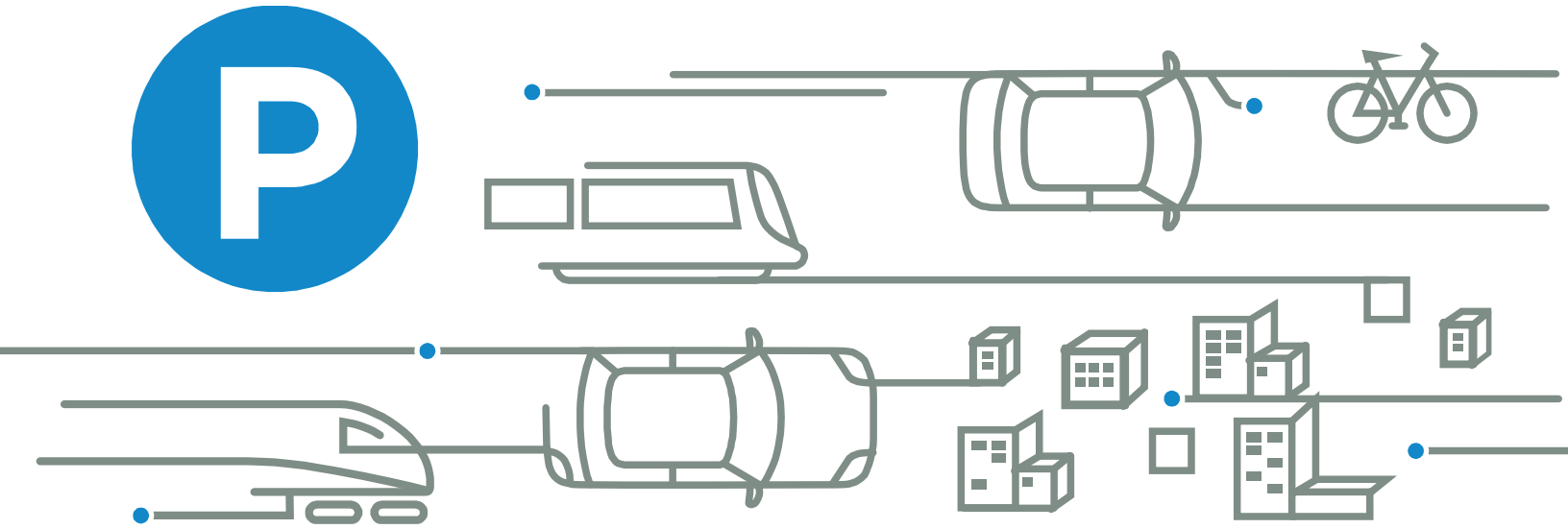

PARKING MATTERS

MISSISSAUGA

PARKING MASTER PLAN AND IMPLEMENTATION STRATEGY

City of Mississauga

Final Report (May 2019)

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EXECUTIVE SUMMARY

Introduction

As Mississauga continues to grow, the way we move is expected to change. The goal of *Parking Matters* is twofold: to improve the efficiency and effectiveness of current and future resources dedicated to parking; and to use parking as a tool to realize the city building objectives set out in the City's planning documents.

Approximately 15% of the total land area is dedicated exclusively to off-street parking and related purposes, not including private driveways. Most existing parking supply is surface parking.

In 2011, approximately 85% of trips into, out of or around Mississauga were taken in a car. As of 2016, households in Mississauga owned an average of 1.6 cars per household. The number of cars per household varies significantly from neighbourhood to neighbourhood with some having less than 1 car per household and others having more than 3. Sizes of homes and driveways vary from neighbourhood to neighbourhood as well, resulting in very different types and levels of parking pressures in different parts of the city.

As Mississauga is mostly "built out," city builders need to look for innovative ways to use land more effectively to get the most out of each property and new development site and maintain affordability. It is important for the City to look at how existing resources dedicated to parking and transportation can be used more efficiently and effectively. Parking policy can no longer be a one-size fits all approach. The cost of providing "free" parking in the City needs to be recognized and reconsidered.

PARKING VISION

The Parking Vision Statement was developed through extensive consultation with the public and relevant City divisions.

- The Vision for Parking in the City is that parking policies and practices should consider parking as a valuable resource that influences city building, transportation choices and economic development, and provides an important service for residents and businesses. The City should strive to ensure a balance between parking provision and management to maximize support for Mississauga as a multi-modal city. Finally, the City should strive to ensure a fair distribution of parking costs.

It is recommended that the City require all future parking policy and practices to be strategically consistent with the vision statement.

DEVELOPING THE PARKING MASTER PLAN

The Parking Master Plan was undertaken in three phases:

- **Phase 1 Discovery:** Phase 1 involved significant public consultation and an exploration of parking best practices.
- **Phase 2 Develop and test Policies:** Phase 2 centered on presenting draft recommendations.
- **Phase 3 Define and Approve Policies:** Phase developed and refined the draft recommendations into the final Parking Master Plan.

Consultation and Engagement

The Parking Master Plan was completed through a comprehensive process that gathered input and feedback from across the City. The stakeholders consisted of three groups, they were:

- **Decision-Makers**: Mayor and Members of Council, the City's Leadership Team, and the project Steering Committee.
- **Parking Providers**: Representatives responsible for and or who are interested in the provision and or management of public or private parking facilities in Mississauga. This group included anyone in the business of parking.
- **Parking Users**: Homeowners, tenants, business-owners or business representatives, community groups, visitors, and engaged collaborators. This group included anyone who uses, relies on, or has an interest in parking in Mississauga.

Parking Precincts in Mississauga

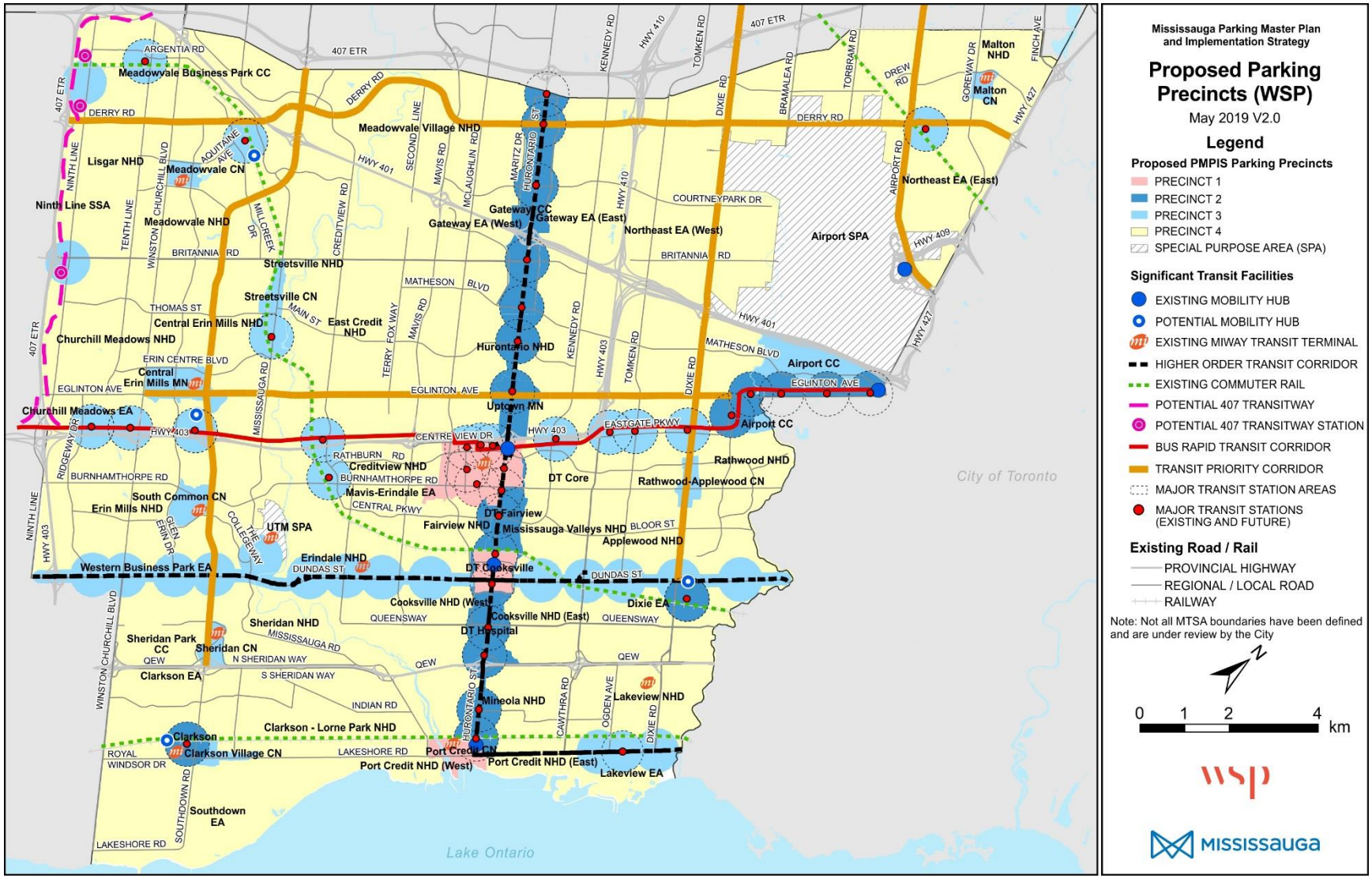
A precinct approach to parking management in the City of Mississauga was considered by examining the following six criteria:

- Transit Accessibility and Service Frequency
- Vehicle Ownership
- Availability of Alternative Travel Modes: Active transportation network, shared vehicles, taxi services, carshare service
- Public Parking Facilities
- Land Use
- Walkability

The review shows a wide range of conditions that impact parking demand, supply, and management. A precinct approach for Mississauga was further considered through a review of local precedents in Toronto, Vaughan, Kitchener, Hamilton, Richmond Hill, Oakville, and Newmarket.

Four parking precinct areas are recommended for Mississauga. Exhibit E-1 shows the locations of the four parking precinct policy areas. It should be noted that the Precincts and their boundaries are preliminary, and subject to zoning by-law review. The delineations of Major Transit Station Areas (MTSAs) are subject to the MTSAs Study.

Exhibit E-1 Locations of Proposed Precinct Policy Areas for Parking



For parking management in the City, it is recommended that the City:

- Adopt a precinct based approach to parking provision and management, each precinct with its own approach.
- Adopt the following goals and parking management principles for each precinct:
  - Precinct One
    - Goal: Lowest parking requirements, highest level of parking management strategies, and consideration of parking maximums for most land uses.
    - Parking Management Principle: A Price Responsive approach that makes maximum use of pricing to build, own, operate, and supply municipal parking.
  - Precinct Two
    - Goal: Second lowest parking requirements, high level of parking management strategies and consideration of parking maximums for certain land uses.
    - Parking Management Principle: An Area Management approach that makes maximum use of area-based solutions such as pricing and shared parking.
  - Precinct Three
    - Goal: Appropriate minimum parking requirements that are higher than those for Precinct One and Precinct Two.
    - A phased approach for reducing parking requirements in proposed transit corridors based on committed funding
    - Parking Management Principle: A Site-Focused approach that optimizes parking at appropriate sites and within the City's parking goals.
  - Precinct Four
    - Goal: Appropriate minimum parking requirements (among the highest in the City.)
    - Parking Management Principle: A Site-Focused approach that optimizes parking at appropriate sites and within the City's parking goals.
- Review the City's current Zoning By-law to determine appropriate parking requirements for each precinct and ensure that the parking requirements align with this study's criteria for defining and establishing the precinct areas.
- Conduct regular reviews (not more than five years apart) to assess whether precinct boundaries are still appropriate or need to be changed.

Parking Regulations

THE ZONING BY-LAW

Motor Vehicle Parking Standards

The current Mississauga Zoning By-Law (225-2007) specifies parking supply requirements for 14 residential land use categories and 51 non-residential land and mixed-use developments.

To realize the City's strategic goal of a transit-oriented city, the City's existing minimum parking requirements should be reduced and replaced with a policy designed to manage parking demand more deliberately. Emerging transportation patterns and trends (electric and autonomous vehicles, carsharing, etc.) also needs careful consideration.

- The City should consider establishing maximum parking requirements in all Precincts as part of a future, detailed Zoning By-law review.
- The City should require any development proponent who wishes to exceed the maximum parking requirement to provide a justification report that considers at least the following questions:
    - Is the proposed development consistent with the City's overall parking and transportation planning objectives?
    - Has the applicant demonstrated a need for additional on-site parking beyond short-term or event driven levels?
    - Has the applicant considered and discussed with City staff the viability of providing the additional parking in a shared format such as a public parking lot?
    - Has the applicant considered a phasing plan to remove surplus parking in the future, for example, as part of a later development phase or because of regular monitoring?
    - Is the applicant able to implement a design (higher ceilings, wider separation joints, or pre-fab structure that can be dismantled) that would allow for the conversion or retrofit of the parking spaces in future, if necessary?
- When precincts are introduced:
    - Precinct One should have the lowest parking requirements and parking maximums should be considered for most Precinct One land uses.
    - Precinct Two could have the same or slightly higher parking requirements than Precinct One and parking maximums should be considered for some Precinct Two land uses.
    - Precinct Three's minimum parking requirements should be higher than those of Precinct One and Two, but should not be the highest in the City.
    - Precinct Four includes areas where parking demand could be particularly high due to limited transit service and inadequate Active Transportation infrastructure. This situation may continue for some time. Precinct Four's minimum parking requirements should be appropriate and may be the highest in the City.

Shared Parking

The Zoning By-law provides a shared use parking formula that considers parking occupancy for each activity at different times of the day and week. It is recommended that:

- The City's future Zoning By-law review should examine current shared parking categories to determine whether additional land uses and land use categories should be added.
- The City should review current parking occupancy percentages to determine whether the percentages are appropriate.

PAYMENT-IN-LIEU OF PARKING PROGRAM

Mississauga's payment-in-lieu of parking program (PIL) is applicable where municipal parking is provided. The City evaluates PIL applications based on the appropriateness of the proposed development and the adequacy of municipal parking to offset the proposed parking deficiency. Where municipal parking is unavailable, the City evaluates its interest in providing municipal parking in the future and the viability of interim parking solutions.

The recommendations for the City's PIL program are as follows:

- The City should conduct a review of the PIL program, led by the Planning and Building Department and in partnership with the Municipal Parking Group, and Corporate Services.
- The City should continue considering applications not meeting the Zoning By-law requirements to be candidates for a contribution to the PIL program.
- The City should review the PIL program to address the following:
    - Find an appropriate methodology to address land value in consultation with Corporate Services.
    - Incorporate current benchmark costs for surface, structure, and below ground parking facilities including concrete and pre-fab construction options and applied City wide.
- The City should conduct a review to determine the impact of expanding the PIL program to include residential uses, in coordination with other aspects of the parking system.
- The City's should conduct regular updates of parking fees to incorporate current construction costs and land costs.
- The City's PIL program should be is administered and managed by the Municipal Parking group in consultation with the Planning & Building Department.

Parking Facilities

ON-STREET PARKING

On-Street Parking Time Restrictions

Parking is allowed on City roads for a maximum of 5 hours unless otherwise posted. Parking on-street is not permitted overnight between 2 am and 6 am. Vehicles with accessible parking permits can park on-street for a maximum of 24 hours. In certain locations, 15-hour on-street parking is permitted including overnight hours. On Statutory Holidays, parking is allowed between 8:00am and midnight without time restriction.

The recommendations for on-street parking time restrictions are as follows:

- The City should continue to allow on-street parking between 8 am and midnight beyond the 5-hour limit on all Statutory Holidays.

Resident Petition Program

Residents can request changes to parking restrictions through a petition program. The program requires a petition showing support from at least 66 percent of affected homeowners, a technical review by the City, and approval by the Ward Councillor. Typical requests are to extend the 5-hour parking limit, to allow lower driveway boulevard parking, and to reduce local parking prohibitions.

Lower Driveway Boulevard Parking

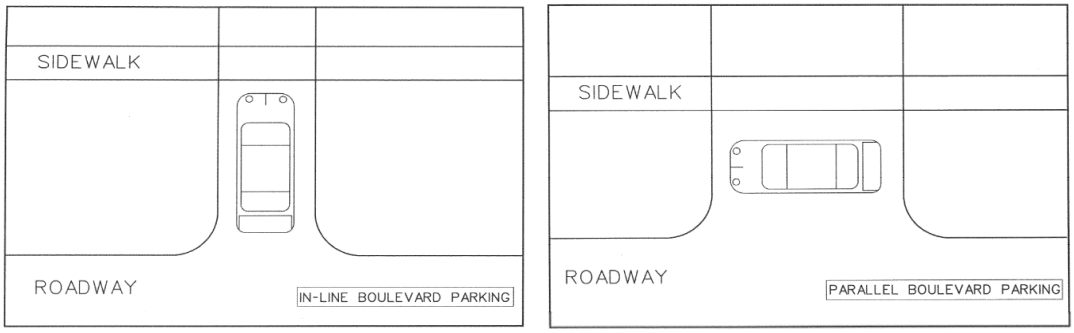
Traffic By-law 555-00 prohibits parking on the city boulevard (area between the property line or sidewalk and the road), and any obstruction of the sidewalk from pedestrian traffic. While lower driveway boulevard parking (LDBP) is permitted in some locations, there are many residents who park in the boulevard illegally.

Based on a review of best practices and safety requirements, the following is recommended:

- The City should continue to offer LDBP but without the need for a resident's petition. LDBP can help to alleviate the shortages of residential parking in some areas.
- The City should develop a communications campaign to explain LDBP and the expectations on residents to park properly.

Exhibit E-2 shows correct and safe in-line and parallel vehicle positions in a lower driveway boulevard.

Exhibit E-2 Correct In-line and Parallel Parking in a Lower Boulevard



Source: Resident Parking Petition, City of Mississauga

On-Street Parking Permits

There are currently five types of on-street parking permits offered by the City, including residential short-term temporary, residential long-term, commercial blanket, residential blanket, and carshare permits.

It is recommended that:

- The City should develop a digital on-street parking permit program (for processing, operating and enforcing the program).
- The City should replace the various parking permits currently available by implementing a comprehensive digital parking permit system for residents and businesses.

The City should undertake further study and review to specify the most appropriate types of permit to adopt.

- The City should implement an on-street overnight parking program in residential areas to work in alignment with the review of the Zoning By-law requirements and the potential reductions in certain precincts (e.g. parking requirement for Secondary Units could be waived in areas within the overnight permit parking program, or where boulevard parking is feasible).

Paid On-Street Parking

There are certain locations within the City where paid on-street parking is in force. The existing paid parking program is administered through pay-and-display machines installed along the curb.

It is recommended that:

- The City should continue to monitor on-street parking occupancy in Precincts One, Two and Three (specifically Port Credit, the Downtown, Streetsville, Clarkson, and Cooksville).
- To improve the management of parking demand and to encourage turnover in areas that charge for parking, the City should increase parking fees when parking occupancy exceeds 85% during peak hours in these areas. See Best Practices review for this study.
- To improve the management of parking demand and to encourage turnover in areas that do not charge for parking, the City should consider introducing a parking fees when parking occupancy exceeds 50% during peak hours.

Curbside Management

Competing for curb space with on-street parking are vehicles that are loading and unloading goods and deliveries as well as an increase in passenger pick-ups and drop-offs attributable to the popularity of ride-sharing in the City.

It is recommended that:

- The City should consider a Curbside Management Study to:
  - Frame the discussion regarding on-street parking.
  - Determine appropriate locations.
  - Determine curbside priorities for each proposed Precinct area.
- Where appropriate, and subject to coordination with other City Departments, the Municipal Parking Section should identify and or approve locations where on-street pick-up and drop-off areas are permitted.
- Loading regulation should be reviewed in conjunction with parking regulations as part of the zoning by-law review.

OFF-STREET PARKING LOTS

Municipal Parking Lots

Mississauga currently operates 3 below grade off-street paid garages and 4 paid off-street surface lots. The City also provides public parking at municipally owned recreational, institutional, and transit facilities. As the need for additional public parking increases the City will need to find options for providing additional parking capacity.

Some free City public parking facilities are located close to paid City public parking facilities. As the City begins the process of right-sizing, it will be increasingly important for the City to manage its parking supply consistently and logically.

It is recommended that:

- The City should develop a parking demand forecasting model that can be used on an ongoing basis for all of Precinct One and Precinct Two. The model should incorporate the following data:
  - Existing parking utilization
  - Development applications
  - Area Master Plans
  - Long-term population and employment forecasts
- The City should review the feasibility of removing overnight parking prohibitions at all its off-street parking facilities, and should determine the capital and or operational changes required to implement the change.
- The City's Municipal Parking unit should work with other City business units, such as Parks and Forestry and Mississauga Transitway, to align long-term plans for parking expansion and to find opportunities for shared public parking.
- The City should consider opportunities to partner with the private sector where appropriate and beneficial for providing parking or developing shared parking arrangements.
- The City's Zoning By-law review should consider the role and policies of the City's Downtown CIP and how the CIP will work with the City's PIL policy.

- The Zoning By-law Review should recommend any CIP or PIL modifications required to ensure that the CIP and PIL complement the Precinct approach.
- Where parking is needed in some areas the City should consider partnerships with the private sector to deliver a portion or all the parking spaces.
- The City should implement parking controls, including paid parking if necessary, at free City parking facilities when one or a combination of the following is true:
    - There is an existing market for paid parking in the area
    - Transit is available
    - Utilization during peak periods exceeds 85 percent

Parking Lot Design

In line with the City's commitment to Vision Zero, safety is always a top priority. Slips, trips and falls in parking facilities have proven to be significant causes of injury. In addition, people often perceive parking garages as unsafe environments due to their lack of visibility and layouts.

It is recommended that:

- The City should develop safety standards and best practices for pedestrian and bicycle safety in parking facilities.

Governance

Governance refers to how the City makes decisions related to parking. Decisions about parking and service delivery are currently made within a horizontally integrated organizational structure.

A well-designed governance structure will result in the alignment of policies, operations and financial objectives to meet the needs of the citizens the City serves. The current organizational structure served the City well in the past, but is no longer appropriate. Based on an evaluation of five parking organization models used in North America, benchmarking against comparable Canadian cities, consideration of parking governance principles:

- It is recommended that the City adopt a vertically integrated organizational model that includes a parking division.

MISSISSAUGA'S PARKING DIVISION

- It is recommended that:
- The City approve and support the new governance model of establishing a new Parking Division over time within the Transportation & Works Department.
- The City creates a "Parking Service Area" which would have its own business plan.

The new parking division should have four groups: Parking Operations, Parking Planning, Parking Enforcement, and Business Development.

The Parking Operations Section would:

- Coordinate off-street municipal parking lots, on-street paid parking, winter maintenance for City provided parking, digital products, and policies for other City provided parking.
- Manage parking considerations, both short-term and long-term.

- Administer the Traffic By-law and on-street overnight permits.
- Maintain Electric Vehicle (EV) charging infrastructure

The Parking Planning Section would:

- Provide input into the Mississauga Official Plan (MOP) parking policies.
- Develop parking design guidelines.
- Provide parking comments for Zoning By-law Amendments and Committee of Adjustment applications. Review driveway widening applications.
- Provide input to Zoning By-law parking policies.
- Review parking studies and lead area specific parking strategies.
- Coordinate Payment-in-Lieu (PIL), Development Charges (DCs) and parking elements of Community Improvement Plans (CIPs).
- Assist with accessibility policies and standards.

Parking Enforcement would:

- Enforce parking and traffic by-laws.
- Administer the APS (Administrative Penalty System).
- Coordinate enforcement technology upgrades.

The Business Development Section would:

- Undertake business analysis.
- Handle data management and visualization.
- Be responsible for business planning.
- Support 311 municipal phone-in service with parking customer service.
- Be responsible for parking communications, marketing and outreach.
- Be responsible for finance in cooperation with the City's Finance division.

