the future parking demand analysis in Downtown Brampton. It is worth noting also that the hybrid work arrangement impact on parking, which is to be better understood using the parking surveys of the present study, may sharpen the underutilization of the parking system. 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 in light of recent requests for parking as part of development proposals that are expected to bring significant employment to the Downtown (see Section 2.3).

Phase 2 Reports

Phase 2 of Brampton Parking Plan produced two main reports, i.e., a Financial Analysis Memorandum and a Parking Management Plan report. The two documents provided many findings and recommendations relevant to the Downtown Parking Implementation Strategy. Below is a summary of these findings organized by each document.

Financial Analysis Memorandum

This memorandum examined the financial performance of Brampton's existing parking system. IBI's 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 operations deficit to 2035. At this point, 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 a growth factor of 1.08, and 2) the proportion of people parking and driving in Brampton continuing at current levels to 2035.

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. The memorandum 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.

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.

The above findings are very relevant to the present study. The fact that the parking system in Downtown Brampton is running at a deficit means that other resources to generate revenues are needed and these may include, for example, leasing some of the underutilized parking facilities in Downtown Brampton. In addition, the recommended increase in parking price rates should

increase the interests of parking facility owners to engage in parking agreements. Moreover, the removal of the CIL of parking means that public parking supply needs to be provided and funded through alternative policies and strategies. This also calls for considering different types or arrangements of shared parking agreements.

Parking Management Plan Report

The Parking Management Plan report intends to lay out several strategies and procedures to optimize parking operations in Brampton. Chapter 2 of the report, "Downtown Parking Management," provided the following recommendations that are relevant to the present study:

- Explore opportunities to lease a part of the underutilized facilities to other public and private developers as a way to generate revenue that can be used for other parking initiatives or to expand the public parking supply in the future.
- Reserve some parking spaces for short-term parking purposes on the nearby surface parking lots and also on the ground and first-level floors of parking garages.
- Increase the parking price rates in Downtown Brampton for both, the transient or on-street parking and also for the long-term parking permits.
- Stop the one-hour free complimentary parking offered at the municipal parking garages.
- Stop the CIL of parking program and explore other resources of funding, e.g., Community Benefit Charges (CBCs), leasing the underutilized parking facility, and increasing the parking price rates.

In addition, Chapter 6 "Parking Partnerships," discussed several types of parking partnership arrangements and outlined the following remarks:

- Parking partnership is very important in strategic areas where parking requirements are reduced or rescinded in order to provide more off-site parking supply opportunities, optimize the use of available parking facilities, promote the concept of shared parking, and achieve the targeted densities.
- Several types of parking partnerships and agreements exist in practice. For example, the City can grant a density bonus for developments adding public parking, enter into operation contracts with private owners and share the revenue, enter into finance contracts and be either a lessee or lessor, and build new parking facilities through the P3 projects.
- A combination of different types of agreements may be implemented in the same area.

2.2 Background Documents and Plans

The Integrated Downtown Plan (In-Progress)

The Integrated Downtown Plan (IDP) coordinates the active initiatives and infrastructure projects in the City's Downtown area and provides guidance on future growth and strategic investment till the year 2051. The guiding principles of the IDP align with the Brampton 2040 Vision and the 2018-2022 Term of Council Priorities. It aims to help integrate local employment opportunities, services and programs for residents, and ongoing infrastructure projects in order to upgrade from a historic urban city centre to a vital district that drives economic growth, embraces cultural heritage, and promotes innovation.

The IDP considers the forecasted future growth and the associated impact on Brampton's Downtown area. Transportation and Connectivity is one of the eight key components of the IDP, which promotes active forms of transportation and integrates multiple transportation systems.

Brampton's Innovation District

Brampton's Innovation District in the Downtown will be the hub for innovation and technology. It is expected to have strong partnerships with various post-secondary institutions and technology companies and provide resources and spaces for local and foreign talent development.

Centre for Innovation

The Centre for Innovation (CFI) will become an integral part of the future Brampton Innovation District. It will offer a new central library and flexible space for post-secondary institutions and office uses, which is expected to create hundreds of new jobs and attract skilled talents. This will drastically increase parking demand in Downtown Brampton. The CFI will be located in the centre of historic Downtown Brampton and is close to Canada's Innovation Corridor, which is a GO Train line that connects Toronto and Waterloo with Brampton. Although the users of Centre for Innovation will heavily rely on public transit for travel due to its close access to transit, parking challenge at the CFI is still foreseeable due to the large number of trips being generated and lack of new parking facilities, i.e., it is to be noted that parking is not being provided as part of the CFI development. Therefore, the CFI is expected to generate a considerable off-site parking demand.

Partnership between City of Brampton and Post-Secondary Institutes

There is opportunity for post-secondary institutes to be located in the CFI, and this is likely to create parking demand.

Riverwalk

The City has completed the Downtown Brampton Flood Protection Environmental Assessment and Urban Design Master Plan as part of the Riverwalk Project to make Downtown Brampton a healthy, sustainable, and resilient space through long-term flood management integrated with open space realm along the Etobicoke Creek Valley. This master plan generates solutions to the flood risk in the area, which opens up opportunities for urban growth and development. The Riverwalk is anticipated to improve public health, provide high quality spaces for various events, unlock economic benefits, and attract residents and visitors to Downtown Brampton. As a result, it can be expected that public parking demand will increase as these events take place. The Riverwalk construction is expected to start in 2025 and be completed in 2028. The Federal Government committed $38.8M towards the Riverwalk flood mitigation.

Active Transportation Master Plan (ATMP)

The Active Transportation Master Plan provides guidance on developing active transportation network plans, policies, and programs in support of Brampton's 2040 Vision "Living the Mosaic". The ATMP focuses on developing implementation strategies for various modes of alternative transportation, such as cycling and walking, to build a safe and convenient cycling and pedestrian network. It provides recommendations on location and type of bike parking facilities and mechanisms for delivering bike parking at public and private properties. As more and better active transportation infrastructure is provided, personal vehicle usage can be anticipated to decrease, resulting in lower parking demand for the entire City, including Downtown Brampton.

Downtown Transit Hub

The Downtown Transit Hub is a component of Brampton GO Mobility Hub. The preliminary study area for the transit hub consists of lands owned by Metrolinx and the City within the vicinity of the existing GO Station. The design and objectives of the Downtown Transit Hub are in line with key Provincial, Regional, and City policies, including the Metrolinx 2041 Regional Transportation Plan, MTSA vision, City's Official Plan, and Brampton 2040 Vision. It aims to provide adequate infrastructure to serve and integrate various modes of transportation with increased capacity and quality of the transit system. It improves connectivity with surrounding development and

accessibility to transit vehicles. The new Downtown Transit Hub can potentially double the number of bus bays, meaning increased transit ridership and reduced personal vehicle mode share can be expected.

LRT Extension EA

The LRT Extension EA is an ongoing study and is expected to be completed in late 2024. It analyses three different alternatives for the extension of Hurontario LRT route from Brampton Gateway Terminal to Brampton GO station in Downton Brampton. These options include Main Street-George Street one-way loop, tunneling options, and two-way surface route. The options are evaluated based on their potential to best address Brampton's current and future needs. The preferred options were presented to Council at the June 23, 2021, Committee of Council Meeting. The outcome of the discussion was that one surface option and one tunnel option will be advanced to the 30% preliminary design to further compare. Both options support improvements on various streetscaping components such as wider sidewalks, narrowed roadway, and bike paths. Both the surface and underground options indicate that there will be no on-street parking spaces provided along the extended LRT route. With improved public transit services, personal vehicle mode share can be expected to decrease resulting in decreases in parking demand as well.

The Queen Street BRT

The Queen Street BRT aims to connect Brampton with York Region through a bus rapid transit along the Queen Street-Highway 7 corridor between Helen Street and Mississauga Road. It is anticipated that the road geometry of Queen Street within Downtown Brampton, from McMurchy Avenue and Kennedy Road), may be altered depending on the selected BRT planning scenario. The potential change in streetscape along Queen Street can result in loss of on-street parking spaces in Downtown Brampton. On the other hand, with improved public transit services, personal vehicle mode share can be expected to decrease, which will potentially decrease parking demand.

Hurontario LRT

Hurontario LRT runs along the Hurontario corridor between Port Credit GO Station in Mississauga and Brampton Gateway Terminal at Steeles Avenue in Brampton. Among the 19 transit stops along the LRT route, 3 of them are within City of Brampton jurisdiction, which are at Ray Lawson, County Court, and Brampton Gateway Terminal. This new transit system integrates the regional transportation network with the Greater Toronto and Hamilton Area (GTHA) and connects Brampton with the major transit systems including GO Transit, Mississauga Transit, and Brampton Transit. The HuLRT is anticipated to improve public transit services along the region's busiest street, which will consequently result in lower personal vehicle usage and reduced parking demand.

A Shared Electric Kick Scooter (Micromobility) Pilot Program

The pilot program initiated by the Government of Ontario allows municipalities to enact a by-law to permit and regulate the use of personal e-scooters. Through this program, City of Brampton launched a pilot to assess the performance and operation of an e-scooter share-system in the City as an approach to improving City of Brampton's micro-mobility. The Council Meeting took place in February 2022 provided an overview of the commercial e-scooter pilot framework, which outlines the key operational objectives. The e-scooters will be permitted to operate on roads with a posted speed limit of 50km/hr or less, bicycle lanes and multi-use paths and not be permitted on sidewalks. Up to 750 e-scooters will be available throughout the City as part of the pilot program. E-scooter parking areas will be identified, and proper parking procedures will be developed. The improvement on alternative transportation modes and micro-mobility infrastructure within the City would generally decrease the usage of personal vehicles and consequently parking needs. An assessment of the pilot program will determine its success.

Downtown Development Applications

A list of site plans and development applications in Downtown area was reviewed. The plans and applications address a wide range of land uses, including residential, commercial, office, medical, etc. Several plans and applications refer to building new high-rise buildings or converting existing low-rise residential buildings into high-rise residential buildings or condominiums. This is expected to increase the density in the area and also open opportunities to explore incentives to add public parking within such large developments. Opportunities for adding public parking and entering into parking partnership will be investigated in detail at a later stage of this project.

2.3 Off-Site Parking Needs and Requests

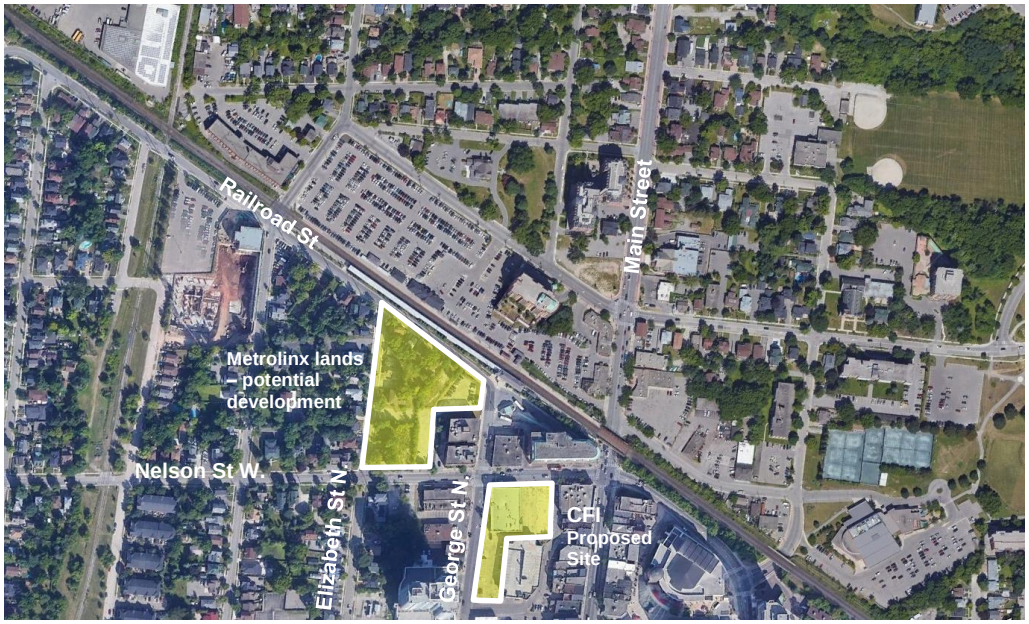
Downtown Brampton is anticipating more intensification and significant transit system improvements. Developers are expected to be interested in locating their projects in such a vibrant area that is served by various land uses and connected by different transit systems. These developments will bring economic growth to the Downtown and may include, for example, employment centers, office uses, and post-secondary institutions.

The City of Brampton has recently received requests from private developers to share some of the anticipated underutilized parking spaces for use in developments that are expected to bring significant employment to the Downtown. These projects are still in the planning phase and, as such, are tentative. As well, their features (site location, land uses, built-up area, etc.) are subject to change. No reference is made therefore to any of these projects. However, having a well-established procedure to enter into shared parking partnerships will facilitate the accommodation of their parking needs as they arise.

For the purpose of this study and in order to establish a baseline for a potential off-site parking demand in the short run, the following assumptions are made based on the internal and external stakeholder consultation efforts that were done in the early phase of the study, including a questionnaire that was distributed to prospective developers:

- A potential site to accommodate a prospective development (or developments) is the site bounded by Railroad St, Elizabeth St N, Nelson St W, and George St N. This site, illustrated in Exhibit 1, is presently owned by Metrolinx. Land uses assumed are employment uses and may include major offices and post-secondary institutions.
- Given the limited site area and the uncertainty about future parking demand, the developers are expected to consider the provision of off-site parking spaces through parking partnership. An off-site parking demand around 500+ parking spaces is anticipated in the short run resulting from such development (or developments) on this potential site.

Exhibit 1: Potential Development Sites in Downtown Brampton



Source of the image is Google Earth, taken on Jan 25, 2023.

In addition, the CFI is anticipated to also generate a considerable off-site parking demand in the short-to-medium run. Section 6.2.1 includes detailed calculations aiming at estimating the off-site parking demand of the CFI.

The discussion of the implementation scenarios in Sections 6.2 through 6.4 provides more information and assumptions related to the off-site parking demand and its timeline.

2.4 Summary Findings

Below is a summary of the background document review which highlights the key takeaways and findings:

- The analysis of parking operations in Downtown Brampton, as carried out in Brampton Parking Plan, indicated that there does not appear to be major supply concerns associated with the future parking demand in Downtown Brampton. The 2019 scenario revealed that the Downtown system-wide parking utilization is 58%, and this utilization was forecasted to only increase to 63% by 2040.
- 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.
- The removal of significant on-street parking on Main Street and Queen Street and its impact on off-street parking facilities needs to be considered.
- The lessons learned from the financial analysis conducted in Brampton Parking Plan also support the scope of the present study. The fact that the parking system in Downtown Brampton is running at a deficit means that other resources to generate revenues are needed and these may include, for example, leasing some of the underutilized parking facilities in Downtown Brampton. In addition, the recommended increase in parking price rates should increase the interests of parking facility owners to engage in parking agreements. Moreover, the removal of the CIL of parking means that public parking supply need to be provided and funded through alternative policies and strategies.

- The future growth in employment and business activities have been emphasized in many plans and projects (e.g., IDP, CFI). These stress the need to rely more upon the concept of public and shared parking given the value of land in Downtown Brampton and space constraints.
- Parking is not being provided as a part of some new key developments in Downtown Brampton (e.g., CFI). Consequently, the concept of shared parking and parking partnership is becoming more important and needed to serve such developments.
- Several initiatives and activities are making Downtown Brampton a more vibrant place offering various social activities (e.g., Activate Downtown Brampton, Riverwalk, etc.). These activities are expected to attract citizens, visitors, and tourists and this will emphasize the need for more publicly accessible parking facilities. That is, to support such activities, parking in Downton Brampton should be more oriented to the shared and public off-site parking concept as compared to the development-specific on-site parking.
- More emphasis is made on active transportation and the transit system in Downtown Brampton's plans and projects. Extensive improvements to the transit system and active transportation network are underway (e.g., Downtown Transit Hub, LRT Extension, Queen Street BRT, Brampton's TMP and ATMP, etc.). Modal split targets by 2041 are set as: 16% Brampton transit, 6% active Transportation, 28% auto passenger, and 50% single-occupancy vehicles (SOV).
- A pilot program of shared electric kick scooter has been approved by Brampton's Council. If successful, e-scooters and other micromobility devices could potentially reduce auto-dependence and the resulting parking demand.
- The site plans and development applications in Downtown Brampton address a wide variety of land-uses, including residential, commercial, office, medical and other land uses.
- Several plans and applications refer to building new high-rise buildings or converting existing low-rise residential buildings into high-rise residential buildings or condominiums. This is expected to increase the density in the area and also open opportunities to explore incentives to add public parking within such large developments.
- Downtown Brampton is anticipating more intensification and significant transit system improvements, and developers are expected to be interested in locating their projects in such a vibrant area. The City of Brampton has recently received requests from private developers to share some of the anticipated underutilized parking spaces for use in developments that are expected to bring significant employment to the Downtown. These projects are still in the planning phase and the project's features are subject to change. However, having a well-established procedure to enter into shared parking partnerships will facilitate the accommodation of their parking needs as they arise.
- A potential site to accommodate a prospective development (or developments) is the site bounded by Railroad St, Elizabeth St N, Nelson St W, and George St N. Off-site parking demand around 500+ parking spaces is anticipated in the short run resulting from such development (or developments). In addition, the CFI is anticipated to also generate a considerable off-site parking demand in the short-to-medium run.

3 Best Practices Review

In this section, the best practices of parking partnership, shared parking, and the required agreements and arrangements are reviewed. This section is divided into the following subsections:

Case Studies: to unfold some practices and lessons learned from some jurisdictions and municipalities that have extensive experience in applying the concepts of parking partnership and shared parking agreements. Three municipalities were selected, i.e., Toronto, ON, Oak Park, IL, and Sacramento, CL. These municipalities have a progressive parking management system with a strong emphasis on parking partnership and shared-use agreements.

Parking Partnership Arrangements and Structures: to highlight and define the different types of parking agreements. Different parking agreements exist based on the engaged parties, the purpose of the agreement being management, lease, or both, and the intended use of the facility (i.e., to serve the public or to serve a specific developer or party).

Parking Agreement Terms and Considerations: to discuss the content of the parking agreements and the important items and subjects that should be considered when establishing and drafting the agreements.

3.1 Case Studies

The case studies presented herein include three municipalities, i.e., Toronto, ON, Oak Park, IL, and Sacramento, CL. These municipalities were selected because they have a progressive parking management system with a strong emphasis on parking partnership and shared-use agreements. For each case study, the discussion also highlights the main characteristics of the municipality (e.g., population, area, transit system, parking governance, etc.) to understand the context surrounding the parking system.

Toronto, ON

Main Features:

- Population is 2.93 million (2017)
- City's area is 630.2 km^2
- Has a busy transit system that consists of a subway system, three heavy-rail rapid transit lines in addition to a large network of buses and streetcars.
- Toronto Parking Authority (TPA) is owned by the City of Toronto and it manages and operates municipal on-street and off-street parking facilities.
- Toronto is a neighbouring city to Brampton.

Toronto is a special and important case study when it comes to shared parking agreements. This is because the concept of shared parking has been applied citywide at a very large scale and mainly administered by Toronto Parking Authority (TPA). As of April 2022, TPA operates 309 off-street parking facilities that include over 40,000 spaces. Around half of this large parking inventory, i.e., 143 facilities and over 23,000 spaces, is managed and operated by TPA through parking management agreements (PMAs). These PMAs include agreements with private land/property owners and also agreements with other City's Divisions or ABCCs (Agencies, Boards, Commissions, and Corporations). In 2021, parking agreements with third party (private) facility owner included a total of 1,608 spaces at 23 facilities. In most of these agreements, TPA provides full operational services, including maintenance, revenue collection, payment equipment, pay-by-phone app, enforcement, signage, and capital improvements. However, agreements with limited services can also be arranged based on the requirements of the contracting party.

Based on reviewing some of the available information related to PMAs with third parties (privately owned lands and facilities), the following remarks are made:

- The agreements are usually made for 3-5 years.
- The number of parking spaces included in the agreement can be small (e.g., 20-30) or large (200+).
- Some of the parking facilities might be closed in the future (e.g., lot being redeveloped by the owner, the site is expropriated for other infrastructure projects, etc.).

It should be noted that TPA is aiming to expand its adoption of the parking management agreements because these agreements provided lower risk plans and appeared to outperform financially the traditional inventory expansion plans that depend on owning and operating the facility.

Oak Park, IL

Main Features:

- Population is 52,102 (2020)
- Village's area is 12.17 km^2
- The Village is connected with Chicago through light rail transit.
- Bus transit services are available within Oak Park.
- The Village is considered as bicycle-friendly community.
- Parking is managed by the Village's Parking and Mobility Services Division.
- The Village has a popular and advanced parking management program that relies heavily on shared parking.

The Parking and Mobility Services Division manages all public parking of the Village of Oak Park including more than 100 off-street lots and four garages. Three garages are available 24-hour to the public whereas one garage, a high school parking garage, is only available when faculty is not in attendance. In total, the Village manages around 8,000 parking spaces that include 1,000 privately owned spaces.

The Village administers shared parking agreements for around 30 different parking lots. By reviewing a sample of the parking agreements and available resources, the following remarks are made:

- Most of the agreements are made with the intent to increase the supply of public parking, i.e., the contracted parking spaces are used by the general public.
- The maintenance, snowplowing, signage, payment machines, revenue collection, and enforcement are the responsibility of the Village which subtracts the cost of operations/maintenance and split the remaining revenue 50/50 with the facility owners.
- Different types of the lessors (parking facility owners) are partnering with the municipality, including, for example, banks, churches, schools, etc.
- The agreement duration varies widely, and some example agreements have durations of 2, 3, 10, and 15 years.
- The agreements are usually flexible, i.e., either party may terminate without cause usually by providing a 90-day advance notice.
- The Village also looks actively for deals to jointly operate public parking spaces.

Sacramento, CA

Main Features:

- Population is 503,482 (2020)
- City's area is 258.41 km^2, i.e., comparable to Brampton.
- It has a busy transit system that consists of light rail trains (three lines) and buses.
- Cycling is a popular and growing mode of transport.
- Parking operations and revenues are administered by the City of Sacramento Parking Services Division.
- The City has intensively used shared parking agreements with private lot owners.

The City's parking division offers diverse parking management solutions, and it has a webpage with contact details for prospective clients interested in these parking services and agreements. The City provides different models of parking management services, the key ones are defined below.

Parking Payment and Marketing Services: the City markets and offers the parking spaces of the partnering facility on the City Website. The City collects and manages all fees for the bookings made through its website. In return, the City receives a proportion of the total parking fees (15%), a fixed monthly marketing/management fee, and credit card transaction fee per transaction completed through the website. Owners of the partnering parking lots can adjust the number of available parking spaces on the website as long as this does not impact the already reserved spaces. Owners are responsible to train their employees how to access their account on the City's website and make adjustments.

Enforcement Only Services: the City enforces the parking lots which allows the City to generate additional source of revenue using its already established enforcement staff and parking citations. Under such services, the City does not provide operational or maintenance services. The City retains all revenues generated from the citations issued at the respective parking facility. In addition, a fixed management fee may also be paid to the City on monthly basis. Parking enforcement agreements can be flexible, i.e., for short duration with flexible termination clauses.

Full Management Services: the City provides all needed services, including maintenance, insurance, revenue collection, enforcement, and improvements. The City first attempts to offset the cost of the provided services. Then, the profit is shared with lot owner usually evenly 50/50.

By reviewing several parking agreements, the following remarks are also made:

- Some agreements intend to offer the parking spaces 24/7 to the public. However, the City also entered into agreements with private parking facility owners to provide parking solely during evening and weekend times, i.e., to serve visitors and activities related to the entertainment venues, shopping, and restaurants. The days and times of the intended use of the facility are clearly stated in the agreements.
- A standard agreement template is used, but the actual terms may vary from one agreement to the other.
- In many cases, the City takes the liability because it is self-insured.
- The agreements usually include flexible exit clauses, i.e., any party can exit without cause with an advance notice, e.g., 30-day or 60-day notice.
- The agreements are made for short-to-moderate durations, e.g., 5-year, 2-year with 2-year extension possibility, etc.

The City is also willing to share the cost of parking in exchange for providing public parking in new developments. The City tries to be active in exploring these opportunities in the early stages of projects.