Private Sector Partnerships

It is recommended that the City continue to support joint ventures and partnerships with private sector companies to optimize the use of land and infrastructure and meet public needs for parking spaces in the most appropriate way.

Decision-Making

City Council will continue to be the final decision-making body on policy issues such as strategic goals, capital and operating budgets for existing and future expanded parking services and facilities, and parking fees. Important aspects of the reporting and decision-making process include Standing Committee of Council, Citizens-Business Advisory Committee and the Committee of Adjustment.

It is recommended that:

- The City Council and applicable standing committees of Council continue to be the decision-making body associated with parking policies including, for example, fee setting, expansion of parking facilities, joint ventures with the private sector, new technologies, and integrating TDM with parking and other policy issues.

Finance

Finance refers to how current and future municipal parking operations are currently funded and financed. The City's main revenue streams for parking are on-street and off-street paid parking, parking fines, PIL, and development charges. The cost of providing "free" parking in the City should also be considered.

Future Funding Options

It is recommended that:

- As the City's paid parking market matures, the City undertake an analysis of the benefits and costs of reducing the daily and monthly parking discount and that the City aligns its parking passes with surrounding commercial monthly parking fees.
- The City increase its parking fees at regular intervals to keep pace with inflation.
- Over the long-term, the City's fee-setting strategy evolve to meet specific parking utilization objectives. The strategy could include setting parking fees that vary by location, time of day, and special event type.
- The City support its April 2018 TDM Strategy pricing parking measure by setting monthly parking fees higher than the MiWay adult monthly transit pass fee.
- The City formalize the approach to financing and funding Municipal Parking operations. The policy should adhere to the following principles:
    - Revenue-generating parking activities should be funded through parking revenues (separate cost centre) as much as possible.
    - Non-revenue parking activities should be funded by the property tax base (separate cost centre).
- Municipal Parking fees should reflect market conditions (supply and demand).
- The City use annual parking ticket revenue to cover all costs of enforcement including parking ticket processing. Any surplus revenue should be placed into the reserve account to pay for new capital projects (For example, surface lots, parking garage structures and necessary equipment).
- The City undertake an analysis to determine the benefits and costs of implementing dynamic or escalating on-street pricing in each of the Precincts.
- The City undertake an analysis of the benefits and costs of reducing the daily and monthly parking discount to align the City's parking passes with surrounding commercial monthly parking fees.
- The existing six geographically-delineated parking reserve accounts are merged into one capital reserve account.

New Parking Structures

It is recommended that a formalized process for determining the business case associated with any parking capital project be adopted.

GO Parking

It is recommended that the City work with Metrolinx to develop a strategy to reduce all-day free parking at GO Transit rail and bus stations.

Special Considerations

There are instances where exceptions to paid parking can lead to a loss of revenue. For example, the CarShare vehicle permits at $65.00 per month and patio spaces in high traffic areas limit the potential parking revenues that can be generated from the same space.

It is recommended that:

- The City should develop a strategy to accurately account for lost revenue where special considerations are given in paid parking locations.

Technology and Innovation

PAYMENT METHODS

As technology continues to evolve related to parking, cities should monitor these new tools for parking management and apply them where they can be most effective. As new technologies have become available the City has updated its network to improve the user experience but also to be able to track parking usage more accurately. Currently, the City uses pay and display machines, multi-visit payment cards, and annual and monthly permits. New payment methods were considered, including pay-by-license-plate (PBLP), gated pay-on-foot (POF), pay-by-phone, and pay-by-online permit.

It is recommended that:

- The City should undertake a business case analysis to determine the feasibility and benefits of upgrading its Pay and Display machines and enforcement technology to a PBLP system.
- The City should consider a Pay-On-Foot (POF) system possibly combined with LPR technology at locations that require additional parking controls. Depending on circumstances, POF may offer a better solution than Pay and Display and or PBLP.
- The City should consider POF for any new parking structures planned for the Downtown Core.
- The City should consider converting the City Hall parking garage from Pay and Display machines to a POF system.
- When installing POF systems, the City should consider systems with the latest technologies available including access control for monthly parking permit holders and property management staff proximity cards, wireless transponders, and mobility phones.
- The City should offer the convenience of Pay-By-Phone at all the City's on-street and off-street parking facilities.
- The City should use a phased approach to introduce Pay-By-Phone.

PARKING ENFORCEMENT TECHNOLOGY

Recent advances in parking enforcement technology have made new approaches economic even for smaller municipalities to use License Plate Recognition (LPR) for parking enforcement.

A pilot project in underway in the City's Parking Enforcement group to test License Plate Recognition technology and Digital Chalking equipment. This will eliminate the need for manual chalking, offers immediate recognition of vehicles plates and a review of existing permit data. Digital Chalking will allow officers to enforce the City's parking bylaws more efficiently and allowing for reliable, digital tracking during inclement weather conditions. In addition to efficiencies of a single pilot vehicle for Chalking duties is an anticipated 25 per cent improvement to process productivity.

PARKING DATA COLLECTION AND MANAGEMENT

- Fundamental to any discussion of policy change is an understanding of existing conditions such that strengths can be built upon and weaknesses remediated or removed. A review of Mississauga's Municipal Parking's existing data collection and storage methods identified several gaps and opportunities for improvement.

It is recommended that:

- The City's Municipal Parking organization should develop an annual parking data collection program and create a comprehensive database of City-provided parking supply and utilization. The data collected should be openly available online. This work will begin the process of creating the back-end infrastructure required to provide parking and utilization information to the end-user.
- The City should consolidate existing data files regarding privately-owned parking and add information at key locations of interest across the municipality (For example at Intensification Areas). The data collected could be used to develop a more comprehensive understanding of existing parking supply for development and long-range planning purposes.
- Future data collection and storage methods for parking enforcement should link infraction and infraction location data, and the data should be mapped.

DIGITAL SIGNAGE AND WAYFINDING

Parking guidance systems are useful in large areas where alternative parking locations are available close to destinations. They typically include a website and mobile app that provide real-time, map-based information on parking availability and pricing.

It is recommended that:

- The City should consider implementing a parking guidance system in locations such as Precinct 1 where there are large municipal parking facilities and large private parking facilities. The system should combine digital variable message signs and wayfinding signs to direct drivers to available parking.
- The signs should be placed at Precinct entry points, key decision-making points within the Precinct, and access points to each parking facility.

- Wayfinding signs should be provided for parking locations where real-time information is unavailable.
- All City parking guidance technology in all parking facilities should be compatible to ease integration into the City's information system.
- The parking guidance system should include a website with an associated app that makes parking availability and pricing data available to customers.
- The City should promote the use of the online tools, particularly during peak demand periods such as special events. The web-based tools may be developed by the City or through a private partnership.
- The City should regularly:
    - Review the geographical areas where a parking guidance system is implemented.
    - Assess the parking guidance technology available and consider advances in technology and best practices.

Implementation Plan and Monitoring Strategy

To ensure the vision of the Parking Masterplan is achieved it is critical to develop a robust and comprehensive Implementation Plan and corresponding Monitoring Program to guide next steps – day to day work completed by staff, decision making by Council and input / support provided by stakeholders and partners.

To support implementation of the parking master plan a comprehensive implementation plan has been prepared. A summary of the implementation plan is provided in Exhibit E-3. The plan is documented in a summary table which is intended to be used by City staff to guide next steps.

Exhibit E-3 Implementation Plan Summary

Short-Term	Medium-Term	Long-Term
Adopt a Precinct Approach to Parking requirements	PIL Program Review	Update the Parking Master Plan
Implementation of Lower Driveway Boulevard Parking City-wide	Improve public communication on parking projects and policies	Review the impacts of Autonomous Vehicles on parking
Develop new funding options and opportunities around parking provision and maintenance	Curbside Management Study	Full build out of a vertically integrated Parking Division within the City structure
Zoning By-Law Update	Develop Share-Your-Parking program	
Transformation of existing Parking Permits to Digital Platform	Develop business case and implement pay-by-phone	
	Implement digital signage and wayfinding	

1 PARKING IN MISSISSAUGA

1.1 THE CONTEXT

As Mississauga continues to grow, the way we move is expected to change. While walking, cycling and taking transit will become more prevalent, if the car will continue to be the mode of choice for many. Parking will therefore remain a key element of our transportation network. This Parking Master Plan and Implementation Strategy (PMPIS) examines the need for and management of parking in the City, for the future now and in the future, and explains why and how *Parking Matters*.

The goal of *Parking Matters* is twofold: to improve the efficiency and effectiveness of current and future resources dedicated to parking; and to use parking as a tool to realize the city building objectives set out in the City's planning documents.

1.1.1 THE CHANGING CITY

Mississauga has grown to be Canada's 6th largest city. It is home to more than three-quarters of a million people and almost half a million jobs. Parking is an important part of Mississauga's transportation system, but as the City continues to grow and evolve, community parking needs are changing.

As the City includes a wide range of neighbourhoods and communities and new development will take on other various forms, Mississauga's parking policy can no longer be a one-size fits all approach. The provision and management of parking across the City must reflect local characteristics and needs. An environment scan of current trends in planning and managing parking was completed and a review of how local characteristics within the City of Mississauga are changing both can be found in Appendix 1-1.

Affordable housing is also a priority across the City as housing becomes more and more expensive. Parking is a tool that can help shape the City by right-sizing parking requirements or not making parking mandatory for every unit, especially in rental or affordable housing projects. Through unbundling parking from unit sales or rentals, housing can become more affordable for an individual or family that chooses other modes to move around the City and can also significantly reduce the upfront construction costs for a development.

1.1.2 PARKING AND THE TRANSPORTATION SYSTEM TODAY

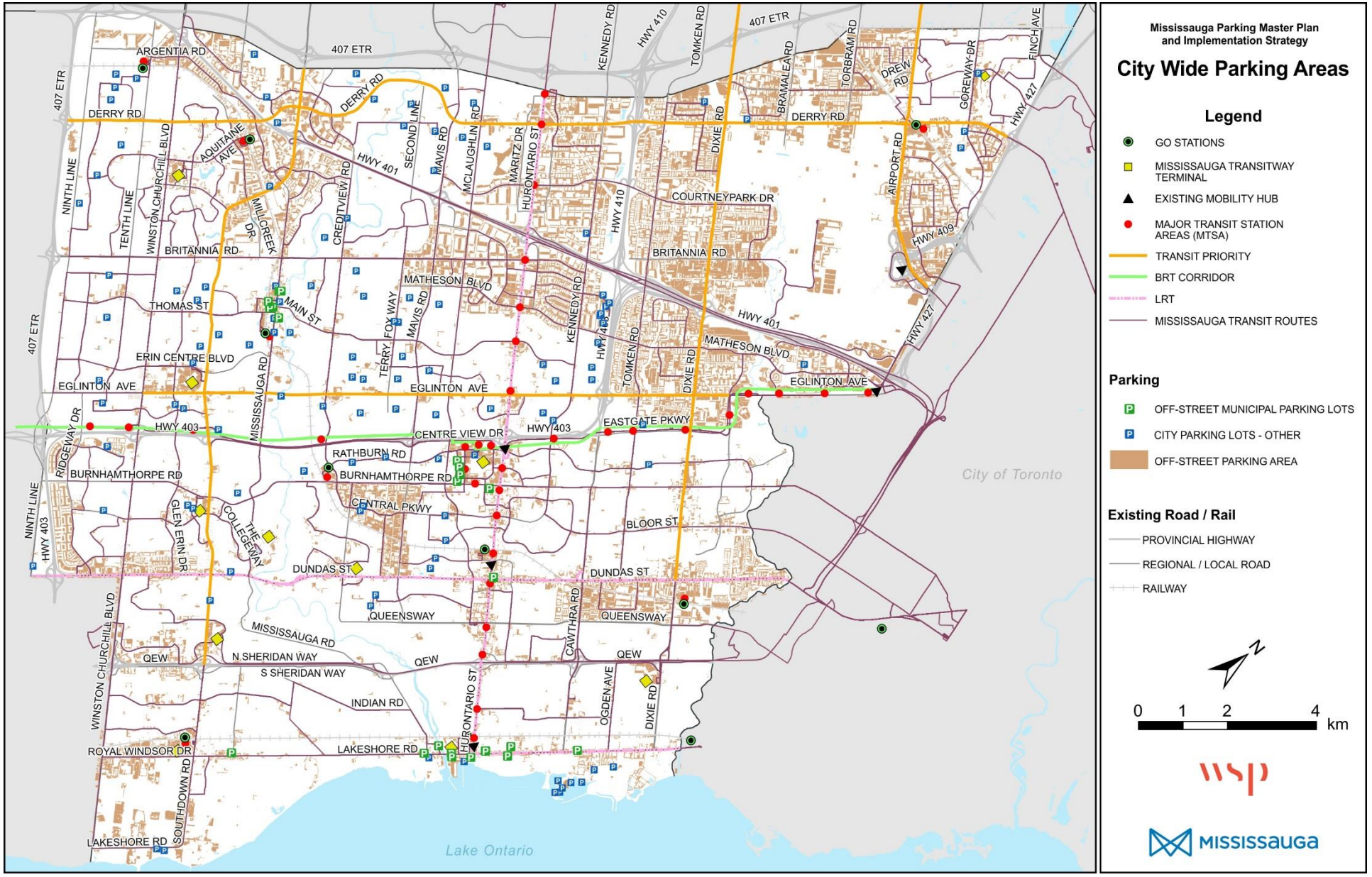
An analysis of Mississauga shows that approximately 15% of the total land area is dedicated exclusively to off-street parking and related purposes, not including private driveways. Most existing parking supply is surface parking. As Mississauga is mostly "built out," it is important for the City to find developable land and look at how existing resources dedicated to parking and transportation can be used more efficiently and effectively.

The City is currently responsible for a variety of different municipally owned/leased and managed parking. Today in Mississauga there are:

- 19 at-grade parking facilities;
- 4 below grade parking facilities;
- 169 on-street pay and display machines in 2 on-street parking districts; and
- 77 off-street pay and display machines.

Exhibit 1-1 shows several key parking locations throughout the City.

Exhibit 1-1 City Wide Parking Areas



Municipal Parking staff track certain statistics about how the existing paid parking is being utilized through data gathered from installed Pay-and-Display machines as well as purchased monthly passes and permits.

The 2011 Transportation Tomorrow Survey (TTS) indicates that approximately 80% of trips in Mississauga occur by car. The survey also shows that each household owns an average of two vehicles. Private motor cars provide mobility but place a heavy cost burden on many households. This PMPIS is designed to provide proactive and evidence-based solutions to this important transportation and land use challenge both now and in the future.

It is a common public opinion that parking should be “free”. There is typically significant opposition to implementing paid parking which does not consider the costs associated with providing parking. The cost of parking spaces in new parking facilities includes land acquisition, design and construction, lighting, power, signage, access control, safety and security, fencing, landscaping, parking planning, and insurance. The cost of parking spaces in existing parking facilities includes the ongoing maintenance costs of snow and litter removal, power sweeping, resurfacing, landscaping, line painting, lighting, and insurance. Additional costs include marketing, promotion and enforcement. Free parking during certain time periods increases enforcement costs as additional patrols are required. These factors make it difficult for the City to continue to provide free parking.

Another consideration is that “free parking” is being subsidized by all tax payers and consumers of goods and services, whether they own a car or not.

Parking in Mississauga is discussed in several existing Mississauga policy documents. Some of those include the Mississauga Strategic Plan (2016), Mississauga Official Plan (MOP), the current Zoning By-law (225-2007), the Transportation Master Plan (TMP) (2019) and the Transportation Demand Management Strategy and Implementation Plan (TDMSI) (2018). There are many other City studies and documents that also provide direction on how the City should provide and manage parking. A detailed review of policies that influence parking can be found in Appendix 1-2.

1.2 PARKING VISION

The Parking Vision Statement, as determined though the creation of this document, states the City’s view of Mississauga in the future and defines the City’s beliefs about the overarching principles that parking policy and practices should adopt to achieve that view. The process and framework used to develop the City parking vision can be found in Appendix 1-3. The Vision Statement is aligned with the principles, goals and objectives of the City's Strategic Plan and MOP.

The Vision for the Parking Master Plan and Implementation Strategy was developed through extensive consultation with the public and relevant City divisions as follows:

- Parking policies and practices should consider parking as a valuable resource that influences city building, transportation choices, affordable housing and economic development, and provides an important service for residents and businesses. The City should strive to ensure a balance between parking provision and management to maximize support for Mississauga as a multi-modal city. Finally, the City should strive to ensure a fair distribution of parking costs.

It is recommended that the City require all future parking policy and practices to be strategically consistent with the vision statement.

1.3 DEVELOPING THE PARKING MASTER PLAN

1.3.1 DEVELOPMENT PROCESS

Parking Master Plan is an action plan designed to guide how the City will provide and manage parking in the future.

The Parking Master Plan was undertaken in three phases:

- Phase 1: Discovery
- Phase 2: Develop and Test Policies
- Phase 3: Define and Approve Policies

Phase 1 involved significant public consultation to identify issues and opportunities associated with current parking practices. It also included an in-depth exploration of parking best practices in other jurisdictions. Phase 1 resulted in the development of the report entitled *Best Practices Review.* This report contains information about how Mississauga's parking compares to other similar municipalities in terms of parking zoning requirements, technology, organizational structure for the Parking department and other permissions. To review the contents of this document, please see Appendix 1-4. This report was also used to help inform Phases 2 and 3.

Phase 2 centered on presenting draft recommendations developed in response to the Phase 1 feedback and comments received from the public.

Phase 3 developed and refined the draft recommendations that flowed from Phases 1 and 2. Phase 3 included preparing a Draft Parking Master Plan Report for City staff. This Phase also included a final round of refinements based on feedback from City staff, parking providers, and the public.

1.3.2 CONSULTATION AND ENGAGEMENT

The Parking Master Plan was completed through a comprehensive process that gathered input and feedback from across the City. Staff representing a variety of divisions across the corporation have provided input on how parking currently operates in the City and how it could be improved in the future. Mississauga's Mayor and members of Council were also included in discussions throughout the course of the project to provide input and direction to staff. Finally, an extensive public consultation process was administered at different milestones of the project to make sure that the goals and objectives in this Plan were consistent with what Mississauga residents felt was needed.

The stakeholders consisted of three groups, they were:

- **Decision-Makers**: Mayor and Members of Council, the City's Leadership Team, and the project Steering Committee.
- **Parking Providers**: Representatives responsible for and or who are interested in the provision and or management of public or private parking facilities in Mississauga. This group included anyone in the business of parking.
- **Parking Users**: Homeowners, tenants, business-owners or business representatives, community groups, visitors, and engaged collaborators. This group included anyone who uses, relies on, or has an interest in parking in Mississauga.

The development of the Parking Master Plan was built upon significant input and consultation with staff and decision makers for the City. Staff provided input on how parking currently operates in the City and how it could be improved in the future. Mississauga's Mayor and members of Council engaged in discussions to provide input and direction to staff.

Consultation and engagement was used to inform each of the project phases. As such, a three-phase program was completed to inform the development of the Parking Master Plan. The following is an overview of the various activities that were undertaken:

Exhibit 1-2 Overview of Consultation & Engagement Tactics

PHASE 1	PHASE 2	PHASE 3
OBJECTIVE	**OBJECTIVE**	**OBJECTIVE**
Inform audiences about the project and gather input on issues and opportunities associated with parking	Provide audiences with an update on the project and present / gather input on the preliminary recommendations	Work with audiences towards an agreement on the proposed recommendations and finalize outcomes

Key themes emerged from the consultation and engagement activities undertaken. The key themes were considered and incorporated into the master plan where possible to ensure that community and stakeholder values were reflected. The following is a summary of the key themes that emerged.

- **LOCATION:** The area where parking is provided, the surrounding land-use and desired vision for the space should have a strong influence on how parking is determined and managed.
- **APPLICATION**: The application of parking standards need to be considered or more clearly rationalized based on other City policies and strategies.
- **ENFORCEMENT:** Consistency and frequency of enforcement is needed depending on the by-law requirements and the various land-uses throughout the City. It should be considered more as a tool as opposed to a reaction.
- **COMMUNICATION:** There needs to be more communication between the City and its parking users regarding the current as well as emerging or changing standards for parking as well as meaningful communication with the parking providers regarding expectations for management and provision.
- **CONTEXT:** There are unique parking circumstances throughout the City which are driven by neighbourhoods, communities and land-uses. The context needs to be considered when determining parking requirements and supply.
- **PERCEPTION:** There are a considerable number of perceptions around parking both from the parking users regarding how it is planned, designed and enforced as well as from the providers as to how parking requirements are determined. There are preconceived notions about how much parking should cost in various areas throughout the City which may be more assumption-based as opposed to fact-based.

A more detailed overview of the process and outcomes of the consultation and engagement program are found in Appendix 1-5**.**

1.4 PARKING MASTER PLAN OVERVIEW

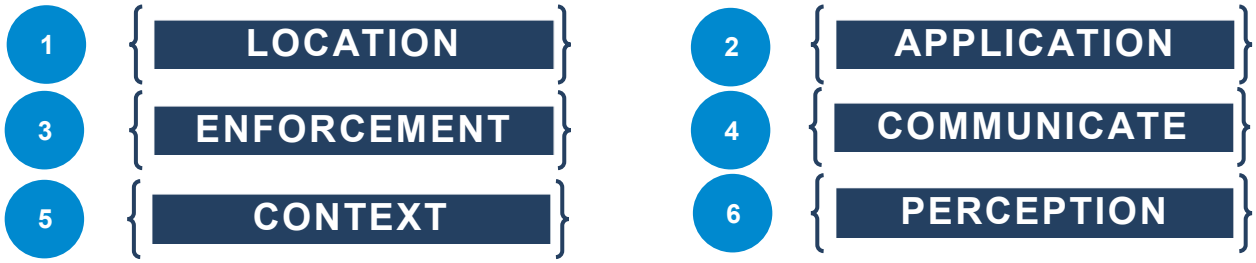
The Parking Master Plan is a comprehensive document which contains a wide range of information, tools and recommendations for the City's consideration and use.

The following is a summary of the chapters that make-up the Master Plan Report and the intended use of each.

Chapter		Purpose
1	Parking in Mississauga	Establishes existing context, Parking Vision, and study methodology
2	Parking Precincts in Mississauga	Explores the precinct approach to parking and recommends four precincts based on analyses of key criteria
3	Parking Regulations	Makes recommendations to parking regulations in the zoning by-law, bicycle parking, and payment-in-lieu (PIL) program
4	Parking Facilities	Makes recommendations for on-street and off-street parking
5	Governance	Makes recommendations for a new organization model including a parking division
6	Finance	Makes recommendations for future funding options and approaches to new parking infrastructure projects, coordination with other jurisdictions
7	Technology and Innovation	Explores emerging technologies in parking payment, enforcement, data collection and management, digital signage and wayfinding, peer-to-peer parking sharing, automated vehicles, and smart parking, and makes recommendations for the City's approach to each function.
8	Implementation and Monitoring	Summarizes all recommendations of the PMPIS and identifies the key requirements for implementation of each. Identifies key performance indicators to be monitored in order to track implementation of the PMPIS recommendations

In addition to the content noted above, the plan includes a comprehensive set of recommendations based on the key themes of Municipal Parking, Parking Demand Management, Accessibility and Safety, Technology and Innovation.

The recommendations are found at the end of each of the key sections of the Master Plan Report. A summary and implementation considerations is provided at the end of the report to support implementation and next steps



2 PARKING PRECINCTS IN MISSISSAUGA

Mississauga is a city made up of a variety of built forms. Some areas of the City are high density mixes of residential, commercial and employment with strong transit, walking and cycling connectivity, while other areas are comprised solely of single detached residential on winding local roads with limited access to other travel modes. That is why the PMPIS is not suggesting a one size fits all parking approach; rather it breaks the City up into sections based on those characteristics, known as Precincts.

This Chapter discusses the precinct approach first on a general level and presents other municipalities that have adopted this approach to providing and managing parking, and then delves deeper into why the precinct approach is being recommended for the City of Mississauga.