Key highlights from the case studies:

Some of the key highlights that can be drawn from the case studies include the following:

- Cities are realizing that shared parking agreements often financially outperform the traditional inventory expansion plans that depend on owning and operating the facility.
- Different types of agreements are in use today. The most popular type is the parking management agreement with full services included. Other agreements include enforcement only, marketing and payment services, and customized (limited) management services.
- The City may establish a standard parking agreement template that can be further customized by each case. Consequently, shared parking agreements within the same jurisdiction do have general similarity regarding the terms included, but they can also include significantly different items based on each case and the parties involved, e.g., different agreement durations, exit clauses, services included, etc.
- The municipality and its parking office or division play a major role in participating in parking agreements and also in advocating for these agreements by reaching out to prospective parties and building a website that can be a marketing tool for the whole shared parking district.

3.2 Types of Parking Partnership Arrangements

Different types of parking agreements exist in practice based on the engaged parties, the purpose of the agreement being management, lease, or both, and the intended use of the facility, i.e., to serve the public or to serve a specific developer or party. The following is a discussion of these types.

Parking Lease Agreement for Exclusive Use
Under this scheme, the entire parking facility or part of the facility is leased to a specific development (or developer) which will be granted the exclusive right to use the leased parking spaces.

The City is the Lessor
Under this type of agreements, the City or the municipality leases the underutilized municipally-owned parking facility to other private or public parties. The lease may only include a proportion of the available parking spaces or the entire facility. Usually, if the City is already undertaking the operation and maintenance activities, it will continue to do so especially if the lease is for a proportion of the facility.

Private Lessor
The private owner of the parking facility leases the entire (or part of the) facility to other private or public parties. Usually, large private lots are better candidates for this type of agreements to achieve significant investment outcomes and offset the administration efforts. However, leasing a small or limited number of spaces is also possible. If the private owner is leasing the facility to the private sector, then the City may play the role of being an intermediary facilitator, i.e., advocate for the shared parking, suggest an agreement template, expedite needed applications, etc. In a broader role, the City may also provide supplementary services, e.g., enforcement, maintenance, snow plowing, etc. According to the agreement, either the lessor or lessee will pay the City in return for the provided services.

Parking Lease Agreement for Public Use

In many cities or downtown areas, there could be many private parking lots where the parking demand is significantly lower than the available capacity. Instead of building costly large public parking facilities, public parking can be provided through parking partnership agreements intended to share the underutilized privately-owned parking spaces. Under this scheme, an arrangement is made between the City and the owner of the parking property to use the entire facility or part of the facility as a public parking. This type of agreement targets mainly the privately-owned parking facilities. The City may carry out the maintenance and operations of the public parking spaces, and the profit is then shared with the parking facility owner. A case-by-case agreement can also be formulated, and the services provided by each party should be considered when sharing the revenue.

Parking Management Agreements

This type of agreement does not intend to lease any parking spaces, but the owner of the parking facility assigns several parking management and operation services to another party. The owner pays the contracting party either a fixed monthly payment, a proportion of the revenue, or a hybrid method (fixed payment in addition to revenue sharing). Revenue sharing seems to be the most common type of compensation under this type of agreement. Parking management agreements can be further categorized into:

Full Management Services: the parking management provider carries out all (or most of) the services related to the management and operation of the parking facility, including maintenance, revenue collection, payment equipment, enforcement, signage, capital improvements, etc. This type of agreement better suits owners who seek full delegation of the management works and where a specialized parking management provider exists (e.g., municipal parking services division or authority). The provider is usually compensated for all the management expenses and the net revenue is then shared with the owner.

Agreements for Specific Services: the provider assists the owner of the facility with one or few services. These agreements help owners who seek particular supplementary services which are better to be provided by a specialized party, e.g., enforcement, pay-by-phone app, pay-by-web, etc. These supplementary services are usually technical or require special resources, and they are therefore better to be assigned to another party to maintain an efficient economy of scale. As learned from the City of Sacramento case study, the “enforcement” provider can retain the revenue generated by the parking citations. If “payment technology services” are provided, then the compensation can include a proportion of the revenue in addition to the cost of the credit card transactions. In all cases, a fixed management service fee can also apply.

Agreements to Add Public Parking in Future Developments

Under this model, the City encourages private developer to include public parking in their future development throughout different methods as outlined below.

- The City may educate the developers on the business opportunities arising from providing public parking in the development. The City may carry out the maintenance and operations of the public parking spaces, and the profit is then shared with the development owner. This arrangement leverages the already established City’s resources that are used for parking operations and maintenance elsewhere in the municipal parking system. The developer provides the spaces, the City provides expertise and facilitates the licensing, and the profit is then shared 50/50.
- In another arrangement, as recommended in the City of London Parking Strategy Study, the City grants density bonuses to the existing ZBLs (ex: extra dwelling units, or increased building heights) if the developer agrees to add on-site public parking.

In order to promote this concept of shared parking, the following recommendations are made:

- Including public parking in new developments should start as early as possible and ideally during the planning phases of the new developments.

- The City may educate the developers on the business opportunities arising from providing public parking in the development.
- The City may reach out to the private developer and provide them with incentives to include public parking in their projects.

The Role of the City or Municipality

The City has a vital role to promote the concept of shared parking agreement in dense areas. The City can participate directly and indirectly. As a direct participator, the City can be a lessor, lessee, or provide parking management services for the private facilities offering public parking. The City can also, as discussed above, promote several methods to add public parking in new developments and buildings (e.g., density bonus, business awareness, etc). Even if the City is not a contracting party in a parking agreement, it can still assist by carrying out the following activities and actions:

- Reach out to private parking owners and developers of new buildings and advocate for shared parking. Businesses may show little interest if this policy is not actively encouraged by municipalities.
- Act as a facilitator, address concerns of the contracting parties, and expedite and prioritize the processing of related applications.
- Establish a draft standard agreement template to encourage participation and make the agreement terms flexible enough to adjust to each case.
- Create Downtown-wide (or district-wide) shared parking system. This can help highlight the facilities that have parking supply surplus and raise awareness of the possible shared parking agreements among private developers.
- Report annually based on metrics that highlight the status of the shared parking system, including available demand and supply, future expansion, etc.
- Identify some (paid) services that can be required by the contracting parties, e.g., enforcement, maintenance, lighting, signage, insurance, etc. This can be efficient if the City is already providing these services at the municipal parking facilities.

3.3 Parking Agreement Terms and Considerations

This section explains the items and subjects that should be considered when preparing the shared parking agreements. The discussion also provides some insights and best practices on how such considerations were addressed in specific agreements or conditions. Parking agreement terms and considerations vary widely based on each case and the needs of the contracting parties, and these differences can be even noticed in the same City or jurisdiction. However, the section should help prospective parties interested in parking partnership agreements to understand the basic components of these agreements.

The discussed items are categorized into basic and supplementary. Basic items are the most important and common ones, they should be considered and included in all agreements. Supplementary items are less important, but they are still needed for some specific agreements and can also be useful to establish a comprehensive agreement that addresses all issues.

First: Basic Items

Agreement Duration

This identifies the duration of the agreement and whether it is renewed automatically. Shared parking agreements are usually arranged for long durations. However, differences in the durations can still be noticed, i.e., some agreements can be for 1-3 years whereas others can last for several decades, e.g., 10-40 years. Long-term durations are also needed for build, operate, transfer

contracts such as the PPP models. As mentioned in the case studies review, different agreement durations can still be noticed for similar types of agreements within the same jurisdiction, i.e., this can be something more relevant to the needs and preferences of the contracting parties.

Number of Leased Spaces and Use of the Facility

This should clarify the number of leased parking spaces, and if the use is limited to specific days and times of day. Some lease agreements may be seasonal and therefore should include the dates that define when the agreement is in place and if the same dates carry over recurrently to the next years.

Some agreements include a layout that demonstrates the leased parking spaces (highlighted and specified in an agreement). This can be important if the leased spaces constitute only a proportion of the facility.

Arranging for shared parking agreements consume coordination time and resources. Therefore, the number of leased parking spaces need to be large enough to make the agreement feasible for the engaged parties. However, based on the best practices review conducted herein, leasing a small number of parking spaces in the range of 20-30 spaces was also noticed in some cases, and based on the needs of the contracting parties.

In addition, the term “use of the facility” should address and clarify the following:

- If the leased parking spaces are to be used by the general public.
- If the leased parking spaces are to be used only by a specific party or organization.
- If the use of parking spaces is different by daytime, nighttitme, or overnight.
- If there are a limited number of parking permits to be issued by type, e.g., a maximum of “X” overnight parking permits.
- Parking spaces reserved for the owner’s use, if any.

The Rent Charging Rate

This is to specify the price rates of the leased parking spaces which is usually specified as a monthly price rate per parking space. Prices are typically valid for one year and can be adjusted annually, this adjustment should be well stated and defined. For example, the statement may indicate that adjustment should not exceed the prevailing parking rental rate charged by the City throughout the City’s municipal parking system. Payment due date, i.e., the recurring payment date every month, should be stated. Penalties for past due amounts may also be specified. In some cases, the lease cost can be a percentage of the revenue.

Maintenance

This is to specify the parties responsible for all aspects of maintenance of the facility, including cleaning, pavement repair, striping, lighting maintenance, snow and ice plowing, etc. Maintenance may be assigned fully to a particular party, be shared 50/50, or could follow a hybrid approach whereby some maintenance items are shared and some are not. Some agreements may include detailed exhibits or schedules that outline the maintenance responsibility. The following are further guidelines that can be followed when establishing the maintenance and operation responsibilities:

- When leasing an existing facility, it is generally recommended to retain the existing provider of a particular service to benefit from their experience.
- Economy-of-scale and speciality factors should also be considered, i.e., to assign a particular service to one provider in an area-wide sharing system.
- If the parking agreement is limited to leasing a proportion of the facility, then it makes sense to assign maintenance services to the same provider responsible of the full facility.

- Maintenance activities that have long-term nature, e.g., pavement or asphalt repair, are more likely to be assigned to the owner or lessor especially if the contract duration is not long enough to amortize the expenses.
- For long-term contracts, a term that specifies the frequency of some types of services may be included in the agreement (e.g., asphalt replacement and striping should be done every "X" years).
- Some maintenance activities may merit detailed language. For example, snow removal provision may state how quickly the snow must be cleared from the facility (i.e., within a specified number of hours from the accumulation of a specified snow thickness) and where the plowed snow should be stored.

Utilities

This term is to specify who is responsible to pay for the electricity, water sewage, etc. Usually, the lessee pays for these charges. If the leased parking area is a proportion of the whole facility, then the lessee may be made responsible to reimburse the lessor for a percentage of the total utility costs, i.e., the percentage is consistent with the proportion of the leased area. In full management contracts, it is either the owner's responsibility or it will be considered among the operating expenses and deducted from the collected revenue if paid by the operator.

Enforcement

Some agreements include a provision that explains enforcement allowances and restrictions, right to towing, who does the enforcement, who has the right to retain the parking violation revenues, who should compensate the enforcement operator, etc. Enforcement resources may not be needed if the facility has strict entry and exit control and is also supported with adequate technology that can keep the records of the vehicles when entering/exiting the facility, e.g., through LPR technology. If the permit structure is complex, e.g., the permits are only granted for specific times of day and days of the week, and the facility cannot keep records of the license plates of the vehicles entering and exiting the facility, then enforcement is needed. In addition, ungated facilities evidently need enforcement.

The lessee may be made responsible to ensure that their parkers are complying with the parking rules, mainly those related to parking location and time. This means that the lessee may need to patrol the area (by their personnel or through third-party) and issue formal notices of violation. A more stringent agreement may include terms requiring the use of an insured towing company, i.e., to remove violating vehicles within a specified number of hours.

Signage

An item is usually provided to specify signage restrictions if any, and who is responsible for adding sings if needed (directional, wayfinding, safety, etc.). Different types of signs may be assigned to different parties, e.g., some branding or marketing sings may only be provided by the branding party. In addition, the lessee is usually responsible to provide signs that define the boundaries of the leased parking area, highlight the days and times of permissible use, specify the penalties for parking violations, and identify who is responsible for enforcement. On the other hand, standard traffic signs such as traffic flow, pedestrian movement, speed limit, and parking access are usually the responsibility of the owner.

Exit or Termination Clause

The exit or termination clause is an important item for shared parking agreements. It describes the restrictions and conditions, if any, to exit the agreement and the advance notice if applicable. Some agreements may state clearly the reasons that justify the termination, e.g., ownership transfer, changing or limiting the access to the facility, etc. Early termination without cause clauses are also included sometimes. The following are further remarks and some of the best practices regarding the termination clause:

- The advance notice varies, i.e., 30 days, 90 days, 180 days, and one full year notices were observed. Typically, longer contract durations require longer advanced notice.
- Agreements with shorter durations, e.g., 3-year term (or less), usually have no exit clause or a strict one. On the other hand, long-term agreements should have exit clause that specifies the conditions to terminate the agreement and the advance notice.
- Agreements for only operation and management services are usually given more flexible exit clauses whereas the lease agreements may be given more stringent and restrictive exit clauses.
- The termination clause is usually the same for both the lessee and the lessor. However, different terms and conditions can be assigned to the different parties in some cases, e.g., the lessor may need to provide a longer notice period as compared to the lessee.
- Exit clauses may include termination fee to be paid by the terminating party. This fee can vary by the time of termination, i.e., the sooner the termination is made the larger the fee is.
- Agreements may also include some additional termination requirements, e.g., removing unnecessary signs, repairing abuse-caused damages, etc.
- In some cases, language is provided to address the unamortized capital expenses incurred by the lessee.

Fees Collection and Accounting

This is to specify who should handle the fees collection and revenue management. This should also include the revenues collected from parking enforcement and the issued tickets.

Insurance

The insurance term should detail the insurance requirements. This may include several insurance coverages: worker's compensation insurance and employer's liability, commercial general liability insurance, garage liability insurance, garage keeper's liability insurance to insure the parked vehicles (automobile liability), property insurance, limits per occurrence and annual aggregate limit, liability waiver clauses, and when the insurance certificates must be issued and delivered to the lessor (first time and for renewals). The party that carries and maintains the insurance differs by each case, it could be the owner or the lessee. The cities are usually self-insured municipal corporations and may take advantage of this when they enter into such agreements.

Taxes

This should specify who is responsible to pay the property taxes. Usually, the owner pays for the property tax and the lessee pays taxes related to the operations and income of the parking system. Some sale taxes related to parking fees can be passed to the parkers.

Cooperation

A cooperation term is provided to state that the parties will collaborate during the contract period to the best of their ability and that they agree to meet occasionally to discuss any needed adjustments to the agreement. The frequency of such meetings may also be specified.

Indemnification

The indemnity term is usually a standard item and provided in addition to the insurance term. This can be however very technical and requires legal counsel regarding its language.

Second: Supplementary Items

Improvements: usually the owner adds a term to prohibit any change made to the facility without their approval. If some improvements are already known to be needed during the lifetime of the

contract, then these should be specified clearly along with their expected costs and the party responsible for them. A table or exhibit may be needed if there are too many improvement items. Amortization schedule and conditions may need to be established.

Communication and notice delivery rules: to set out the acceptable methods of communication, e.g., by writing, email, registered or certified mail, etc.

Security: to specify the need for security system (surveillance) and identify who should maintain and operate the system.

Issuance and management of the permits: to specify who is responsible for the permit issuance and administration.

Default Clause: to define a default event occurrence and the consequences and/or remedies.

Supplemental Covenants: to provide additional terms, rights, and responsibilities.

Snowplowing: who will do the snowplowing, how, and when.

Other terms may also speak of branding, subletting, restrictions of some types or weights of vehicles.

4 Parking Utilization Surveys

4.1 Parking Survey Information

Manual parking surveys were carried out in October 2022 by City staff and they included public and private off-street parking facilities and on-street parking stretches in Downtown Brampton. The surveyed facilities are similar to the ones that were surveyed in Brampton Parking Plan study based on 2019 data and highlighted in Phase 1 report (See Exhibit 4.4 in the Phase 1 report). Each parking facility was surveyed on at least one weekday (i.e., October 26th or 27th) and at different times (e.g., morning, noon, and/or afternoon). Exhibit 2 summarizes the parking survey date and time by different parking types and facilities.

The purpose of the 2022 parking surveys is twofold. First, the surveys will provide an up-to-date parking utilization data as the City is recovering gradually from COVID-19 pandemic impacts. Second, the surveys will be used to assess the parking utilization in the hybrid work environment which was recently adopted by the City and many other employers. By identifying the impact of COVID-19 pandemic and the hybrid work model, a refined future parking demand forecast scenario can also be prepared and the parking supply surplus can be reassessed. It is anticipated that the hybrid work model will decrease the utilization of the parking system and increase the system-wide parking supply surplus. Having more recent parking data and assessing the impact of the hybrid work model should better inform any recommendation or decision regarding the shared parking strategies in the Downtown area.

Exhibit 2: Manual Parking Survey Date and Time by Facility

Parking Facility/Type	Date and Time the 2022 Surveys Were Available
Market SQ	Thursday, Oct 27: at 8:33 AM and 12:34 PM
City Hall	Thursday, Oct 27: at 8:40 AM and 12:42 PM
West Tower	Thursday, Oct 27: at 8:49 AM and 12:49 PM
Nelson SQ	Thursday, Oct 27: at 8:55 AM and 12:49 PM Thursday, Oct 26: 8:00 AM to 6:00 PM
John St	Thursday, Oct 27 at 9:04 AM and 12:55 PM
On-Street Parking	Wednesday, Oct 26: 9:00 AM, 12:00 PM, and 3:00 PM
All Private Off-Street Facilities	Wednesday, Oct 26: 10:00 AM and 12:00 PM

4.2 Methodology for Estimating Parking Supply

Analysis of the 2022 parking survey data will address the following criteria and assumptions:

- Two analyses were conducted as follows:
- First: analysis of the existing parking utilization using the 2022 parking data. This analysis also attempts to compare the 2022 data (post-Covid) with the 2019 data (pre-Covid) and draw conclusions regarding the impact of Covid-19 pandemic and the hybrid work model in place today.
- Second: estimation of the 2040 future parking utilization. This analysis will consider the following three basic scenarios: 1) 2040 base model: assumes no teleworking and relies

on 2019 parking data as the baseline, 2) 2040 hybrid work model: assumes the existing hybrid work model patterns will remain in place and relies on 2022 parking data as the baseline, and 3) 2040 limited hybrid work model: assumes 50% of the existing hybrid work model patterns will remain in place. The third scenario aims to reflect a contingency regarding the continuation of the existing hybrid work model, i.e., more work activities may return to office in the future. In addition, the impact of closing the Nelson Square parking garage on parking supply surplus will also be assessed.

- The assumptions regarding the population growth rate and the modal split were taken as per the Brampton Parking Plan Phase 1 report and following the same approach. That is, a population growth rate of 1.38 and a modal split reduction factor of 0.79 are assumed between 2019 and 2040 (over 21 years). When indexing the 2040 future parking demand forecast to the 2022 parking data, prorated ratios were calculated (over 18 years) and this resulted in a Net Growth Factor of 1.07.
- As shown in Exhibit 2 above, the survey times differ across the surveyed facilities. However, the Brampton Parking Plan Phase 1 Report indicates that the highest parking demand is historically noticed midday between 10:00 am to 4:00 pm and it only fluctuates moderately over this period (see Exhibit 4.3 in the Phase 1 report). Therefore, the period 12:00 to 3:00 PM will be adopted for further analysis in this report because it coincides with the historical area-wide peak-period and all facilities had at least one 2022 parking survey available during this period. The period 12:00 to 3:00 PM will be referred to as the “midday period” in the subsequent sections.
- The calculation of parking supply surplus will be based on the effective capacity of the facilities, i.e., capacity will be taken as 85% of the total number of available parking spaces.

4.3 Analysis of Existing Parking Utilization

Exhibit 3 shows the midday parking utilization ratios for different parking facilities and types in Downtown Brampton and Exhibit 4 summarizes the resulting parking supply surplus. The two exhibits provide the parking data for the 2022- and 2019-year baselines and compares the two. The following remarks can be drawn from Exhibit 3 and Exhibit 4:

- As compared to 2019 (pre-Covid), the area-wide parking utilization dropped substantially in 2022 (post-Covid). Relative to 2019 conditions, the area-wide parking utilization (and demand) dropped by 34.8%.
- A sharper parking utilization drop is noticed in the municipal off-street parking garages (48.9%) as compared to the private off-street parking facilities (24.7%).
- The data in Exhibit 3 indicates that the underutilization in the parking system which was observed initially in 2019 survey data has expanded and magnified as a result of the hybrid work arrangements. Based on 2019 data and assuming the effective capacity of 85% of the available supply, the surplus in parking supply was around 480 and 641 parking spaces in the municipal and private off-street parking systems, respectively; this surplus has increased in 2022 to 994 and 979 spaces, respectively.

Exhibit 3: Downtown Brampton Midday Parking Utilization: 2022 vs 2019 Data

Parking Facility/Type	Parking Utilization		2022 vs 2019	
	2019	2022	Difference*	Difference Relative to 2019**
Market SQ Garage	68%	22.7%	-45.3%	**-66.6%**
City Hall Garage	56.7%	27.8%	-28.9%	**-51.0%**
West Tower Garage	61.8%	39.2%	-22.6%	**-36.6%**
Nelson SQ Garage	49.8%	34.2%	-15.6%	**-31.4%**
John ST	42.7%	26.2%	-16.4%	**-38.5%**
Municipal Off-Street Parking (All Garages)	58.4%	29.9%	-28.5%	**-48.9%**
Private Off-Street Parking (All Facilities)	57.8%	43.5%	-14.3%	**-24.7%**
Municipal On-Street	49.6%	35.5%	-14.1%	**-28.4%**
Area-Wide Parking System	57.6%	37.5%	-20.0%	**-34.8%**

(*) Difference = 2022 utilization – 2019 utilization
(**) Difference Relative to 2019 = Difference ÷ 2019 utilization

Exhibit 4: Downtown Brampton Midday Parking Supply Surplus: 2022 and 2019 Data

Type of Parking	Parking Surplus (# of parking spaces)	
	2019 DATA (No teleworking)	2022 DATA (Hybrid work model)
Municipal Off-Street Parking System	480	994
Private Off-Street Parking System	641	978
Area-Wide Off-Street Parking System	1,121	1,972

4.4 Analysis of 2040 Future Parking Utilization

Exhibit 5 provides the forecasted 2040 parking utilization ratios for the three previously defined future scenarios, i.e., the base model, the hybrid work model, and the limited hybrid model. For each scenario, the impact of closing the Nelson SQ parking garage was also included. Exhibit 6 summarizes the resulting parking supply surplus for each scenario. The following remarks can be drawn from Exhibit 5 and Exhibit 6:

- The off-street parking system is expected to remain underutilized in 2040 and this applies to the three future scenarios. The area-wide off-street parking utilization ratio ranged between 40.3% (for the hybrid work model and assuming no facility closure) and 66.7% (for the base model and assuming the closure of the Nelson SQ parking garage).
- The parking system underutilization is significantly larger for the hybrid work model scenarios (scenarios two and three) and if the Nelson SQ parking garage remains open.
- The area-wide off-street parking supply surplus ranged between 1864 and 712 parking spaces across the different scenarios. The supply surplus in the municipal off-street system ranged between 162 and 956 spaces whereas the surplus in the private off-street system ranged between 550 and 908 spaces, across the different scenarios.
- If the hybrid work model is considered, either fully (scenario two) or partially (scenario three), the supply surplus in the municipal off-street system ranged between 440 and 956 spaces whereas the surplus in the private off-street system ranged between 729 and 908 spaces, across the different scenarios.