2.1 CRITERIA FOR DETERMINING PRECINCTS

When it comes to providing and managing municipal parking, it is important to analyze the overall built form of the City. Are there major differences in neighbourhoods across the city or can one approach be effective? Exhibit 2-1 provides a list of factors that typically affect parking needs, parking demand, and parking supply and most are commonly used in the development of appropriate parking management policies. Some are also used to group areas with similar characteristics and therefore a similar vision and need for a similar set of parking policies.

The most effective and most frequently used factors are:

- Transit Accessibility and Service Frequency
- Vehicle Ownership
- Availability of Alternative Travel Modes
- Active Transportation Network
- Shared Vehicles
- Taxi Service
- Carshare Service
- Public Parking Facilities
- Land Use
- Walking and other active transportation environment quality

Exhibit 2-1 Factors Affecting Parking Demand, Supply, and Management

Factor
Geographic Location: Vehicle ownership and use rates in an area
Residential Density: Number of residents or housing units per acre/hectare
Employment Density: Number of employees per acre/hectare
Land Use Mix: Land use mix located within a convenient walking distance
Transit Accessibility: Nearby transit service frequency and quality
Car Sharing: Whether car-sharing services are located within or nearby a building
Walkability and Bike-ability: Walking environment quality
Demographics: Age and physical ability of residents or commuters
Income: Average income of residents or commuters
Housing Tenure: Whether housing is owned or rented
Pricing: Parking that is priced, unbundled, or cashed out
Sharing/Overflow: Ability to share parking facilities with other nearby land uses
Management Programs: Parking and mobility management programs implemented at a site
Design Hour: Number of allowable annual hours a parking facility may fill
Contingency-Based Planning: Use lower-bound requirements, and implement additional strategies if needed

Source: Parking Management Comprehensive Implementation Guide, Victoria Transport Policy Institute, 2018

2.2 OTHER CITIES WITH A PRECINCT APPROACH

As pointed out in the *Best Practice Review* (Appendix 1-4) prepared as part of the PMPIS, jurisdictions in many countries have adopted a precinct approach while others are exploring that direction through their on-going zoning by-law review. The availability of transit, public parking, and active transportation networks is important to the approach. Many jurisdictions also review their parking policies and update their Zoning By-laws when adopting a policy area approach. The policies that emerge differ with the different needs of different jurisdictions. Seven different local jurisdictions are reviewed: Toronto, Vaughan, Kitchener, Hamilton, Richmond Hill, Oakville, and Newmarket. A summary is provided in Exhibit 2-2 and additional detail with maps are provided in Appendix 2-1.

Exhibit 2-2 Jurisdictions with Precinct/Policy Area Approach to Parking Policies

City	Year	Precincts/Policy Areas	Summary
City of Toronto	2013	• Policy Area 1: Downtown and Central Waterfront. • Policy Area 2: Yonge and Eglinton. • Policy Area 3: Centres and Avenues on Subway. • Policy Area 4: Other Avenues well served by Surface Transit. • Policy Area 5: Rest of the City.	The City of Toronto conducted a series of reviews of its parking policies and standards to develop a new Zoning By-law 569-2013 in 2013. The new by-law reflects the parking needs of residents and businesses and incorporates policies in the city's Official Plan Urban Structure and higher-order transit corridors. The Zoning By-law includes specific parking policies for: Avenues, Centres, Employment Areas, and Downtown and Central Waterfront.
City of Vaughan	2010	• Higher-order Transit Hubs • Local Centres • Primary Centres and Primary Intensification Corridors • Base (Other Areas)	Vaughan adopted a parking policy area approach in 2010 based on the city's Official Plan's urban structure and linked to current and planned transit facilities. The review recommended parking standards for each separate area. These standards ranged from minimums in areas with limited transit to maximums in areas in Transit hubs or along higher-order transit facilities and Intensification Areas.
City of Kitchener	2018	• Rapid Transit Stations • Urban Growth Centres including City Centre • Mixed Use Zones • Other Areas	The parking requirements in the new by-law are lower for Planning Around Rapid Transit Stations, Urban Growth Centres (including City Centre) and for Mixed Use Zones than for other areas of the city. The by-law provides minimum and maximum parking requirements for multi-unit residential developments in these zones.

City of Hamilton	2018	• Downtown Commercial Zones • Mixed Use Zones • Transit Oriented Zones • Other Areas	If the gross floor area (total area contained within the building) meets a minimum requirement, some commercial developments in these zones are not required to provide parking. The city has minimum and maximum parking ratios for multi-unit residential developments in the Transit Oriented Zones.
Town of Oakville	2014	• Mixed-Use Zones • Growth Areas • Downtown	The Town has lower parking requirements in the Mixed-Use Zones and Growth Areas. Downtown commercial developments do not have to provide parking, but there is a minimum parking standard (no maximums) for residential uses in Downtown.
Town of Newmarket	On-going	• Urban Centres • Other Areas	The Town decided to develop an Area-Specific Zoning By-law for the Urban Centres Secondary Plan. As part of that exercise, the town commissioned a parking standard background study. As the study area is to be highly transit-oriented, the report recommended both minimum and maximum parking rates.

2.3 THE CASE FOR PRECINCTS IN MISSISSAUGA

This Section assesses the applicability of a precinct approach to parking management in the City of Mississauga.

This Section uses the criteria for selecting and defining precincts, as discussed in Section 2.1 to assess the City to determine appropriate precinct areas. A more detail review of these criteria and how they apply to the City is provided in Appendix 2-2. Section 2.4 presents the four precinct types, the rationale behind the selection of the precincts, and the policy target for the precincts.

2.3.1 DEMOGRAPHICS

The City's population has increased by 1.5% annually since 2000. The 2017 population of about 766,000 is expected to grow to 930,000 in 2041. This projected rate of growth will drive the demand for mobility and will put great pressure on the City's transportation system.

The largest single age cohort is between the ages of 50 and 54 indicating that many people will retire in the next decade or two. This will lead to changes in housing choice and travel habits for this age cohort. Younger generations, particularly those aged 15 to 34, tend to be internet-savvy and highly connected. They are likely to respond easily to new parking technologies and to outreach campaigns that use online and social media platforms.

2.3.2 LAND USE, POPULATION, AND EMPLOYMENT

Mississauga is mostly built out, only a small amount of greenfield land is available for development and most new development, residential or non-residential, will be in infill and with higher densities than the traditional suburban greenfield development.

It is expected that the trend towards apartments and townhouses will continue and accelerate with the number of detached and semi-detached housing types expected to grow only by 2,338 units by 2041[1]. The density of future residential areas is likely to be higher than in older neighbourhoods. High density neighbourhoods will be well-suited to non-auto transportation modes such as transit, walking, and cycling. The anticipated shift to alternative modes will have implications for the City's parking needs.

Future development will occur mainly through intensification in existing urban areas. This means that existing parking stock will inevitably undergo some transformations. For example, existing parking may be displaced by new development, surface parking may be replaced by structured parking in denser areas, paid parking may become the norm in more areas of the City as land becomes more scarce and valuable. Exclusive parking for some specific land uses could be phased out in favour of more affordable and space-saving solutions such as off-site, shared public parking.

Employment in Mississauga has also grown steadily with more than 10,000 jobs were created between 2013 and 2017. During this period, the number of businesses also increased. Service-based sectors are driving employment and business growth in Mississauga, but manufacturing and wholesale trades are shrinking.

[1] Population, Demographics, and Housing Survey, City of Mississauga, 2016

Future employment is expected to grow by 23% to 552,000 in 2041, making employment in the downtown area and other existing office centres more concentrated. Amidst this growth, office-based jobs are expected to be the main driver, while population-related jobs such as retail, healthcare, and education will also support the trend.[2]

Mixed-use areas have the most potential for reducing the need for automobile travel and the related demand for parking. In a mixed-use area where citizens can live, work and play, travel needs can be met by walking or transit trips.

2.3.3 VEHICLE OWNERSHIP

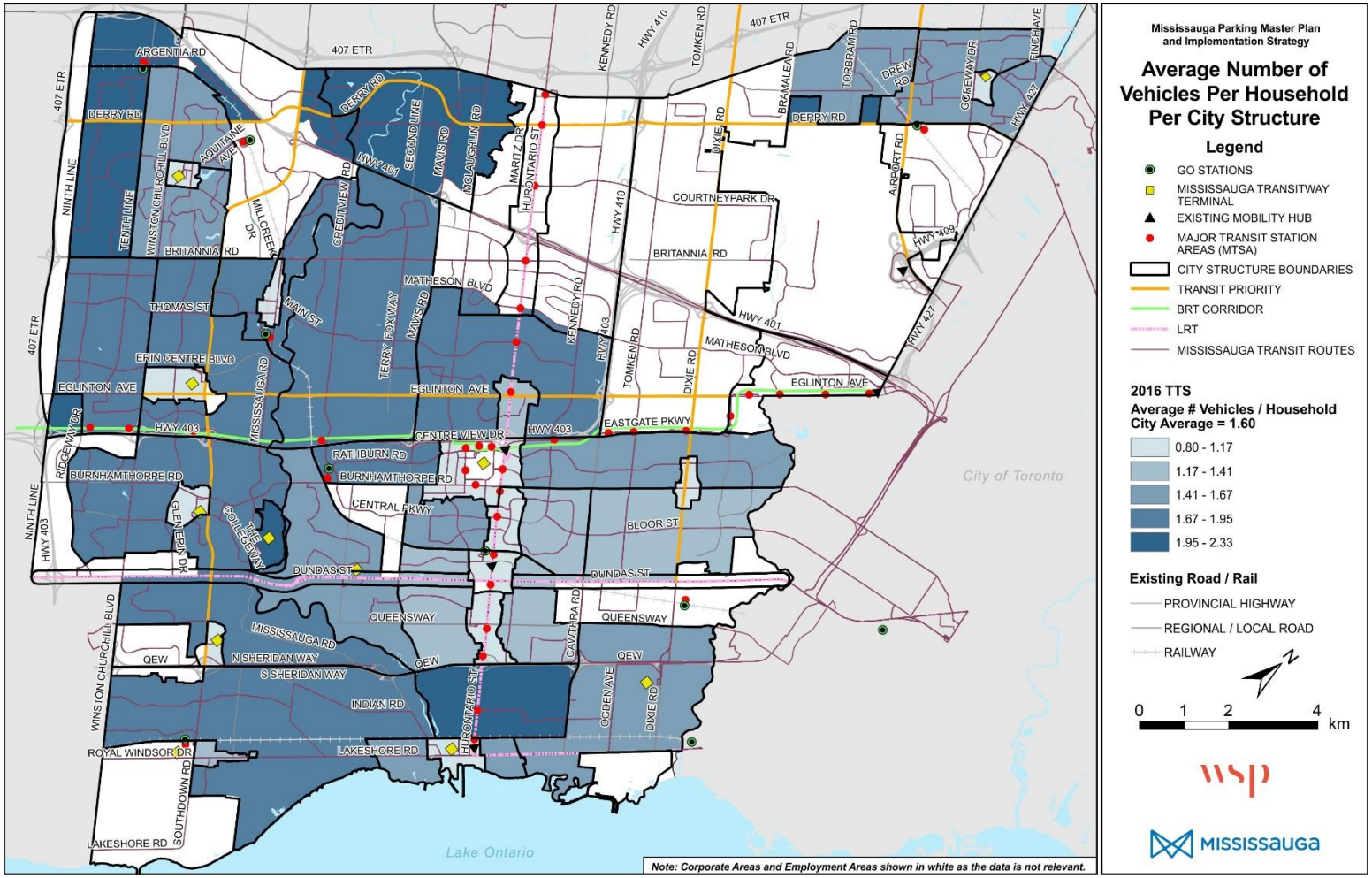
Vehicle ownership in Mississauga has been declining over the last five years however most households still have more than one vehicle. Vehicle ownership per household averaged 1.6 in 2016.

Exhibit 2-3 shows that vehicle ownership is low in the Downtown and the Community Nodes, the areas with the most frequent transit services. Such areas are likely to generate less demand for parking.

Areas farther from transit service or where transit service is less convenient have much higher vehicle ownership rates and consequently higher parking demand.

[2] Draft Transportation Master Plan for Mississauga, City of Mississauga, January 2019

Exhibit 2-3 Number of Vehicles per Household - 2016



Source: Transportation Tomorrow Survey, University of Toronto, 2016
Note: Data not available for uncolored areas.

2.3.4 AVAILABILITY OF OTHER TRAVEL MODES

In recent years, the increased availability of non-personal vehicles has had an impact on the demand for parking spaces. With more people using these services, personal vehicle ownership is declining, especially among young people. Reduced vehicle ownership reduces the need for parking spaces both at the point of origin and destination.

The locations of carshare vehicles, car rental companies and taxi are scattered across the City with some clustering in the Downtown and at some Community Nodes. In March 2017, City of Mississauga staff estimated 60,000 Uber trips per week were occurring in the City. An estimated 25,000 individuals are registered with Uber as drivers and can conduct business in Mississauga.[3]

These services reduce the need for individual vehicle ownership and can reduce parking demand especially in the heavy destination areas such as the Downtown

2.3.5 TRANSIT

Existing Transit Usage

The transit mode share in Mississauga has increased in recent years, according to a review of Transportation Tomorrow Survey data (TTS) as well as Census data, as shown in Exhibit 2-4. According to data from the TTS, the City's transit mode share increased from 8% in 2011 to 14% in 2016. The Census, which is a relatively more reliable data source due to its larger sample size, reported an even higher transit mode share of 18% in 2016.

Exhibit 2-4 Travel Mode Share - 2011 to 2016

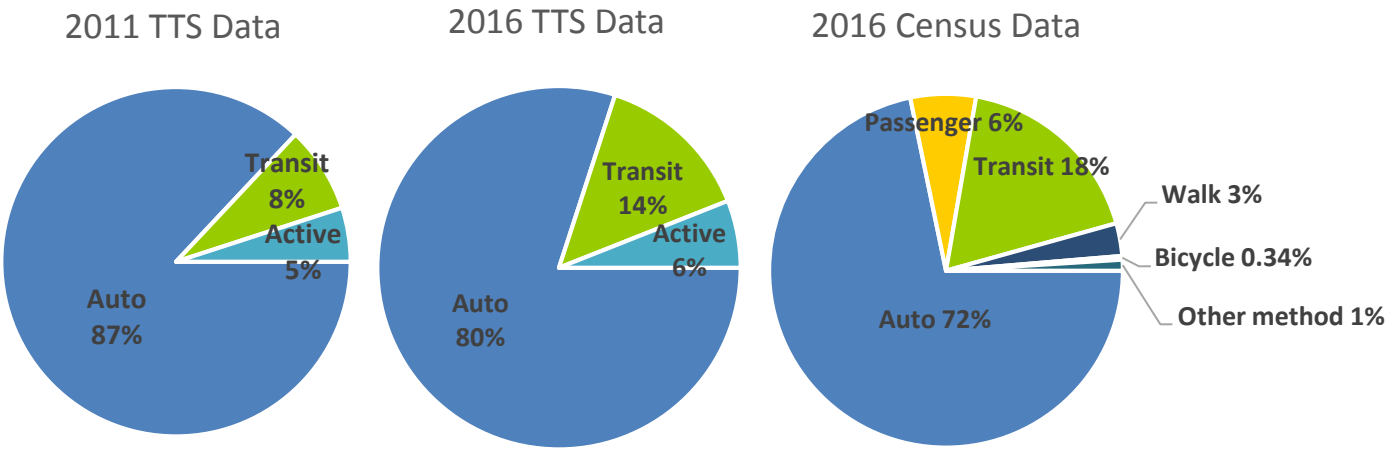
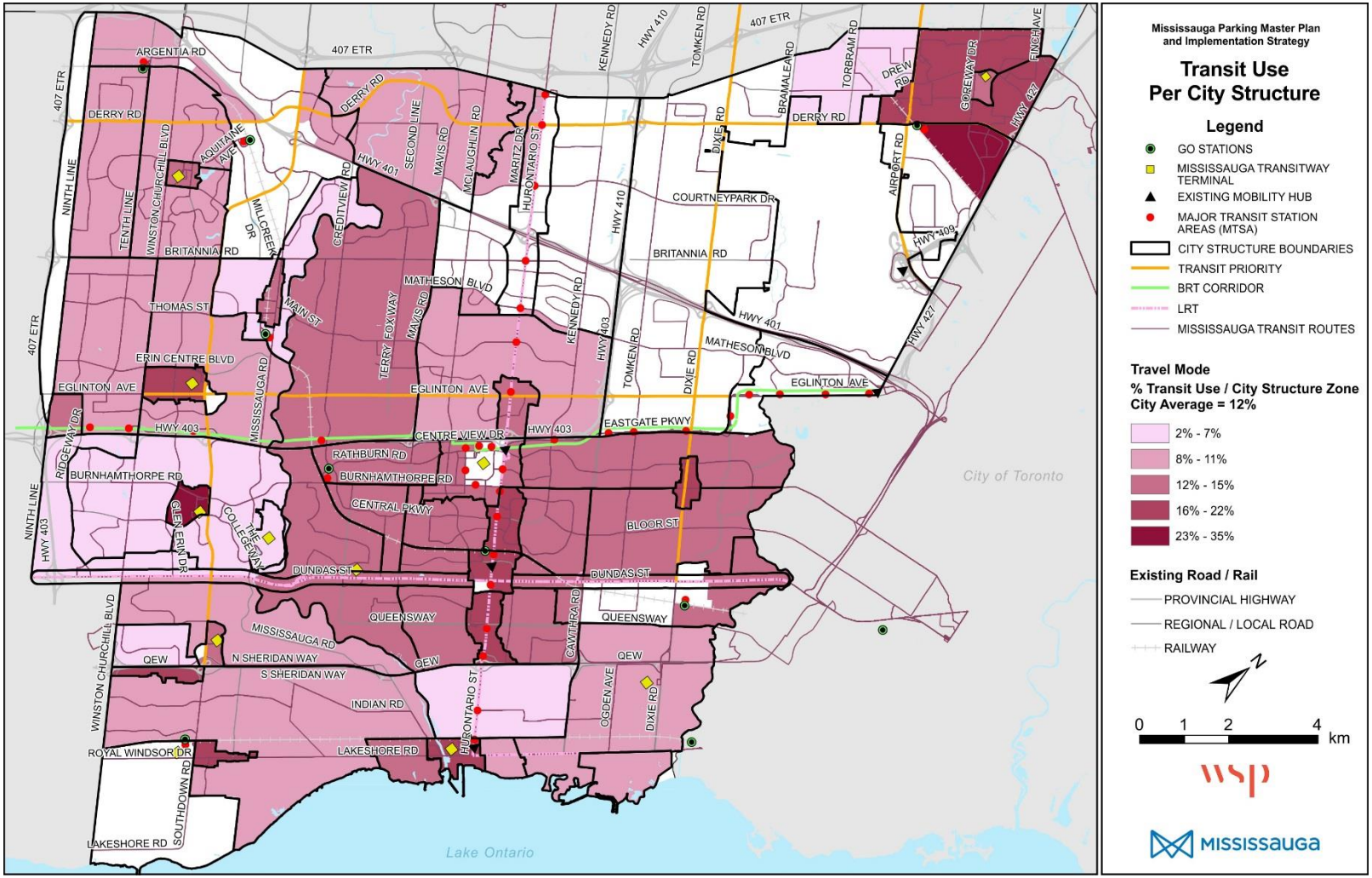


Exhibit 2-5 shows the transit percentage by traffic zone in 2016 based on TTS data.

From 2011 to 2016, MiWay ridership grew by more than 15%. Mississauga has the second highest local transit ridership per capita in the GTHA (after Toronto). Mississauga also generates the most GO Train ridership after Union Station, with 21,000 passengers per day.

[3] City to Propose Terms for Legalization of Uber in Mississauga, Rachael Williams, 2017

Exhibit 2-5 Transit Mode Share by Traffic Zones - 2016



Source: Transportation Tomorrow Survey, University of Toronto, 2016
Note: TTS data is reported as-is and may vary from other sources.

The Square One GO Bus terminal is the busiest bus terminal in the GO Transit network, including Union Station.[4]

The Mississauga Transitway beside Highway 403 provides an east-west corridor across the City for bus service. Initial trends indicate the Transitway has been successful at increasing ridership, with MiWay needing to add capacity to accommodate the extra demand.[5]

Areas well served by transit are prime locations to implement lower parking requirements. The planned transit improvements will increase the convenience of transit use in these areas in the future and likely increase transit ridership.

Future Transit Service

The planned Long-Term Transit Service for Mississauga includes significant improvements in the number of transit routes, frequency, and reduced transit travel time.

Improvements will include:

- Hurontario Light Rapid Transit (Approved/Funded)
- Bus Rapid Transit along Highway 403 (most stations in service)
- GO Regional Express Rail (proposed by Metrolinx)
- Kitchener GO Line
- Lakeshore West GO Line
- Milton GO Line
- Higher-order transit on Dundas Street and Lakeshore Road East (Proposed/Unfunded)
- Miway 5 Strategy to improve transit service in the next 5 years
- Transit Priority Corridors on north-south and east-west arterial roads

The provision of higher order transit and improvement of regular transit service is important for mobility in the City. When transit as a mobility option becomes equally if not more attractive than driving in terms of cost, convenience, comfort, reliability, and connectiveness between key locations, shifts in car ownership and travel mode can be realistically achieved. The shift away from auto use has a direct impact of reduced parking needs in areas well served by transit.

[4] Draft Transportation Master Plan for Mississauga, 2019
[5] Draft Transportation Master Plan for Mississauga, 2019

2.3.6 WALKABILITY

Walkability considers the quality of pedestrian facilities, roadway conditions, land use patterns, community support, security, and general comfort of walking. At the level of a specific community, the relative location of common destinations and the quality of connections between them (land use accessibility) is very important.[6]

Mississauga was designated a Silver WALK Friendly Community in 2014.[7]

Walk Score, a private company that provides walkability services, currently ranks Mississauga the fourth most walkable large city in Canada with a Walk Score of 59. Walk Score is a walkability index based on the distance to amenities such as grocery stores, schools, parks, libraries, restaurants, and coffee shops.[8]

While some areas in the City are very walkable, there are extensive areas that are not conducive to walking or active transportation.

The ability to walk conveniently and safely in the City is critical because almost all modes of travel begin and end with a walking trip. If appropriate walking facilities are not present, residents and employees will be less likely to take transit. If residents cannot walk short distances to shops and school, they will drive. Both sets of circumstances are likely to affect the demand for parking spaces with the more walkable area requiring fewer parking spaces.

Many on-going city initiatives are designed to address current gaps in walkability in the City. The City has developed policies designed to improve walkability significantly for new developments and redevelopments. As result, improvements in walkability are anticipated for the City over the next five years.

2.3.7 PUBLIC PARKING FACILITIES

The location and size of public parking facilities can be an important factor when considering parking policies. The availability of public parking facilities can reduce the need for on-site parking as multiple users can share the same parking facilities at different times of the day. For example, an office complex located next to a municipal parking lot can have reduced on-site parking with spill-over demand being accommodated in the public lot during office hours. The same public lot can serve nearby retail or restaurant land uses that typically experience peak parking demand in the evening hours. The same principle can be applied to residential buildings. Visitor parking can be accommodated in public parking. Subject to certain conditions, additional resident parking can also be accommodated in public parking in a mixed-use environment.

Municipal public parking is currently offered in the following areas:

- Streetsville Community Node
- Downtown Core
- Downtown Cooksville
- Port Credit Community Node

The location of municipal parking lots could support reduced on-site parking in a mixed-use environment.

[6] Walkability Improvements, Victoria Transport Policy Institute, 2017
[7] Mississauga, Walk Friendly Ontario, 2014
[8] Walking the Walk, CEO for Cities, 2009

2.3.8 SUMMARY OF PRECINCT APPROACH

The review of precinct criteria shows a wide range of current and future transit, public parking, Transportation Demand Management (TDM) measures, environmental built form/land use, and walkability across the City. As the various elements discussed impact parking demand, supply, and management differently, recommendations for parking precinct areas must be based on careful consideration. Transportation Demand Management is discussed in detail in Appendix 2-3.

2.4 MISSISSAUGA PRECINCT BOUNDARIES AND POLICIES

This Section discusses how four parking precinct areas emerged from an analysis of the City's Character Areas. The four precincts are known as One, Two, Three, and Four. This Section discusses the precinct area boundaries, the rationale for each precinct, the parking policy targets for each precinct, and potential parking management strategies for each precinct.

The parking precincts were determined by examining the Character Areas' current and future:

- Land use, built form, walkability
- Built form
- Transit availability
- Availability of public parking
- TDM measures
- MOP's planning objectives

It should be noted that the Precincts and their boundaries are preliminary, and subject to zoning by-law review. The delineations of Major Transit Station Areas (MTSAs) are subject to the MTSAs Study, currently being undertaken by the City and Region of Peel.

The parking requirements within each Precinct will be determined by a future Zoning By-law requirements review conducted by the City.

2.4.1 RATIONALE

A parking policy framework is required for four main reasons:

- To adopt a unified overview of citywide parking provision and management in Mississauga.
- To consider the variety of different areas in the City especially the differences in transit and municipal parking availability.
- To align decisions about land use, transit, parking provision, and management strategies with the City's vision for a multimodal city.
- To regard city-managed parking facilities as a valuable resource that should be managed proactively.

2.4.2 PRECINCT ONE

Location

Precinct One comprises:

- Downtown Core
- Downtown Cooksville
- Port Credit Community Node

Rationale

A. TRANSIT

- Precinct One areas contain existing mobility hubs:
  - Mississauga City Centre – Mobility Anchor
  - **Cooksville GO** – Mobility Gateway
  - **Port Credit GO** – Mobility Gateway
- Precinct One areas have the highest current and future level of transit service with a confluence of Higher Order Transit Corridors and Commuter Rail:
  - **Downtown Core**: Hurontario LRT and Highway 403 BRT Corridor.
  - **Downtown Cooksville:** Hurontario LRT, Dundas BRT Corridor, and Commuter Rail Station.
  - **Port Credit Community Node:** Hurontario LRT and Commuter Rail Station. This node is also part of the potential Lakeshore transit service as identified in the Lakeshore Connecting Communities Master Plan study which recommended starting with conventional or enhanced bus service and progressing to LRT or streetcar over time as growth increases along the Lakeshore Corridor.
- An additional factor is the planned GO services improvement at the Port Credit GO Station. The Lakeshore West GO line will benefit from the Metrolinx RER Corridor Projects that will introduce a 15-minute, two-way service between Aldershot and Union Station.

B. PUBLIC PARKING

- Precinct One areas have the largest supply of publicly available parking facilities with:
  - Several municipal parking lots
  - Several privately operate parking facilities
  - Metered on-street parking spaces

C. MIXED LAND USE/BUILT FORM

- Precinct One areas contain the largest mix of complementary major land uses that foster the ability to live, work and play in the same area. The major land uses are:
  - Residential
  - Commercial
  - Office

D. WALKABILITY

– Precinct One areas have a significantly higher Walk Score than the City average. They are “very walkable” areas where most errands can be accomplished on foot.

E. TRANSPORTATION DEMAND MANAGEMENT

– Precinct One areas already have several TDM measures in place. These measures include:

  - Convenient and frequent transit service
  - Carshare locations
  - Taxi stands
  - Car rental locations
  - A mix of primary, secondary On-road, and off-road facilities
  - In the future, additional TDM measures will be added through City initiatives such as those recommended in the City’s TDM Strategy and Implementation Plan (2018). Such initiatives include bicycle parking regulations and standards, transit passes, and on-road active transportation infrastructure.

F. VEHICLE OWNERSHIP

– Precinct One areas currently have some of the lowest vehicle ownership rates per household in the City (typically lower than the City average of 1.6 vehicles per household). Precinct One areas also currently have the highest concentrations of high residential density in the form of multi-unit complexes (apartments).

Policy Objectives

Precinct One areas have the City’s highest combination of characteristics that result in the lowest parking demand. Precinct One areas are centered on transit, they have the largest supply of publicly available parking facilities, the most mixed-use areas, Walk Scores that are significantly higher than the City average, well established TDM measures, vehicle ownership rates that are lower than average, and the highest residential densities.

It is recommended that Precinct One areas should have the lowest parking requirements and the highest level of parking management strategies. It is recommended that parking maximums for most land uses should be considered in these areas. A variety of parking management measures including Price Responsive approach should be adopted.

2.4.3 PRECINCT TWO

Location

Precinct Two comprises:

- Downtown Fairview
- Downtown Hospital
- Uptown Major Node
- Gateway Corporate Centre
- Major Transit Station Areas at:
  - Airport Corporate Centre
  - Clarkson (Potential Mobility Hub)
- Dixie Community Node (Potential Mobility Hub)
- Hurontario Intensification Corridor

Rationale

A. TRANSIT

- Precinct Two locations have very good transit service. They are located on a higher-order transit corridor, BRT corridor and or commuter rail:
  - Downtown Fairview, Downtown Hospital, Uptown Major Node and Gateway Corporate Centre and Hurontario Intensification Corridor: Hurontario LRT.
  - Major Transit Station Areas at the Airport Corporate Centre: Highway 403, BRT.
- **Dixie Community Node**: to be served by planned Dundas BRT Corridor. Within five years, Metrolinx' s RER Corridor Projects will increase service to every 15 minutes or better between Milton and Toronto. The 30 percent increase in service will benefit all stops on the Milton line including Dixie Station.[9]
- The City's Official Plan Schedule 6 identifies Dixie Road north of Dundas Street as a Transit Priority Corridor indicating that transit improvements are planned for Dixie Road. The service improvements will serve Dixie Station.
- **Major Transit Station Areas Clarkson:** Like Port Credit Station (Precinct One), Clarkson Station is on the Lakeshore West GO line and will benefit from the planned 15-minute, two-way service between Hamilton and Downtown Toronto.
- A phased approach for the reduction of parking requirements should be considered in alignment with the timing of transit improvements and funding.

B. PUBLIC PARKING

- Precinct Two areas currently lack public parking.
- The Clarkson GO station supplies almost 3,500 parking spaces and the Dixie GO station has approximately 1,000 parking spaces. The spaces at both stations are for GO patrons only.
- The nearest municipal parking lot to Clarkson GO station is located on Clarkson Road North and provides approximately 135 parking spaces, but the lot is approximately 1.5 km from Clarkson GO station and outside the 500m radius area designated as a Major Transit Station Area.

[9] Milton GO Line, Metrolinx, 2017

C. MIXED LAND USE/BUILT FORM

- Precinct Two areas include some mixed-use developments. The main examples in Precinct Two are Downtown Fairview, Downtown Hospital, and Uptown Major Node. All three are on the Hurontario Intensification Corridor.
- Areas inside the Major Transit Station Area at Airport Corporate Centre and at Clarkson also have a good mix of commercial and office uses with some industrial land uses nearby. These locations are expected to continue to offer a good mix of land uses as they grow and redevelop.
- Dixie Community Node: the Dundas Connect Master Plan recommends that this area (location and boundaries yet to be determined) be one of the seven Focus Areas along Dundas. Each Focus Area will be increasing its mix of land uses and will have the greatest increase in population and jobs along the corridor.

D. WALKABILITY

- Precinct Two areas (like Precinct One areas) have a significantly higher Walk Score than the City average.
- Walk Score rates the **Hurontario corridor** as "very walkable." The corridor has a much higher ranking than the City average.
- Areas within **Highway 403 Major Transit Stations at Airport Corporate Centre** (Tahoe, Etobicoke Creek, Spectrum, Orbitor, and Renforth) and the **Clarkson GO Station** all receive better than average scores for transit service, but rate lower on walkability than the City average. These areas are "car-dependent" and most errands require a car.[10]
- Areas included in **Dixie GO Station** have the highest Walk Scores for locations around Major Transit Stations. The areas are "somewhat walkable." This Walk Score is consistent with the City average and indicates that some errands can be accomplished on foot. The Dundas Connect Master Plan has proposed significant improvements in pedestrian connectivity for areas around **Dixie GO Station**.

E. TRANSPORTATION DEMAND MANAGEMENT

- Precinct Two areas have limited TDM measures, but City initiatives are likely to introduce additional measures.

F. VEHICLE OWNERSHIP

- Precinct Two areas' vehicle ownership rates are around the City average of 1.6 vehicles per household. Precinct Two areas do not have the highest residential density, but some areas are those the City's second highest densities, and some areas have the potential to accommodate redevelopment and add significant population and employment growth (e.g., Dundas Corridor, Clarkson MTSA).

Policy Objectives

Precinct Two areas have higher parking demand than in Precinct one, but lower than the City average. Precinct Two parking demand is reduced by access to good transit service, the availability of some public parking, the presence of some mixed-use development, a range of walkability scores, and some TDM strategies already in place. Precinct Two areas have average vehicle ownership rates and most have average residential density.

It is recommended that parking maximums be considered for certain land uses in Precinct Two. Similar to Precinct One a variety of parking management measures should be included but Area Management approach would best suit most areas.

[10] Living in Mississauga, Walk Score, 2018

2.4.4 PRECINCT THREE

Location

Precinct Three comprises:

- Major Nodes:
  - Central Erin Mills
  - Lakeview
- Community Nodes:
  - Streetsville
  - Clarkson Village
  - Malton
  - Meadowvale
  - South Common
  - Sheridan
  - Rathwood-Applewood
- Airport Corporate Centre outside the Major Transit Stations
- Future BRT Stations along Dundas Street
- Other Major Transit Stations not included in Precinct One or Precinct Two. These include a possible Lakeshore Station on the Lakeshore corridor of Hurontario LRT between Hurontario Street and the Mississauga boundary.

Rationale

Precinct Three areas all have or will have reasonably good transit service, but the areas lack some of the other supporting elements that reduce parking demand.

A. TRANSIT

- Precinct Three areas have or will have a reasonably good level of transit service on a higher-order transit corridor, BRT Corridor and or commuter rail. Transit infrastructures in Precinct Three are very similar to Precinct Two. The key additional infrastructure for will be the future Dundas Street BRT and the possible Lakeshore BRT or LRT.
- It should be noted that the Dundas Higher Order Transit (HOT) and Lakeshore HOT are only proposed, with no funding committed. Changes in parking standards for these areas should be phased based on funding.

B. PUBLIC PARKING

- Precinct Three areas have only limited public parking. Streetsville and Clarkson Village are exceptions.

C. MIXED LAND USE/BUILT FORM

- Precinct Three includes varying levels of mixed-used development. Precinct Three areas with a high mix of land use include:
  - Dundas Corridor around Dixie Road
  - Central Erin Mills Major Node
  - Clarkson Village Community Node
  - Lakeshore east of Hurontario Street
  - Highway 403 corridor around Airport Corporate Centre
- As growth takes place, and future MTSA's are confirmed and studied, these areas will intensify and more mixed-use development will be encouraged.

D. WALKABILITY

- Precinct Three areas have a range of Walk Scores. Locations like Streetsville, South Common and Malton are "very walkable," areas like Meadowvale are "somewhat walkable" and areas like Lakeview remain "car-dependent."

E. TRANSPORTATION DEMAND MANAGEMENT

- Precinct Three areas have some TDM measures, but the measures are limited.

F. VEHICLE OWNERSHIP

- Precinct Three areas typically have higher vehicle ownership rates than Precincts One and Two, but not the highest vehicle ownership rates in the City.

Policy Objectives

Precinct Three includes areas with good transit service, parking demand that may be higher than the City average or reduced by the good transit, "very walkable" or "somewhat walkable" Walk Scores, limited TDM measures, and higher than average vehicle ownership rates.

It is recommended that an appropriate level of minimum parking requirements should be set for Precinct Three areas. The minimum parking requirements should not be the highest in the City.

It is recommended that appropriate parking management strategies be adopted for Precinct Three but a site-focused approach will likely address most sites.

2.4.5 PRECINCT FOUR

Location

Precinct Four includes all areas of the City not included in Precincts One, Two or Three. It also includes the Special Purpose Areas.

Precinct Four includes:

- All Neighbourhoods
- Corporate Centres:
  - Meadowvale
  - Sheridan Park
- Employment Areas:
  - Churchill Meadows
  - Western Business Park
  - Southdown
  - Mavis-Erindale
  - Lakeview
  - Dixie
  - Gateway (Outside the MTSAs)
  - Northeast
  - Clarkson

Rationale

Precinct Four areas have limited transit service, the City's lowest transit ridership and Walk Scores, and the City's highest vehicle ownership. Significant improvements in transit infrastructure are not expected in the near future for Precinct Four areas. Built form is not expected to change enough to result in a measurable reduction in parking demand. Precinct Four areas are expected to remain largely car-dependent.

As the City grows, however, some locations may develop to the point that they become mixed-use areas where walking is a real alternative mode and parking demand is reducing. In such cases the City should endeavor to review the precinct areas.

Policy Objectives

Precinct Four includes the areas where parking demand could be among the highest in the City, due to limited transit service and minimal walking and cycling infrastructure. Therefore, an appropriate level of minimum parking requirements is needed along with appropriate parking management strategies. It is recommended that appropriate parking management strategies be adopted for Precinct Four but a site-focused approach will likely address most locations.

2.4.6 SPECIAL PURPOSE AREAS

Location

MOP designates Toronto Lester B. Pearson International Airport and the UTM as Special Purpose Areas (See Chapter 3).

The City has no jurisdiction over the Special Purpose Areas, but works with the operators and key stakeholders to influence travel options and parking management at these locations. The areas are currently market responsive.

2.5 SUMMARY OF MISSISSAUGA PRECINCT APPROACH

This Section summarizes the parking policy framework and the proposal to establish four parking precincts, each precinct reflecting different circumstances and approaches to parking provision and management.

Exhibit 2-6 summarizes the main characteristics of the four proposed precinct areas.

Exhibit 2-7 shows the locations of the four parking precinct policy areas.

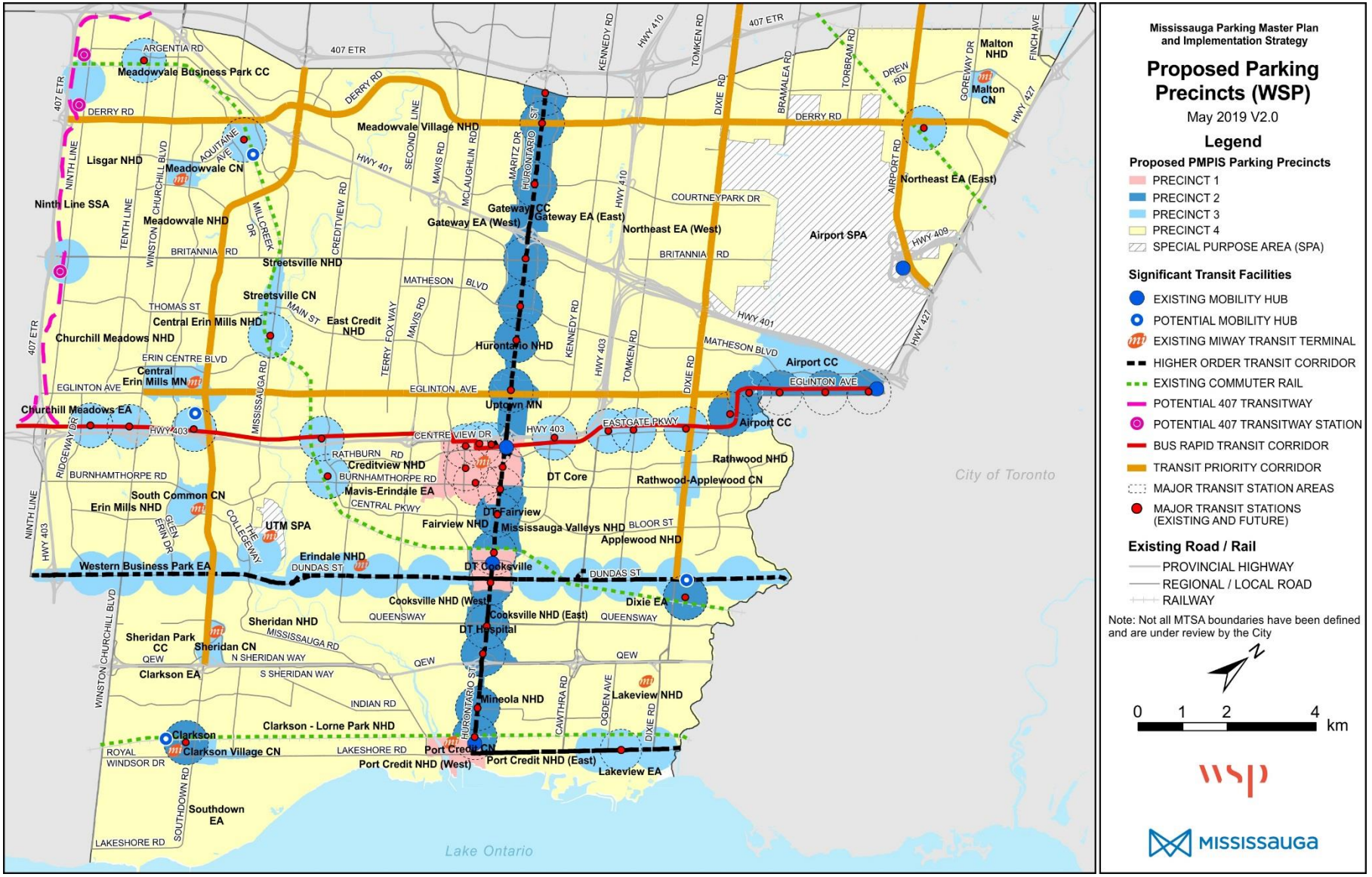
Exhibit 2-6 Parking Precincts (based on MOP Schedules 9 and 2)

	Schedule 9							Schedule 2
Precinct	**Downtown**	**Major Node**	**Community Node**	**Neighbourhood**	**Corporate Centre**	**Employment Area**	**Special Purpose Area (4)**	**Intensification Corridors and MTSAs (2)**
One	DT Core DT Cooksville		Port Credit					
Two	DT Fairview DT Hospital	Uptown	Dixie		Gateway			MTSAs inside Airport Corporate Centre Hurontario Intensification Corridor (outside Precinct One) MTSA in Clarkson
Three		Erin Mills Lakeview (1)	Streetsville Clarkson Malton Meadowvale South Common Sheridan Rathwood-Applewood		Airport (Outside MTSAs)			Dundas Intensification Corridor (3) Other MTSAs, including Lakeshore (3)
Four				All	Meadowvale Sheridan Park	Churchill Meadows Western Business Park Southdown Mavis-Erindale Lakeview Dixie Gateway Northeast		
Special Purpose Area							University of Toronto Mississauga Airport	

Notes:

1. Lakeview Major Node: Pending Council Approval. The proposed land use plan is expected to be approved by Council on July 4.
2. City has a Major Transit Station Area (MTSA) review underway; other areas may be identified.
3. Subject to other ongoing City studies (i.e.: Lakeshore Connecting Communities, MTSA review)
4. Special Purpose Areas: Locations where the City has very little influence and parking is already subject to market pricing

Exhibit 2-7 Locations of Proposed Precinct Policy Areas for Parking



2.5.1 RECOMMENDATIONS: MISSISSAUGA PARKING PRECINCTS

This Section summarizes the recommendations for parking management in the City of Mississauga, it is recommended that the City:

- Adopt a precinct based approach to parking provision and management, each precinct with its own approach.
- Adopt the following goals and parking management principles for each precinct:
  - Precinct One
    - Goal: Lowest parking requirements, highest level of parking management strategies, and consideration of parking maximums for most land uses.
    - Parking Management Principle: A Price Responsive approach that makes maximum use of pricing to build, own, operate, and supply municipal parking.
  - Precinct Two
    - Goal: Second lowest parking requirements, high level of parking management strategies and consideration of parking maximums for certain land uses.
    - Parking Management Principle: An Area Management approach that makes maximum use of area-based solutions such as pricing and shared parking.
  - Precinct Three
    - Goal: Appropriate minimum parking requirements that are higher than those for Precinct One and Precinct Two.
    - Parking Management Principle: A Site-Focused approach that optimizes parking at appropriate sites and within the City's parking goals.
  - Precinct Four
    - Goal: Appropriate minimum parking requirements (among the highest in the City.)
    - Parking Management Principle: A Site-Focused approach that optimizes parking at appropriate sites and within the City's parking goals.
- Review the City's current Zoning By-law to determine appropriate parking requirements for each precinct and ensure that the parking requirements align with this study's criteria for defining and establishing the precinct areas.
- Conduct regular reviews (not more than five years apart) to assess whether precinct boundaries are still appropriate or need to be changed.

3 PARKING REGULATIONS

Policies and regulations about the provision of new parking are an important aspect of the City's Parking Master Plan and the Plan's implications for future developments. As the city continues to grow and intensify, it is important that old policies that supported the supply of abundant parking are replaced by policies compatible with the City's current vision, goals for land use and transportation planning, and more balanced support for all travel modes.

This Chapter reviews the City's existing policy instruments for the provision of new parking supply (Source: By-law; how much: rate per use; how: design guideline) and highlights the modifications required if the proposed Precinct system is adopted.

3.1 THE ZONING BY-LAW

The current Mississauga Zoning By-Law (225-2007) provides detailed information about the City's expectations when it comes to providing parking. The current approach in Mississauga is to provide direction on a minimum number of parking spaces required based on land use and development size. When these policies were developed the intention was to ensure that parking spaces were available when the parking would be at maximum capacity. The main issue with this approach is that often, too much parking is built and sits unused most of the time. In addition, high parking requirements adds substantially to development costs, sometimes limit development potential, and do not help to support and promote sustainable ways of travelling when parking is abundant.

3.1.1 MOTOR VEHICLE PARKING STANDARDS TODAY

The current Zoning By-law specifies parking supply requirements for 14 residential land use categories and 51 non-residential land and mixed-use developments (office, retail, service, restaurant, overnight accommodation, and or residential components). The Zoning By-law also provides a shared use parking formula for sites that can share parking between various activities on the same property, thus reducing the overall required parking supply. The shared use parking formula considers parking occupancy for each activity at different times of the day and week.

Parking rates may also be lowered as the result of an application to the Committee of Adjustment. This Committee has reduced parking requirements for numerous developments and a variety of land uses. More information on the Committee of Adjustment can be found in Section 5.2.6 Decision Making.

A comprehensive benchmarking exercise that compares the zoning by-law parking requirements in Mississauga, other Greater Toronto Hamilton Area (GTHA) municipalities, Ottawa, Vancouver and Victoria. The comparison includes downtown by-laws and citywide by-laws for office, retail, industrial, residential apartment (apartment), medical offices, and restaurants uses. The benchmarking review can be found in Appendix 3-1.

3.1.2 MOTOR VEHICLE PARKING STANDARDS FUTURE CONSIDERATIONS

To realize the City's strategic goal of a transit-oriented city where residents can get around without an automobile, the City's existing minimum parking requirements should be reduced and replaced with a policy designed to manage parking demand more deliberately. The new policy should have sufficient regard for alternative modes of transportation and should focus on the City's long-term transportation goals.

Based on the benchmarking report (see Appendix 3-1) and a review of current practices around parking in Mississauga, it is clear that there is opportunity to lower the minimum number of required parking spaces in certain areas. Reductions have been implemented in the main street areas of Port Credit, Streetsville and Clarkson with land uses such as residential apartment, retail and restaurant. However, moving forward, there is a need for consistency in those reductions.

Emerging transportation patterns and trends in Mississauga and elsewhere also needs careful consideration. Possibilities include modern technologies such electric and autonomous vehicles. Carsharing may become a very popular alternative to personal vehicle ownership. Although the impact of these emerging trends is unclear, there is broad agreement that the impact on parking infrastructure and the parking industry could be significant. New policies and regulations will be required to deal with the changing circumstances.