Exhibit 5: Downtown Brampton Midday Parking Utilization: 2040 Forecasts

Type of Parking	Scenario One 2040 Base Model (No teleworking)		Scenario Two 2040 Hybrid Work Model		Scenario Three 2040 Limited Hybrid Work Model	
	No Closure	Nelson SQ Closure	No Closure	Nelson SQ Closure	No Closure	Nelson SQ Closure
Municipal Off-Street Parking System	63.0%	74.4%	32.0%	37.7%	47.6%	56.2%
Private Off-Street Parking System	61.8%	61.8%	46.6%	46.6%	54.2%	54.2%
Area-Wide Off-Street Parking System	62.3%	66.7%	40.3%	43.1%	51.3%	55.0%

Exhibit 6: Downtown Brampton Midday Parking Supply Surplus: 2040 Forecasts

Type of Parking	Parking Surplus (# of parking spaces)					
	Scenario One 2040 Base Model (No teleworking)		Scenario Two 2040 Hybrid Work Model		Scenario Three 2040 Limited Hybrid Work Model	
	No Closure	Nelson SQ Closure	No Closure	Nelson SQ Closure	No Closure	Nelson SQ Closure
Municipal Off-Street Parking System	396	162	956	722	674	440
Private Off-Street Parking System	550	550	908	908	729	729
Area-Wide Off-Street Parking System	946	712	1,864	1,630	1,403	1,169

4.5 Parking Utilization Survey Discussion

The previous sections analyzed the parking system utilization in Downtown Brampton for both the existing and future conditions. However, in order to identify the parking supply that can be used for shared parking agreements, the following remarks should be considered.

Most of the private parking facilities are small in size (<25 parking spaces), and these are deemed inappropriate for shared parking agreements because they do not provide sufficient economy-of-scale for such type of agreements. Drafting, developing, and managing shared parking agreements consume time and efforts and only parking facilities with significant size should be considered. In addition, the owners of these facilities should show interest in parking partnerships. Moreover, some private lots serve specific purposes (e.g., the GO Station parking lots) and may not be used easily for shared or public parking purposes. This means that only a limited proportion of the private off-street parking system can be used for shared parking agreements and the focus should be placed on the municipal parking facilities.

The municipal off-street parking facilities have a large parking surplus. However, estimating this parking surplus is challenged with some uncertainty. The popularity of the hybrid work model in place today may change in the future. In addition, the Nelson SQ parking garage may be closed. Moreover, additional streetscaping projects may require redistributing some of the on-street parking demand to the off-street facilities. It is also to be noted that the analysis performed herein was based on one day of data to derive a high-level estimate of parking utilization, parking demand may still fluctuate from day-to-day.

These remarks indicate that an upper limit estimate of the parking supply surplus should be avoided as this does not address any contingency and may result in an overestimation. However, adopting a lower limit estimate may also prove to be too conservative and result in poor utilization of the available facilities. A middle estimate is deemed more feasible for planning purposes. The existing parking supply surplus in the municipal off-street facilities is estimated to be around 990 parking spaces. As for the 2040 future conditions, the third scenario which assumes a narrower hybrid work arrangement in place appears to be reasonably conservative. This corresponds to a parking supply surplus estimate of around 670 parking spaces assuming the Nelson Parking SQ remains open.

Based on scanning the private parking facilities and the stakeholder engagement activities carried out in the early phases of this study, only few private parking facilities were found to have appropriate size and also have owners interested in parking partnerships. The parking supply surplus of these facilities, which can be considered for parking partnerships, is estimated at around 130 parking spaces. This is just a rough estimate as the actual parking supply offered will be governed by the acceptance of the owners, the actual parking demand on-site, rental rate offered, and agreement duration and terms.

5 Off-Site Parking Opportunities

In order to accommodate potential parking demand increase in the future, desktop review was conducted in this section to assess the available site opportunities that can be leveraged to expand the Downtown parking system.

First: Policy Review: to gain an understanding of the existing and forthcoming policies in Downtown Brampton and how these can impact the process of developing new parking facilities.

Second: Review of Site Plans and Development Applications: to identify the major developments coming to the Downtown area, their land use and parking supply, and if there are already plans to develop new parking facilities in the area.

Third: Site Scan: to use air-photos and available documents to search for potential sites that can be used to develop new parking facilities in the future.

It must be emphasized that this section intends to provide high-level assessment and recommendations based on available data and documents. Site development is usually a lengthy process that may require further assessment of several detailed policies and standards; and therefore, the findings and recommendations of this section are intended to support future plans and developing any site would still require a more detailed feasibility and regulatory assessment.

5.1 Policy Review

This section provides a summary of land use planning policies which would impact the development of parking structures within Downtown Brampton. The reviewed policies include the Official Plan, the Secondary Plan, and the Draft New Official Plan.

Official Plan

The Brampton Official Plan is a long-term planning document to guide development in the city. The in-force Official Plan was originally approved in 2006, with the most recent consolidation including changes and amendments up to September 2020.

Section 4.11 of the Official Plan includes policies related to urban design. Relevant to the present project, Subsection 4.11.3.8 includes urban design policies specifically related to parking. These include the following policies:

“Parking areas shall be organized into small units separated by landscaping and pedestrian facilities to provide safe, attractive pedestrian environments and visual enhancement. Large unarticulated parking areas shall not be permitted;

Sustainable stormwater practices such as permeable pavement and bioretention should be integrated into parking areas to the greatest extent feasible;

Convenient surface parking shall be provided for commercial areas without affecting the character of major streetscapes. Parking areas should be located wherever possible at the rear or side of the blocks and connected to the streetscape through pedestrian links or covered ways; […]”

As indicated above, the City intends for parking facilities to have minimal visual impact on the character of the Downtown area. The Official Plan recommends parking be located at the rear sides of blocks and be well connected with the active transportation network.

Secondary Plan

Secondary Plans form part of Official Plans and provide additional details for land use development. Brampton Downtown Brampton Secondary Plan, also known as the Secondary Plan Area 7 (referred to herein as “SP7”) envisions the Downtown Brampton area as mixed-used area

with intensification and requires improvements to remain sympathetic to the character of the Downtown area.

Section 6 of SP7 includes policies related to the transportation network. As further discussed below, these policies support a system where buildings share parking structures as opposed to each having its own parking amenities.

Subsection 6.2 includes policies related to the road network. Policy 6.2.1. notes that where large size blocks are being redeveloped, a condition of development indicates that landowners shall consider entering into agreements to determine, among other things, shared parking arrangements. Shared parking arrangements would therefore help support the road network goals of SP7. Policy 6.2.1. notes the following (emphasis added):

"Where large size blocks are contemplated for development, access between properties at strategic locations to facilitate a local road network shall be considered at the development approvals stage. As a condition of development approval, ***landowners shall enter into agreements which among other matters shall determine ultimate access and shared parking arrangements."***

Subsection 6.4 includes policies related to traffic and access management which overall aim to reduce the number of driveway accesses to Queen Street. Policy 6.4.3 prohibits the addition of new driveway site access from Queen Street except under specific exceptions as quoted below:

"6.4.3. No new driveway site accesses to Queen Street shall be permitted in the Downtown Brampton Secondary Plan, with a few exceptions.

This means that the development of parking facilities along Queen Street should carefully consider the availability of appropriate access and egress schemes which may include relying upon the side streets.

Subsection 6.6. includes policies related to parking. Policy 6.6.1 and 6.6.2 both note that the City shall encourage less stringent parking standards and may establish reduced parking standards through a ZBL. As discussed elsewhere in Brampton Parking Plan reports, ZBL 045-2021 removed parking minimum requirements in the entire Downtown area with few exceptions. As per Policy 6.6.4, lands may be temporarily used for parking prior to redevelopment as quoted below:

"6.6.4. Lands may be used on a temporary basis for parking, prior to redevelopment, in accordance with the use and density provisions of this Plan. The design of temporary parking areas shall be in accordance with the urban form policies referenced in Section 8.0 of this Plan."

This policy provides opportunities to use vacant sites as temporary parking facilities until they are fully developed. In summary, SP7 encourages the use of shared parking arrangements in Downtown Brampton to preserve the land for other purposes and it also allows using the sites being redeveloped as temporary parking facilities.

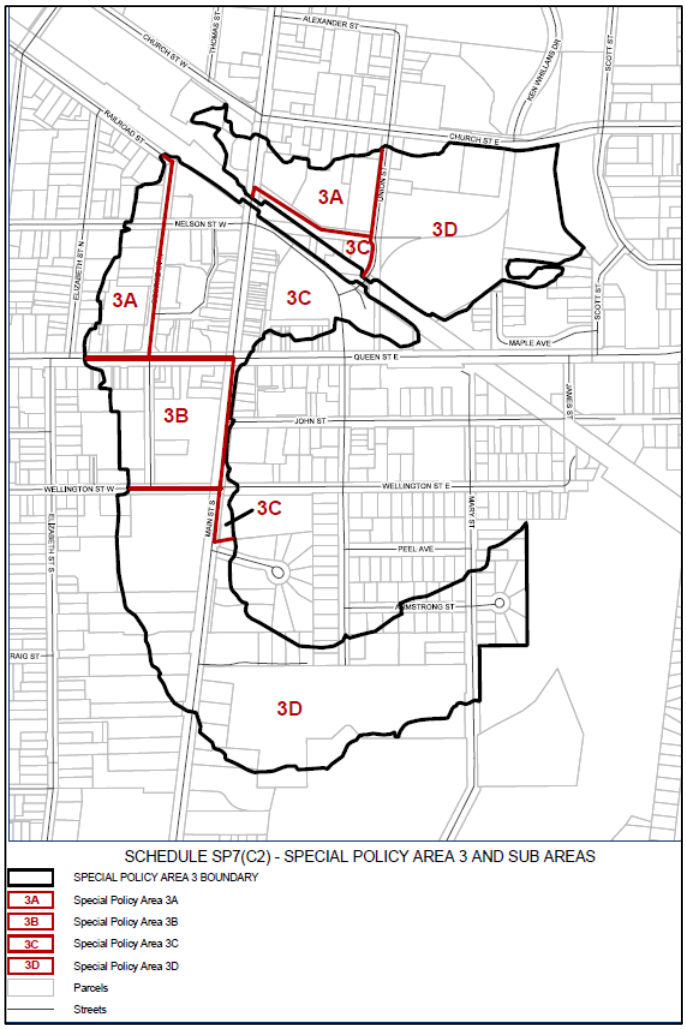
Special Policy Area Number 3

The SP7 includes site specific policies for Special Policy Areas. As shown in Schedule SP7(C2) (Exhibit 7), much of the Downtown area falls within Special Policy Area Number 3. The Special Policy Area is broken down into four sub-policy areas. Special Policy Area Number 3 was determined by the Toronto and Region Conservation Authority (TRCA) as being subject to flooding in a major storm event. The susceptibility of these lands to flooding require that floodplain management measures be added to proposed development within the area. Particularly relevant to parking structures is policy 5.6.3.2(xiii) which notes:

"Underground parking is generally discouraged. Where an underground parking garage is proposed, it shall be floodproofed to the Regulatory Flood elevation. Where it is technically impractical to floodproof to the Regulatory Flood level, the entrance and all openings, including those associated with ventilation, shall be floodproofed to the highest level technically feasible and

practical. The minimum floodproofing shall be the 1:350 year storm event, as determined by the Toronto and Region Conservation Authority."

Exhibit 7: Downtown Brampton Secondary Plan – Special Policy Area Number 3



Source: Schedule SP7 (C2) of the Downtown Brampton Secondary Plan

Draft New Official Plan

The City of Brampton is currently undertaking a study to update the Official Plan. The second and most recent draft of the updated Official Plan was released in December 2022. It has a strong focus on departing from Brampton's traditional suburban auto-centric community design and moving towards a people-first complete-street design.

The Draft Official Plan Schedule 1 depicts the entire Downtown area as an 'Urban Centre.' As such, Urban Centre policies apply to the municipal properties being reviewed. The following policy must therefore be considered in the implementation of new parking facilities:

"Policy 2.2.3.4 The following uses may be permitted within Urban Centres and Town Centres as shown on Schedule 1:

d. New parking facilities within centres will be integrated within buildings and structures. Parking may also be facilitated on street. Where the land use of an existing mall site is transitioning, surface parking may be permitted on a case-by-case basis".

"2.2.3.24 Where new development includes structured parking as an accessory use within Centres, such parking will be located mainly underground or, if within the principal building, not along the frontage of any public street."

While these policies are not yet in force, they highlight the City's goals of reducing surface parking and mitigating the impact of parking on the public realm and character of the Downtown area.

Policy Review Key Takeaways

Below are the summary remarks and key takeaways from the policy review:

- A parking facility in the Downtown area must balance policy direction to avoid surface parking as much as possible and mitigate the impacts of parking structures on the public realm.
- The City's intends for the Downtown parking facilities to have minimal visual impact on the character of the area. The Official Plan recommends parking be located at the rear or sides of blocks.
- The Secondary Plan of the Downtown area (SP7) encourages the use of shared parking arrangements in Downtown Brampton to preserve the land for other purposes and it also allows using the sites being redeveloped as temporary parking facilities.
- The City's draft new Official Plan requires new parking facilities within centres to be integrated into the buildings or the structures and it also encourages locating the structured parking underground.
- Special Policy Area No.3 delineates several sub areas in Downtown Brampton as susceptible to flooding and requires that any underground parking facility to be carefully floodproofed.

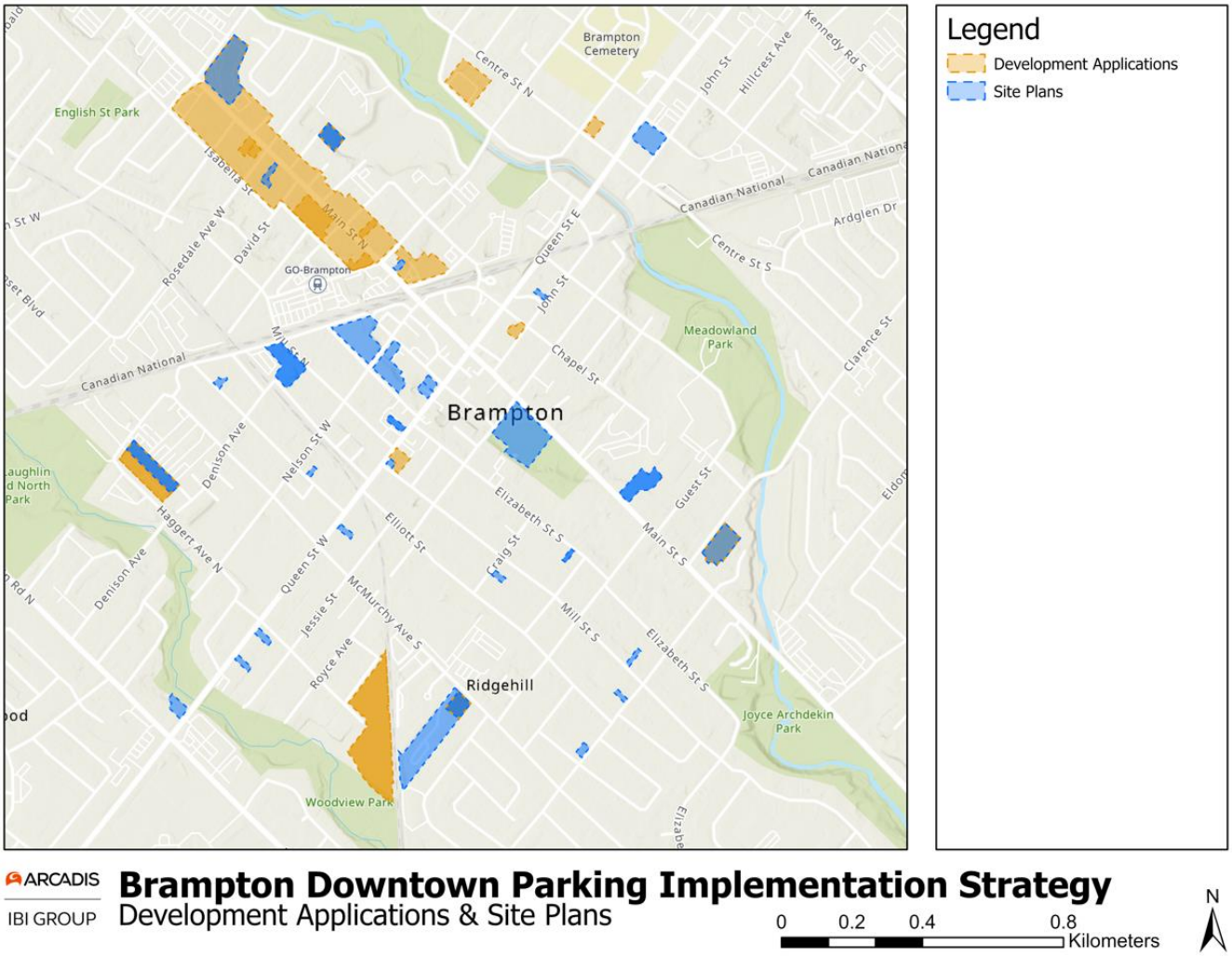
It is to be noted that the Special Policy Area designation and policies are expected to be removed through the review process, once flood protection construction is completed in 2028 as part of the Riverwalk project. In that case, the above-noted requirement for flood-proofing underground parking may not be required.

5.2 Review of Site Plans and Development Applications

In total, 55 site plans and development applications were reviewed in the Downtown area. The locations of these plans and applications are highlighted in Exhibit 8. The review focused on the size of the intended developments, their parking needs and supply, and their location. Exhibit 9 summarizes the major or large developments observed among the reviewed files and provides a brief description of each, including the parking supply. Exhibit 10 demonstrates the location of these developments. All these major developments were mainly residential (some comprise

limited mixed-use or retail areas). Other developments, i.e., not shown in Exhibit 9, were minor in nature and size and do not have significant impact on parking supply and demand, (e.g., developments with a few residential units, garage detachment, improving a building façade, etc.).

Exhibit 8: Downtown Brampton Existing Development Applications and Site Plans



Note: the data were shared by the City between September 2022 and May 2023.

Exhibit 9: Major Residential Development Applications

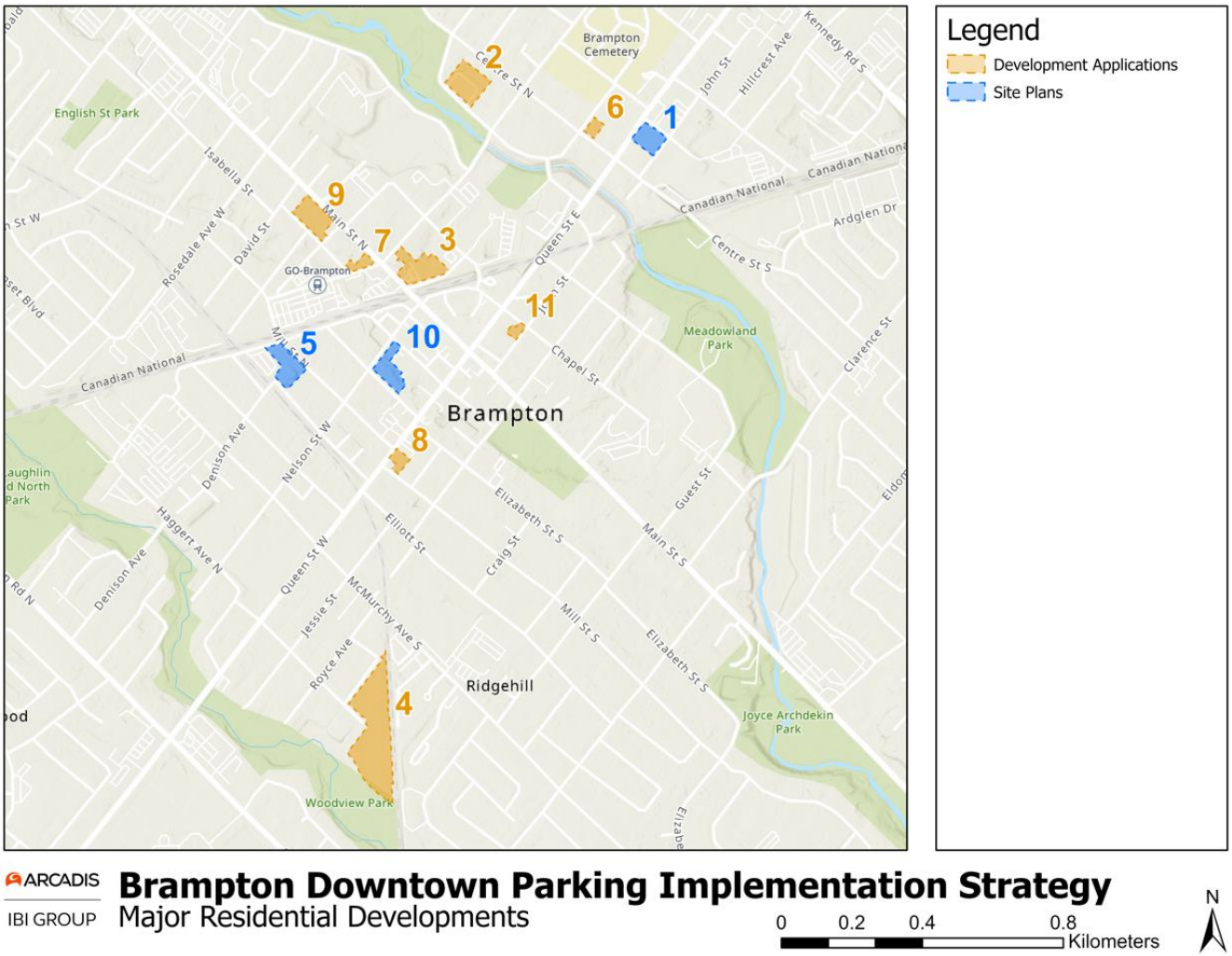
No.	Application or File No.[1]	Date Received	Building Type	Number of Units	ZBL Required Parking [2] (spaces)	Parking Supplied or Proposed (Spaces)
1	SP17-036.000	2017-05-15	25-storey mixed-use buildings	168 units + 524 m2 retail and 3,058 m2 office space	256 (168 residential + 26 commercial + 62 office)	278 (186 residential + 92 commercial). 92 bike racks.

No.	Application or File No.[1]	Date Received	Building Type	Number of Units	ZBL Required Parking [2] (spaces)	Parking Supplied or Proposed (Spaces)
						Based on approved site statistics drawing dated Nov 19, 2019.
2	C01E06.054	2017-06-02	17-storey residential building	358 units	392 (339 residential + 53 for visitors)	467
3	C01E06.056	2018-01-12	Three residential towers	590 units + 5,205 m^2 retail + 6 townhouse units	666 (565 residential + 89 for visitors + 12 TWHs). Property is within area exempt from commercial parking requirement, as per staff recommendation report.	645 (554 residential + 91 visitors & commercial). Based on Traffic Impact & Parking Study, Cole Engineering Group Ltd., Jan 2018.
4	C01W05.044	2018-02-20	13-storey residential building & stacked townhouse blocks	402 units (250 apartments + 152 townhouses)	498 (300 for apartments + 198 for townhouses)	497. Based on TIS, Stantec, dated Aug 18, 2020.
5	SPA-2020-0087	2020-07-03	25- and 27-storey mixed-use buildings	365 units	543 (435 residential + 76 visitor + 32 non-residential)	517 (408 residential + 77 visitor + 32 non-residential) -as per site plan dated June 29, 2020.
6	OZS-2020-0025	2020-09-14	9-storey residential building	82 units	131 (110 residential + 21 visitors)	Option 1 - 96 (84 residential + 12 visitors) Option 2 - 58 (41 residential + 17 visitors). Based on Parking Study, Burnside, August 12, 2020.
7	OZS-2021-0003	2021-01-14	30-storey mixed-use building	361 units + 298 m^2 retail at grade	72 for visitors, as per by-law 45-2021.	195 (136 residential + 54 visitor). 244 bicycle racks. Based on TIS and Parking Study Memo from BA Group, Dec 8, 2021.
8	OZS-2021-0009	2021-03-11	11-storey mixed-use building	82 units + 584 m2 retail space	16 for visitors, as per by-law 45-2021.	50. Based on site plan dated Jan 25, 2021

No.	Application or File No.[1]	Date Received	Building Type	Number of Units	ZBL Required Parking [2] (spaces)	Parking Supplied or Proposed (Spaces)
9	OZS-2022-0011	2022-02-11	Two 48-storey mixed-use buildings	1,149 units + 1,638 m^2 retail space	230 for visitors, as per by-law 45-2021.	466 (351 residential + 115 visitor). Based on City staff Supplementary Report dated Aug 2022.
10	SPA-2022-0122	2022-06-22	37- and 42-storey mixed-use buildings	971 rental units + 146 hotel units + 799 m2 retail space	194 for visitors as per by-law 45-2021. Bicycle racks 680 (0.7/unit).	654 (457 residential + 197 visitor). Bicycle racks 680. Based on site plan and zoning info. Drawing dated Sept 1, 2022.
11	OZS-2022-0035	2022-07-13	39-storey mixed-use building	285 apartment units + 77 student housing units + 100 m2 retail space	73 for visitors as per by-law 45-2021.	82 spaces. Parking is not provided for student housing as Algoma University is within 100 meters of the property. Proposes that parking generated by visitors and the commercial use can use municipal parking available in the vicinity. Based on Addendum Letter to TIS dated May 1, 2023.