Recommendations: Motor Vehicle Parking Standards

- It is recommended the City hire a full-time contract position following the approval of the PMPIS (2020) for a period of approximately two years to undertake a review and update of the City's Parking Standards within the Zoning By-Law.
- It is recommended the City consider establishing maximum parking requirements in all Precincts as part of a future, detailed Zoning By-law review.
- It is recommended the City require any development proponent who wishes to exceed the maximum parking requirement to provide a justification report that considers at least the following questions:
    - Is the proposed development consistent with the City's overall parking and transportation planning objectives?
    - Has the applicant demonstrated a need for additional on-site parking beyond short-term or event driven levels?
    - Has the applicant considered and discussed with City staff the viability of providing the additional parking in a shared format such as a public parking lot?
    - Has the applicant considered a phasing plan to remove surplus parking in the future, for example, as part of a later development phase or because of regular monitoring?
    - Is the applicant able to implement a design (higher ceilings, wider separation joints, or pre-fab structure that can be dismantled) that would allow for the conversion or retrofit of the parking spaces in future, if necessary?

– When precincts are introduced:
    - Precinct One should have the lowest parking requirements and parking maximums should be considered for most Precinct One land uses.
    - Precinct Two could have the same or slightly higher parking requirements than Precinct One and parking maximums should be considered for some Precinct Two land uses.
    - Precinct Three's minimum parking requirements should be higher than those of Precinct One and Two, but should not be the highest in the City.
    - Precinct Four includes areas where parking demand could be particularly high due to limited transit service and inadequate Active Transportation infrastructure. This situation may continue for some time. Precinct Four's minimum parking requirements should be appropriate and may be the highest in the City.

3.1.3 ACCESSIBLE PARKING REQUIREMENTS

The current City of Mississauga Zoning By-law 0225-2007 sets out the number of accessible parking spaces required by land use and location. The By-law table is summarized in Exhibit 3-1. Exhibit 3-1 compares the City's requirements with the requirements of the Accessibility for Ontarians with Disabilities Act (AODA). As shown, there is no difference in the Table indicating the City's requirements matches the AODA requirements.

It is important to note that the AODA requirements are minimum standards, but additional accessible spaces are encouraged in developments where a higher than average number of accessible users is anticipated. Examples of such developments include seniors' housing, seniors' facilities and hospitals.

Exhibit 3-1 Accessible Parking Spaces Requirements

Total Number of Required Parking Spaces	Minimum Number of Accessible Parking Spaces (Mississauga)	Minimum Number of Accessible Parking Spaces (AODA)
12 or less	1	1
13 – 100	4% of the total[1&2]	4% of the total[1&2]
101 – 200	1 space plus 3% of the total[2]	1 space plus 3% of the total[2]
201 – 1000	2 spaces plus 2% of the total[2]	2 spaces plus 2% of the total[2]
More than 100	11 spaces plus 1% of the total[2]	11 spaces plus 1% of the total[2]

Source: Zoning By-law 0225-2007, City of Mississauga, 2007
Notes:
1. Where only 1 accessible parking space is required, a Type A accessible parking space shall be provided.
2. Where more than 1 accessible parking space is required:
    - If an even number of accessible parking spaces is required, an equal number of Type A and Type B accessible parking spaces must be provided.
    - If an odd number of accessible parking spaces is required, an equal number of Type A and Type B accessible parking spaces must be provided and the odd space may be a Type B accessible parking space.

It will be important for Staff to remain up to date on Provincial Accessibility Standards to ensure that Mississauga's standards are current and meet the needs of those who require accessibility accommodations.

3.1.4 SHARED PARKING

When a parking space is provided on a property with a variety of different uses that have different times of day where they experience most of their traffic, the City's Zoning By-law suggests that share parking may be an option. For example, land uses such as offices, restaurants, may be able to share the parking supply if the peak parking demand for the different land uses occurs at different times of the day. The parking requirements of office may peak between 9 a.m. and 5 p.m. Monday to Friday and the restaurants may peak in the evening and on weekends with a smaller increase at mid-day.

Exhibit 3-2 shows the City's current shared parking table from the Zoning By-law.

Exhibit 3-2 Shared Parking Table, Zoning By-Law 0225-2007

Column	A	B	C	D	E
Line 1.0	TYPE OF USE	PERCENTAGE OF PEAK PERIOD (WEEKDAY)			
		Morning	Noon	Afternoon	Evening
1.1	Office / Medical Office / Financial Institution	100 (10)	90 (10)	95 (10)	10 (10)
1.2	Retail Centre / Retail Store / Personal Service Establishment *(0379 – 2009)*	80 (80)	90 (100)	90 (100)	90 (70)
1.3	Restaurant / Convenience Restaurant / Take-out Restaurant	20 (20)	100 (100)	30 (50)	100 (100)
1.4	Overnight Accommodation	70 (70)	70 (70)	70 (70)	70 (100)
1.5	Residential – Resident Residential - Visitor	90 (90) 20 (20)	65 (65) 20 (20)	90 (90) 60 (60)	100 (100) 100 (100)

Source: Zoning By-law 0225-2007, City of Mississauga, 2007
Note: Percentages in brackets are shared parking percentages related to weekends

Recommendations: Shared Parking

- It is recommended that the City's future Zoning By-law review examine current shared parking categories to determine whether additional land uses and land use categories should be added.
- It is recommended that the City review current parking occupancy percentages to determine whether the percentages are appropriate.

3.2 BICYCLE PARKING

Bicycle parking is a key element of infrastructure that makes it easier for residents to choose not to drive their cars and reduces the demand on existing vehicle parking. Mississauga currently has no enforceable bicycle parking requirements within the City's Zoning By-law that make it mandatory for an applicant to include it in their development.

However, as a part of the 2018 Cycling Master Plan and recently approved TDM Strategy and Implementation Plan updated bike parking rates and rationales were developed. These recommendations provide guidance for an applicant on the appropriate amount of bicycle parking they should consider incorporating into their sites.

Recommendation: Bicycle Parking

- The current Zoning By-law should be updated to include bicycle parking requirements determined by the 2018 Cycling Master Plan and Mississauga TDM Strategy and Implementation Plan to ensure they are mandatory for all future development.

3.3 MISSISSAUGA'S PAYMENT-IN-LIEU OF PARKING PROGRAM

Payment-in-lieu (PIL) of parking is a program where a developer can provide the City with a cash contribution for the right to build less than their required parking spaces. The funds received by the City are intended to support the development of a centralized public parking lot or garage, or possibly other transportation improvements within the area. PIL is common in many cities' downtown and other urban areas where opportunities for building off-street parking are limited.

Payment-in-lieu policy is designed to support intensification by promoting modes of transportation that are more environmentally sustainable than driving. The intention is to reduce the need for parking spaces by encouraging people to take transit, walk, cycle or use ride-share services instead of driving. The key principle underlying PIL is the transfer of the responsibility to provide parking from the property owner to the municipality.

A PIL program requires three elements to operate effectively:

- A PIL policy that outlines a consistent approach.
- A formal stipulation of the appropriate financial contribution expected by the City. An example might be a cost per parking space.
- A clear decision mechanism for the municipality's acceptance or rejection of each PIL application. The PIL application is usually part of either a rezoning or Committee of Adjustment application. On occasion a PIL application is made on its own.

3.3.1 PAYMENT-IN-LIEU OF PARKING TODAY

Mississauga has had a payment-in-lieu of parking program in place since 1984. A major revamp of the program was approved and implemented in 1997. Since then various updates and improvements have been implemented.

The PIL Program is applicable in all areas of the city where municipal (on and or off-street) parking is provided. The City uses two evaluations schemes for PIL applications:

- Under **Part A**, an application for PIL is evaluated using criteria that assess the appropriateness of the proposed development and the adequacy of the existing public parking supply to offset the proposed on-site parking deficiency.
- Under **Part B**, the City may request PIL where limited or no municipal parking facilities are available. In this case, the evaluation will have regard for the City's interest in providing municipal parking, the viability of the site and its surrounding area during the interim before municipal parking becomes available, and the timing and adequacy of the future municipal parking supply to address the public parking needs to be created by the application of PIL.

The Planning and Building Department and its Commissioner are responsible for processing PIL applications, preparing the terms and conditions of PIL approval, and executing agreements for PIL of ten parking spaces or less. Authority from Council is required for the execution of agreements for PIL of more than 10 parking spaces. For applications not supported by the Planning and Building Department, a report from the Commissioner is prepared for consideration by the Planning and Development Committee and Council.

Exhibit 3-3 shows the PIL contribution formula for three categories of development.

Exhibit 3-3 PIL Contribution Formula

Development Related to PIL Application		Developer/Proponent Contribution
Change in land use or conversion of an existing building/structure or part thereof.	Category 1: Up to 50 m^2 GFA	12.5% of the estimated cost of parking
	Category 2: Up to 200 m^2 GFA	25% of the estimated cost of parking
	Category 3: Over 200 m^2 GFA	50% of the estimated cost of parking
New development, redevelopment, and addition to existing building/structure		50% of the estimated cost of parking

Notes:
1. The estimated cost of parking is based on the Planning Act Processing Fees and Charges By-law, which are derived from the formula contained in Appendix A of the Corporate Policy.
2. GFA-Gross Floor Area

More details on the current costs associated with PIL for both new developments and changes to existing land uses as well as a review of PIL programs in other Canadian municipalities can be found in Appendix 3-1.

3.3.2 PAYMENT-IN-LIEU OF PARKING UPDATES

The current PIL program for the City of Mississauga needs to be further researched to ensure that the funds being provided to the City by applicants appropriately covers the needs of the City to make up that space, whether by building the same parking space in a municipally provided lot or allocating the funds to implementing TDM strategies. Given the new precinct based approach to parking PIL applications can be assessed based on what area they application is in and what other parking options and opportunities exist or are planned for the future.

3.3.3 RECOMMENDATIONS: PAYMENT-IN-LIEU OF PARKING

- It is recommended that the City conduct a review of the PIL program, led by the Planning and Building Department and in partnership with the Municipal Parking Group, and Corporate Services.
- It is recommended that the City continue considering applications not meeting the Zoning By-law requirements to be candidates for a contribution to the PIL program.
- It is recommended that the City review the PIL program to address the following:
    - Find an appropriate methodology to address land value in consultation with Corporate Services.
    - Incorporate current benchmark costs for surface, structure, and below ground parking facilities including concrete and pre-fab construction options and applied City wide.
- It is recommended that the City conduct a review to determine the impact of expanding the PIL program to include residential uses, in coordination with other aspects of the parking system
- It is recommended that the City conduct regular updates of parking fees to incorporate current construction costs and land costs
- It is recommended that the City's PIL program be administered and managed by the Municipal Parking group in consultation with the Planning & Building Department.

4 PARKING FACILITIES

4.1 ON-STREET PARKING

On-street parking refers to any location were vehicles are permitted to be parked along the curb or in a designated lay-by parking space. In the City of Mississauga there is both paid and free on-street parking opportunities. On-street parking is currently governed by the City's Traffic By-law (555-00) which contains all regulations related to where parking is permitted, time of day permissions, how long an individual vehicle can be parked as well as other restrictions. For a detailed review of the contents of the Traffic By-law (555-00) please see Appendix 4-1.

This Section will explore the City's current on-street parking practices and explore recommendations for future improvements.

4.1.1 ON-STREET PARKING TIME RESTRICTIONS

5 Hour Parking

In Mississauga, anywhere that on-street parking is allowed and un-paid, the maximum amount of time a vehicle can be parked in a spot is 5 hours unless otherwise posted. The 5-hour limit is allowed on City roads between 6:00am and 2:00 am. Parking on-street is not permitted overnight between 2:00am and 6:00am. The one exception is for vehicles with accessible parking permits, which can be parked on-street in the same location for a maximum of 24 hours.

15 Hour Parking

There are certain locations within the City where 15-hour on-street parking is permitted which includes over-riding the overnight parking restriction. 15-hour parking provides some neighbourhoods where visitor parking or resident parking may be challenging to find an on-street spaces alternative for overnight storage. 15-hour parking does create some challenges for City staff as it can be very difficult to enforce, can impede snow removal, road maintenance or waste collection and tends to attract resident and visitors from other neighbouring streets that do not have the same permissions.

Holiday Parking

During the 11 Statutory Holidays on the annual calendar the timed parking restrictions on streets where parking is allowed is waived. Vehicles can park between 8:00am and midnight for as long as is necessary without receiving a parking infraction. Overnight parking is still not permitted unless otherwise posted.

4.1.2 RECOMMENDATION: ON-STREET PARKING TIME RESTRICTIONS

- It is recommended that the City continue to allow on-street parking between 8 am and midnight beyond the 5-hour limit on all Statutory Holidays.

4.1.3 RESIDENT PETITION PROGRAM

Not all streets in Mississauga allow for on-street parking. Many of the City's roads restrict parking all the time, at certain times of the year or even certain times of the day, for example there are several no parking zones around schools specifically at drop-off and pick-up times to mitigate unsafe situations. If a resident or group of residents feels that there should be a change to the existing parking regulations on their street, there is a petition process set up for them to request the City explore their proposed changes.

To apply for a change in the existing by-law, a resident must obtain signatures of support from more than half of residents of the homes on the affected street. After receiving the petition and undertaking a detailed technical review of the request, the Transportation and Works Department advises the resident whether City staff support the request. The process includes a formal questionnaire mailed to the homeowners. If at least 66% of the homeowners support the change, and if the Ward Councilor also approves the change, the Transportation and Works Department submits a report recommending the change to City Council.[11]

Residents' requests typically include changes such as:

- Extending the 5-hour parking limit to 15 hours
- Allowing lower driveway boulevard parking
- Reducing local parking prohibitions

4.1.4 LOWER DRIVEWAY BOULEVARD PARKING

In addition to 15-hour parking allowances, another opportunity to increase parking capacity without changing infrastructure is with lower driveway boulevard parking (LDBP). The current Traffic By-law (555-00) states that no person may park a vehicle on the paved or grassed portion of the city boulevard, and no person may park a vehicle in a manner that obstructs the sidewalk from pedestrian traffic. (The boulevard is defined as the portion of the driveway between the property line or sidewalk and the road.)[12]

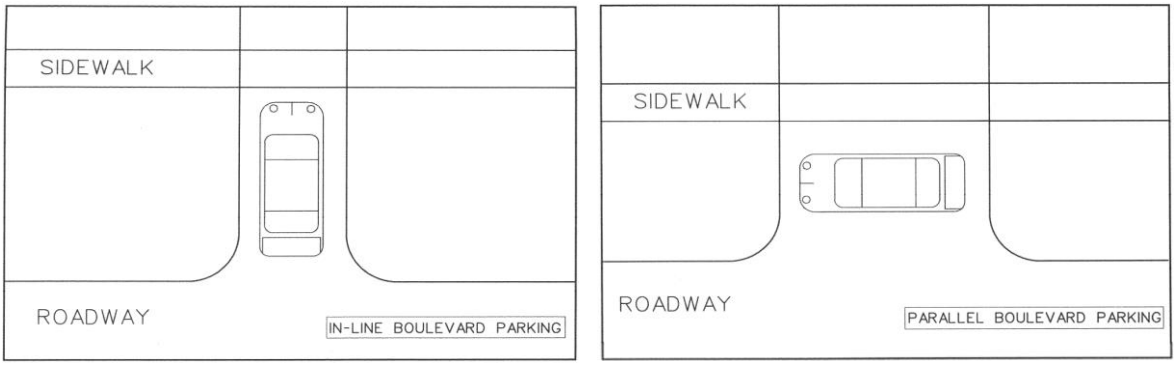
There are some locations across the City where LDBP has been permitted and there are many residents who park in the boulevard even if it is not permitted on their street. A lower driveway must generally be 1.8m (6 feet) by 4.0m (13 feet) to ensure that a parked vehicle does not overhang the sidewalk, grassed boulevard or road. Major collector and arterial roads are not eligible for the LDBP prohibition exception.

Exhibit 4-1 shows correct and safe in-line and parallel vehicle positions in a lower driveway boulevard.

[11] https://www7.mississauga.ca/documents/tw/Parking_Petition_Information_Apr_2018.pdf

[12] http://www7.mississauga.ca/documents/bylaws/traffic_definitions_2013.pdf (Traffic By-law 555-00)

Exhibit 4-1 Correct In-line and Parallel Parking in a Lower Boulevard



Source: Resident Parking Petition, City of Mississauga

During the consultation process, many residents said that LDBP could be an important option when there was no room for an additional vehicle in a garage or driveway and where on-street parking is not available or limited. Other residents, however, said that LDBP should not be allowed because vehicles that overhang the boulevard area are safety concerns, because LDBP encourages multiple vehicle ownership, and because of aesthetics.

To get a better understand of how LDBP has and has not worked in other Ontario Municipalities, a detailed review can be found in Appendix 4-2.

For the City of Mississauga there are three options when it comes to managing LDBP and they are outlined in Exhibit 4-2 along with their anticipated advantages and disadvantages.

Exhibit 4-2 Advantages and Disadvantages of Three LDBP Options for Mississauga

OPTIONS	ADVANTAGES	DISADVANTAGES
Maintain LDBP by Petition	City continues to enforce current LDBP plan on residential areas Councilors and neighbours continue to maintain control and determine whether specific boulevard parking spaces are permitted	Request process LDBP and enforcement consume City's time and resources Fewer options for residents to park their vehicles. As demand grows, residents may park their vehicles illegally on the boulevard or on-street
Allow LDBP without Petition	More off-street parking spaces would be available. No need for City permits or enforcement More on-street parking spaces available for short-term use by visitors as residents would have LDBP option Less strain on City resources to manage the petition process Decreased request for driveway widenings	Enforcement required for vehicles in violation of City requirements (safety, overhang, etc.) Some residents may not like or approve of LDBP. Unattractive aesthetically for some residents
Prohibit LDBP	Boulevards safer as more space for pedestrians/motorists and no overhanging vehicles Minimum enforcement costs	Illegal LDBP parking could increase Increases demand for permits for on-street short-term residential parking Possible shortage of parking if no on-street parking program implemented Increased requests for driveway widenings

Based on the above evaluation as well as the detailed review of best practices in other Ontario municipalities the City should move forward with allowing LDBP without the petition process.

4.1.5 RECOMMENDATIONS: LOWER DRIVEWAY BOULEVARD PARKING

- It is recommended that the City continue to offer LDBP but without the need for a resident's petition. LDBP can help to alleviate the shortages of residential parking in some areas.
- It is recommended that the City develop a communications campaign to explain LDBP and the expectations on residents to park properly.

4.1.6 ON-STREET PARKING PERMITS

There are currently five types of on-street parking permits offered by the City of Mississauga, some are paid permits and others have no fee. The five permits are residential short-term temporary, residential long-term, commercial blanket, residential blanket, and carshare permits. Exhibit 4-3 provides a summary of the details associates with each type of permit.

Exhibit 4-3 Temporary Parking Permits

Type	Validity (from date of issue)	Number of Vehicles	Reasons	Approval time	Fee
Short Term Temporary Residential*	1 - 5 days	Maximum of 5	Overnight guests, driveway repairs, funerals, parties. License plate number of each vehicle required	Same day (where prohibited parking signs are not present)	No fee
Long-Term Residential	More than 5 days	Maximum of 5	Extended visitor stays, driveway repairs, renovations, etc. License plate number of each vehicle required	1-3 days depending on parking signs and whether an inspection of the proposed area is required	$62.00 + HST
Blanket Commercial	Any	No maximum	Large commercial renovations, parking lot resurfacing, underground garage sweeping, parking lot resurfacing.	1-3 days Area is subject to inspection	$124.00 + HST
Blanket Residential*	Greater than 5 days	No maximum	Large residential renovations, etc.	Within 2 weeks Area is subject to inspection	$62.00 + HST
Carshare Permit	One month	One	Public use of car share	Within 2 weeks Staff approval required	$65.00 + HST

Note: *Maximum of 14 per calendar year for a municipal address

These five permits are strictly related to on-street parking. The City offers many parking permits for off-street parking as well. As the City works through the recommendations of this Plan, it is recommended that the process for obtaining these passes becomes more centralized and streamlined to the benefit of the City and the individual requesting the permit. Some options to streamline the permit process using technological advancements are explored in Section 7.3.

4.1.7 RECOMMENDATION: ON-STREET PARKING PERMITS

- It is recommended that the City develop a digital on-street parking permit program (for processing, operating and enforcing the program).
- It is recommended that the City replace the various parking permits currently available by implementing a comprehensive digital parking permit system for residents and businesses.
- It is recommended that the City undertake further study and review to specify the most appropriate types of permit to adopt.
- It is recommended that the City implement an on-street overnight parking program in residential areas to work in alignment with the review of the Zoning By-law requirements and the potential reductions in certain precincts (e.g. parking requirement for Secondary Units could be waived in areas within the overnight permit parking program, or where boulevard parking is feasible).
- It is recommended that the City hire a full time permanent staff following the approval of the PMPIS (2020) to undertake a review of all existing permits and develop the new on-street and off-street permit program.

4.1.8 ON-STREET PAID PARKING

There are certain locations within the City where paid on-street parking is in force. Port Credit, Downtown, Streetsville, Clarkson and Cooksville all have paid on-street parking. The existing paid parking program is administered through pay-and-display machines that have been installed along the curb. Drivers pay for time they believe they will require the space and receive a ticket from the machine. They are expected to place that ticket on their dashboard where it is clearly visible to enforcement officers.

Maps showing the current streets with paid meter parking can be found in Appendix 4-3. Exhibit 4-4 to Exhibit 4-6 show the current times and rates for paid parking in Port Credit, Downtown, Streetsville, Clarkson and Cooksville.

Exhibit 4-4 On-street Parking Fees in Port Credit

Timing	Fees	Daily Fee
Monday to Saturday, 10am to 9pm **Sunday, 10am to 6pm**	$1.50/hour for the first two hours $2.00 for the third hour (3-hour maximum)	$18/day (Monday to Saturday) $13/day (Sunday)

Exhibit 4-5 On-street Parking Fees in the Downtown

Location	Timing	Fees	Daily Fee
All locations except Brickstone Mews, Grand Park Drive, and Parkside Village Drive	Monday to Friday, 8am to 6pm Saturday and Sunday, 10am to 6pm	$1.00 per hour (2-hour maximum)	$15/day (Monday to Friday) $13/day (Saturday and Sunday)
All locations	Overnight on-street Sunday to Thursday from 6pm to 8am and Friday and Saturday 6pm to 10am	$1.00 per hour ($5.00 maximum)	
Brickstone Mews, Grand Park Drive, Parkside Village Drive	Monday to Friday, 8am to 6pm Saturday and Sunday, 10am to 6pm	$1.50/hour for the first two hours $2.00/hour for the third hour (3-hour maximum)	$21.50/day (Monday to Friday $18/day (Saturday and Sunday)
Brickstone Mews, Grand Park Drive, Parkside Village Drive	Monday to Friday, 8am to 6pm Saturday and Sunday, 10 a.m. to 6 p.m.	$1.50/hour (4-hour maximum)	$21.50/day (Monday to Friday $18/day (Saturday and Sunday)

Exhibit 4-6 On-street Paid Parking in Streetsville, Clarkson, and Cooksville

Location	Timing	Fees	Daily Fee
Streetsville (Queen St.)	Monday to Saturday, 10am to 9pm Sunday, 12pm to 6pm	$1.50/hour for the first 2 hours $2.00/hour for the third hour (3-hour maximum)	$18/Day (Monday to Saturday) $13/Day (Sunday)
Clarkson (Lakeshore Rd.)	Monday to Saturday, 10am to 5pm Except for Holidays	$1.00/hour (2-hour maximum)	$7/Day
Cooksville (Hurontario)	Monday to Saturday, 10am to 5pm Except for Holidays	$1.00/hour (2-hour maximum)	$7/Day
Cooksville (Sherobee Rd.)	Monday to Friday, 8am to 6pm Saturday and Sunday, 10 am to 6pm	$2.00/hour (No maximum)	$20/Day (Monday to Friday) $16/Day (Saturday and Sunday)

Charging for parking encourages turnover by freeing up on-street spaces for other users. Charging also ensures that those wishing to park for longer periods or all day are relocated to off-street facilities which are more appropriate for longer-term parking.

As charging for on-street parking in the proposed Precinct One and Precinct Two areas (Port Credit, the Downtown, Streetsville, Clarkson, and Cooksville) is a demand management tool, the parking fees in these areas were typically introduced to create parking turnover at and near major destinations.

4.1.9 RECOMMENDATIONS: PAID ON-STREET PARKING

- It is recommended that the City continue to monitor on-street parking occupancy in Precincts One, Two and Three (specifically Port Credit, the Downtown, Streetsville, Clarkson, and Cooksville).
- To improve the management of parking demand and to encourage turnover in areas that charge for parking, it is recommended that the City increase parking fees when parking occupancy exceeds 85% during peak hours in these areas. See Best Practices review for this study.
- To improve the management of parking demand and to encourage turnover in areas that do not charge for parking, it is recommended that the City consider introducing a parking fees when parking occupancy exceeds 50% during peak hours.

4.1.10 CURBSIDE MANAGEMENT

With many competing priorities, it can be difficult to allocate space along a street's curb for every use. As our transportation system evolves, that could become even more complicated. Curbside management refers to a City's ability to accommodate all users within the allotted space along a curb.

Competing for curb space with on-street parking are vehicles that are loading and unloading goods and deliveries as well as an increase in passenger pick-ups and drop-offs. While there has always been a demand for pick-up and drop-off spaces, the increase can be attributed to the popularity of ride-sharing companies now operating within the City.

On-street pick-up and drop-off areas where vehicles stop temporarily or park short-term to load and unload passengers can reduce the need for on-site parking. On-street pick-up and drop-off areas are typically found in school zones and at other land uses that require safe, convenient and accessible areas for passenger pick-ups and drop-offs.

To be effective, on-street pick-up and drop-off areas should be:

- Safe and accessible.
- Close to the front door or entry.
- Clear of the traffic lanes so vehicles do not block traffic or reverse into traffic.
- In compliance with the Highway Traffic Act.

If ride-sharing companies can operate long term in the City, they may help to reduce the need for on-site parking, but there will be a need for suitable pick-up and drop-off locations across the City. The experience of other jurisdictions suggests that the need for pick-up and drop-off locations will be especially important in locations such as the proposed Precincts 1 and 2.

4.1.11 RECOMMENDATIONS: CURBSIDE MANAGEMENT

- It is recommended that the City consider a Curbside Management Study to:
    - Frame the discussion regarding on-street parking.
    - Determine appropriate locations.
    - Determine curbside priorities for each proposed Precinct area.
- Where appropriate, and subject to coordination with other City Departments, it is recommended that the Municipal Parking Section identify and or approve locations where on-street pick-up and drop-off areas are permitted.
- Loading regulation should be reviewed in conjunction with parking regulations as part of the zoning by-law review.

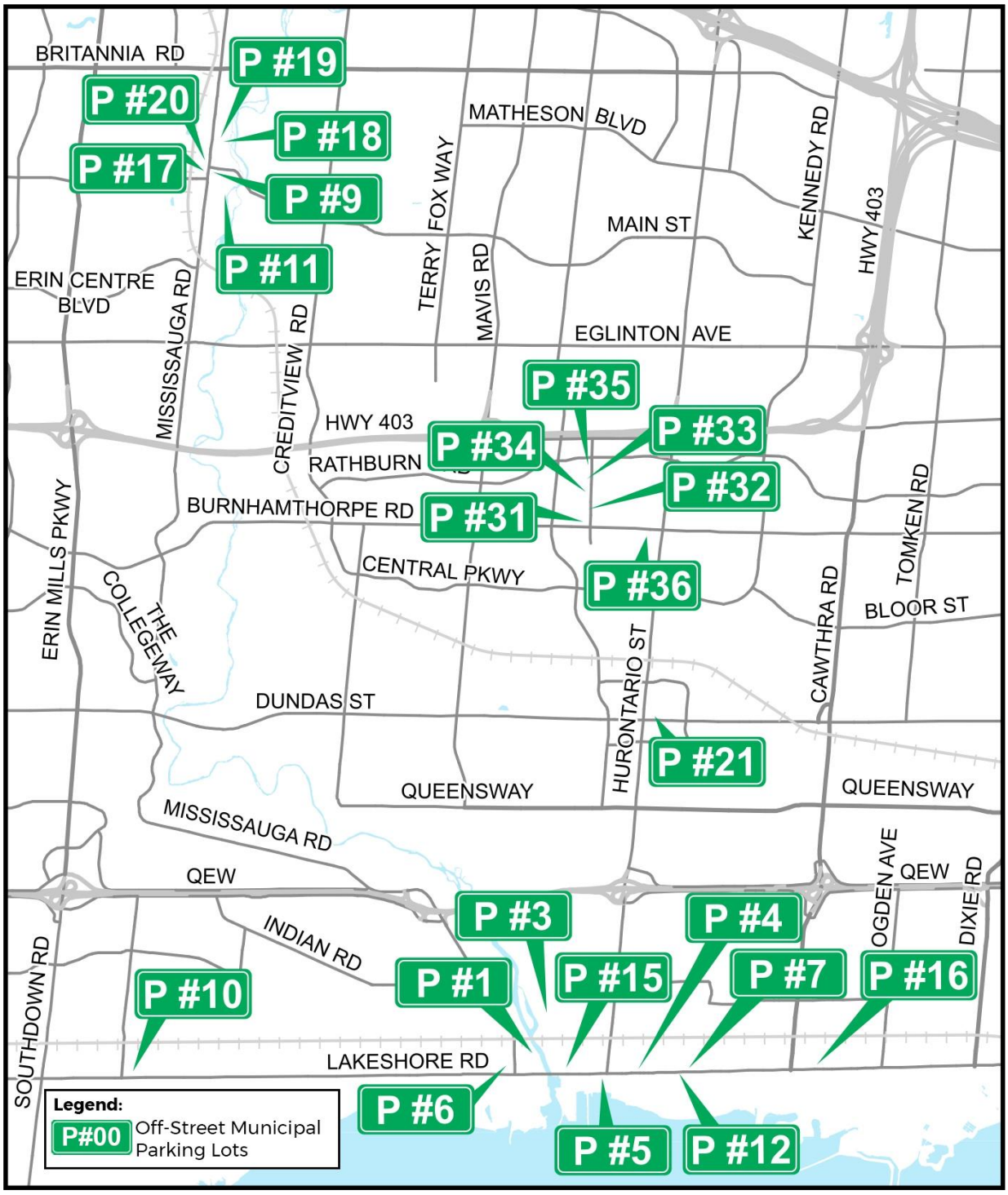
4.2 OFF-STREET PARKING LOTS

In addition to the on-street parking infrastructure discussed in Section 4.1, there are several off-street parking lots located across the City. Some are municipally operated lots with parking fees, others are free and some lots are privately owned and operated. Each lot provides a service to those looking to park their vehicles. This Section will identify the different off-street parking options in the City and discuss ways to expand the network of parking infrastructure.

4.2.1 MUNICIPAL OFF-STREET PAID PARKING LOTS

Mississauga currently operates 3 below grade off-street paid garages and 4 paid off-street surface lots. There are 77 off-street pay and display machines split among the 7 paid lots. The 3 garages are in the Downtown and generally service City Hall, Central Library and the Living Arts Centre. Exhibit 4-7 shows the locations of all the different off- street parking lots.

Exhibit 4-7 Off-street Municipal Parking Lots



4.2.2 MUNICIPAL OFF-STREET UNPAID PARKING LOTS

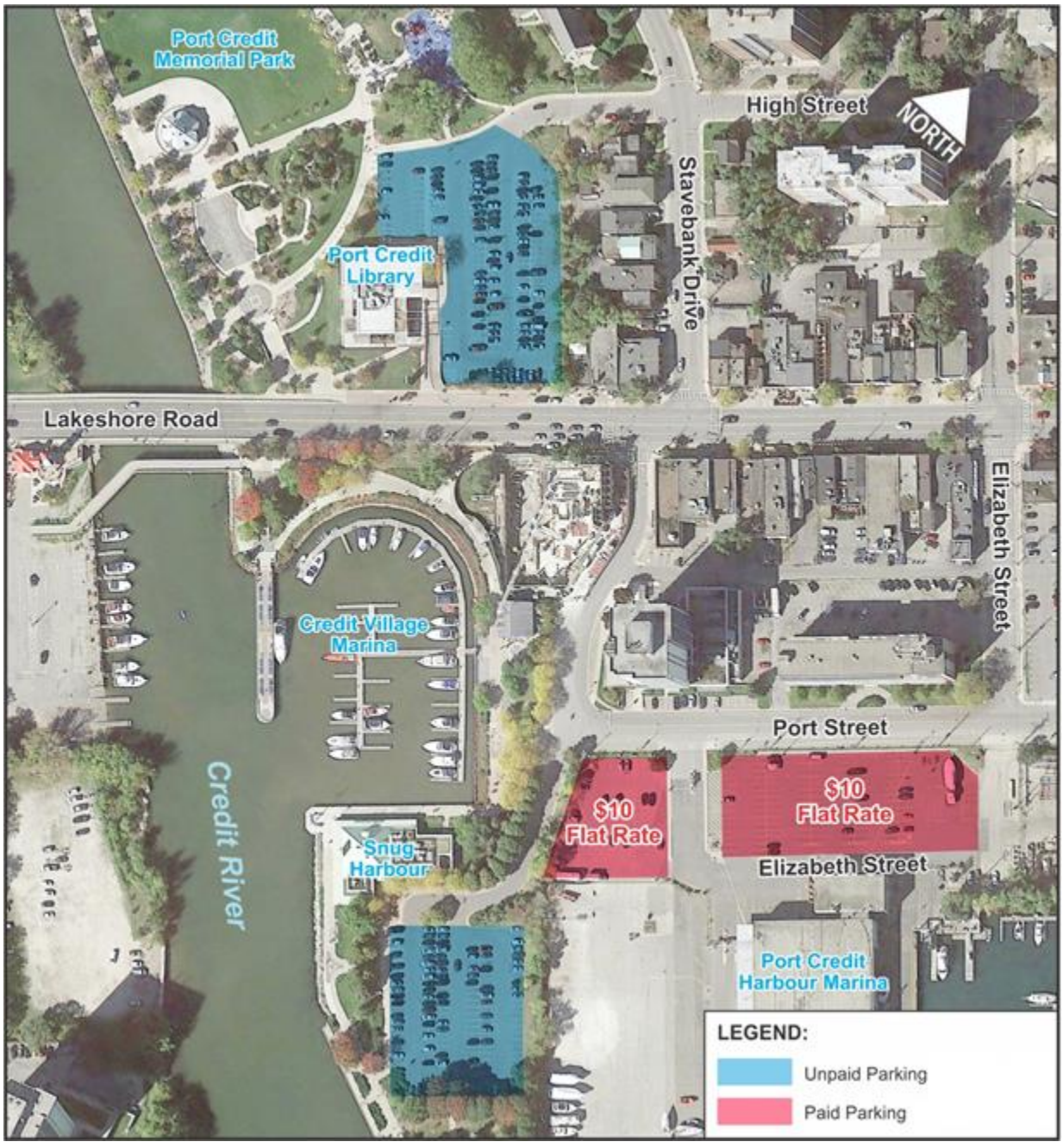
The City also provides public parking at municipally owned facilities such as: parks and recreation areas; arts, culture and tourism centres; Mississauga Transitway lots; fire stations; and the City Courthouse. Operation and maintenance of the parking lots varies by facility.

Expansion of Parking Controls to Other City Parking Facilities

Some free City public parking facilities are located close to paid City public parking facilities. As the City begins the process of right-sizing, it will be increasingly important for the City to manage its parking supply consistently and logically.

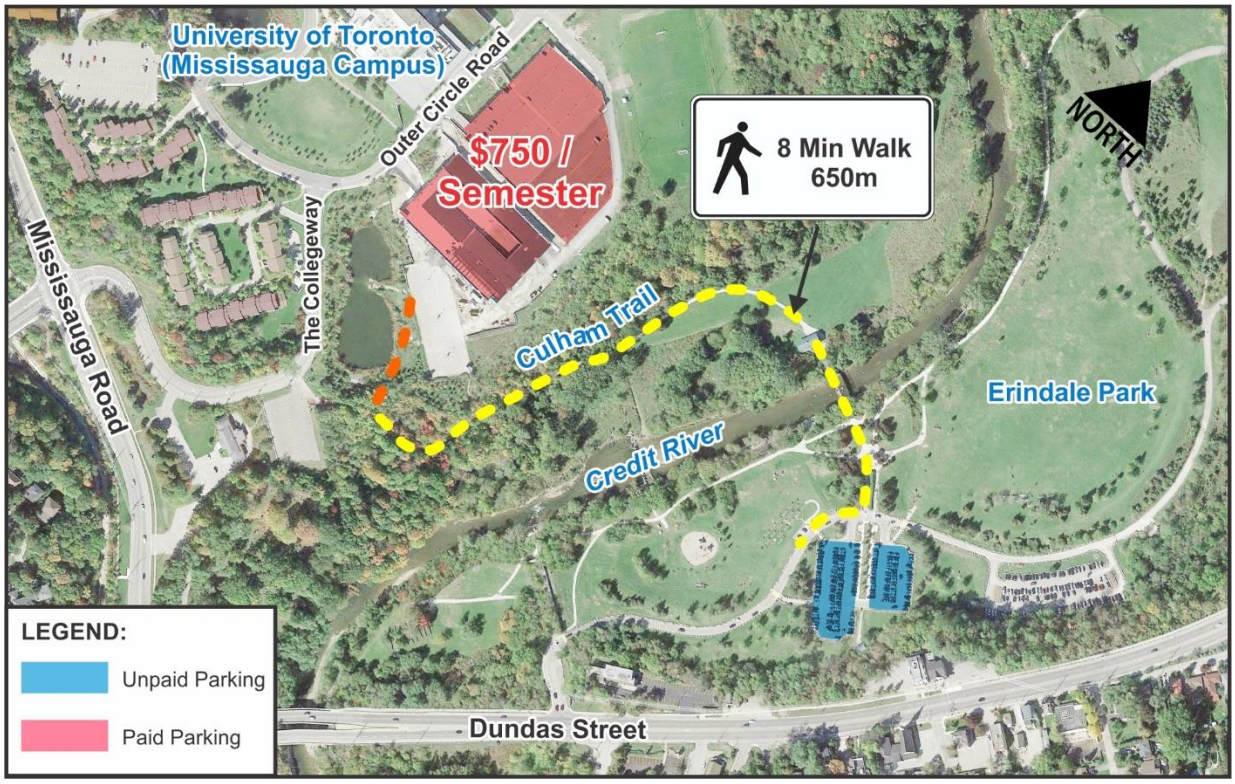
In Port Credit, for example, parking is free at the municipal facilities including the Library, Arena and Waterfront Parks although there is a market for privately owned paid parking in the immediate area. See Exhibit 4-8.

Exhibit 4-8 Free and Paid Parking in Port Credit



Erindale Park is another example. Parking on the University of Toronto (U of T) Mississauga Campus is expensive (ranges from $725 to $1,050 per semester per parking space)[13], but free municipal parking is available an 8-minute walk away at the Erindale Park. See Exhibit 4-9.

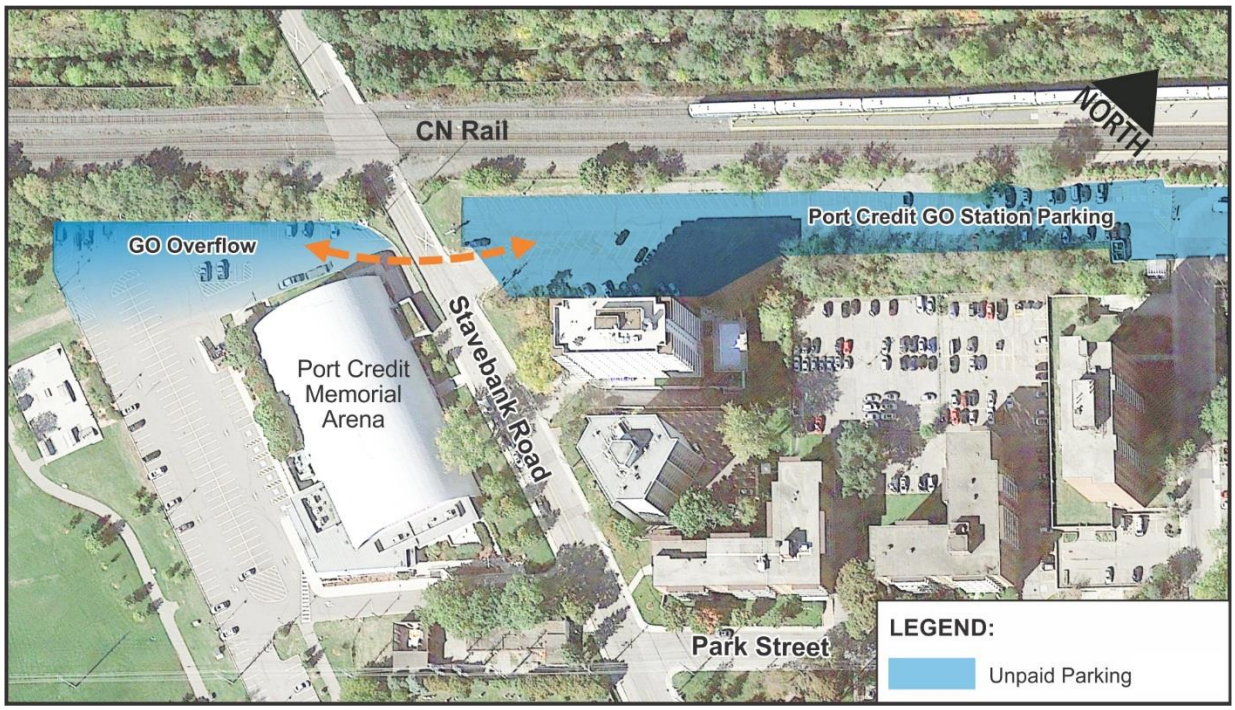
Exhibit 4-9 Paid Parking in Erindale Park Free and versus U of T Paid Parking



The City also needs to consider the problem of free parking provided, for example, at parks or library, becoming utilized by non-users of the facility and unavailable to those who wish to use the park or library. This problem occurs at the Port Credit GO Station where GO transit users who cannot find a parking space in the GO parking lot, park at the adjacent Port Credit Memorial Arena and walk across to the station. See Exhibit 4-10. During the public consultation process, residents said that GO transit users also routinely park on the adjacent roadways.

[13] https://www.utm.utoronto.ca/parking/permits/2017-2018-parking-rates

Exhibit 4-10 Port Credit Arena and Port Credit GO Station Parking



4.2.3 NEW OPORTUNITIES FOR OFF-STREET PARKING

As the need for additional public parking increases the City will need to find options for providing additional parking capacity. A few options to be considered for off-street parking expansion include:

- Physical and time expansion at existing off-street Municipal Parking lots
- Partnerships with other City business units
- Partnerships in new developments
- Community Improvement Plan (CIP)
- Land Acquisition

Expansion of existing off-street lots

The most obvious response to a greater parking demand is to build more parking. The City has identified an immediate need for two additional parking structures although their exact location has not yet been determined. The new parking structures will likely be used to accommodate development pressures in areas like the Downtown, Port Credit or along the Hurontario LRT corridor. To make these and any future decisions about where future structures are required the City should develop a parking demand forecasting model.

In addition to new parking construction, another method to expand parking capacity is to extend the times where parking is permitted. Overnight parking is only permitted in five municipal lots. The City should consider the implications of allowing overnight parking at other municipal lots.

Time-of-Day Expansion at Existing Off-Street Lots

Time-of-day expansion refers primarily to the removal of overnight parking prohibitions at public parking lots. Only five lots currently allow overnight parking. During the PMPIS consultation phases, many residents said that they would like to be able to park in City facilities overnight. These comments and the City's success with overnight parking at the Sheridan lots in the Downtown suggest that the City should consider offering overnight parking at other parking lots.

Partnerships with other City Owned Parking Locations

Municipal Parking is not responsible for many of the public parking facilities in Mississauga. Many facilities are owned, operated and maintained by other City business units.

In areas such as Precinct One where land is scarce, but additional public parking may be needed in the future, the City could consider partnering with Parks and other City business units to expand parking.

Partnerships with New Developments

As Mississauga continues to encourage higher densities and mixed-use developments, the potential for shared parking will increase. Shared parking can make the use of parking spaces more efficient, reduce the number of spaces required and free space for other uses.

Municipal Parking can consider partnering with developers to provide shared public parking. The Toronto Parking Authority, for example, has partnered with many condo developers and office developers to provide shared public parking in their developments. Every partnership arrangement would be subject to the terms and details negotiated, but shared parking should provide benefits to both developer and Municipal Parking.

Community Improvement Plan

The City's Community Improvement Plan is part of the City's efforts to attract new office developments to the Downtown Core (part of Precinct One), but the cost of constructing parking in downtown is a major barrier to office developers.

The Municipally Funded Parking Program is one of the CIP's incentives for new office development. The Program would allow the City to build and own a municipal parking facility as a standalone building or as part of a private office development. The City could decide to offer a below market rate for the rent or lease of the parking.

Public parking is a highly desirable alternative to private parking, especially in the Downtown Core. Public parking is a form of shared parking and can be used to make more efficient contribution to accommodating the overall parking demands in an area. If the Precinct approach is adopted by the City, public parking would also help in the implementation of a price-responsive approach to parking management in Precinct One.

Given the above considerations, the CIP's development incentives should prioritize public parking over private parking for new developments, and the Zoning By-law review should consider the use of parking as a development incentive. The review should also include parking incentives in the context of a price-responsive parking management approach for Precinct One and the City's PIL policy.

Land Acquisition

Land in both Mississauga and the surrounding Greater Toronto and Hamilton Area (GTHA) is becoming prohibitively expensive and may make using land for parking hard to justify financially. When the City's long-term parking demand forecasting model is developed, the model can be used to conduct rigorous analyses of the impact of land prices on the provision of parking especially in areas where the City does not already own land. It may be possible for City departments and business units to find viable partnership opportunities in areas where they have similar long-term land requirements. Corporate services is responsible for the acquisition, disposal and leasing of property.

4.2.4 RECOMMENDATIONS: OFF-STREET PARKING LOTS

- It is recommended that the City develop a parking demand forecasting model that can be used on an ongoing basis for all of Precinct One and Precinct Two. The model should incorporate the following data:
  - Existing parking utilization
  - Development applications
  - Area Master Plans
  - Long-term population and employment forecasts
- It is recommended that the City review the feasibility of removing overnight parking prohibitions at all its off-street parking facilities, and should determine the capital and or operational changes required to implement the change.
- It is recommended that the City's Municipal Parking unit work with other City business units, such as Parks and Forestry and MiWay Transit, to align long-term plans for parking expansion and to find opportunities for shared public parking.
- It is recommended that the City consider opportunities to partner with the private sector where appropriate and beneficial for providing parking or developing shared parking arrangements.
- It is recommended that the City's Zoning By-law review consider the role and policies of the City's Downtown CIP and how the CIP will work with the City's PIL policy.
- It is recommended that the Zoning By-law Review recommend any CIP or PIL modifications required to ensure that the CIP and PIL complement the Precinct approach.
- Where parking is needed in some areas, it is recommended that the City consider partnerships with the private sector to deliver a portion or all the parking spaces.
- It is recommended that the City implement parking controls, including paid parking if necessary, at free City parking facilities when one or a combination of the following is true:
  - There is an existing market for paid parking in the area
  - Transit is available
  - Utilization during peak periods exceeds 85 percent

4.2.5 PARKING LOT DESIGN

Slips, trips and falls in parking facilities have proven to be significant causes of injury. An Institute of Transportation Engineers (ITE) report notes that research indicates that pedestrian injuries due to slips, trips and falls in parking facilities are far more common than injuries due to conflicts with moving vehicles. The design of pedestrian routes in parking facilities must clearly consider tripping hazards in addition to measures such as the separation of pedestrian and vehicular movements.