Notes: (1) the application number and date are as per the data received in May 2023 and may change according to the application stage, (2) the applicable ZBL differs based on the availability and applicability of recent ZBL amendments, (3) some of the listed applications/files are still under review and have not been approved yet.

Exhibit 10: Major Development Applications in Downtown Brampton



Note: the shown development numbers correspond to the serial numbers provided in Exhibit 9.

Key Takeaways from Site Plans and Development Applications Review

The key takeaways from reviewing the site plans and development applications are:

- Several major and large residential developments are coming to Downtown Brampton. The site plans and development applications include eleven of such developments (Exhibit 9). The number of dwelling units for each development ranges between 82 and 1149, and some include mixed-use or retail areas.
- Some of the developments precede By-law 45-2021 (March 2021) which rescinded the parking minimums. Parking spaces are provided in these buildings or developments at a rate that is approximately equal to the number of units (i.e., the average supply is approximately 1.20 space/unit, including the visitor parking). This indicates that the parking estimation was mainly governed by satisfying the minimum parking requirements as stated in the previous ZBLs. However, it is to be noted that the developers did not apply for the cash-in-lieu of parking and were interested instead to provide adequate parking supply on-site. This may also suggest that future developers may still consider providing appropriate parking supply on-site even if no parking minimum requirements exist.

- Some of the development applications (or site plans) are recent and may benefit from By-law 45-2021 which relaxed parking requirements (i.e., developments No. 7 to 11 in Exhibit 9). All these developments are primarily residential, but a retail or commercial space is also included. The parking supply of the developments, which combines parking for both residents and visitors, ranges between 0.28 to 0.67 space per unit (with an aggregated/weighted average of 0.51 space/unit). It is to be noted that most of these development applications are still under review at the time this report was prepared.
- The parking spaces of these eleven developments are expected to be already bundled (or sold) with the dwelling units, and it may be complicated to unbundle them at this time and convert some of them into public parking. However, the City may approach the developers to further confirm this and see if there is still an opportunity to convert a limited number of the parking spaces into public parking. Offering public parking will assist the developers to invest in their parking supply and generate revenue.
- Rogers Communications requested for two Minister's Zoning Orders (MZOs) for major improvement to Rogers' Brampton campus. The two MZOs are for the Metrolinx-owned lands, located on the block bound by Railroad Street, Elizabeth Street North, Nelson Street West, and George Street North, and Rogers Communications-owned lands, located at 8200 Dixie Road. Other large mixed-use, commercial, or office developments were not noticed among the reviewed applications in Downtown Brampton. Only few and small mixed-use areas were added to some residential buildings. This indicates that the only major parking demand generator among the reviewed applications is Rogers Communications.
- There is only one development application that aims at developing a parking lot on 164&166 Main Street North. However, the area on the subject lot is very small leaving a very low potential to add significant public parking supply. The area of the lot as it appears on the map does not allow for a structured parking facility.

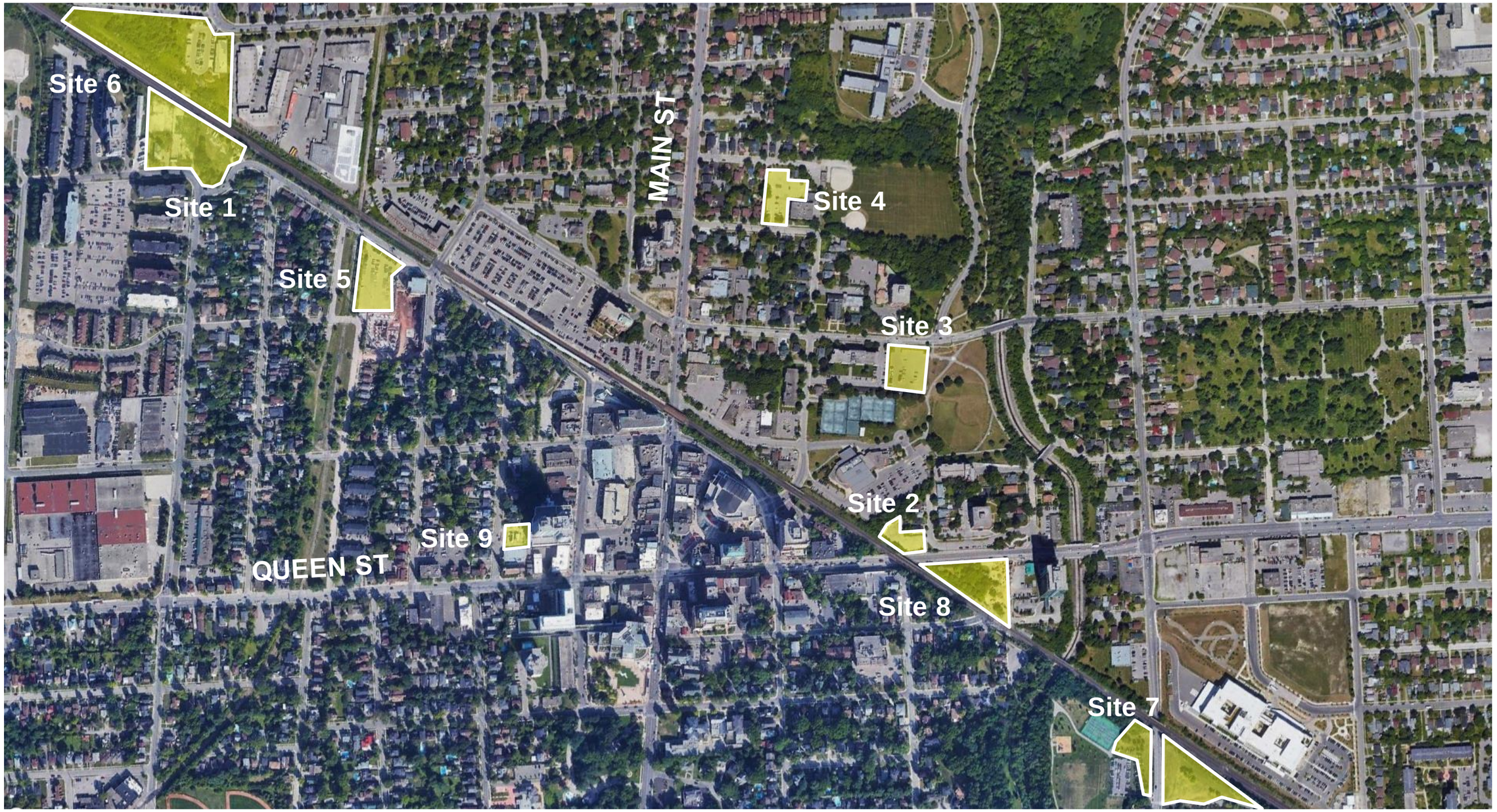
In summary, the reviewed development applications do not seem to create a major change in the parking demand and supply of the Downtown public parking system, except for Rogers' MZO. Applications to build new large public parking facilities were missing. The large residential developments provide their own parking on-site. Although some large residential developments are providing less than one parking space per unit on average, the demand for parking is anticipated to decrease with the forthcoming intensification in the area and the improvements to the transit and active transportation systems. It is to be noted also that the municipal garages presently do not offer overnight parking permits to residents. Offering such permits may be considered in the future if overnight residential parking demand reaches a significant level.

5.3 Air-Photo Site Scan

This section reviews the potential sites for developing future parking facilities and considering both the municipally-owned and the privately-owned sites. The review focuses on the vacant sites, but it also considers improving or repurposing some of the existing facilities (e.g., converting a surface parking lot into structured parking, opening a limited-access parking facility to the public, etc.). Exhibit 11 highlights the sites that were shortlisted and reviewed, the sites were provided with ID numbers so they can be referred to subsequently. Each of these sites is discussed individually in the following sections. The discussion provides general information, such as the site ownership, current use, Secondary Plan land use, ZBL designation, and if the site is located within the Secondary Plan special policy area No. 3. The ZBL information was retrieved from the City's *PlanningViewer* web tools[1]. In addition, the feasibility of using the site as future or temporary parking facility is discussed. At the end of this section, a summary table (Exhibit 21) summarizes the main attributes and key remarks for all the analyzed sites.

[1] https://maps1.brampton.ca/PlanningViewer/

Exhibit 11: Shortlisted Sites for the Off-Site Parking Opportunity Review



Source of the image is Google Earth, taken on Jan 25, 2023.

5.3.1 Site 1

Address: 82 - 100 Railroad St

Ownership: mixed (neighboured public and private plots)

Current Use: vacant and storage

Secondary Plan Land Use: residential - medium/high density

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: industrial: (M1)

Description:

The site is composed of several plots which are municipally and privately owned. It is possible that the current owner of the private lands is interested in selling the property or leasing it to the City and this should enlarge the total site area and achieve an economy of scale when developing a parking facility on site. The land use designation and ZBL permit parking on the site, and floodproofing mitigation measures are not required. The site has a 600 m walking distance from the potential development on Metrolinx site and 1070 m from the Main St and Queen St. intersection. Approximately 225 to 245 parking spaces can be accommodated on this site at the surface level. Using this site temporarily as a surface parking lot can be considered until future plans decide on the best use of the site.

It is to be noted also that the Secondary Plan identifies a grade separated crossing of the CNR tracks of the future extension of McMurchy Ave., subject to further investigation. Investing in a parking facility in Site 1 may impact the extension of McMurchy Ave.

Feasibility for Parking Purposes: high

Key Remarks:

Consider using the site temporarily as a surface parking lot which can be converted in the future into structured parking or mixed-use development. The facility can mainly serve the northern and western areas in Downtown Brampton and long walking distances may be encountered by the users if they are destining the other sides of the area.

Exhibit 12: Site 1 Street Image (*Source: Google Street View, taken on Jan 16, 2023*)

5.3.2 Site 2

Address: 2 Maple Avenue

Ownership: municipal

Current Use: surface parking (Rosalea Parking Lot)

Secondary Plan Land Use: residential - medium/high density

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: open space (OS)

Description:

The existing surface parking lot (Exhibit 13) does not seem to be highly utilized and it is not clear which facilities it serves. However, the signs indicate that parking is only allowed by permits between 7:00 AM to 7:00 PM from Monday to Friday, and parking is free after hours and on weekends. The pavement marking and stripes are not in a good condition and need improvement. The lot is relatively small and irregular in shape and so a multi-level parking structure is likely unfeasible although the site is not located within the Secondary Plan Special Policy Area Number 3. The ZBL does not permit a parking lot, but allows for parking as accessory to other recreational open space uses, such as the Rosalea Park. Therefore, developing a public parking facility on this site may require a ZBL amendment. The lot area is around 1950 sq m and may accommodate 55-65 parking spaces. The site is 350 m walking from Main St and Queen St. intersection and 750 m from the potential development on Metrolinx site. The site access and egress schemes need to rely on the side streets not only because of the policy limiting the access points on Queen St but also because Queen St is at a different (lower) level.

It is to be noted also that a BRT line, namely the Queen St Hwy 7 BRT project, is planned to pass along the Queen St and nearby the site. The project is still at the conceptual design phase, and it is unclear if the BRT alignment will require land expropriation and impact the site size. However, the project documents indicate that the BRT alignment design will be considerate of the tight right-of-way availability in the Downtown area and a narrowed section may be considered there. The design concepts considered so far and shown on the project website do not involve encroachment to the site. In addition, the Kitchener Go Rail Expansion project is foreseeing the addition of a third rail track to the Brampton GO station. The alignment of this additional track may pass nearby the site area. There is already an existing buffer between the site and the existing rail tracks, and the impact of a third track appears to be moderate, if any.

Feasibility for Parking Purpose: high

Key Remarks:

Consider converting the parking area into public parking facility if a ZBL amendment can be granted. This may provide moderate parking supply within walkable distance from the Downtown core area.

Exhibit 13: Site 2 Street Image (*Source: Google Street View, taken on Jan 16, 2023*)

5.3.3 Site 3

Address: 59 Church St E

Ownership: municipal

Current Use: surface parking (for the Rosalea Park)

Secondary Plan Land Use: institutional

Within Secondary Plan Special Policy Area Number 3: yes

Zoning By-law: institutional 1 (I1)

Description: The existing surface parking lot is serving the Rosalea Park. The I1 zone does not permit a parking structure in isolation, but allows for parking as accessory to other permitted uses including a park which is located on the site. Therefore, developing a public parking facility on this site requires a ZBL amendment. If the site is repurposed, additional parking may be included through the addition of new levels. The parking lot is within the Secondary Plan Special Policy Area Number 3, so mitigation would need to occur if underground parking were to be constructed. Structure height is limited by the ZBL which notes the maximum height is 3 storeys. The site is located within around 650 m walking distance from both the potential development on Metrolinx site and Main St and Queen St. intersection.

It is to be noted that the Ken Whillans Drive Extension project includes a proposed roadway alignment that may impact the Rosalea Park parking lot area. The proposed alignment however passes just to the east of the parking surface area and the impact on the lot area, if any, appears to be slim.

Feasibility for Parking Purpose: average

Key Remarks:

Consider converting the parking area into public parking facility if a ZBL amendment can be granted and if the northern side of the Downtown area is further developed and intensified.

Exhibit 14: Rosalea Park Parking Facility (*Source: Google Street View, taken on Jan 16, 2023*)

5.3.4 Site 4

Address: 24 Alexander St.

Ownership: municipal

Current Use: surface parking (for the participants of the school's programs)

Secondary Plan Land Use: public open space (valley land)

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: institutional 1 (I1)

Description: The existing surface parking lot is serving the Central Public School and the cultural and recreational programs offered by the school. Around 94 parking spaces are presently available on the lot. The I1 zone does not permit a parking structure in isolation, but allows for parking as accessory to other permitted uses. Therefore, developing a public parking facility on this site requires a ZBL amendment. The site is located within around 560 m walking distance from the potential development on Metrolinx site and 630 m from the Main St and Queen St. intersection. The site is listed (but not designated) as a heritage property.

Feasibility for Parking Purpose: average

Key Remarks:

Consider converting the parking area into public parking facility if a ZBL amendment can be granted and if the northern side of the Downtown area is further developed and intensified.

Exhibit 15: Central Public School Parking Facility (*Source: Google Street View, taken on Feb 3, 2023*)

5.3.5 Site 5

Address: southeast corner of Railroad St and Park St Intersection

Ownership: private (Metrolinx)

Current Use: GO Station parking lot

Secondary Plan Land Use: residential (medium-high rise)

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: residential R4B

Description: The existing surface parking lot provides additional parking to the GO Station. The site is being considered for inclusion in the City's Downtown Transit Hub which is still in the planning stage. If the location is not used eventually for the Transit Hub project, the existing parking lot could be considered as a potential expansion to the off-site parking system and can be used for shared parking purposes.

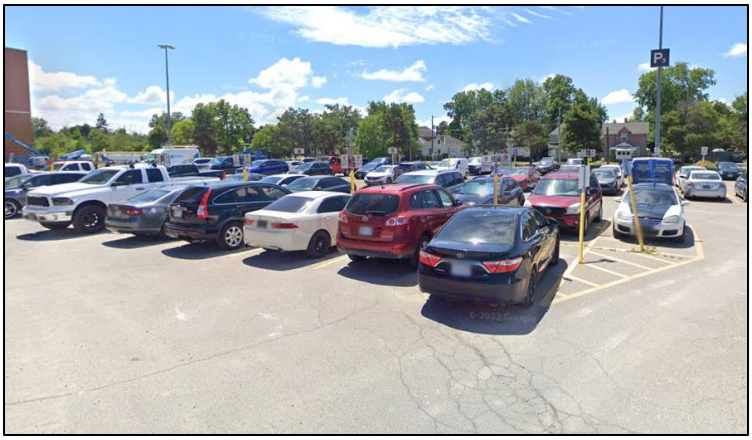
The parking demand levels at Metrolinx parking lots were at capacity before the Covid-19 pandemic. However, the 2022 survey results show that these lots are presently 70% to 80% utilized, indicating that Metrolinx may be willing to lease out or sell a proportion of the unutilized parking facilities. Walking distance from the site to Main St and Queen St intersection and the potential development on Metrolinx site is around 720 m and 270 m, respectively.

Feasibility for Parking Purpose: high

Key Remarks:

Consider purchasing the land and converting the private parking area into public parking facility if the site is not used for the Downtown Transit Hub and assuming the other GO Station parking lots are able to serve the station's demand.

Exhibit 16: Site 5 street image (*Source: Google Street View, taken on Feb 3, 2023*)



5.3.6 Site 6

Address: 99 Rosedale Avenue

Ownership: private

Current Use: industrial / commercial one-storey buildings, associated parking, and vacant land

Secondary Plan Land Use: industrial

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: industrial 1 (M1)

Description:

The 1.6-hectare triangular site currently contains a one-storey commercial/industrial complex on the north eastern portion of the lot (Exhibit 17). However, there is a large empty space on the property. The property is zoned as industrial, so residential or mixed-use development would require amendments to the Official Pan and ZBL. However, it is possible that the current or future industrial owners may be interested in partnering with the City to lease out a portion of the site, or sever the lot and sell the vacant land to the City. Because of the railway, reaching the Main St and Queen St intersection from the site requires to walk around 1.5 kilometres.

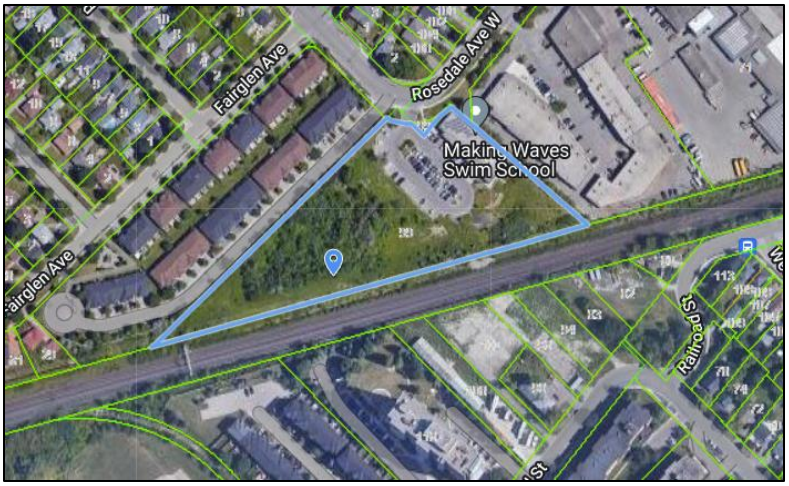
Note that this site could be of interest for potential future rail grade separation, and parking could still be considered on the remaining parcel.

Feasibility for Parking Purpose: low

Key Remarks:

Consider developing a parking facility on the site (or on a proportion of the site) if the area to the north of the railway is further developed. The site imposes long and convoluted walking distance to reach the southern side of the Downtown area.

Exhibit 17: Site 5 Satellite Image (*Source: Google Earth View, taken on Jan 16, 2023*)



5.3.7 Site 7

Address: 50 centre Street (Centennial Park)

Ownership: municipal

Current Use: public park and associated surface parking

Official Plan Land Use: neighbourhood/open space

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: open space (OS)

Description:

This is a public park with associated parking. The ZBL does not permit a parking lot, but allows for parking as accessory to other recreational open space uses, such as the park. Therefore, converting the existing parking lot into public parking with or without expansion would require a ZBL amendment. In addition, the site location is faraway from the Downtown centre, it requires following a convoluted route and walking around 1,000 m to reach the Main St and Queen St intersection. An additional 360 m of walking would be required to reach the potential development on Metrolinx site. The lot area is around 5,600 sq m and can accommodate 160-185 parking spaces.

Feasibility for Parking Purpose: low

Key Remarks:

Converting the site area into public parking facility requires ZBL amendment and the site is not within close proximity to the Downtown core area.

Exhibit 18: Centennial Parking Parking Lot (*Source: Google Street View, taken on Jan 25, 2023*)

5.3.8 Site 8

Address: 89-101 Queen St E (McLoughlin Parkette)

Ownership: municipal

Current Use: public parkette

Secondary Plan Land Use: public open space (parkette)

Within Secondary Plan Special Policy Area Number 3: no

Zoning By-law: open space (OS)

Description:

This is a public parkette and its removal and replacement with parking is not recommended in order to maintain the green space and public realm in the area. The ZBL does not permit a parking lot, but it allows for parking as accessory to other recreational open space uses, such as the Parkette. The site has an area of around 4,400 sq m and can accommodate 125 to 145 parking spaces. Walking distance from the site to Main St and Queen St intersection and the potential development on Metrolinx site is 425 m and 800 m, respectively.

Feasibility for Parking Purpose: low

Key Remarks:

Converting the site area into public parking facility requires a ZBL amendment and may receive opposition as it adversely impacts the green land and the public realm.

Exhibit 19: McLoughlin Parkette (*Source: Google Street View, taken on Jan 25, 2023*)

5.3.9 Site 9

Address: 8 Elizabeth St N

Ownership: private

Current Use: electrical infrastructure

Secondary Plan Land Use: central area mixed use

Within Secondary Plan Special Policy Area Number 3: yes

Zoning By-law: residential extended one zone (R2B (1))

Description:

The site has two properties (Exhibit 20) that are owned by Alectra Utilities and were previously owned by Brampton Hydro Networks. Combined, the two plots have a total area of around 1100 sq m. The properties appear to contain electrical infrastructure. There is a limited space to provide additional parking on the site and the site safety requirements would still need to be also assessed. The ZBL does not permit a public parking facility, and a ZBL amendment would be needed. The site area is also small and not promising to build a multi-storey parking garage.

Feasibility for Parking Purpose: low

Key Remarks:

Converting the site area into public parking facility requires ZBL amendment and safety assessment. The site does not have a good potential to be converted into multi-storey parking garage.

Exhibit 20: Site 9 images (*Source: Geowarehouse and Google Street View, taken on Jan 25, 2023*)

Exhibit 21 provides a summary of the analyzed sites and their main attributes.

Exhibit 21: Site Scan Summary for Future Off-Street Parking Opportunities

Site ID	Land Ownership	Lot Area (sq.m)	Estimated Surface Parking Supply (spaces)	Walking Distance to Main st & Queen st intersection (m)	Overall Feasibility	Remarks
Site1	Mixed	7,850	225 to 245	1,070	High	The site can be used temporarily as surface parking and may be converted into structured parking in the future. Require purchasing private lots and adding them to the publicly owned area. The facility can mainly serve the northern and western sites in Downtown Brampton
Site 2	Municipal	1,950	55-65	350	High	Consider converting the parking area into public parking facility if a ZBL amendment can be granted. The lot size and shape do not allow for structured parking.
Site 3	Municipal	3,700	106	650	Average	Consider converting the parking area into public parking facility if a ZBL amendment can be granted. Structured parking can be considered.
Site 4	Municipal	3,150	94	630	Average	Consider converting the parking area into public parking facility if a ZBL amendment can be granted.
Site 5	Private	4,400	153	720	High	Consider purchasing the land and converting the private parking area into public parking facility if the site is not used for the Downtown Transit Hub and assuming the other GO Station parking lots are able to serve the station's demand.
Site 6	Private	16k	Max. 500 to 560	1,500	Low	Consider developing parking facility on the site (or on a proportion of the site) if the area to the north of the railway is further developed and intensified. The site imposes long and convoluted walking distance to reach the southern side of the Downtown area. Should include greenery area to avoid building excessively large parking lots (this may reduce the parking supply).
Site 7	Municipal	5,600	160-185	1,000	Low	Converting the site area into public parking facility requires ZBL amendment and the site is not within close proximity to the Downtown core area.

Site ID	Land Ownership	Lot Area (sq.m)	Estimated Surface Parking Supply (spaces)	Walking Distance to Main st & Queen st intersection (m)	Overall Feasibility	Remarks
						The site requires following a convoluted route and passing around 1000 m to reach the Main St and Queen St intersection.
Site 8	Municipal	4,400	125-145	425	Low	Converting the site area into public parking facility requires a ZBL amendment and may receive opposition as it adversely impacts the green land and the public realm.
Site 9	Private	1,100	Not clear	290	Low	Converting the site area into public parking facility requires ZBL amendment and safety assessment because it contains electrical infrastructure. The site does not have a good potential to be converted into multi-storey parking garage.