In addition, people often perceive parking garages as unsafe environments due to their lack of visibility and layouts. Based on this information there are many improvements and design elements that can be incorporated into parking lots to ensure pedestrian safety.

In line with the City's commitment to Vision Zero, safety is always a top priority. A detailed review of some best practices related to parking lot and garage design for pedestrians and cyclists can be found in Appendix 4-4.

4.2.6 RECOMMENDATIONS: PARKING LOT DESIGN

– It is recommended that the City develop safety standards and best practices for pedestrian and bicycle safety in parking facilities.

5 GOVERNANCE

The network of parking infrastructure and payment options requires coordination and structure in order to operate effectively and efficiently. There are different approaches that have pros and cons and levels of suitability for Mississauga. This Chapter will explore the current governing structure for Municipal Parking in Mississauga, evaluate the different types of structures typically used by municipalities and recommend an approach for the future of parking in Mississauga.

It is important to adopt the best type of parking organizational and service delivery structure to meet the City's overall strategic goals. A proper governance structure will result in the alignment of policies, operations and financial objectives to better meet the needs of the City and the citizens it serves. With the current organizational structure, parking is complex as planning, operations, finance, and enforcement are disconnected with no overarching voice for parking.

5.1 EXISTING CONTEXT

Parking in the City of Mississauga is currently managed on a case by case basis. There is no one central staff group within the City's organizational structure that oversees all parking related work. If a city owned parking lot is attached to a community centre that lot is the responsibility of Community Services Staff. If a new development is proposing a parking reduction, that is reviewed and decided on by the Planning and Building Department. Existing paid parking across the City is managed by Municipal Parking Staff in Transportation and Works.

Exhibit 5-1 shows the current high-level governance structure. Many "hands" are involved with parking: large departments such as Community Services, Corporate Services, and Planning and Building, and departments focused on very specific functions such as traffic management, technology, accessibility, parking enforcement and municipal parking (on-street and off-street parking operations).

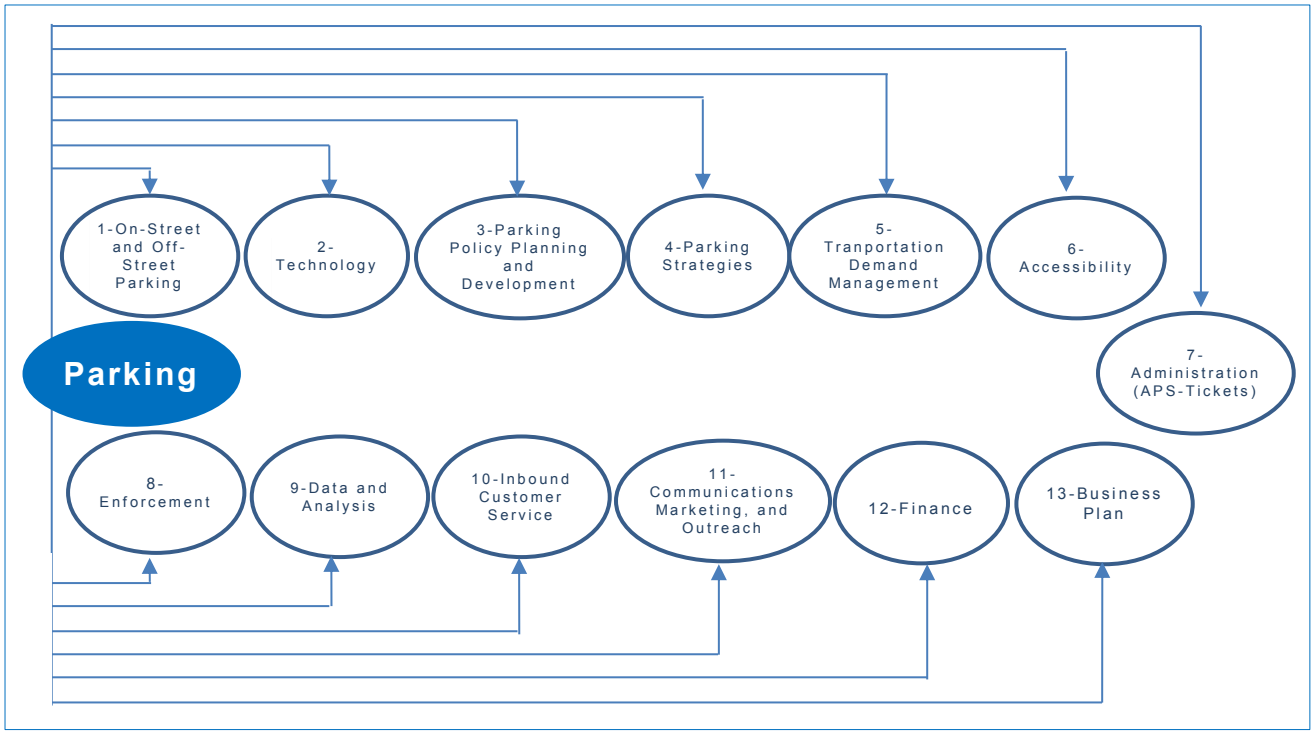
Exhibit 5-1 Mississauga Governance Today

The current parking structure operates in what is referred to as a horizontally integrated model with parking functions spread across many departments, divisions and sections. Each group manages one or more parking functions and no one department or division has total responsibility, accountability and full understanding of all parking functions and interrelationships. The horizontally integrated structure is shown in Exhibit 5-2

The structure shown in Exhibit 5-2 is the result of an evolutionary process that occurred as the City developed and grew in population. The structure made economic sense and was organizationally effective when parking was less complicated and mostly free. At that time, a small number of parking staff from different parts of the City's organization was adequate, but traffic increased creating additional demand for parking spaces, greater controls were needed to manage parking. An example is paid parking which was introduced about 10 years ago.

It is now understood that the horizontally integrated organization model has reached its limit as an effective organizational model. Parking is now viewed as an important municipal policy tool for city building rather than simply parking spaces for automobiles.

Exhibit 5-2 Municipal Horizontally Integrated Parking Organization with 13 Functions



Before creating a new organizational structure for parking, it is important to consider the functions required. These include Municipal Parking, Parking Enforcement and the Administrative Penalties System. These functions are discussed below.

Municipal Parking

The Mississauga Municipal Parking function currently operates as a very small group of five full time employees within the Transportation & Works Department. Their primary functions are: managing the paid parking program; administering the contract for the pay and display parking machines with Precise ParkLink; recommending parking fee increases for on and off-street parking; reviewing development applications, permit management in municipal lots, parking spaces for electric vehicles and carshare spaces; designating accessibility spaces (working with the Accessibility staff); performing cash collections from the pay parking equipment; analyzing parking revenue and operational data; responding to parking service requests; and preparing and administering capital and operating budgets.

Parking Enforcement

The Parking Enforcement group in the Enforcement Division of the Transportation and Works Department is currently responsible for enforcing parking regulations. Parking Enforcement's role is to "promote public safety and the smooth flow of traffic through proactive fire route and accessible parking enforcement and through enforcement of the Traffic By-law" on both public and private property. There are officers on the road 24 hours a day, seven days a week.

Parking enforcement officers are accredited members of the Municipal Law Enforcement Officers Association and are certified First Aid and CPR (cardiopulmonary resuscitation) providers. The City of Mississauga parking enforcement objectives and budget is outlined in the "Regulatory Services, 2018-2021 Business Plan and 2018 Budget." The latter document shows for parking enforcement:

- 51.9 FTE (Full Time Equivalent staffing)
- Annual expenses of approximately $6.2 million
- Issued 59,000 parking considerations in 2016 (these are temporary on street parking permits granted for overnight guests, or driveway repairs)
- Launched new mapping software on mobile technology
- Developing new field technology that will update current handheld ticketing devices and pursuing other technology initiatives 2018 to 2021.

In the 2018 operating budget, parking revenues are aggregated with the other municipal enforcement groups: animal services, compliance and licensing enforcement, enforcement licensing and mobile licensing. From 2015 data provided by the City for this study, total revenue from parking fines amounted to $8.6 million, and therefore when applied to the $6.2 in parking enforcement expenses, equates to $2.4 million in surplus (profit). As a result, parking enforcement is self-funded.

In 2015, the City of Mississauga began using the Administrative Penalties System (APS) process for the enforcement of most of the City's parking by-law violations including accessible parking offenses and violations of animal, mobile and business licensing requirements. Parking Enforcement Officers, issue Administrative Penalty Notices rather than parking tickets. The new system is discussed in the next section.

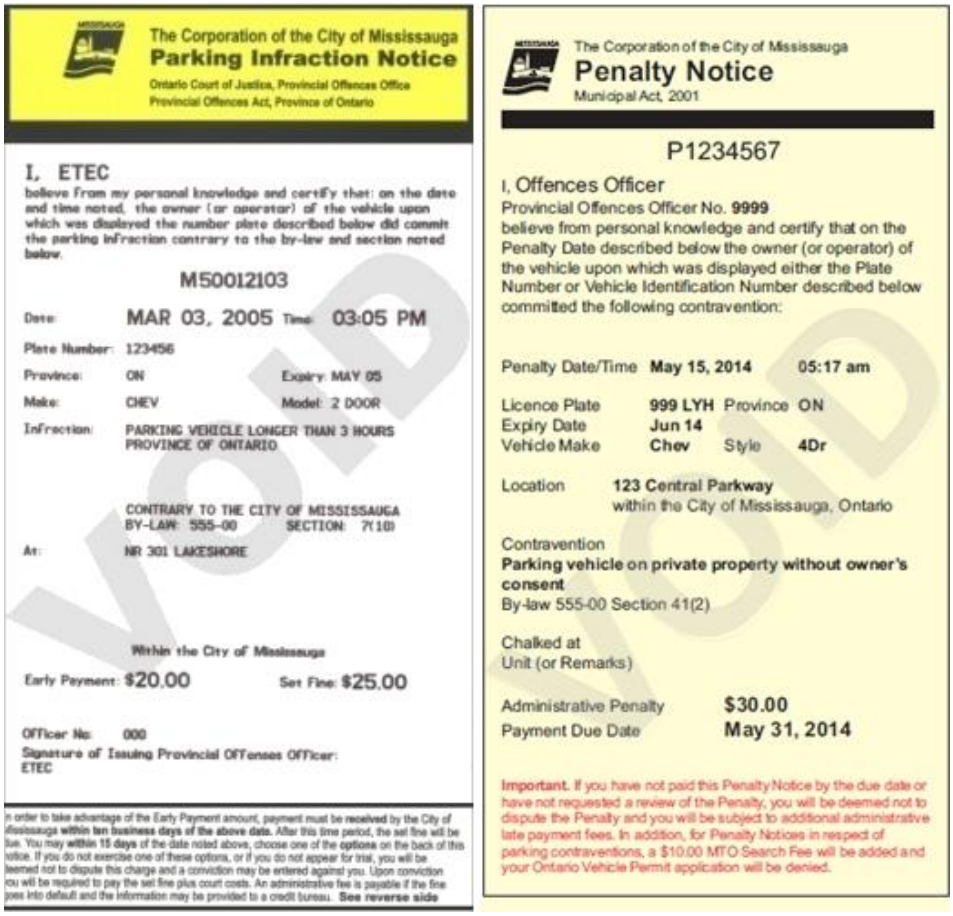
Administrative Penalties System (APS)

The Municipal Act, 2001 allows municipalities to use an Administrative Penalties System (APS) for by-law violations relating to parking and licensing. The APS is a more efficient way for municipalities to enforce parking and licensing by-laws.

The APS is an objective, fair and efficient process that issues manages and reviews penalty notices. Screening Officers' decisions regarding the APS can be reviewed by a Hearing Officer, an independent and impartial third party.

Exhibit 5-3 shows a typical Administrative Penalty Notice for parking by-law violations. The owner of the vehicle is responsible for paying the administrative penalty. The City may also charge additional fees such as fees for late payments and failure to appear for screening and hearings.

Exhibit 5-3 Typical Administrative Penalty Notice



The Corporation of the City of Mississauga
Parking Infraction Notice
Ontario Court of Justice, Provincial Offences Office
Provincial Offences Act, Province of Ontario

I, ETEC
believe from my personal knowledge and certify that: on the date and time noted, the owner (or operator) of the vehicle upon which was displayed the number plate described below did commit the parking infraction contrary to the by-law and section noted below.

M50012103

Date: MAR 03, 2005 Time: 03:05 PM
Plate Number: 123456
Province: ON Expiry: MAY 05
Make: CHEV Model: 2 DOOR
Infraction: PARKING VEHICLE LONGER THAN 3 HOURS PROVINCE OF ONTARIO

CONTRARY TO THE CITY OF MISSISSAUGA BY-LAW: 555-00 SECTION: 7(10)
At: NR 301 LAKESHORE

Within the City of Mississauga
Early Payment: $20.00 Set Fine: $25.00

Officer No: 000
Signature of Issuing Provincial Offenses Officer:
ETEC

In order to take advantage of the Early Payment amount, payment must be received by the City of Mississauga within ten business days of the above date. After this time period, the set fine will be due. You may within 15 days of the date noted above, choose one of the options on the back of this notice. If you do not exercise one of these options, or if you do not appear for trial, you will be deemed not to dispute this charge and a conviction may be entered against you. Upon conviction you will be required to pay the set fine plus court costs. An administrative fee is payable if the fine goes into default and the information may be provided to a credit bureau. See reverse side

The Corporation of the City of Mississauga
Penalty Notice
Municipal Act, 2001

P1234567

I, Offences Officer
Provincial Offences Officer No. **9999**
believe from personal knowledge and certify that on the Penalty Date described below the owner (or operator) of the vehicle upon which was displayed either the Plate Number or Vehicle Identification Number described below committed the following contravention:

Penalty Date/Time **May 15, 2014** **05:17 am**

Licence Plate **999 LYH** Province **ON**
Expiry Date **Jun 14**
Vehicle Make **Chev** Style **4Dr**

Location **123 Central Parkway**
within the City of Mississauga, Ontario

Contravention
Parking vehicle on private property without owner's consent
By-law 555-00 Section 41(2)

Chalked at
Unit (or Remarks)

Administrative Penalty **$30.00**
Payment Due Date **May 31, 2014**

Important. If you have not paid this Penalty Notice by the due date or have not requested a review of the Penalty, you will be deemed not to dispute the Penalty and you will be subject to additional administrative late payment fees. In addition, for Penalty Notices in respect of parking contraventions, a $10.00 MTO Search Fee will be added and your Ontario Vehicle Permit application will be denied.

The administrative penalty and fees for parking contraventions are set out in City of Mississauga *By-laws 0282-2013* and *0135-2014*. *By-law 0282-2013* established a system of administrative penalties for vehicles contravening standing, stopping or parking regulations in the City. *By-law 0135-2014* set out the administrative penalty and fee for licensing contraventions.

Other Functions

Other sections within the Transportation and Works Department are responsible for winter maintenance, transportation and infrastructure planning, administration of the traffic by-law, and parking lot maintenance and repair. Several City departments (Parks, Recreation, Library, Courthouse, Fire, and MiWay) manage other municipal parking lots. The Culture and Realty Services sections manage the Culture Node Patio program. Policy Planning and the Municipal Parking group work on area-specific strategies and municipal parking expansions. Several sections, including IT and the Digital Team, manage Website content and the Pingstreet.

5.1.1 REVIEW OF ORGANIZATIONAL MODELS

Parking generates millions of dollars in revenue from paid parking and parking enforcement. Parking is also playing a greater role in city building by influencing travel behaviour towards more sustainable transportation modes. It is clearly important to consider a range of different organizational models before deciding which model will best meet the future needs of the City and its citizens.

This Section reviews different parking organizational models including comparing the City of Mississauga's organizational structure to the structure adopted by four other Canadian cities and examines future directions.

The review of parking organizational models is presented under the following seven headings:

- Overview of parking organizational models in North America
- Benchmarking
- Evaluation of organizational models
- Evaluation criteria
- Parking principles - Governance
- Why not a parking authority?
- Summary of review of parking organizational models.

Overview of Parking Organizational Models in North America

Through a detailed review of parking organizational structure, a list of five different models were found to be most common in North American cities. Exhibit 5-4 summarizes the characteristics of those five different models. The five types range from full privatization of parking with a private governance board to a publicly governed and delivered service controlled by a municipal department.

Nearly all municipal parking services in Canada are publicly governed and delivered by a municipal Council or by a separate board with members appointed by the elected municipal Council. The variations listed in Exhibit 5-4 have been adopted mainly in the United States.

Exhibit 5-4 Summary of Main Characteristics of Five Organizational Models for Parking

Organization Model	Purpose	Pros	Cons
Horizontally Integrated (Mississauga Existing)	•Balance service and city building •Minimize tax support	•Cost sharing and team building across many departments •Suitable for limited off-street parking growth	•Unclear accountability •Conflicting objectives especially service vs. revenue •Products/services not well coordinated
Vertically Integrated (Parking Division)	•Support parking service and city building objectives •Promote multiple transport modes •Minimize tax support •Improve the coordination of products/services	•Clear "one stop shop" for parking services and issues •Better coordination of parking products (on-street) •Council decision-making •Full accountability •Surplus promotes TDM	•Parking revenue may not be maximized due to service and city building objectives •Parking Division may compete with other City Divisions for funding, but revenue will help offset
Parking Authority	•Prioritize revenue generation •Contribute profits to capital reserves and City	•Quick decision-making by a Board, not Council •Suitable for a large expansion of parking facilities •100% non-tax supported	•Fees set by Board, not Council •Revenue higher priority than city building •Council responsible for revenue losses
Business District	•Generate revenue •Provide control to local businesses	•Commits businesses to successful parking services •Private sector partnerships •Financially self-supporting	•Fees set by Board, not Council •Revenue higher priority than city building •May have limited capital N/a in residential areas
Privatization	•Generate an upfront lump sum payment to City for 35+ year agreement •Address serious debt and cash problems	•Renewed investment in parking infrastructure and technology •Lump sum payment used for non-parking City services	•Private Board decision- making, not Council •Profit generation focus, not city building and or service •Long-term agreement

Exhibit 5-2 shows a horizontally integrated municipal organization structure with many departments and sections involved in parking. This is the current horizontal model used in Mississauga was shown in Exhibit 5-2. A vertical model reorganizes the responsibilities from the horizontal model into one coordinated division as seen in Exhibit 5-5.

Exhibit 5-5 Municipal Vertically Integrated Parking Organization with 13 Functions (Proposed)

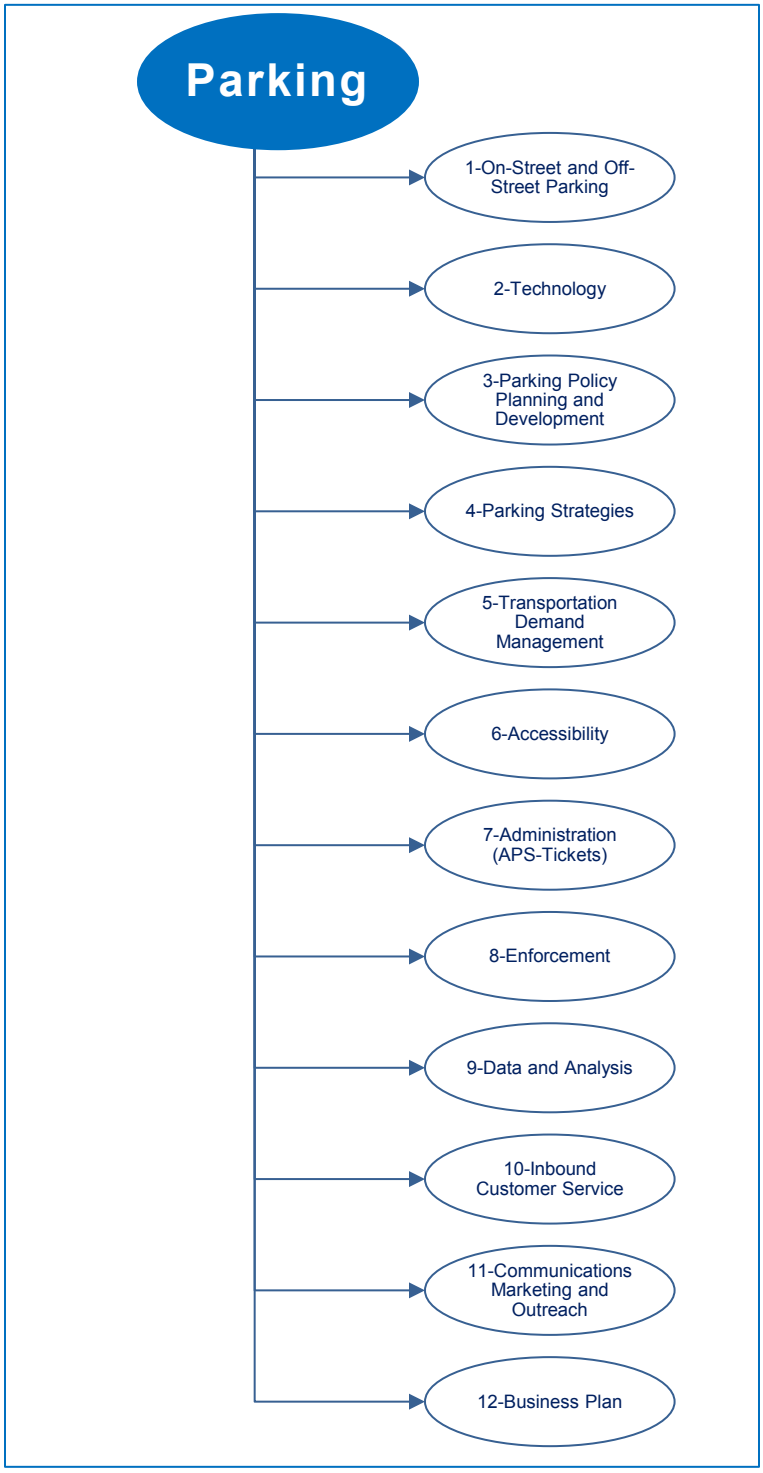


Exhibit 5-6 lists 18 cities (14 Canadian and four American) and provides information about each city's population, number of public pay parking spaces and approach to parking including the type of parking business model adopted and the primary contracted services.

The Canadian cities are almost evenly split among horizontally integrated, vertically integrated and parking authority business models. Montreal is different as it has a separate parking organization that operates as a Business District in the downtown. The organization is operated and governed by Montreal's Board of Trade.

Three of the American cities provide examples of parking privatization. More American municipalities are considering privatization to deal with severe financial issues and make public funds no longer spent on parking available to other municipal services.

Five of the Canadian cities (Calgary, Thunder Bay, Toronto, Vancouver, and Winnipeg) have a parking business model based on a parking authority. These cities (except for Thunder Bay) are larger and have a higher number of public pay parking spaces than the other cities.

Except for London, Ontario, the other Canadian cities organize their parking functions horizontally or vertically integrated within a department, division, or branch. London, Ontario has a standalone separate parking department operating within the upper tier level of Transportation Services and at the same level as public transit (London Transit Commission).