Note: the provided areas, parking supply, and walking distance are approximate estimates.

Site Scan Key Takeaways

Based on reviewing the potential off-street parking opportunities in Downtown Brampton, below are the main findings:

- Vacant lands in the Downtown area are very rare. Most of the lands are already developed or under development. This means that building new stand-alone parking facilities in the future may be restricted by land availability. The public parking system expansion may alternatively rely on repurposing some of the existing lands, opening limited-access parking facilities to the public, and converting surface parking lots into multi-storey parking garages. These alternative mechanisms may still be challenged by the need to amend ZBLs and purchasing lands.
- Sites 1 to 5 analyzed herein appear to be the more feasible sites for off-street parking system expansion although some need a ZBL amendment and some need further engineering assessment.
- More intensification is planned for the Downtown area at the time parking minimum requirements have been rescinded and shared parking arrangements are encouraged. This means that the Downtown off-street parking system will play a major role in the future to accommodate the whole area parking needs. The above noted restrictions to build new parking facilities indicate that the existing parking system is expected to be more utilized and more needed in the future.

6 Shared Parking Implementation Scenarios

This section provides a discussion of different implementation scenarios under which different parking demand and supply profiles are to be assessed. Because parking demand and supply profiles may continuously change as a result of changing density rates, travel behaviour, economic growth, and other factors, the implementation scenarios were established such that they reflect different time horizons as follows:

Scenario One: short-term scenario based on the existing parking demand and supply conditions

Scenario Two: long-term scenario assuming normal operational growth

Scenario Three: long-term scenario assuming expansive operational growth

The main features describing the background conditions of the downtown parking system are summarized first based on findings from previous tasks. Then, a discussion of each scenario is provided. Scenario One is discussed in more details because of two reasons. First, more data are presently available to describe the existing and the short-term conditions as compared to the far future. Second, the recommendations resulting from Scenario One are to be considered or implemented in the short-term, and naturally should be more of a priority. An efficient implementation of parking partnership in the short-term should help better accommodate the future needs.

Important Note

It is to be noted that the analysis herein is made based on the available information and several assumptions have been made. The intention is to formulate “approximate” or “likely” but not “accurate” or “definitive” scenarios, so an assessment to the shared parking system can be made and lessons can be learned. The operations of the parking system are subject to frequent changes and uncertainty resulting from, for example, teleworking behaviour, maturity of the transit system improvements, modal split changes, economic growth, land use changes, future parking demand requests, etc. The City should continue to monitor the off-site parking requests, site plans, development applications, and changes in the parking demand and supply profiles in the area, and take any considerable changes into account when assessing the shared parking system needs.

6.1 Context of the Downtown Parking System

A summary of the key features describing the downtown parking system is provided herein. This summary intends to identify the context and the background conditions of the parking system that will guide preparing the shared parking strategies and tactics. The key features of the parking system described in the preceding sections of this report are summarized below.

Utilization of the Parking System

The analysis of parking operations in Downtown Brampton indicated that the parking system is presently underutilized. This underutilization was observed for both the pre-COVID and post-COVID conditions. However, parking demand dropped by 34.8% between the 2019 (pre-COVID) and 2022 (post-COVID) surveys, which means that the underutilization has magnified as a result of the hybrid work arrangements.

Based on the recent 2022 parking surveys, the observed parking utilization ratio was around 37.5%, 43.5%, and 29.9% for the area-wide parking system, the private off-street parking, and the municipal off-street parking, respectively. This substantial underutilization of the Downtown off-street parking system calls for applying parking partnership strategies that can make this system more efficiently deployed while benefitting from the expected growth in employment and population.

Takeaway: a large parking supply surplus is available and ready for parking partnership arrangements.

Context of the Private Parking Facilities

The total supply of the private off-street parking system in Downtown Brampton is large and estimated at around 2,360 parking spaces. Based on the 2022 parking surveys, the observed private system utilization area-wide was equal to 43.5% and this means that around 1,333 parking spaces were vacant at the time of the survey. However, only a limited proportion of this large supply surplus can be used for shared parking agreements because of two main reasons. First, most of the private parking facilities are small in size (<25 parking spaces), and these are deemed inappropriate for shared parking agreements because they do not provide sufficient economy-of-scale for such type of agreements. Second, some private lots serve specific purposes (e.g., the GO Station parking lots) and may not be used easily for shared or public parking purposes.

Takeaway: only a limited proportion of the private parking supply surplus can be used for shared parking purposes and the reliance should be placed on the municipal parking system.

Anticipated Growth in Employment and Businesses

Brampton is the fastest growing big city in Canada. The City's growth is projected to reach 985,000 people and 355,000 jobs by 2051, and Downtown Brampton is projected to reach 30,000 people and 15,000 jobs by 2051. As informed by the previous tasks of this study, there are several large residential, mixed-use, and commercial developments coming or planning to come to the downtown area. Some of the developers have already expressed their needs to secure off-site parking supply through parking partnership arrangements. Examples of such developers or developments include employment centers, office uses, and post-secondary institutions.

Takeaway: the demand for parking partnership already exists and is expected to grow.

New Parking Regulations and Official Plans

By-law 45-2021 has rescinded the minimum parking requirements in the downtown, central area, and Hurontario-main corridor. Developers are not obliged to provide a predefined on-site parking supply any more in these areas. Although the developers are still expected to assess their parking needs based on the market conditions, many will aim to optimize the use of their lands and explore off-site parking partnership opportunities. The Secondary Plan of the downtown area (SP7) encourages the use of shared parking arrangements in Downtown Brampton to preserve the land for other purposes. The City's draft new Official Plan requires new parking facilities within centres to be integrated into the buildings or the structures.

Takeaway: the recent Zoning By-law (ZBL 45-2021) will increase the interest in parking partnership and the official plans of the City have already promoted parking partnership and the efficient use of land.

Opportunities to Expand the Parking System in the Future

Building new stand-alone parking facilities in the future may be restricted by land availability. The public parking system expansion may alternatively rely on repurposing some of the existing lands, opening limited-access parking facilities to the public, converting surface parking lots into multi-storey parking garages, and integrating public parking into new mixed-use or residential developments.

Takeaway: expanding the parking system in the future is possible but may be challenged by land availability and the need for some ZBL amendments, the existing parking system is expected to be more utilized and more needed in the future.

All the above highlights and takeaways reveal that the existing conditions are very promising and appropriate to apply the concept of parking partnership in Downtown Brampton. This is well

reflected by the parking supply availability, employment and population growth, and the new laws and plans.

6.2 Scenario One: Short-Term Conditions

Scenario One is established to represent the existing conditions of the parking system and the near future (2-8 years). The analysis of this scenario will rely on the available parking demand and supply data, including the 2022 parking surveys. An off-site parking demand of 500+ parking spaces will be assumed to be generated from the potential development on Metrolinx site (Exhibit 1). In addition, parking supply request anticipated as part of well-defined future development plans (e.g., CFI) is considered.

6.2.1 Off-Site Parking Demand Profile

From the parking demand side, there are presently many planned developments that already requested or are expected to request off-site parking supply arrangements. These are outlined below. It is to be noted that the Downtown shared parking system is primarily intended in this study to address parking demand requests from proposed developments that bring significant employment to the area. That is, parking needs of residential developments are not considered as part of the analysis.

Centre for Innovation (CFI)

The CFI is planned to be a landmark building comprising a new library, an innovation zone, and office space, and the proposed CFI site is on the land delimited by Railroad St, George St N, and Nelson St W. The CFI is still being designed, but parking has not been provided as part of the CFI development and securing off-site parking supply is needed to serve the CFI's employees, users, and visitors. No parking demand calculations were available for the CFI at the time this report was prepared. Because of the importance and the size of the CFI, a parking demand generation exercise for the CFI was deemed necessary and prepared for the purpose of the present study. This analysis is intended to be a high-level estimate to gauge the anticipated level of the parking demand generated by CFI, an exact parking demand estimate is subject to further details and is considered beyond the scope of this study. In addition, this demand generation is rather "technical" or "theoretical" and not "regulatory" since the new ZBL 45-2021 has rescinded the minimum parking requirements. A report prepared by Brampton Committee of Council, dated 2019-04-12, will be used to retrieve the CFI land uses and their areas. The total gross floor area of the CFI is estimated to be 320,000 sq ft. The breakdown of this area by the different land uses and the parking demand generated by each are summarized in Exhibit 22. The total parking demand is estimated roughly at 727 parking spaces. However, estimating the CFI parking demand should also consider that:

The two main land uses generating the parking demand are the "library" and "office space". space". According to ZBL 270-2004, they have different peaking times and parking demand demand reduction is possible if a shared parking facility is used for the mixed-use development. development. Applying the concept of shared parking, as per the ZBL 270-2004 peaking percentages (Exhibit 23), would reduce the total CFI parking demand to 524 spaces as shown in Exhibit 24 (a 27.9% reduction). By using the concept of shared parking, the percentages provided in Exhibit 23 can be applied to the required parking supply for each land use. The total number of parking spaces required for each of the four peaking periods is then calculated. The period with the maximum number of parking spaces is then selected to determine the required parking supply. The calculations of the shared parking formulas are summarized in Exhibit 24.

- Exhibit 24The shared parking-based reduction (27.9%) appears large if compared with what the ITE Parking Generation Manual peaking percentages would suggest. In addition, the actual use of the library space is still unclear and the space may be used or repurposed

for other purposes, e.g., to serve or support academic institutes. Therefore, a 15 to 20% reduction sounds more plausible.

- Parking demand reduction due to the recent trends in applying the hybrid work arrangement is very likely to be significant. Establishing an accurate estimation of such reduction is not possible due the uncertainty about future work and travel behaviours. However, a 10 to 20% reduction due to teleworking is assumed.
- The significant transit improvements in the area, which include high-order transit, are expected to be implemented in the long-run. In addition, the parking rates retrieved from the ZBL 270-2004 are designated to the central area of the City, and so, they should be considerate of the downtown area connectivity to the transit system. Therefore, no significant modal split changes are to be assumed in the short-run.

Considering all the above points and for the purpose of having a rough estimate of the short-term parking demand of the CFI, a blanket parking demand reduction of 30% was assumed. This adjusts the total parking demand from 727 spaces to 509 spaces (~500 spaces). Because the assumed parking reduction is near the lower limit (conservative), this parking demand estimate may also consider additional (limited) parking demand if generated by the Transit Hub. However, if planning the Transit Hub resulted in a very large parking demand, then this may impact the present analysis, and this can be however considered as part of the continuous monitoring of the parking demand and supply in the area.

As per the City's Transportation Master Plan Update, the high-order transit improvements (i.e., light rail and rapid transit) are planned for the long-run. However, some moderate transit improvements may become available in the short-to-medium runs (e.g., additional bus lines and increased frequency of services). In addition, the CFI may not become fully operational in the short-term. Because of these additional reasons, the CFI parking demand will be further reduced by 20% for Scenario One and this will adjust the estimated parking demand to 400 spaces.

Exhibit 22: CFI Area Breakdown and Parking Generation

Land Use	Assumed Area (1)		Assumed Land-use Class (for parking generation)	Assumed Parking Generation Rates (ZBL 270-2004)	Number of Parking Spaces Required
	ft^2	m^2			
Library	105,000 (NFA)	9,754.8	Library	1 space per 44 m^2 of GFA (2)	290
Innovation Zone	10,000 (NFA)	929	Office	1 space per 44 m^2 of gross commercial floor area (2)	28 (3)
Admin/Support Services	5,000 (NFA)	464.5	Office	1 space per 44 m^2 of gross commercial floor area (2)	14 (3)
Retail	1,000 (NFA)	93	Retail	first 150 m2 of gross commercial area exempted from min req. (2)	0
Event Space	9,000 (NFA)	836	Community Club	0.57 space per 8 m^2 (4)	78
Transit Hub	10,000 to 15,000 (NFA)	930 to 1,395	No matching class is available	The exact parking demand is not available and subject to the final architectural design. (5)	
Additional Office Area	150,000 (GFA) (6)	13,935.5	Office	1 space per 44 m^2 of gross commercial floor area (2)	317 (3)
Total	**320,000 (GFA) (7)**	**29,729 (GFA) (7)**			**727**

Notes: (1) NFA: net floor area, GFA: gross floor area, the areas provided are as per the Brampton Committee of Council report dated 2019-04-12, the ratio between NFA to GFA is assumed to be 0.76, (2) parking requirements as per the ZBL 270-2004, (3) for simplicity, the gross commercial floor area was assumed equal to the GFA, (4) the ZBL 270-2004 requirement for "community club" was adapted to reflect the downtown location and it was reduced from 1.0 to 0.57, (5) no parking supply is assumed for the transit hub and the layby pick-up and drop-off activities are assumed to be integrated with the architectural space design, (6) the additional office floor area was given, in the City's report, as 150,000 ft^2 without clear specification of this area being GFA or NFA, but it was assumed as GFA since this adds the numbers more accurately to the total GFA given in the report, and (7) the total GFA assumes 150,000 ft^2 GFA for the additional floor area plus 170,000 ft^2 GFA for the remaining land uses.

Exhibit 23: Percent of parking demand by peak period (ZBL 270-2004)

Land Use	Morning	Noon	Afternoon	Evening
Office	100	N/A	95	15
Retail/Commercial	80	N/A	100	50
Restaurant	20	N/A	60	100
Residential	80	N/A	80	100
Library	30	N/A	30	100
Theatre/Cinema	0	N/A	0	100

By using the concept of shared parking, the percentages provided in Exhibit 23 can be applied to the required parking supply for each land use. The total number of parking spaces required for each of the four peaking periods is then calculated. The period with the maximum number of parking spaces is then selected to determine the required parking supply. The calculations of the shared parking formulas are summarized in Exhibit 24.

Exhibit 24: Shared parking calculations for the CFI (based on Exhibit 23)

Land Use	Total Parking Required	Morning	Noon	Afternoon	Evening
Office	359	359	N/A	341	54
Library	290	87	N/A	87	290
Event Space/ Community Club (1)	78	78	N/A	78	78
Total	**727**	**524**	**N/A**	**506**	**422**
Maximum period		√	×	×	×

Notes: (1) no reduction was made to the parking demand of the event space as some events may take place during different times of day.

Potential Development on Metrolinx Land

As discussed in Section 2.3, a potential site to accommodate a prospective development (or developments) is the site bounded by Railroad St, Elizabeth St N, Nelson St W, and George St N. This site, illustrated in Exhibit 1, is presently owned by Metrolinx. Off-site parking demand around 500+ parking spaces is estimated in the short term to result from such development (or developments). These assumptions are made based on the internal and external stakeholder consultation efforts that were done in the early phase of the study, including a questionnaire that was distributed to prospective developers.

Mixed-use Development Applications

As mentioned in Section 5.2, there are several mixed-use (mainly residential) development applications in Downtown Brampton that are either underway or still being reviewed. Some developments provide parking supply using relatively low parking generation rates and attempt to benefit from the parking requirement relaxation in By-law 45-2021. The developments include a limited proportion for retail and commercial uses which may generate some transient parking needs at the nearby municipal garages. In addition, if the municipal garages are opened in the future for overnight parking purposes or permits, a demand for such permits may be generated. The off-site parking demand of these mixed-use developments is still expected to be moderate because: 1) most of these developments still provide a significant amount of parking spaces for their residents and visitors although at a rate less than one space per unit, and 2) the Downtown area is planned for intensification and aggressive improvements to the transit and active transportation systems. The off-site parking demand of these developments will only be discussed qualitatively in the present study and will not be included in the quantitative analysis. As stated above, the off-site parking demand in this study is mainly formed by developments that generate significant employment activities.

Other Possible Developments

With the expected growth in employment and population and the planned intensification to the area, other programs and prospective developers are likely to be interested in locating their developments in the downtown area. For example, Algoma University, currently located in Downtown Brampton, has some plans to expand into other buildings in the area. In addition, the Heritage Theatre Block will be redeveloped and revitalized in the future for non-residential land uses which may add significant parking demand.

Parking Demand Profile Summary

There are several major developments coming to Downtown Brampton. Considering only the two main and largest developments, i.e., the CFI and the potential development on Metrolinx site, the approximate demand for off-site parking supply through parking partnership is expected to be around 900 parking spaces. As mentioned earlier, more developments may also request off-site parking supply, and the total demand is likely to increase beyond what is required by the CFI and the potential development on Metrolinx site.

It is worth noting that the CFI and the potential development on Metrolinx site are expected to generate a very high demand pressure on the Nelson Square parking garage since this garage is conveniently located within a very short walking distance from these developments. Other municipal garages can still be considered for shared parking purposes, but additional walking distance will be needed. This is discussed further in Section 6.2.3.

6.2.2 Parking Supply Profile

The total parking supply in Downtown Brampton is around 4,332 parking spaces comprising 2,361, 1,802, and 169 spaces in the off-street private, off-street public, and on-street parking facilities, respectively. Based on the October 2022 parking surveys, Exhibit 25 summarizes the parking supply, utilization, and the surplus observed at each facility during the peak midday period. It should be noted that only one-day parking survey was done at most of the surveyed facilities. Although parking demand level is subject to fluctuation across different days and seasons, the analysis here is deemed to be done at the high-level and for planning purposes only.

Exhibit 25 provides two types of parking surpluses, i.e., theoretical and practically usable for shared parking purposes. The theoretical parking surplus may not be fully used or utilized for several reasons as explained below:

- The effective capacity at parking facilities is usually taken as 85-90% of the full theoretical capacity. This ensures keeping the cruising time needed to find vacant spaces at a

reasonable level. Therefore, 15% of the available parking capacity will be kept unused when estimating the practical surplus.

- The on-street parking supply is usually kept for the general public use and is not commonly used in shared parking agreements that address parking needs of specific developments. In addition, the on-street parking supply can be impacted by future streetscaping projects. Therefore, the on-street parking supply will be deemed unusable for parking partnership.
- As mentioned elsewhere in this report, the private off-street parking facilities can be used for shared parking as long as these facilities are large enough and their owners are interested in parking partnership. Only a few private parking facilities met these two conditions and their parking supply surplus is estimated at around 131 parking spaces.

Exhibit 25: Downtown Parking System: 2022 Midday Parking Survey Data

Parking Facility/Type	2022 Surveys		Supply Surplus (# of spaces)	
	Parking Supply (# of spaces)	Utilization (%)	Theoretical Surplus	Practical Surplus (for shared parking)
Market SQ Garage	519	22.7%	401	323
City Hall Garage	349	27.8%	252	200
West Tower Garage	434	39.2%	264	199
Nelson SQ Garage	275	34.2%	181	140
John ST	225	26.2%	166	132
Municipal Off-Street Parking	1,802	29.9%	1,264	994
Private Off-Street Parking	2,361	43.5%	1,333	131
Municipal On-Street	169	35.5%	109	-
Area-Wide Parking System	**4,332**	**37.5%**	**2,706**	**1,125**

Parking Supply Profile Summary

As can be informed from Exhibit 25, the area-wide practical parking supply surplus is estimated to be around 1,125 parking spaces including a municipal off-street parking system contribution of 994 spaces (88.3%). On the facility-level, the largest parking supply surplus was observed at the Market SQ Garage with a practical surplus of 323 parking spaces, the City Hall and West Tower garages come next with around 200 spaces at each facility.

Although the parking supply surplus of the private off-street parking system is theoretically large (1,331 spaces), the practically usable proportion for parking partnership purposes is very small (131 spaces). In addition, facility owners are likely to only lease a proportion of this surplus to keep their own parking operations within a comfortable or conservative level.

In addition, to account for an effective capacity threshold at the 85% level, it is highly recommended that the estimate of the municipal off-street parking system supply surplus be considerate of the future transient parking needs. The Downtown 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. Although the 2022 parking surveys indicated only a utilization of 35% in the municipal on-street parking system, replacing all (or most of) the 100 spaces within the municipal garages is recommended. This recommendation is made conservatively to secure a sustainable replacement of the lost on-street parking spaces, continue to support the businesses in the area and all transient parking needs, and to account for additional loss in the on-street parking due to other future transit and streetscaping projects. This would reduce the estimated area-wide practical parking supply surplus to 1,025 spaces (894 municipal + 131 private).

6.2.3 Off-site Parking Demand Distribution

As mentioned earlier, the demand for off-site parking in the area is estimated at around 900 parking spaces whereas the total available and usable parking supply surplus is assessed to be around 1,025 spaces. This means that the available supply may barely serve the demand and some additional demand, if required by new or additional developments, may not be served. It is also to be noted that the existing off-site parking demand is generated mainly by two major developments, i.e., CFI and the potential development on Metrolinx site. If any of the two developments withdrew its plan or changed its land use or area, then the parking demand profile will significantly change. Some mixed-use developments are still under review and the size of their expected off-site parking demand is not comparable to the CFI and the potential development on Metrolinx site. Therefore, these developments are only considered and included qualitatively (and not quantitatively) in the present analysis.

Research by Mary S. Smith, Thomas A. Butcher, and the Victoria Transport Policy Institute[2] associates different walking distances by different levels of service (Exhibit 26) and suggests some walking distance targets by different land uses (Exhibit 27). LOS D is considered herein as the minimally acceptable LOS with LOS C or higher as the desired targets. Based on these criteria, an attempt was made to analyze the resulting level-of-service (LOS) associated with different off-site parking demand distribution plans or options, i.e., using the different off-street parking facilities available in the Downtown Brampton.

Exhibit 26: Walking distance by level-of-service

Walking Environment	LOS A	LOS B	LOS C	LOS D
Climate Controlled	300 m	730 m	1,150 m	1,580 m
Outdoor/covered	150 m	300 m	450 m	600 m
Outdoor/uncovered	120 m	240 m	360 m	480 m
Through Surface Lot	100 m	210 m	320 m	420 m
Inside Parking facility	90 m	180 m	270 m	360 m

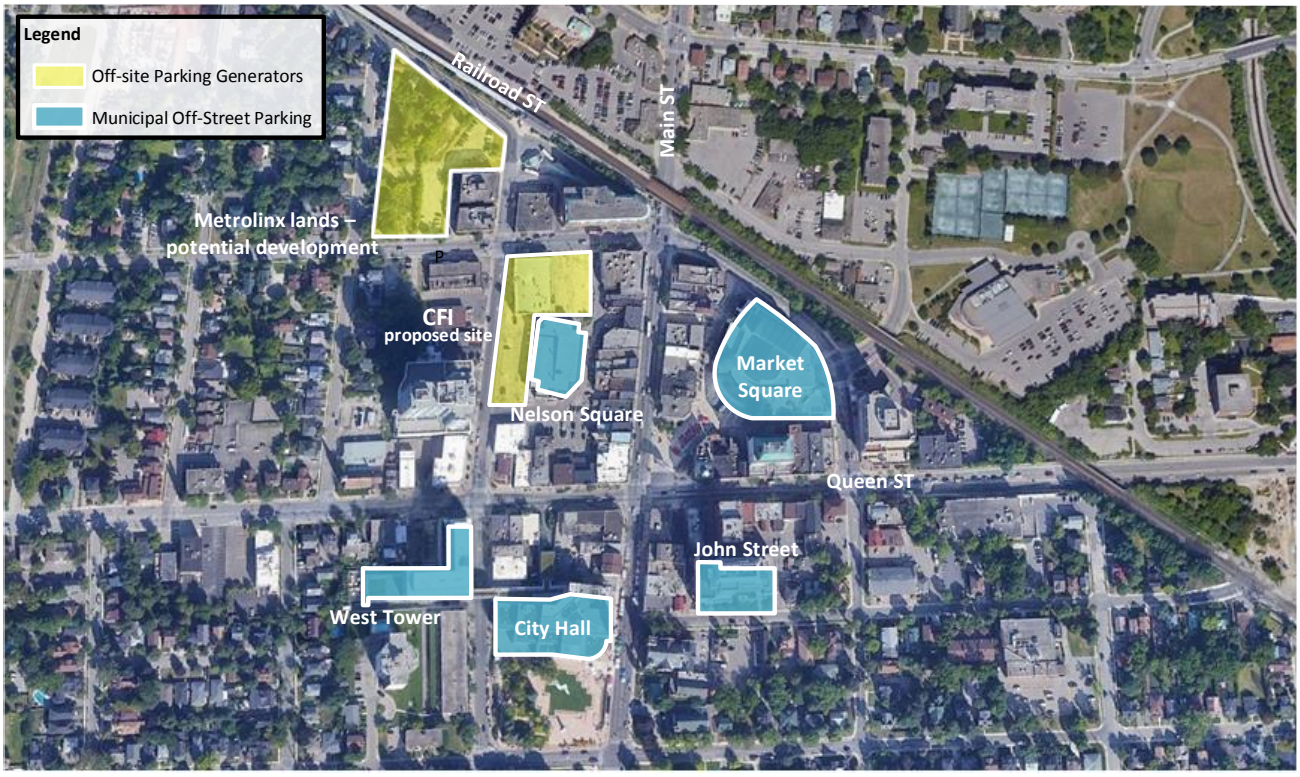
[2] https://www.vtpi.org/tdm/tdm73.htm#_Toc18599176

Exhibit 27: Walking Distance Targets

Adjacent	Minimal (LOS A or B)	Median (LOS B or C)	Long (LOS C or D)
People with disabilities	Grocery stores	General retail	Airport parking
Deliveries and loading	Residents	Restaurant	Major sport/cultural event
Emergency services	Medical clinics	Employees	Overflow parking
Convenience store	Professional services	Entertainment center	

Exhibit 28 shows the area of Downtown Brampton and highlights both the developments that are expected to require off-site parking supply and the municipal off-street parking facilities that can accommodate this demand. Exhibit 29 shows the walking distance needed and the resulting LOS when the off-site parking demand of each development is distributed to the different available parking facilities.

Exhibit 28: Potential parking demand generators and available municipal off-street parking facilities



Note: the shown locations of the CFI and the potential development are proposed sites and subject to changes.

Exhibit 29: Approximate walking distance and level-of-service (LOS) between different parking demand generators and off-site facilities

Development	Parking Facility				
	Nelson Square	Market Square	City Hall	John Street	West Tower
Potential Development on Metrolinx Site	240m (LOS B)	300m (LOS C)	360m (LOS C)	550m (-)	320m (LOS C)
CFI	50m (LOS A)	210m (LOS B)	240m (LOS B)	400m (LOS D)	190m (LOS B)

Note: (-) means the walking distance surpassed the LOS D threshold and is considered not acceptable.

Based on the spatial attributes shown in Exhibit 28 and Exhibit 29, the largest proportion of the off-site parking demand, which is generated by the CFI and the potential development on Metrolinx site, is concentrated at the corner south to Railroad St and west to Main St N. Considering the CFI and the potential development on Metrolinx site, the Nelson Square Garage is the most feasible facility to serve the existing off-site parking demand, as it offers the shortest walking distance and the highest quality of service (LOS A or B). The Market Square, City Hall, and West Tower garages come next and also offer reasonable walking distance (LOS B or C). Finally, the John Street Garage might be only minimally acceptable by some users of the CFI (LOS D).

The total practical parking supply surplus at the four most feasible garages with LOS C or higher (i.e., Nelson Square, Market Square, City Hall, and West Tower) was estimated to be 862 parking spaces (See Exhibit 25) which is less than the total requested supply of 900 spaces. If the John St Garage is added, then the supply increases to 994 spaces. However, compensating the lost on-street parking spaces (around 100 spaces due to streetscaping projects) inside the municipal garages would reduce the available supply to 894 spaces which is very close to the requested demand. This analysis overall shows that the existing parking supply surplus may barely accommodate the estimated off-site parking demand generated by the CFI and the potential development on Metrolinx site. Using some private facilities can add a limited additional supply (e.g., 80-100 spaces) to bridge this deficiency. However, extra off-site parking demand requests from other developments are expected to magnify the supply deficiency.

Adding more parking supply from the existing facilities, i.e., beyond the practically usable surplus, would require relaxing the 85% capacity threshold to a higher level, and this can only add limited supply at the time it also creates congestion, prolongs the cruising time inside the facility, and does not well account for the day-to-day demand fluctuation.

6.2.4 Scenario One Summary

The analysis of the short-term off-site parking demand and supply conditions reveals that: 1) a large off-site parking demand around 900 spaces may be generated, assuming the CFI and the potential development on Metrolinx site and their areas and land uses, and 2) the available parking supply surplus may barely serve that demand and a proportion of this demand may have to be served with a relatively low level-of-service (i.e., a walking distance that exceeds 360 m) and using some private parking facilities. Additional off-site parking demand is also likely to be generated if other developments or redevelopment activities took place in the area. Moreover, the existing parking utilization rate may increase as more workers may return to work in-office and the post-pandemic recovery continues. All these possibilities may create a deficiency in the available parking supply to serve the off-site parking demand.

6.3 Scenario Two: Long-Term Conditions with Normal Growth

Scenario Two is established to represent the parking system conditions in the long-term future (by 2040) and assuming normal operational growth. The normal operations growth herein assumes the following: 1) the off-site parking demand already requested in the short-run (Scenario One) will carry on, 2) the background parking demand will only grow as per the population growth, 3) no new large or development-specific off-site parking demand request is assumed beyond the normal growth, and 4) modal split will change as per the City's Transportation Master Plan due to significant changes in the transit system. In addition, the Nelson SQ parking facility is assumed to remain open.

6.3.1 Off-Site Parking Demand and Supply Profile

Based on the definition of Scenario Two, no additional off-site parking demand requests are assumed beyond the ones assumed in Scenario One. Therefore, the off-site demand of 900 parking spaces, which was estimated in Scenario One, carries on. However, the planned improvements to the transit system are expected to reduce the demand for parking. The previous reports and sections, as part of the Brampton Parking Plan and the Downtown Parking Implementation Strategy, estimated around 18% reduction in parking demand between 2022 and 2040 due to modal split changes. This was based on the City's Transportation Master Plan. However, discussion with City's staff indicated that the CFI is intended to be directly connected with high-order transit and that students, who are not expected to be auto-dependent, will be the primary users of some of the development facilities. Therefore, the CFI development is prone to a larger parking reduction and a reduction of 50% was suggested. Based on this discussion, the off-site parking demand of the potential development on Metrolinx site will be reduced by 18% (from 500 to 410 spaces) whereas the CFI parking demand will be reduced by 50% (from 500 to 250 spaces). This would consequently reduce the total off-site parking demand to around 660 spaces.

However, the supply of the off-site parking can change due to future population growth and changes in modal split and work behaviour. Section 4.4 elaborated on estimating the 2040 parking supply surplus. The estimate assumes a 1.326 population growth between 2022 and 2040 and a 0.82 reduction in parking demand between 2022 and 2040 due to modal split changes. Exhibit 30 summarizes this estimate for two cases: 1) a wide implementation of the hybrid work arrangements, i.e., similar to the post-pandemic conditions and as per the 2022 parking surveys, and 2) a limited implementation of the hybrid work arrangements, i.e., this approximately maintains half of the parking demand reduction observed post the pandemic in the 2022 parking surveys, i.e., approximately a 17% reduction as compared to the pre-pandemic demand level. Based on this analysis, the practically usable public parking supply surplus ranges between 574 and 856 parking spaces. This range assumes that 100 spaces are used to compensate the lost 100 on-street spaces and cannot be used for shared parking. Similar to Scenario One, a limited number of spaces can also be added to the supply surplus from some private facilities.

It is worth noting that there should be an overlap between the off-site parking demand requested by the CFI and the potential development on Metrolinx site, from one side, and the parking demand increase due to population growth, from the other side. The population growth-induced parking demand increase in the municipal parking lots is expected to be only 38 spaces considering the presently wide implementation of the hybrid work arrangements and the anticipated modal split changes, i.e., the size of this demand increase does not appear to be significant. To keep the analysis simple and conservative, the two parking demands (i.e., development-generated and population-growth-generated) will be aggregated and the possible overlap will be neglected and only discussed qualitatively in the absence of accurate data and in light of the complexity of this overlap and the relatively insignificant demand generated by the population growth.

Exhibit 30: Off-street Municipal Parking supply surplus – 2040 forecasts

Parking Facility/Type	2040 Hybrid Work Model		2040 Limited Hybrid Work Model	
	Theoretical Surplus	Practical Surplus (for shared parking)	Theoretical Surplus	Practical Surplus (for shared parking)
Market SQ Garage	393	315	265	187
City Hall Garage	245	193	190	138
West Tower Garage	252	187	198	133
Nelson SQ Garage	174	133	150	109
John ST	162	128	141	107
Municipal Off-Street Parking (All Garages) - unadjusted	**1,226**	**956**	**944**	**674**
Municipal Off-Street Parking (All Garages) - adjusted to compensate the 100 lost on-street parking spaces	**1,126**	**856**	**844**	**574**

The extensive improvements planned for the transit system and the anticipated modal split changes should reduce auto-dependence and reduce the pressure on the parking system. However, the uncertainty regarding how teleworking may look like in the future adds more challenge to estimate the parking supply surplus accurately. The continuation of applying the hybrid work model widely, as presently is the case, is anticipated to create a practical surplus of 856 spaces which should be sufficient to serve the assumed off-site parking demand (i.e., 660 spaces). The more conservative estimate, which assumes a limited implementation of teleworking, is anticipated to create a practical surplus of 574 spaces which is less than the off-site demand and results in a deficiency of around 86 spaces (~100 spaces). This deficiency may also increase if we assumed that the parking demand of the CFI and the potential development on Metrolinx site would also increase in light of the limited teleworking. Some private parking facilities may bridge a proportion of this deficiency. However, relaxing the 85% effective capacity threshold to a higher level, such as the 95% or 100% level, is warranted to fully serve the demand.

6.3.2 Scenario Two Summary

The analysis of the anticipated off-site parking demand and supply profiles for the 2040 horizon year and assuming normal background growth (i.e., Scenario Two) reveals the following:

- Off-site parking demand generated by the CFI and the potential development on Metrolinx site is anticipated to drop to around 660 spaces due to the planned transit system improvements and the resulting modal split changes.
- Estimating the future parking supply surplus is challenged with considerable uncertainty, especially when it comes to anticipating the work behaviour and the prevalence of teleworking.
- A wide implementation of the hybrid work model can result in a parking supply surplus sufficient to serve the assumed off-site parking demand. On the other hand, a limited implementation of such work model can result in a deficiency of around 100 spaces. Increasing the utilization of the municipal parking system to 95-100% may bridge this gap,

but this will create congestion and does not account for the day-to-day or seasonal parking demand fluctuation.

6.4 Scenario Three: Long-Term Conditions with Expansive Growth

Scenario Three is established to represent the future conditions of the parking system in the long-term future (20 years) and assuming expansive operational growth. The expansive operations growth herein assumes the following: 1) the off-site parking demand already requested in the short-run (Scenario One) will carry on, 2) the background parking demand will continue to grow as per the population growth, 3) additional large or considerable development-specific off-site parking demand requests are anticipated beyond the normal growth and these requests are for employment-related activities, and 4) modal split will change as per the City's Transportation Master Plan due to significant changes in the transit system. The Nelson SQ parking facility is also assumed to remain open.

6.4.1 Off-Site Parking Demand and Supply Profile

The analysis of Scenario Two reveals that the off-site parking demand generated by the CFI and the potential development on Metrolinx site is anticipated to drop by 2040 to around 660 spaces in light of the anticipated transit system improvements and the modal split changes. Scenario Three assumes that more large employment-related developments might be established in the downtown area and that these can increase the off-site parking demand substantially beyond 660 spaces. Although site availability is limited in the downtown area, repurposing and redeveloping some of the existing lands or buildings is still possible. A considerable increase in the off-site parking demand can be generated by one single large development, i.e., similar to the CFI and the potential development on Metrolinx site, or by the accumulation of several parking demand requests made by several small, medium, and large developments. Estimating the size of the potential off-site parking demand increase due to such potential developments is hard and challenged with uncertainty because this relies heavily on the economic conditions, policy changes, site availability, and development application approvals, etc. However, as learned form the parking generation estimates done for the CFI and the potential development on Metrolinx site, one large development may add a demand of several hundreds of spaces. Scenario Three intends to reflect expansive growth, i.e., it should assume an additional off-site parking demand in the range of several hundreds of parking spaces, e.g., 300 to 600 spaces. This can increase the total off-site parking demand area-wide from 660 to around 950 – 1,250 parking spaces.

The parking supply surplus that can be used for shared parking was already discussed in Scenario Two and estimated to be 574 (limited teleworking) to 856 parking spaces (wide teleworking). When comparing this surplus to the estimated off-site parking demand, Scenario Three retrieves a large deficiency that can range from 94 to 676 parking spaces. The deficiency of 676 spaces represents a worst-case scenario with a very large off-site parking demand (1,250 spaces) and the lowest parking supply surplus (574 spaces). On the other hand, the deficiency of 94 spaces represents a moderate but also significant increase in the off-site parking demand requests and a parking supply surplus that assumes wide implementation of teleworking. It is to be emphasized again that some assumptions had to be made to analyze the shared parking scenarios, the actual parking demand and supply profiles may be different based on the changing conditions.

6.4.2 Scenario Three Summary

The analysis of the anticipated off-site parking demand and supply profiles for the 2040 horizon year and assuming expansive growth (i.e., Scenario Three) reveals the following:

- The expansive growth in the downtown area may bring several small, medium, and large employment-related developments to the area, and these developments may accumulate a large off-site parking demand. An additional off-site parking demand in the range of

several hundreds of parking spaces (e.g., 300 to 600 spaces) was assumed. By adding this to the total demand generated by the CFI and the potential development on Metrolinx site, the total off-site parking demand area-wide may reach 950 to 1,250 spaces.

- Forecasting the future parking supply surplus is challenged with considerable uncertainty, and it is estimated however to be between 574 and 856 spaces. This results in a large deficiency that can range from around 100 to 670 parking spaces (with an average of around 400 spaces). Such deficiency can only be accommodated by expanding the shared parking system.

6.5 Shared Parking Implementation Strategies

Assessing the off-site parking demand and supply profiles in the short-term and far future is challenged with several sources of uncertainty. These include: the work behavior and the prevalence of teleworking, the progress of the planned transit system improvements and the resulting modal split changes, and the off-site parking demand requests which rely on the economic conditions, policy changes, site availability, development application approvals, etc. However, despite this uncertainty, several scenarios were prepared to assess the shared parking system under different potential parking demand and supply combinations and different time horizons.

The analysis of the three defined scenarios, i.e., short-term, long-term normal, and long-term expansive, can be summarized in the following points:

- The analysis of the existing parking conditions in Downtown Brampton and considering the two very likely and large off-site parking demand requests, i.e., by CFI and the potential development on Metrolinx site, shows that the existing parking supply surplus overall may barely accommodate the estimated off-site parking demand. Parking supply deficiency is likely if extra off-site parking demand requests are made, if more parking spaces were reserved for transient purposes, and if more return to in-office and less teleworking are observed.
- An easy future scenario would assume: a limited increase in parking demand due to normal population growth, significant reduction in parking demand due to modal split changes, and no new off-site parking demand requests beyond the requests made by the CFI and the potential development on Metrolinx site. This results in a healthy parking system utilization that is less than the 85% level. However, a limited implementation of teleworking would increase the parking demand resulting in a supply deficiency of around 100 spaces.
- A challenging future scenario would assume a significant increase in off-site parking demand due to expansive growth in the area, i.e., in the range of additional 300 to 600 spaces. This may generate a parking supply deficiency that ranges from around 100 (wide teleworking) to 670 spaces (limited teleworking). This is a rough estimate in the absence of accurate data.

It appears that most of the potential scenarios or cases result in a parking supply that is barely sufficient to serve the demand or even in a parking supply deficiency, i.e., assuming the off-site demands created by the CFI and the potential development on Metrolinx site are confirmed and that they will continue in the future. Note that all scenarios assumed that the Nelson Square garage remains open. Considering this context and the uncertainty surrounding it, the following are the recommendations made to outline the parking partnership implementation strategy. In the beginning, some recommendations and strategies tailored for the short-term are provided. These are followed by recommendations made for both the short- and long-terms.

Recommendations and Strategies for the Short-Term

Confirm the existing off-site parking demand requests. There is still some uncertainty regarding the actual off-street parking demand that can be requested by the prospective developers or developments. The CFI final design has not finished yet and other prospective developers are still working on securing sites for their developments. As mentioned above, the CFI and the potential development on Metrolinx site are presently the main parking demand generators and any change to their plans may significantly change the parking demand profile, including cancellation of the development, changes to the gross floor areas or the land uses, etc. Confirming the parking demand from these large parking demand generators is needed.

Establish priority guidelines to serve these requests. As discussed earlier, the existing parking supply surplus may not be able to serve the entire parking demand with high LOS, e.g., parking demand may compete to utilize the Nelson Square which provides the highest level of service for the anticipated developments. A deficiency in the available parking supply to serve the full demand is also possible. This requires establishing some priorities to serve the anticipated parking demand (e.g., public developments over private, first come first served, etc.). These priorities are better to be established by the City which is more able to envision the City's overarching policies and the area-wide growth and public needs.

Consider a phase-wise approach and the gradual accumulation of the developments' parking demand. If parking demand from the large generators is confirmed, then understanding the timeline of this demand is needed. These large developments may not operate at full capacity during the first few years of operation. A phase-wise approach in establishing the parking demand and the supply needed to serve that demand can lead to a better utilization of the parking facilities. This can also help in prioritizing the parking demand requests and understanding if, when, and by how much the parking system needs to be expanded.

Recommendations and Strategies for both the Short- and Long-Term

Assess the need to expand the parking system on an ongoing basis. The need to expand the parking system is better to be assessed frequently. The City should continue to monitor the off-site parking requests, site plans, development applications, and changes in the parking demand and supply profiles in the area, and take any considerable changes into account when assessing the shared parking system needs.

However, if off-site parking demand is confirmed (from the CFI and the potential development on Metrolinx site or other developments) and exceeds, for example, 900 spaces, then expanding the parking system is needed. Based on all the assumptions made, adding a medium size parking facility in the area (with a capacity of around 100 to 200 spaces) is recommended in the short-to-medium run to support office and other employment generating uses. Alternatively, two smaller facilities, with the size of 100 spaces each, can also be considered. Selecting the location of this facility (or these facilities) should be carefully tailored to serve the off-site parking demand generators. The continuous review of the site plans and development applications should assist in locating the facilities. Given the short-term nature of this parking demand and its size, the facilities can be surface lots or a combination of several parking arrangements (e.g., including shared public spaces in new developments). If parking demand stabilizes and increases in the future, considering also the anticipated modal splits, building a parking structure may become more feasible but this is still subject to financial feasibility constraints. See Section 6.6 and Appendix B for more information.

The site opportunity scan, done as part of the present study, evaluated the feasibility of using several sites to expand the parking system. In order to particularly serve the CFI and the potential development on Metrolinx site, purchasing or repurposing Site 5 can add a supply of 153 spaces with LOS B (Metrolinx site) and D (CFI). Purchasing Site 1 and using it as a surface parking can add a supply of 225 to 245 spaces, but this is offered at a walking distance that slightly surpassed the LOS D threshold from the potential development on Metrolinx site.

The conservative future scenario assumes expansive growth (additional off-site parking demand of 300 to 600 spaces). This would require adding a large parking supply in the long-run (400 spaces, on average, and inclusive of any spaces added in the short-to-medium runs). This large supply can be added through one large facility or a combination of several medium facilities. The continuous and frequent monitoring of parking demand and supply profiles, off-site parking requests, teleworking patterns, site plans, developments applications, etc., should better confirm the need for such large expansion in the parking system.

Future-proof any new parking facility. This ensures the possibility to convert part or the entire parking facility to an alternative land-use if parking demand decreases in the future. This can be particularly important for the multi-level and large parking facilities.

Continue to monitor the parking demand and supply profiles. Because the success of the shared parking arrangements is contingent upon having an accurate estimation of the parking demand and supply, the City should continue to minor the parking operations through frequent field parking occupancy surveys. The surveys should be done at least once every year and ideally quarterly in order to capture the seasonality of parking demand. However, monitoring the parking system should go beyond the typical surveys and include other measures as explained in the following recommendations.

Reserve parking spaces for transient parking needs. The proportion of transient parking in the municipal garages should be examined and updated frequently in order to refine the parking supply surplus that can be leased and shared. This should account for: 1) the existing transient users of the facilities, 2) the potential increase in transient parking demand due to streetscaping projects and loosing on-street parking, and 3) any projected business growth in the area that may increase the demand for transient parking. Identifying the total number of transient parking users inside the garages requires carrying out field surveys that can specifically sort out the short-stay or transient parking users. Based on these surveys, a specific number of parking spaces for transient use should be reserved.

Carry out surveys to retrieve data regarding the teleworking and hybrid work arrangements used by the major employers in the area. Such surveys can be done once every one to three years and should seek the trends at the time of the survey and any future anticipated patterns or changes. The hybrid work model has become a major determinant of the actual parking demand and should be carefully considered. By monitoring the hybrid work trends in the area continuously, the uncertainty about the future parking demand can be better managed.

Meet frequently with the major off-site parking demand generators, e.g., the CFI and the potential developers on Metrolinx site, to understand and update their parking needs. These updates should be done on annual basis or according to the terms stated in the shared parking agreement.

Consider supporting the private parking facilities by providing parking management services. This can be done by providing full management services or specific services (e.g., enforcement only). The City participation in these management agreements can encourage the private parking facility owners to enter into parking partnership.

Continue to assess the feasibility of using the private parking facilities. Based on the 2022 surveys, the parking lots serving the GO Station have an overall capacity of around 1,155 parking spaces with a peak-period utilization of 60.7%, this leaves a theoretical surplus of around 454 spaces and a practical surplus of around 281 spaces. Communication with Metrolinx during the onset of this study revealed that they are not interested presently in parking partnership. However, given the significant parking supply surplus at the GO Station lots, it is recommended that the parking demand and supply be monitored frequently at these lots, and if the supply surplus continues to exist, then approaching Metrolinx for parking partnership options, including leasing or purchasing some of the available lots, should be considered. Parking utilization in the parking facilities serving the GO station may drop in the future and the facilities may become more prone

to shared parking. However, this cannot be guaranteed and the complex interaction between the other transit improvements and population growth will capture the future parking utilization in those lots.

In addition to the above strategies, which are more driven by parking operations and the demand-supply aspects, more actions and recommendations are discussed in the next section, "Considerations for Shared Parking Implementation." The final section, "Conclusions and Recommendations," consolidates all the recommended strategies and actions in one place.

6.6 Financial Analysis of Parking Structure Construction

Appendix B provides a high-level cost estimate for the construction of a freestanding above-ground parking structure located within Downtown Brampton. This parking structure is assumed to accommodate 550 municipal parking spaces, as an example to inform the present study. The key findings from this financial analysis are summarized below:

- The construction of a free-standing 550-space parking structure represents a significant expense to the City of Brampton's municipal parking program with a high-level cost estimate of $33.2-48.6mn, considering the land and the hard construction costs.
- A sharp parking price increase in conjunction with high utilization of the facility are needed to cover the cost of the structure. For example, a monthly parking permit price of $355 in the first operation year (subject to inflation thereafter) is needed so the assumed facility can achieve a breakeven point after 21 years.
- The cost of purchasing private land on which to construct a parking structure is significant, and it is not recommended that the City acquire private land for the construction of a municipal parking structure. The best practice review indicated that some cities are considering shared parking arrangements or agreements as more financially feasible compared to the traditional inventory expansion plans. A high-level analysis also shows that Community Benefit Charges (CBCs) seem to only add moderate contribution to fund a large parking facility. This means that exploring more innovative funding or partnership options is needed to fund the construction of the future parking facilities.

7 Considerations for Shared Parking Implementation

The previous section (Section 6) discusses three scenarios of shared parking implementation in Downtown Brampton and consolidates several recommendations and actions as part of the implementation strategy. The discussion in the previous section focused on parking demand, supply, and operations aspects. This section explores other shared parking considerations and management aspects, including the city role, available partnership options, guidelines to set or update parking price rate, the performance monitoring plan, the need for third-party providers, and a draft agreement template.

7.1 City Role and Available Partnership Options

The City has a vital role to promote the concept of shared parking agreement in dense areas. The City can participate directly and indirectly. As a direct participator, the City can be a contracting party and follow one of the following parking partnership options:

Offering parking facility leasing agreements: This is the most promising and important type of parking partnerships whereby the City can lease one or more of its municipal parking facilities, in part or in whole. As informed by the analyzed scenarios in Section 6, there is presently a potential to lease around 900 parking spaces in the municipal parking system for the short-to-medium run (i.e., the five garages combined). This can return a large revenue to the City annually which can be used to fund other parking programs, expand the parking system, and improve the downtown area under a Parking Benefits District (PBD) scheme. Assuming the use of a $100 monthly parking rental rate (i.e., as per scenario 2 of the parking pricing scenarios defined in Brampton Parking Plan reports), leasing 900 spaces would return an annual revenue of $1,080,000, for example. This can still be increased by applying year-over-year inflation. Additional fees can also be applied to cover or offset the management services (e.g., administration efforts, contract management, additional enforcement needs, etc.).

Providing full parking management services: The City carries out all (or most) the services related to the management and operation of the parking facility, including maintenance, revenue collection, payment equipment, enforcement, signage, capital improvements, etc. The City can be compensated for all the management expenses and the net revenue is then shared with the owner. The potential of this type of parking partnership is moderate in the area because only few private parking facilities are considered feasible for parking partnership. However, such partnership with the City can encourage the private owners to invest in their parking supply surplus and result in increasing the off-site parking supply. In addition, this type of partnership can encourage private developers to invest in building a privately-owned public parking facility.

Providing specific services: The City can provide limited or specific services to non-municipal parking facility, e.g., enforcement, pay-by-web, etc. The City can be compensated by a fixed service fee, a proportion of the revenue, or a hybrid approach. Enforcement services, in particular, were frequently cited by the private parking facility owners as needed to engage in parking partnership. The City already has parking enforcement resources that can be used to enforce the use of the private parking facilities. In general, the City participation and support in providing these services will encourage the private parking facility owners to enter into parking partnership agreements.

Promoting the addition of public parking in new developments: The City may educate the developers on the business opportunities arising from providing public parking in the development. In addition, the City may grant density bonuses to the existing ZBLs (ex: extra dwelling units, or increased building heights) if the developer agrees to add on-site public parking.

Even if the City is not a contracting party in a parking agreement, it can still assist by carrying out the following activities and actions:

- Reach out to private parking owners and developers of new buildings and advocate for shared parking. Businesses may show little interest if this policy is not actively encouraged by municipalities.
- Act as a facilitator, address concerns of the contracting parties, and expedite and prioritize the processing of related applications.
- Prepare a draft standard agreement template to encourage participation and make the agreement terms flexible enough to adjust to each case.
- Create a downtown-wide (or district-wide) shared parking system. This can help highlight where the off-site parking supply surplus exists and can be a key step to attract developers to participate in shared parking.
- Provide annual reporting metrics that highlight the status of the shared parking system, including available demand and supply, future expansion, financial aspects, etc.
- Provide some (paid) services that can be required by the contracting parties, e.g., enforcement, maintenance, lighting, signage, insurance, etc. This can be efficient if the City is already providing these services at the municipal parking facilities.

7.2 Parking Pricing Guidelines

Establishing a large and efficient shared parking system requires setting appropriate and fair parking price rates. Several factors should be considered when pricing the off-site parking as explained below.

Inflation: Parking price rate normally goes up and adjusted according to the inflation increase rate.

Market competition: The competition is low presently because parking utilization is at a low level and the market is dominated by the municipal off-street parking system. If off-site parking demand becomes high, then higher price rates can be considered.

Parking demand management: A higher parking price rate can play a major role in managing parking demand and supporting TDM initiatives, public transit, and active transportation.

Parking lot location: Parking lots located away from the core area may be given lower price rates to reach a healthier distribution of the parking demand area-wide. In contrast, parking garages located in the center of the downtown may be assigned higher rates. For example, the analysis of the off-site parking requests and the municipal parking facilities revealed that the Nelson Square Garage may be exposed to a large parking demand pressure due to its proximity to the CFI and the potential development on Metrolinx site. A uniquely high parking price rate can be therefore assigned to the Nelson Square Garage.

Parking price rate is recommended to be updated annually in order to reflect inflation and adapt well to the frequent changes in the parking demand and supply profiles. Shared parking agreements are usually established for long durations, i.e., more than a year. However, a clause is usually included to explain how the parking price may increase over the course of the agreement. Examples include “as per inflation rate” or “as per the prevailing parking price rate in the market or area, which is based on demand and supply profiles.” A parking price increase defined based on inflation can be more definitive and less flexible whereas using a criterion such as the “prevailing parking price rate” can be more flexible and adaptive to market changes. Establishing a prevailing parking price rate in the market is feasible in Downtown Brampton because the off-site public parking supply is predominantly provided by the City through the off-street parking municipal system.

In all cases, occasional and early consultation with the lessee is needed to avoid disagreement and sudden or drastic changes in the price. This can be especially important for the large off-site parking demand generators such as the CFI and the potential development on Metrolinx site.

7.3 Performance Monitoring Plan

Establishing an efficient shared parking system requires continuous monitoring of the financial and operational health of the system while also keeping a strong vision to the future.

Contract management: The City should well manage all the binding shared parking agreements including both those that have determinate finish date and those that are expected to be renewed continuously. This would include the following:

- Monitoring the contract performance and in particular paying on time.
- Negotiation with the other party for better contract terms, e.g., when proposing a parking price increase rate.
- Arranging for regular check-ins and meetings so the contracting parties can coordinate and cooperate to perform the contract or agreement and resolve any challenge or dispute.
- Ensuring that the existing and the future parking supply surplus is sufficient to fulfil the terms of the agreements with the lessees.

Financial system management: Establishing the shared parking system would generate a large revenue from the leased facilities but would also create a considerable cost. The cost can come from several operating, capital, and management expenses, including but not limited to: (1) maintenance and operation of the facilities (e.g., utilities, signage, insurance, snowplowing, revenue collection, capital improvements, etc.), (2) enforcement activities which are very important to ensure that the designated parking spaces are used appropriately, and (3) other system-based management activities (staff, planning, reporting, contract management, surveys, marketing, etc.). Monitoring the financial system should frequently update the on-going expenses and revenues by using a professional accounting system. An annual assessment of the financial system health is needed to assess the sustainability of the system and any resulting surplus or deficit. The surplus can be used to improve or expand the parking system whereas any deficit would warrant revising the efficiency of the system and the financial policies. Monitoring the shared parking system financially can be an integral part of the entire Downtown parking system.

Parking surveys: As mentioned earlier among the other shared parking implementation strategies, frequent parking surveys are needed to capture the changes in the area-wide parking demand and supply profiles. An ideal utilization rate would be around the 85% level which provides a good investment in the system and at the same time avoids overcrowding the facilities. If parking utilization rate starts surpassing 85%, then interventions are needed such as revising the parking pricing policies and assessing the available options to expand the parking supply or redistribute parking demand. On the other hand, if the utilization drops significantly below 85%, then searching for prospective users or partners is needed.

Shared parking demand and supply updates: An annual update is needed to confirm the number of parking spaces that should be supplied through leasing agreements considering all existing and upcoming agreements. The total off-site parking supply should be broken down by each facility and projected to the future. Any anticipated parking supply deficit should be detected early and would require finding alternative supply options.

Reporting: An annual report is needed to summarize all the above items and activities. The report should highlight the findings and recommend the main actions needed in the short- and long-terms

7.4 The Need for Third-Party Providers

If the concepts of parking partnership are applied widely, then third-party providers may support the parking system by providing a wide variety of services. Below are some examples of such services.

Payment and digital technologies: The move towards digital permits that can be integrated with LPR technologies is recommended and can be better accommodated through a specialized third-party provider. The digital permits would allow tracking parking activities and sessions, especially if the leasing agreement specifies days of the week and times of day for the use of the facility. Brampton Parking Plan report also included a recommendation to use an LPR cameras at the municipal garages. If the shared parking facility is open to the public, then payment technologies (e.g., pay-by-phone, pay-by-web, pay-by-plate, etc.) can be provided by a third-party.

Enforcement and towing: Enforcement and towing activities are typically done by the municipality staff. However, for some areas where the demand for parking enforcement is large, some cities are using non-municipal enforcement staff to help in carrying out the enforcement activities.

Miscellaneous services: Different services can be provided through third parties (e.g., snowplowing, security, maintenance, etc.) on as needed basis.

When a third-party is engaged, then the shared parking partners should agree on the provider and who is responsible to pay the cost of the services provided. This should be well clarified in the agreement terms and clauses.

7.5 Draft Agreement Template

Section 3.3 explains the items and subjects that should be considered when preparing the shared parking agreements. The discussion also provided some insights and best practices on how the agreement terms or items can be tailored for specific conditions. Parking partnership agreement terms can vary widely based on each case and the needs of the contracting parties. However, establishing a draft agreement can provide several benefits in a shared parking system, including: 1) encouraging the private developers and also the private parking facility owners to enter into such agreements by showing a sample of the agreement, 2) reducing the agreement preparation efforts to only those needed to customize the agreement template based on each case, and 3) informing the prospective partners of the key or essential items that must be included in the agreement. Appendix A includes a shared parking leasing agreement template that can be used as a starting draft.

8 Summary Findings and Conclusions

Through the development of the Brampton Parking Plan, the existing public and private parking in the Downtown area was noted to be underutilized. Parking surveys in 2019 indicated that the area-wide parking utilization is 57.6%. More recent surveys in 2022 revealed that the utilization has even dropped to 37.5%. Both surveys show very clearly that the parking system in Downtown Brampton is underutilized and a better investment in the parking system merits further investigation. The City of Brampton has recently received requests from private developers proposing employment generating uses, to share some of the available parking facilities. In addition, some future development plans (e.g., the Center for Innovation (CFI)) are not including on-site parking and are expected to generate considerable off-site parking demand. The City recognized the potential opportunity for introducing the concepts of shared parking or parking partnership and wished to expand on the original Scope of Work for the Brampton Parking Plan to include a Supplementary Downtown Parking Implementation Strategy.

This study, the "Downtown Parking Implementation Strategy," is intended to investigate strategies that can optimize off-street parking utilization in the Downtown area through shared-use/ reservation parking agreements. In addition, the study aims to identify the involved parties in parking partnerships and their roles, the type and the structure of parking partnership agreements, and the potential parking supply opportunities in Downtown core area. Three implementation scenarios were developed as follows: short-term, long-term with normal growth, and long-term with expansive growth.

This report is the final report of the study and it consolidates and documents all the study phases and tasks, including the background information review, the best practices review, clarifying the existing parking request, investigating the available parking supply surplus, an assessment of the site opportunities in Downtown Brampton which can be used to expand the off-street parking system, and preparing a shared parking implementation strategy in Downtown Brampton. This "Executive Summary" provides the main findings and key takeaways for each task included in the study.

8.1 Background Document Review

The underutilization of the Downtown off-street parking system, the fact that the parking system in Downtown Brampton is running at a deficit, the removal of the cash-in-lieu of parking, rescinding the parking minimum requirements, the planned intensification and the future growth in employment and population, all are reasons that support the scope of this study, which aims to promote shared parking arrangements in the Downtown area, enhance the utilization of the existing off-street parking system, and generate revenue that can be used to fund future parking initiatives and improve the Downtown area.

Downtown Brampton is anticipating more intensification and significant transit system improvements, and developers are expected to be interested in locating their projects in such a vibrant area. The City of Brampton has recently received requests from private developers proposing employment generating uses, to share some of the anticipated underutilized parking spaces for their development proposals. These projects are still in the planning phase and the project's features are subject to change. However, having a well-established procedure to enter into shared parking partnerships will facilitate the accommodation of their parking needs once needed.

A potential site to accommodate a prospective development (or developments) is the site bounded by Railroad St, Elizabeth St N, Nelson St W, and George St N. Off-site parking demand around 500+ parking spaces is anticipated in the short run resulting from such development (or developments). In addition, the CFI is anticipated to also generate a considerable off-site parking demand in the short-to-medium term.

8.2 Best Practices Review

With more intensification planned to urban centres and the growing list of cities that rescinded the parking minimum requirements, shared parking agreements are expected to become more popular and more needed in North America. Cities are realizing that shared parking agreements often financially outperform the traditional inventory expansion plans that depend on owning and operating the facility.

Different types of shared parking agreements are in use today. Off-site parking supply can be provided through parking lease agreements, for either public or private use and where the lessor can be either the municipality or a private owner. Efficient use of the facility and revenue generation can be also made through parking management agreements, which may include full management services or specific ones (e.g., enforcement, payment technology, pay-by-web, snow plowing, etc.). Moreover, public parking can be added in future developments through revenue sharing and parking management agreements.

8.3 Parking Utilization Surveys

As compared to 2019 (pre-Covid), the area-wide parking utilization dropped substantially in 2022 (post-Covid). Relative to 2019 conditions, the area-wide parking utilization (and demand) dropped by 34.8%. Based on 2022 data and assuming the effective capacity of 85% of the available supply, the surplus in parking supply was around 994 and 979 parking spaces in the municipal and private off-street parking systems, respectively. Only a small proportion of the private parking surplus can be used in parking partnerships because most of the facilities are small in size and some owners did not show interest in such arrangements.

The off-street parking system is expected to remain underutilized in 2040 assuming normal population growth and no major off-site parking request or demand is made. The supply surplus in the municipal off-street system alone is estimated to range ranged between 675 and 950 spaces in 2040. This range reflects various levels of applying teleworking in the area and it assumes significant improvements to the transit system and that the Nelson Square garage remains open.

8.4 Off-Site Parking Opportunities

Recent policies and plans in Downtown Brampton are more directed towards the City aesthetic and preserving the lands for mixed-use and high-density developments. This translates to discouraging surface parking and encouraging integrating the parking facility into the building structure. Underground parking is more preferable in urban centres; however, Special Policy Area No.3 delineates several sub areas in Downtown Brampton as susceptible to flooding and requires that any underground parking facility to be carefully floodproofed.

The reviewed site plans and development applications, which were mostly received between 2017 and 2022, do not seem to create a major change in the parking demand and supply of the Downtown public parking system, except for Rogers' MZO. Applications to build new large public parking facilities were missing. The large residential developments provide their own parking on-site. Although some large residential developments are providing less than one parking space per unit on average, the demand for parking is anticipated to decrease with the forthcoming intensification in the area and the improvements to the transit and active transportation systems.

Vacant lands in the Downtown area are very rare. Most of the lands are already developed or under development. This means that building new stand-alone parking facilities in the future may be restricted by land availability. The public parking system expansion may alternatively rely on repurposing some of the existing lands, opening limited-access parking facilities to the public, converting surface parking lots into multi-storey parking garages, and integrating public parking into new mixed-use or residential developments. These alternative mechanisms may still be challenged by the need to purchasing lands, amending ZBLs, and negotiating with developers and

owners. This also means that the existing parking system is expected to be more utilized and more needed in the future.

As detailed in Appendix B "Financial Analysis of Parking Structure Construction," the cost of purchasing private land on which to construct a parking structure is significant and would push out a positive revenue return and impact the City's ability to accrue surplus revenue in a Reserve Fund to finance necessary capital expenditures and technology upgrades for the City's existing parking facilities. It is not recommended that the City acquire private land for the construction of a municipal parking structure.

8.5 Context of the Downtown Parking Systems

The key features that describe the context of the downtown parking system and that also can guide the implementation of parking partnership in the area are summarized below:

- A large parking supply surplus is available and ready for parking partnership arrangements. The existing area-wide practical or effective parking supply surplus is estimated to be around 1,025 parking spaces including a municipal off-street parking system contribution of 894 spaces (87.2%).
- Only a limited proportion of the private parking supply surplus can be used for shared parking purposes and the reliance should be placed on the municipal parking system.
- The demand for parking partnership already exists and is expected to grow.
- The recent Zoning By-law (ZBL 45-2021), which has rescinded the minimum parking requirements in the downtown, central area, and Hurontario-main corridor, will increase the interest in parking partnership.
- The official plans of the City (Secondary Plan (SP7) and the draft Official Plan) have already promoted parking partnership and the efficient use of land.
- Expanding the parking system in the future is possible but may be challenged by land availability and the need for some ZBL amendments. The existing parking system is expected to be more utilized and more needed in the future as off-site parking demand is expected to grow.
- All in all, the existing conditions are very promising and appropriate to apply the concept of parking partnership in Downtown Brampton. This is well reflected by the parking supply availability, employment and population growth, and the new laws and plans.

8.6 Shared Parking Implementation Scenarios

Because parking demand and supply profiles may considerably change in the future, as a result of changing density rates, travel behaviour, etc., the implementation scenarios were established such that they reflect different time horizons as follows:

Scenario One: short-term scenario

The analysis of this scenario relies on the available parking demand and supply data, including the 2022 parking surveys. An off-site parking demand of 500+ parking spaces will be assumed to be generated from the potential development on Metrolinx site (Exhibit 1). In addition, parking supply requests anticipated as part of well-defined future development proposals that generate employment (e.g., CFI) are considered.

The analysis of the short-term off-site parking demand and supply conditions reveals that: 1) a large off-site parking demand around 900 spaces may be generated, assuming the CFI and the potential development on Metrolinx site and their areas and land uses (both assumed to be office or employment-related), and 2) the available parking supply surplus may barely serve that demand

and a proportion of this demand may have to be served with a relatively low level-of-service (i.e., a walking distance that exceeds 360 m) and using some private parking facilities. Parking supply deficiency is likely if extra off-site parking demand requests are made or if more return to in-office and less teleworking are observed.

Scenario Two: long-term scenario assuming normal operational growth

This scenario assumes the following: 1) the off-site parking demand already requested in the short-run (Scenario One) will carry on, 2) the background parking demand will only grow as per the population growth, 3) no large or development-specific off-site parking demand request is assumed beyond the normal growth, and 4) modal split will change as per the City's Transportation Master Plan due to significant changes in the transit system. The Nelson SQ parking facility is also assumed to remain open.

Off-site parking demand generated by the CFI and the potential development on Metrolinx site is anticipated to drop to around 660 spaces due to the planned transit system improvements and the resulting modal split changes. Estimating the future parking supply surplus is challenged with considerable uncertainty, especially when it comes to anticipating the work behaviour and the prevalence of teleworking. A wide implementation of the hybrid work model can result in a parking supply surplus sufficient to serve the assumed off-site parking demand. On the other hand, a limited implementation of such work model can result in a deficiency of around 100 spaces.

Scenario Three: long-term scenario assuming expansive operational growth

As compared to Scenario Two, this scenario assumes that additional development-specific off-site parking demand requests are anticipated beyond the normal growth. The expansive growth in the downtown area may bring several small, medium, and large developments that generate employment, and these developments may accumulate a large off-site parking demand. An additional off-site parking demand in the range of several hundreds of parking spaces (e.g., 300 to 600 spaces) was assumed. By adding this to the total demand generated by the CFI and the potential development on Metrolinx site, the total off-site parking demand area-wide may reach 950 to 1,250 spaces.

Forecasting the future parking supply surplus is challenged with considerable uncertainty, and it is estimated to be between 575 and 850 spaces. This results in a large deficiency that can range from around 100 to 670 parking spaces (with an average of around 400 spaces). Such deficiency can only be accommodated by expanding the public and private shared parking system.

8.7 Shared Parking Implementation Strategies and Actions

The following are the recommendations made to outline the parking partnership implementation strategy. In the beginning, some recommendations and strategies tailored for the short-term are provided. These are followed by recommendations for both the short- and long-terms.

Recommendations and Strategies for the Short-Term

Confirm the existing off-site parking demand requests. The CFI and the potential development on Metrolinx site are presently the main off-site parking demand generators and any change to their plans may significantly change the parking demand profile, including cancellation of the development, changes to the gross floor areas or the land uses, etc.

Establish priority guidelines to serve these requests. This includes designating the use of some garages, fully or partially, to some developers proposing employment generation within the Downtown. These priorities are better to be established by the City which is more able to envision the City's overarching policies and the area-wide growth and public needs.

Consider a phase-wise approach and the gradual accumulation of the developments' parking demand. A phase-wise approach in establishing the parking demand and the supply needed to serve that demand can lead to a better utilization of the parking facilities.

Recommendations and Strategies for both the Short- and Long-Terms

Assess the need to expand the parking system on an ongoing basis. The City should continue to monitor the off-site parking requests, site plans, development applications, and changes in the parking demand and supply profiles in the area, and take any considerable changes into account when assessing the shared parking system needs.

Future-proof any new parking facility. This ensures the possibility to convert part or the entire parking facility to an alternative land-use if parking demand decreases in the future.

Continue to monitor the parking demand and supply profiles. The City should continue to monitor the parking operations through frequent field parking occupancy surveys, at least once every year and ideally quarterly.

Reserve parking spaces for transient parking needs. The proportion of transient parking in the municipal garages should be examined and updated frequently in order to refine the parking supply surplus that can be leased and shared.

Carry out surveys to retrieve data regarding the teleworking and hybrid work arrangements used by the major employers in the area. By monitoring the hybrid work trends in the area continuously, the uncertainty about the future parking demand can be better managed.

Meet frequently with the major off-site parking demand generators, e.g., the CFI and the potential developers on Metrolinx site, to understand and update their parking needs. These updates should be ideally done on annual basis.

Consider supporting the private parking facilities by providing parking management services. The City participation in these management agreements can encourage the private parking facility owners to enter into parking partnership.

Continue to assess the feasibility of using the private parking facilities. Parking utilization in some private parking facilities may drop in the future and more spaces may be available in these facilities for shared parking.

Other Management Recommendations

Advocate for parking partnership arrangements and concepts. The City can act as the champion of the shared parking program and do several activities to promote this concept, including: 1) reaching out to prospective developers and private parking owners, 2) acting as a facilitator to address concerns of the contracting parties, 3) preparing a draft shared parking template, and 4) working towards creating a district-wide shared parking system.

Consider the various parking partnership options. This study focused more on facility leasing agreements which appear to be the most promising type of parking partnerships in Downtown Brampton given the parking supply surplus and the potential off-site parking requests. However, other options include promoting the addition of public parking in new developments (through revenue sharing or density bonuses) and providing "full" or "specific" parking management services.

Update the parking price rates area-wide and at the facility-level, if needed. The rental rate included in the facility leasing agreements should be updated frequently considering inflation, market status, and parking demand management needs. Assigning specific rates to some parking facilities can be considered to better distribute the demand area-wide.

Implement a rigorous performance monitoring plan. An efficient performance monitoring plan would include activities related to contract management, financial system management, parking surveys, shared parking demand and supply updates, and annual reporting.

Consider the need for third-party providers. Third-party providers may support the shared parking system by providing a wide variety of specialty services, including: payment and digital technologies, enforcement, towing, maintenance, snowplowing, security, etc.

8.8 The Need for Parking System Expansion

The need to expand the parking system should be assessed on an ongoing basis and updated based on the off-site parking requests, site plans, development applications, and changes in the parking demand and supply profiles in the area. However, if off-site parking demand is confirmed (from the CFI and other developments that bring economic growth to the area) and exceeds, for example, 900 spaces, then expanding the parking system is needed. Based on this size of off-site parking demand and other assumptions made elsewhere in the study, adding a medium size parking supply in the area (with around 100 to 200 spaces in total) is recommended in the short-to-medium run. Given the short-term nature of this parking demand and its size, the facilities can be surface lots or a combination of several parking arrangements (e.g., including shared public spaces in new developments).

A future scenario that assumes limited or normal growth would result in an overall reduction in off-site parking demand due to the anticipated transit system improvements and the resulting modal split changes. However, a moderate parking supply deficiency in the range of around 100 spaces may result if the use of teleworking becomes limited. This is also better to be accommodated by surface lots and/or other shared parking arrangements, if needed.

A conservative future scenario would assume expansive growth with additional off-site parking demand of 300 to 600 spaces. This would require adding a large parking supply in the long-run with a capacity of 400 spaces, on average, and inclusive of any spaces added in the short-to-medium runs. Because of the contingency and uncertainty surrounding the future parking demand estimates, future-proofing any new large parking facility is recommended.

A financial analysis of building a free-standing 550-space parking structure in Downtown Brampton (see Appendix B), for example, reveals that such a structure represents a significant expense to the City of Brampton with a high-level cost estimate of $33.2-48.6mn, considering the land and the hard construction costs. A sharp parking price increase in conjunction with high utilization of the facility are needed to cover the cost of the structure. For example, a monthly parking permit price of $355 in the first operation year (subject to inflation thereafter) is needed so the facility can achieve a breakeven point after 21 years.

The cost of purchasing private land on which to construct a parking structure is significant, and it is not recommended that the City acquire private land for the construction of a municipal parking structure. The best practice review indicated that some cities are considering shared parking arrangements or agreements as more financially feasible compared to the traditional inventory expansion plans. A high-level analysis also shows that Community Benefit Charges (CBCs) seem to only add moderate contribution to fund a large parking facility. This means that exploring more innovative funding or partnership options is needed to fund the construction of the future parking facilities.

The continuous and frequent monitoring of parking demand and supply profiles, off-site parking requests, teleworking patterns, etc., should better confirm the need and the size of the parking system expansion. The key first step in this regard is to confirm the off-site parking demand requested by the CFI and other prospective large developments in the area, and this requires following up continuously with the developers in the near term.

Appendix A:

Draft Shared Parking Agreement Template

Shared Parking Agreement

This Shared Parking Agreement "Agreement" is entered into and effective _____ , 20___, between _____, whose address is _____, hereinafter called lessor and _____, whose address is _____, hereinafter called lessee.

Agreement Terms

1. Use of the Facility

This section should clarify the number and the location of leased parking spaces, and if the use is limited to specific days and times of day. A layout that demonstrates the leased parking spaces may be added in an attachment or appendix.

SAMPLE LANGUAGE

The lessor agrees to provide the lessee with the right to use of _____ parking spaces on the property located at _____ and as shown on Exhibit A to this Agreement. The parking spaces shall be provided commencing with the _____ day of _____, 20___, and ending at 11:59 PM on the _____ day of _____, 20____.

Lessee shall have exclusive use of the facilities and the use shall only be between the hours of _____ and _____ Monday through Friday and between the hours of _____ and _____ on Saturdays and Sundays.

2. Monthly Charge

This section specifies the rental rate and the annual adjustment criterion during the agreement duration. If the subject parking garage has a special (higher) rate as compared to the other garages in the parking system, then this should be also stated.

SAMPLE LANGUAGE

The monthly charge for the leased parking spaces shall be as $_____ per month per space. This rate will remain effective for one year after the execution of this Agreement. The rate may be adjusted annually and shall not exceed the prevailing permit parking space rental rate charged by the City throughout the City municipal parking system. The lessee agrees to submit the rental charge to the lessor by the _____ day of each month.

3. Maintenance

This section should specify the parties responsible for all aspects of maintenance of the facility, including cleaning, pavement repair, striping, lighting maintenance, snow and ice plowing, etc. Maintenance may be assigned fully to a particular party, be shared 50/50, or could follow a hybrid approach whereby some maintenance items are shared and some are not. Some agreements may include detailed exhibits or schedules that outline the maintenance responsibility, including the maintenance frequency and who pays the fees.

SAMPLE LANGUAGE 1
The lessor shall maintain lot and landscaping at or above the current conditions provide and shall provide, as reasonably necessary asphalt repair work and. Lessee and lessor agree to share lighting, cleaning, striping, and seal coating, at a 50%/50% split and according to mutually accepted maintenance contracts with outside vendors.

SAMPLE LANGUAGE 2
The lessee and lessor agree to adhere to the agreed schedule of tasks as presented in Exhibit X.

SAMPLE LANGUAGE 3
The lessor will be responsible, at its sole expense, for all maintenance work, including cleaning, lighting, ice and snow removal, painting, striping, repaving, and repairs, and any and all other related maintenance costs.

4. Utilities

This section is to specify who is responsible to pay for the electricity, water sewage, etc.

SAMPLE LANGUAGE
The Lessee shall pay for all utility expenses associated with the facility, including electricity, water, and sewage.

5. Enforcement

This section explains enforcement responsibilities and allowances, e.g., right to towing, who does the enforcement, who has the right to retain the parking violation revenues, who should compensate the enforcement operator, etc.

SAMPLE LANGUAGE 1 (when the lessor is a private owner and only a proportion of the facility is leased)
The lessee will, at their own expenses, undertake the following enforcement actions: 1) issue to the registered vehicles a permit sticker or hangtag to confirm the eligibility of the vehicles to park, 2) assign personnel to periodically patrol the subject facility to ensure compliance with the posted parking restrictions, and 3) retain the services of a bonded, insured towing company to remove violating vehicles from the property within 24 hours of issue of a violation notice.

SAMPLE LANGUAGE 2 (when the lessor is the municipality/City)
The City at its own expenses will add the LOT/Facility to its regular patrol coverage and retain all revenue from citations issued to vehicles parked in the Lot.

6. Signage

An item is usually provided to specify signage restrictions if any, and who is responsible for adding sings if needed (directional, wayfinding, safety, etc.). Different types of sings may be assigned to different parties.

SAMPLE LANGUAGE
Lessee may provide signage for the purpose of designating usage allowance after obtaining a written approval of lessor. The lessor is responsible to maintain the standard traffic signs (e.g., directional, wayfinding, and safety).

7. Tax

This section should specify the party responsible to pay the property taxes. Usually, the owner pays for the property tax and the lessee pays taxes related to the operations and income of the parking system.

SAMPLE LANGUAGE

The lessor is responsible for the payment of all property taxes assessed against the facility. The lessee shall pay taxes payable in respect of operations of the parking facility.

8. Insurance

This section details the insurance requirements and may include several insurance coverages, e.g., worker's compensation insurance and employer's liability, commercial general liability insurance, garage liability insurance, garage keeper's liability insurance to insure the parked vehicles (automobile liability), property insurance, limits per occurrence and annual aggregate limit, liability waiver clauses, and when the insurance certificates must be issued and delivered to the lessor (first time and for renewals). This can be a very technical section and legal consultation is needed to provide an appropriate language according to each agreement.

SAMPLE LANGUAGE 1
Lessor and lessee agree to maintain liability insurance for the facility as is standard for their own business usage and at their own expenses.

SAMPLE LANGUAGE 2
Lessee shall carry and maintain at their sole cost, the following insurance coverages:
a) worker's compensation insurance: a description of the limits, scope, and standards
b) garage liability insurance: a description of the limits, scope, and standards
c) garage keeper's legal liability insurance: a description of the limits, scope, and standards
d) other insurance types as applicable.
The lessee shall deliver satisfactory certificates of insurance to lessor and renewal policies shall be obtained, and certificates delivered to lessor, at least 30 days prior expiration.

9. Indemnification

This section explains how each party agrees to indemnify and save harmless each other party. This can be a very technical section and legal or specialty consultation is needed to provide adequate language according to each case or agreement.

10. Exit or Termination Clause

This section describes the restrictions and conditions, if any, to exit the agreement and the advance notice needed if applicable. The exit clause may include termination fee to be paid by the terminating party, and different terms and conditions can be assigned to the different parties, i.e., the lessor may not be allowed to terminate without cause or may be required to provide a longer advance notice period.

SAMPLE LANGUAGE
Either party may terminate this Agreement without cause by providing the other party with written notice at least ninety (90) days prior to the date of its intention to terminate the Agreement.

11. Cooperation

This item emphasizes the need to cooperate during the Agreement time and can specify the frequency of the needed meetings.

SAMPLE LANGUAGE
Lessor and Lessee agree to cooperate and work together in good faith to effectuate the purpose of this Agreement and work out any problems that may arise. The parties agree to meet on occasion (or every X months/years) to discuss any arising issues or subjects related to this Agreement.

12. Communication and Notice Delivery Rules

This section sets out the acceptable methods of communication, e.g., by writing, email, registered or certified mail, etc.

SAMPLE LANGUAGE
All notices or communications under this Agreement shall be by registered or certified mail, return receipt requested. Notices to Lessor shall be mailed to the attention of: name/address. Notices to Lessee shall be mailed to the attention of: name/address. Notice as provided for in this section shall be deemed received if sent by electronic mail if it is acknowledged by the intended recipient by return electronic mail.

13. Improvements

If some improvements are already known to be needed during the lifetime of the contract, then these should be specified clearly along with their expected costs and the party responsible for them. A table or exhibit may be needed if there are too many improvement items. Amortization schedule and conditions may need to be established.

SAMPLE LANGUAGE
Lessee, at its sole cost and expense, shall make certain improvements to the facility as necessary. Lessee shall submit plans and specifications for any improvement to the facility to Lessor for Lessor's approval. Lessor shall not unreasonably withhold its approval.

14. Security

This section specifies the need for security system (e.g., surveillance) and identify who should maintain and operate the system.

15. Supplemental Covenants

This section should contain any additional covenants, rights, and responsibilities.

-Attach appendices as needed-

Appendix B:

Financial Analysis of Parking Structure Construction

Memorandum

TO/ATTENTION	Malik Majeed, Policy Planner City of Brampton	**DATE**	August 02, 2023
From	Arcadis IBI Group	**Project No**	134185 Brampton Parking Plan
Subject	**Draft #2, - Downtown Parking Implementation Strategy -** Financial Analysis for the Construction of a 550-Space, Freestanding Parking Structure		

Background

Arcadis IBI Group was tasked by the City of Brampton to determine the estimated costs associated with the construction of a freestanding above-ground parking structure located a short distance from Downtown Brampton. This parking structure would accommodate an additional 550 municipal parking spaces. This memo provides a high-level cost analysis of an above-ground parking facility.

It is estimated that the cost to construct a below-grade parking facility could be as much as 93% higher than the cost to construct an above-grade structure. Furthermore, the size and number of levels of a below-grade parking structure will be entirely dependent upon the size and use of the above-grade structure to which it is attached, which makes completing a high-level financial analysis that considers the land area required to construct such a parking facility impractical. For this reason, Arcadis IBI Group's financial analysis contemplates the construction of an above-grade facility only. However, this analysis should also inform a plan to construct a below-grade structure knowing the overall or approximate difference in cost.

Cost of Construction Methodology

To determine the cost of construction, Arcadis IBI Group used Altus Group's 2023 Canadian Construction Cost Guide to generate a high-level estimate of the costs associated with constructing an above-ground, freestanding parking structure. The Altus Construction Cost Guide is designed to be used as a tool for initial budgeting purposes or to provide a high-level estimate of construction costs. Altus' Cost Guide provided the per square foot private sector building costs in the Greater Toronto Area.

Building Area Methodology

Arcadis IBI Group determined the total building area required for a 550-space parking structure based on the average parking efficiency (square feet per parking space) of a long-span parking structure, sourced from the International Parking Institute. The parking efficiency is the total estimated built space for a parking structure, on a per parking spot basis. This estimate includes both the parking area and the non parking area of the structure. This produced a parking efficiency of 325 square feet per parking space and a total Gross Floor Area (GFA) of **178,750** square feet based on a 550-space structure.

The Altus Cost Guide provides the estimated construction cost per square foot as a range from low-to-high building costs. The cost per square foot to construct a freestanding parking garage in the GTA is between $140 and $210 per square foot. Arcadis IBI Group multiplied these per square foot rates by our estimated total GFA to obtain an estimated construction cost for the parking structure of between **$25 million and $37.5 million** ($2023). Based on a scan of parking projects completed in the GTA over the past five years, this appears to be a reasonable estimate of both parking efficiency and the cost of construction.

High-Level Estimate of Costs (based on 550 parking spaces)

GTA				
Freestanding Parking Garage (above grade)		Low		High
Construction Cost per sq.ft.	$	140.00	$	210.00
Estimated high-level construction cost (total)	$	25,025,000	$	37,537,500
Land Costs per sq.ft.	$	230.00	$	310.00
Estimated high-level land costs (based on 5-storey structure)	$	8,200,000	$	11,100,000
Estimated Total Cost - Construction and Land	$	33,200,000	$	48,600,000

source: 2023 Altus Group Canadian Cost Guide - Private Sector / Commercial

It is important to note that this high-level construction cost estimate includes only the hard construction costs and does not include any of the soft costs related to development, including legal fees, site servicing outside of the property, soil and environmental testing, architectural and engineering fees, special design consultants, surveying, special equipment and furnishings, insurance and bond costs, and planning fees. Additionally, the unit costs provided by Altus Group exclude HST.

Land Acquisition

Arcadis IBI Group reviewed the nine sites identified in “Section 5.3: Air-Photo Site Scan” of the Final Report of the Supplementary Downtown Parking Implementation Strategy as potential sites for a free-standing parking structure. Five of the identified sites are municipally owned and four of the sites are privately-owned and represent an additional expense if they were to be acquired by the City of Brampton. Based on data provided by the City of Brampton, the average cost of land within the identified area for a downtown parking structure is approximately **$10 million to $13.5 million per acre or between $230 to $310 per square foot**. The estimated land area required for a five-storey, downtown parking structure containing 550 parking spaces is approximately 35,750 square feet. The cost to purchase 35,750 square feet of land in Downtown Brampton is estimated to be between $8.2 and $11.1 million in 2023. Note that this is a high-level estimate and it only intends to inform the analysis. An exact estimate of the land area required to build a 550-space parking structure is subject to engineering studies that better decide the number of floors, circulation needs, and the ideal shape of the structure based on the site boundaries, etc.

It is also important to note that the land costs in Downtown Brampton are highly variable and dependent upon the prevailing zoning and land-use permissions. The privately-owned sites identified in Section 5.3 of the Downtown Parking Implementation Strategy Final Report all have land use planning permissions that include residential uses, making those lands highly desirable for investment and redevelopment. Parking likely does not represent the highest value investment option for the identified privately owned sites. It is not recommended that the City acquire private land for the construction of a municipal parking structure.

Estimated Impact of Debt Repayment Schedule on Parking Program Finances

Using the highest cost estimate for construction and land ($ $48.6 million), Arcadis IBI Group created a debt repayment schedule based on an assumed 20-year amortization schedule at a

7.7% interest (representing the 2023 prime interest rate of 6.7% plus 1.0%). This results in annual debt payments of **$4.8 million** totalling $100.1 million between 2024 and 2044. It should be noted that this estimated debt repayment schedule is intended for illustrative purposes only to show the impact of debt repayment related to the construction of a parking structure on the City's parking system. Based on Arcadis IBI Group's estimates, without additional parking price increases, the impact of debt repayment related to the construction of a parking structure would significantly impact the ability of the municipal parking program to remain financially self-sustaining.

Revenue Estimate

To determine an estimate of the revenue that could result from the construction of a 550-space parking structure, the analysis relied on the following assumptions:

- Parking price scenario 2, as identified in Brampton Parking Plan Final Report, will be assumed for permit parking and transient (hourly) parking (i.e., a municipal permit rate of $100/month and transient parking at $2.50/hour). The rate is subject to inflation.
- The parking facility will be divided into 110 spaces (20%) to serve transient users and 440 spaces (80%) to serve permit users. This assumption considers a downtown area that is employment-focused with some commercial activities as well.
- Each transient parking space is occupied, on average, eight hours every day.
- Parking spaces for permit users have an overall utilization of 85%, i.e., only 85% of the 440 spaces are used on average over the analysis period. However, permits for the used spaces can be also oversold by 30%.
- These criteria assume that the facility is heavily or considerably utilized over the analysis period.
- A system-wide annual operation expenditure of $1,400 per parking stall is assumed. This is based on the actual observed system-wide expenditures per parking stall between 2015 and 2021, derived from the financial data provided by the City of Brampton.

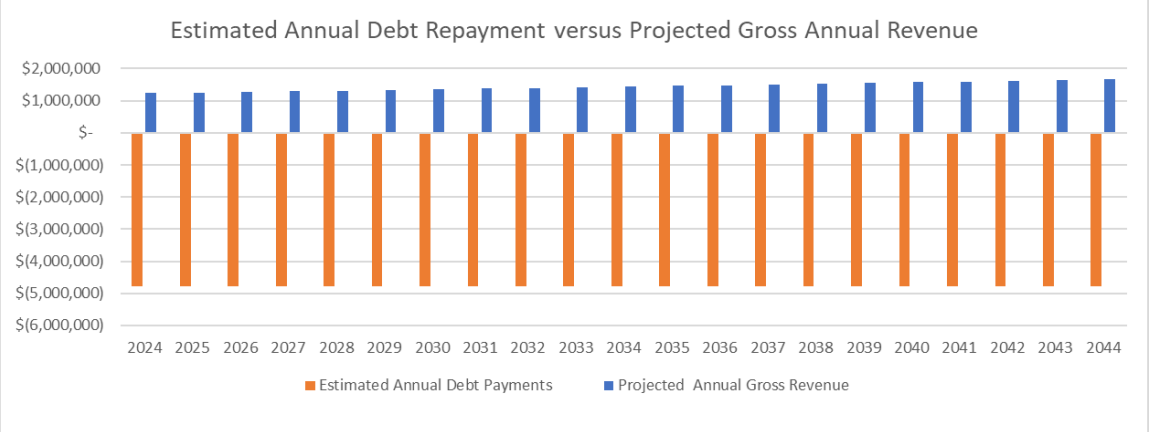
Based on these assumptions, the annual operating costs of a 550-space parking structure would be approximately **$770,000 per year** in the first year of operation and increase thereafter with the rate of inflation to over $1 million per year in 2040. In addition, a 550-space parking structure will result in an **annual gross revenue of $1.2 million** in its first year of operation. When the annual debt repayment for the construction of the parking structure is factored in, the result is a **net revenue deficit of $4.3million** in the first year of operation. The table, included below, depicts a high-level projected cashflow for the parking structure between 2024 to 2044.

Projected Cashflow for 550-Space Parking Structure 2024 to 2044

Year	Estimated Annual Debt Payment	Projected Annual Gross Revenue	Projected Annual Expenditure	Projected Annual Net Revenue	Annual Net Revenue minus Annual Debt Payment
2024	$ (4,769,798)	$ 1,236,400.00	$ 770,000.00	$ 466,400	$ (4,303,398)
2025	$ (4,769,798)	$ 1,255,152.07	$ 781,678.33	$ 473,474	$ (4,296,324)
2026	$ (4,769,798)	$ 1,274,188.54	$ 793,533.79	$ 480,655	$ (4,289,143)
2027	$ (4,769,798)	$ 1,293,513.73	$ 805,569.05	$ 487,945	$ (4,281,853)
2028	$ (4,769,798)	$ 1,313,132.02	$ 817,786.85	$ 495,345	$ (4,274,452)
2029	$ (4,769,798)	$ 1,333,047.86	$ 830,189.95	$ 502,858	$ (4,266,940)
2030	$ (4,769,798)	$ 1,353,265.75	$ 842,781.16	$ 510,485	$ (4,259,313)
2031	$ (4,769,798)	$ 1,373,790.28	$ 855,563.34	$ 518,227	$ (4,251,571)
2032	$ (4,769,798)	$ 1,394,626.10	$ 868,539.39	$ 526,087	$ (4,243,711)
2033	$ (4,769,798)	$ 1,415,777.93	$ 881,712.23	$ 534,066	$ (4,235,732)
2034	$ (4,769,798)	$ 1,437,250.56	$ 895,084.87	$ 542,166	$ (4,227,632)
2035	$ (4,769,798)	$ 1,459,048.86	$ 908,660.32	$ 550,389	$ (4,219,409)
2036	$ (4,769,798)	$ 1,481,177.77	$ 922,441.67	$ 558,736	$ (4,211,062)
2037	$ (4,769,798)	$ 1,503,642.30	$ 936,432.04	$ 567,210	$ (4,202,587)
2038	$ (4,769,798)	$ 1,526,447.54	$ 950,634.59	$ 575,813	$ (4,193,985)
2039	$ (4,769,798)	$ 1,549,598.66	$ 965,052.55	$ 584,546	$ (4,185,252)
2040	$ (4,769,798)	$ 1,573,100.91	$ 979,689.18	$ 593,412	$ (4,176,386)
2041	$ (4,769,798)	$ 1,596,959.61	$ 994,547.80	$ 602,412	$ (4,167,386)
2042	$ (4,769,798)	$ 1,621,180.16	$ 1,009,631.77	$ 611,548	$ (4,158,249)
2043	$ (4,769,798)	$ 1,645,768.06	$ 1,024,944.52	$ 620,824	$ (4,148,974)
2044	$ (4,769,798)	$ 1,670,728.88	$ 1,040,489.51	$ 630,239	$ (4,139,558)
TOTAL	**$ (100,165,750)**	**$ 30,307,797.61**	**$ 18,874,962.93**	**$ 11,432,835**	**$ (88,732,915)**

Note: Annual Net Revenue = Annual Gross Revenue – Annual Expenditure

Based on Arcadis IBI Group's estimates, the parking structure could represent **$11.4 million in additional revenue** for the Municipal Parking Program between 2024 and 2044. However, when factoring in the total debt repayment for the construction of the parking structure over the assumed 20-year amortization period, the parking structure represents a **revenue deficit of $88 million** between 2024 and 2044. As shown in the chart below, the year-over-year revenue increases, but solely based on inflation-based adjustments to the price of parking, while annual debt payments remain constant over the amortization period.



Option to Lease or Acquire Parking Spaces in Private Developments

The options to lease or to share parking spaces in an existing or proposed development are introduced and explored in Section 7 of the Downtown Parking Implementation Strategy Final Report. The Toronto Parking Authority (TPA) leases and purchases parking space within private developments as a common practice in Toronto. This allows the TPA to derive revenue from the parking spaces without taking on additional risk and debt as the constructor and owner of the parking structure. The TPA has typically introduced requests to lease or acquire parking spaces from private developments through the rezoning application process.

In 2019, 22-25 underground parking spaces located at 400-420 King Street West were purchased by the TPA from the Developer at the agreed upon rate of $75,000 per space, which is in total equivalent to between $1.9 and $2.16 million in 2023's dollar value (indexed with the rate of the Consumer Price index). The parking garage and parking spaces were not required to be built to TPA standards, but the agreement did provide for TPA ownership of a service elevator, ground level lobby, and a stairwell providing direct street access to the public parking garage. Access to the shared areas of the parking garage were granted to the TPA under registered Easements. Any cost sharing and maintenance/repair obligations in respect of the shared areas of the building were set out in a Reciprocal Agreement between the City and Developer.

Parking spaces can be also leased directly from the developer or the owner of the facility. The rate at which TPA leases space directly from private developers is usually confidential and not publicly available. A draft agreement template for a shared parking leasing agreement has been included as Appendix A to the Downtown Parking Implementation Strategy Final Report.

Conclusion and Recommendations

This memo provides a high-level cost analysis of a free-standing parking structure in Downtown Brampton. Some assumptions regarding the cost, revenue, parking utilization, and other items were made to set up this analysis.

The construction of a free-standing 550-space parking structure represents a significant expense to the City of Brampton's municipal parking program. According to Arcadis IBI Group' estimates, a parking structure financed by the City, is not projected to return a positive revenue until after the debt repayment period has ended (based on a municipal permit rate of $100/month and transient parking at $2.50/hour). It should also be noted that this is based on a utilization rate of around 85%. Currently, Brampton's parking system's overall utilization rate is around 58%.

Based on a hypothetical utilization rate of 85%, which the City has not achieved thus far, the monthly permit price required for the parking structure to be financially self-sufficient in the first year of operation is $450/ month. This amounts to a 923% increase from the current monthly permit rate of $44.00, or 350% increase from the recommend parking price scenario in Brampton Parking Plan (i.e., Scenario 2 with $100 monthly parking permit). Alternatively, a rate of $355/ month, or a 255% increase from the recommended parking price scenario, would allow the facility to achieve a breakeven point by 2044, in the final year of the parking structure's estimated 20-year debt repayment period.

The cost of purchasing private land on which to construct a parking structure is significant and would push out a positive revenue return and impact the City's ability to accrue surplus revenue in a Reserve Fund to finance necessary capital expenditures and technology upgrades for the City's existing parking facilities. It is not recommended that the City acquire private land for the construction of a municipal parking structure.

Based on the above findings, Arcadis IBI Group recommends that the City of Brampton investigate the feasibility and options available for shared parking agreements within private parking facilities (or with private developers) in Downtown Brampton. An assortment of partnership options are outlined in Section 8.5 of Brampton Parking Plan Final Report and Section 7.1 of the Downtown Parking Implementation Strategy Final Report.

After exploring the sharing or partnership options, if building a new public parking facility is still deemed needed based on the parking supply and demand profiles in the area, then: 1) additional supportive funding resources should be assessed and explored given the high construction cost, 2) the price of transient and monthly permit parking is expected to be set up at a very high rate to offset the cost of construction, and 3) adding the facility (or facilities) as part of a mixed-use development may be considered to better invest in the available land.

A high-level cost estimate, done by the City only for the purpose of informing the present analysis, showed that the Community Benefit Charges (CBCs) may yield approximately $2.55 million and $1.65 million for parking from existing and future residential development applications, respectively. This was based on several assumptions, including assuming a 25% of the CBCs is dedicated to parking as a beneficiary, for example. The CBCs seem to only add moderate contribution to fund a large parking facility. This means that exploring more innovative funding or partnership options is needed to fund the construction of the future parking facilities.