Exhibit 5-6 Characteristics of Parking Organizational Models adopted by 18 Canadian and American Cities

	Ref #	Cities	Population	Total Public Pay Parking Places	100% Non-tax Supported	Governance	Parking Business Model					Primary Contracted Services
							Public			Business District	Privatization (Monetization)	
							Horizontally Integrated (Section)	Vertically Integrated (Section)	Parking Authority	Separate Organization	Separate Organization	
Canadian Cities	1	Mississauga	766,000	2,328	Yes	Council	✓					• Parking equipment, maintenance, repair, transaction processing
	2	Burlington	178,000	1,519	Yes	Council	✓					• Enforcement
	3	Calgary	1,235,000	17,374	Yes	Board			✓			• None
	4	Edmonton	899,500	6,562	Yes	Council		✓				• Enforcement
	5	Hamilton	520,000	3,700	Yes	Council		✓				• Enforcement
	6	London	366,000	2,664	Yes	Council		✓				• Enforcement • Some off-street
	7	Montreal	1,649,500	22,214	Yes	Board of Trade				✓		• None • Enforcement by Police (civilians)
	8	Ottawa	883,400	6,737	Yes	Council	✓					• On-street and off-street revenue and equipment • Ticket processing
	9	Regina	195,000	1,250	Yes	Council		✓				• Enforcement
	10	Thunder Bay	109,000	3,178	Yes	Board			✓			• Revenue collection • some off-street
	11	Toronto	2,615,000	53,000	Yes	Board			✓			• Revenue collection
	12	Vancouver	605,000	20,930	Yes	Board			✓			• None
	13	Winnipeg	727,500	5,971	Yes	Board			✓			• None
	14	Windsor	216,500	4,355	Yes	Council	✓					• Enforcement

	Ref #	Cities	Population	Total Public Pay Parking Places	100% Non-tax Supported	Governance	Parking Business Model					Primary Contracted Services
							Public			Business District	Privatization (Monetization)	
							Horizontally Integrated (Section)	Vertically Integrated (Section)	Parking Authority	Separate Organization	Separate Organization	
US Cities	15	Chicago, Illinois	2,720,500	45,176	Yes	Private Board					✓	• All on-street and 4 large parking garages
	16	Indianapolis, Indiana	853,000	3,900	Yes	Private Board					✓	• All on-street
	17	Minneapolis, Minnesota	411,000	22,000	Yes	Council	✓					• Off-street facilities • On-street revenue collection
	18	Harrisburg, Pennsylvania	49,000	8,983	Yes	Private Board					✓	• All on-street and off-street

Benchmarking

For detailed comparison and benchmarking, the number of Canadian cities was reduced to four: London, Hamilton, Regina, and Windsor. The key metrics selected were population, number of paid parking spaces, and number of hierarchical layers in the city's parking organizational model. The benchmarking process also included the collection of additional data and information from additional Canadian municipalities.

To compare parking organizational structures, it is important to understand the key performance indicators used by different municipalities. Municipal Benchmarking Network Canada (MBN Canada, formerly known as OMBI) is a network of 15 Canadian municipalities in six provinces. The network's data can be used to improve the way municipalities deliver services to their communities. By examining the parking performance measure graphs in MBN Canada and comparing the data with Mississauga data, it was possible to compare Mississauga with larger cities, smaller cities and cities of a similar size. For a comprehensive review of this data see Appendix 5-1.

Municipal Horizontally Integrated (Current Mississauga)

Mississauga's parking organization is currently structured as a Horizontally Integrated model. Mississauga has 13 parking functions spread across many departments, divisions, and sections where each division or Chapter manages one or more parking functions and no one department or division has total responsibility, accountability and full understanding of all parking functions and interrelationships. For example, on and off-street parking functions are currently separated from Parking Enforcement although Parking Enforcement is an integral part of a municipal parking service, especially if the objective is to adopt a parking enforcement approach that is less punitive, more focused on compliance, and more customer friendly.

City Council is responsible for all policies and fee setting.

Municipal Vertically Integrated

A municipal vertically integrated organization consists of one division or Chapter led by a department head who is fully responsible for on-street and off-street parking, parking system planning, enforcement and other parking functions that may or may not be included within this organization structure. This type of organization is a "one-stop shop" for parking services with full accountability for operations and for coordination and interacting with other municipal departments and sections on land use and transportation planning, economic development, special events, Transportation Demand Management (TDM), and active transportation.

Council maintains full control of policies and fee setting.

Parking Authority

A Parking Authority is a municipal special purpose body which is publicly owned and managed, but separate from the municipality. Such a body has its own CEO and Board of Directors comprised of citizen appointees and Councillors. This type of organization structure focuses on all aspects of parking provision and operations, and has responsibility for parking facility planning, construction, maintenance, ownership, and setting fees and fines. Policies and fees are decided independently of the municipal Council. A parking authority's primary focus is on revenue generation. The authority is expected to be 100 percent self-funded and many parking authorities contribute a substantial surplus back to the municipality.

Business District

A business district parking organization refers to a downtown business district organization that operates and manages parking through an operating agreement developed with the City. The organization might be a business group, Chamber of Commerce, Board of Trade, or urban renewal agency. In Small cities, for example, where parking infrastructure may be lacking the business district parking organization can establish relationships with private sector landowners willing to work with the City to provide parking. A business district parking organization means that businesses are committed to making parking successful and ensuring the attractiveness of downtown and vitality of commercial streets for residents and tourists.

Privatization or Asset Monetization

A privatization organization model allows municipalities with serious financial debt and cash issues to operate, maintain, and plan by outsourcing on-street and off-street parking facilities to a private consortium of investors typically for at least 35 to 50 years in exchange for a large upfront cash payment from the private organization. Assets remain the property of the municipality, but operating risks (i.e. management and maintenance costs) and capital expenses are transferred to private organization for the duration of the agreement. The municipality obtains capital funding from the private investor for new parking facilities and technologies.

The primary challenge for a privatization organization model is the development and implementation of a long-term agreement that is fair to both the municipality and the private organization. Privatization of parking has occurred only in American cities and universities and only during the last 10 years.

Evaluation Criteria

The five organizational models were evaluated for the Mississauga context based on the criteria and scoring system shown in Exhibit 5-7. The criteria and scoring system are designed to assess how well parking meets the objective of city building and parking principles. The scores range from a high of +4 to a low of -4.

Exhibit 5-7 Evaluation Criteria for Organizational Models

Score	Description	Symbol
-4	Worst: does not meet principal objectives	
-2	Poor: unlikely to meet principal objectives	
-1	Fair: May partially meet principal objectives	
0	Neutral: little or no adverse impact	
1	Fair: Minimal improvement to support City building and parking principles	
2	Good: improvement from existing condition and supports both City building and parking principles	
4	Best: significant improvement from existing condition and supports both City building and parking principles	

Parking Principles - Governance

Each organizational model was evaluated against five parking principles relevant to governance in Mississauga:

- Create a business unit that takes a leadership role in influencing parking strategy, planning, supply, demand, and parking fees.
- Maintain decision-making with Council.
- Do not create an independent Board or Authority.
- Make parking self-sustainable through user-fees for revenue-generating parking activities, while continuing to fund non-revenue parking activities by the tax base.

Maintain a cooperative approach with other City departments and divisions in attaining the City's corporate goals and objectives. Exhibit 5-8 lists the organization models and summarizes each model's core purpose, advantages (pros) and disadvantages (cons). It is clear from this analysis that the City's vision and supporting strategic goal of using parking as a tool for city building indicate that the vertically integrated organizational model has the highest score (4) and offers the most significant improvement from the current organizational structure.

A comparison of Mississauga's current organizational structure for parking with four other Canadian cities is shown in Appendix 5-2.

Exhibit 5-8 Evaluation of Parking Organization Models

Organization Model	Purpose	Pros	Cons
Horizontally Integrated (Mississauga Existing) 	•Balance service and city building •Minimize tax support	•Cost sharing and team building across many departments •Suitable for limited off-street parking growth	•Unclear accountability •Conflicting objectives especially service vs. revenue •Products/services not well coordinated
Vertically Integrated (Parking Division) 	•Support parking service and city building objectives •Promote multiple transport modes •Minimize tax support •Improve the coordination of products/services	•Clear "one stop shop" for parking services and issues •Better coordination of parking products (on-street) •Council decision-making •Full accountability •Surplus promotes TDM	•Parking revenue may not be maximized due to service and city building objectives •Parking Division may compete with other City Divisions for funding, but parking revenue will help offset internal competition for funding.
Parking Authority 	•Prioritize revenue generation •Contribute profits to capital reserves and City	•Quick decision-making by a Board, not Council •Suitable for a large expansion of parking facilities •100% non-tax supported	•Fees set by Board, not Council •Revenue higher priority than city building •Council responsible for revenue losses
Business District 	•Generate revenue •Provide control to local businesses	•Commits businesses to successful parking services •Private sector partnerships •Financially self-supporting	•Fees set by Board, not Council •Revenue higher priority than city building •May have limited capital N/a in residential areas
Privatization 	•Generate an upfront lump sum payment to City for 35+ year agreement •Address serious debt and cash problems	•Renewed investment in parking infrastructure and technology •Lump sum payment used for non-parking City services	•Private Board decision-making, not Council •Profit generation focus, not city building and or service •Long-term agreement

Why Not a Public Parking Authority?

While it is clear from Exhibit 5-8 that the vertically integrated organizational model emerges as the most appropriate model for the City of Mississauga, PMPIS's research, review of best practices and various meetings with the City found that City staff and members of Council have had many discussions that included the possibility of establishing a public parking authority.

Through this study it has been determined that a parking authority would not be the most effective organizational structure for Mississauga because Canadian parking authorities tend to be in cities with many public pay parking spaces (see Exhibit 5-8). Thunder Bay is an exception with only 3,178 pay parking spaces, but Mississauga has only 2,328. Mississauga has the lowest (311) number of paid parking spaces per 100,000 population. The other Canadian cities with parking authorities have from 5,971 (Winnipeg) to 53,000 (Toronto) pay parking spaces. Cities with a low number of pay parking spaces tend to organize their parking functions within a municipal division or department.

This study also determined that a vertically integrated organizational model within the City is preferable because with a parking authority:

- A separate Board makes decisions on day-to-day operations including parking fees. No approval from City Council is required.
- City building and the promotion of transit and active transportation may be given low priority as they may negatively impact parking revenue and cost efficiency.
- The parking authority's annual surplus contributed to the City may vary and may not meet the City's annual financial expectations.
- If financial losses occur, the operating agreement includes provisions that such losses would be covered by the municipality and not the parking authority.

Based on the above information this study does not recommend a Parking Authority as the appropriate organizational model for City of Mississauga.

5.1.2 RECOMMENDATION: ORGANIZATIONAL STRUCTURE

It is recommended that the City adopt a vertically integrated organizational model that includes a parking division.

5.2 MISSISSAUGA'S PARKING DIVISION

This Section outlines how reorganizing the many parking functions currently operating in different City departments and divisions into a single vertically integrated new division will result in improved responsiveness, accountability and coordination in the delivery of parking services in Mississauga.

5.2.1 RATIONALE FOR PROPOSED PARKING DIVISION

The rationale for the City to create a new Division with a vertically integrated organizational model is that the new Division:

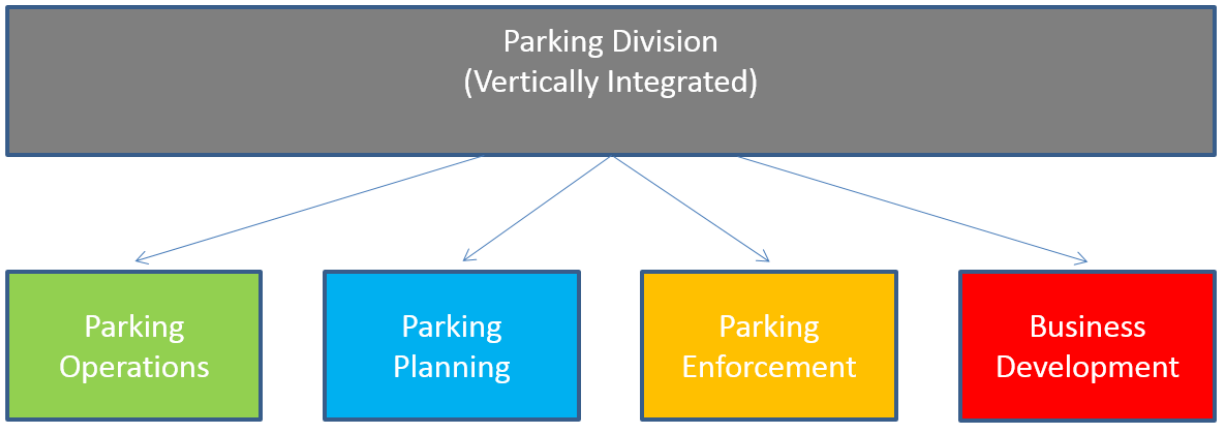
- Creates a "one-stop shop" for parking strategy, planning, services, products, and issues.
- Connects decision-making between and within:
  - Minimum parking requirements and related policy (Zoning By-law).
  - On-street parking by-laws and processes (permits and considerations).
  - Funding mechanisms (paid parking, Payment-in-Lieu, Development Charges, and APS notices [parking tickets]).
  - Other City-provided off-street parking (Transit, Community & Corporate Services).
  - Paid City-provided parking (Municipal Parking to be changed to a new Parking Service Area with its own Business Plan).
  - Enforcement
  - Transportation Demand Management (TDM).
- Achieves a balance between revenue-generation, providing parking as a service, and using parking as a tool for influencing city building.

The new Parking Division would be in the Transportation and Works Department and have a profile like the profiles of other divisions within Works Operations and Maintenance. These divisions include high-profile functions like Engineering & Construction, Transportation & Infrastructure Planning, and MiWay.

Based on a comprehensive review of work currently being undertaken for parking provision and maintenance in the City,

Exhibit 5-9 shows the proposed organizational structure of the new Parking Division. The new division should have four groups: Parking Operations, Parking Planning, Parking Enforcement, and Business Development.

Exhibit 5-9 Organizational Structure of New Parking Division showing Four Sections



5.2.2 DEVELOPMENT OF THE NEW PARKING DIVISION

The new Parking Division's proposed structure and functions involved the following:

- Identification of all parking functions across City's multiple departments and divisions. Process identified 37 functions and grouped them into 13 themes,
- Identification of roles currently performing the 37 parking functions
- Grouping of existing functions into four future groups:
  - Parking Operations
  - Parking Planning
  - Parking Enforcement
  - Business Development
- Working with the City's Human Resources department on a preliminary analysis of the staffing implications of the future organizational structure. Further detailed work will be required after the City's senior management Leadership Team's review of this report's recommendations.

The main proposed functions of the four sections within the proposed new parking division are described below.

Parking Operations

The Parking Operations group within the new proposed Parking Division would be responsible for important day to day parking operations Exhibit 5-10 shows the group's main functions. The Parking Operations Section would:

- Coordinate off-street municipal parking lots, on-street paid parking, winter maintenance for City provided parking, digital products, and policies for other City provided parking.
- Manage parking considerations, both short-term and long-term.
- Administer the Traffic By-law and on-street overnight permits.
- Maintain Electric Vehicle (EV) charging infrastructure.

On-street parking services consist of the complete management of the City's metered parking spaces currently using pay and display machines. On-street services also include the implementation of parking programs and the administration of permitted and non-permitted parking uses on the public road allowance, including accessible parking, loading zones and time restricted parking locations.

Off-street parking services comprise City owned surface lots, the City Hall parking garage and any future leased parking facilities requiring contract negotiation and management of agreements for the public and City staff.

A significant function of Parking Operations is the execution of the City's policies regarding making the best use of public parking availability including the planning and coordination of safe and efficient traffic flow, on-street bike lanes, special event parking, and residential parking permit programs. Parking technology will enable the development of strategies for optimizing the finite supply of on-street curbside parking spaces to help achieve a balance between the parking needs of residents and businesses.

Exhibit 5-10 New Parking Division - Parking Operations Section

Coordinate Off-street Municipal Lots

Coordinate Winter Maintenance for all City-provisioned parking

Coordinate On-street paid parking

Coordinate digital products

Coordinate policies for other City-provisioned parking

Administer the Traffic Bylaw

Administer On-street Overnight Permits

Maintain EV Charging Infrastructure

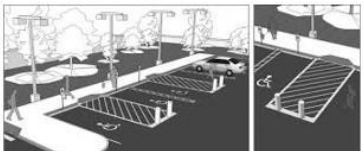
Parking Planning

Just as the City's public transit division (MiWay) includes transit planning, parking also requires short and long-term planning decisions. Exhibit 5-11 shows the planning functions. The Parking Planning Section would:

- Provide input into the Mississauga Official Plan (MOP) parking policies.
- Develop parking design guidelines.
- Review Parking Studies for development applications and provide parking comments for Zoning By-law Amendments and Committee of Adjustment applications.
- Review driveway widening applications.
- Provide input to Zoning By-law regulations.
- Review parking studies and lead area specific parking strategies.
- Coordinate Payment-in-Lieu (PIL), Development Charges (DCs) and parking elements of Community Improvement Plans (CIPs).
- Assist with accessibility policies and standards.
- Represent the Municipal Parking Division on other transportation projects across the City.

Exhibit 5-11 New Parking Division - Parking Planning Section

Provide input to MOP Parking policies



Develop Parking Design Guidelines

Review driveway widening applications

Provide input to Zoning Bylaw parking policies

Review Parking Studies and lead are-specific Parking Strategies

Coordinate PIL, DCs, parking elements of CIP

Assist with policies and standards

Parking Planning's functions involve coordination and integration of tasks and projects with other City departments and divisions as well as taking the lead and undertaking research into new parking initiatives. Parking Planning examples include municipal parking expansion, determining the number and location of carshare and carpool spaces, reviewing and commenting on development applications, and developing area specific parking strategies.

Parking Enforcement

Parking Enforcement is currently its own group within the Enforcement Division. They administer parking within the Transportation & Works Department.

The proposed organizational structure would bring the Parking Enforcement group into the new Parking Division and integrate enforcement into the objectives and functions of parking operations, parking planning, and business development to best serve the community. The overall goal of parking enforcement should be the creation of a communicative and consistent means of encouraging the community to abide by the City's parking by-laws to provide everyone with the maximum benefits available from improved accessibility to parking.

Exhibit 5-12 shows Parking Enforcement's main functions within the new Parking Division. Parking Enforcement would continue to:

- Enforce parking and traffic by-laws.
- Administer the APS (Administrative Penalty System).
- Coordinate enforcement technology upgrades.
- Reviewing parking studies submitted for rezoning and Committee of Adjustment applications

Exhibit 5-12 New Parking Division - Parking Enforcement

Enforce parking and traffic Bylaws

Coordinate enforcement technology upgrades

APS Administration

The trend among Canadian and American municipalities is to shift their approach to parking enforcement from enforcement to compliance. The new approach aims to balance the management of parking spaces and the needs of parking customers. People who park vehicles are regarded as valued and appreciated customers rather than violators who need to be punished for parking infractions.

Parking tickets and towing away vehicles are deeply unpopular among the public and often seen as a municipal “tax grab.” Enforcement is, however, a very important part of managing a scarce resource (parking spaces) and customers need to comply with the parking by-laws on payment, time limits, location and accessibility.

Compliance contributes to efficient parking operations. Illegal parkers cause safety issues and inconvenience to other parkers who also require access to goods and services, their workplace, residence, place of worship, education, and many other activities. An example of a major positive impact made of parking enforcement is ensuring that accessible parking spaces are available to persons with disabilities.

The key objective of the “customer” approach becomes improving compliance rather than issuing more tickets. A parking ticket is just one of the tools. Municipalities such as Victoria, BC and Burlington, ON encourage their parking enforcement officers to act as “ambassadors” who provide directions, help motorists to use parking technologies, and direct drivers parked illegally (whether by mistake or intention) to a legal parking space.

Parking enforcement officers are using new and changing technologies such as mobile parking enforcement in Calgary where parking enforcement officers’ vehicles are equipped with Licence Plate Recognition technology that automatically scans parked vehicles’ licence plates in real time to determine whether vehicles have exceeded the posted time limit or paid parking period. If one of these is the case, the vehicle owner receives a parking ticket a few days later in the mail.

Positioning Parking Enforcement within a new Parking Division would help new and evolving technologies to be properly coordinated and integrated into the City’s overall delivery of parking services.

Business Development

The Business Development group is the fourth within the new Parking Division. Business Development staff would manage "the business" side of parking. The group would examine parking services' revenue, ongoing operating costs, and the capital costs required to support existing parking infrastructure and develop new parking facilities. It should be clarified that Corporate services is responsible for the acquisition, disposal and leasing of property.

Exhibit 5-13 shows the main business development functions. The Business Development Section would:

- Undertake business analysis.
- Handle data management and visualization.
- Be responsible for business planning.
- Support 311 municipal phone-in service with parking customer service.
- Be responsible for parking communications, marketing and outreach.
- Be responsible for finance in cooperation with the City's Finance division.

Exhibit 5-13 New Parking Division - Business Development Section

Business Analysis

Data Visualization and Management

Business Planning

Support 311 with parking customer service

Communications, Marketing and Outreach

Finance

A major objective of the Business Development group is to support parking operations, parking planning and parking enforcement and promote ease of understanding and access to parking services for residents, visitors, employers and businesses. The group would develop common and consistent parking communications, branding and marketing.

The new Parking Division would, like other City divisions, prepare an annual Business Plan with operating and capital budgets for Council approval. The Business Planning staff would work closely with the City's Finance Division in measuring, monitoring and reporting on parking revenues and operating costs and providing data analytics on on-street and off-street parking spaces utilization, parking enforcement, revenues, and costs.

The Business Development group would improve the community's experience of parking by promoting and marketing parking availability throughout the year.

Parking is rich in operational and financial data. The Business Development group would take a lead role in data management lead the coordination and distribution of data and other resources related to parking demand, supply, availability, planning, and special events.

5.2.3 RECOMMENDATIONS: PARKING DIVISION

It is recommended that the City approve and support the new governance model of establishing a new Parking Division within the Transportation & Works Department with a phased approach over the next 5+ years.

The City creates a "Parking Service Area" which would have its own Business Plan.

5.2.4 PRIVATE SECTOR INVOLVEMENT

As a supplement to the public facilities that are currently available and those planned for the future, there are many opportunities for the City to work with the private sector to provide and manage parking.

Currently the City is engaged in a contract for maintenance and repair or the City's pay and display machines. There is also opportunity to work with the private sector to develop partnerships for the construction and operation of new parking.

The private sector will continue to be involved in various aspects of parking provision in the City including;

- Maintenance and repair of the City's 120 on-street Pay and Display machines.
- Joint ventures in the provision of "shared" public parking on private property (includes examples of daytime office parking and evening/weekend entertainment and shopping parking).
- Lease of parking facilities through contracted management agreements.
- Partnerships with new evolving technologies and service providers (For example, electric vehicle charging stations, pay by smartphone services, and License Plate Recognition technologies.
- The private sector plays an important role in the City Core particularly in commercial office buildings where the private Chapter supplies parking for tenants and also works with the City to supply public parking. Examples of co-operation with the City include cost sharing for a new public garage, leasing spaces for a facility, and leasing privately built parking spaces for public parking.

5.2.5 RECOMMENDATION: PRIVATE SECTOR PARTNERSHIPS

It is recommended that the City continue to support joint ventures and partnerships with private sector companies to optimize the use of land and infrastructure and meet public needs for parking spaces in the most appropriate way.

5.2.6 DECISION-MAKING

The proposed organizational structure is not expected to change the City's current reporting and decision-making process on parking related matters. City Council will continue to be the final decision-making body on policy issues such as strategic goals, capital and operating budgets for existing and future expanded parking services and facilities, and parking fees.

An important aspect of the reporting and decision-making process includes the Committee of Adjustment. Their role is discussed below.

Committee of Adjustment

As the City works towards its strategic goals, the Committee of Adjustment will continue to play an important role in addressing parking variance applications. Fundamental changes in parking requirements are expected as a result of intensification, infill and redevelopment, improved walkability, increased supply of affordable housing, the new Hurontario LRT, expanded TDM initiatives, and improved public transit services.

Although this study, the Transportation Master Plan, the TDM Master Plan, and the other related studies provide a basis for proactive parking policies and initiatives, no policy or initiative can anticipate and make provision for every circumstance and every parking need of each land use category specified in the Zoning By-law.

The City's Planning & Building Department and the new organizational parking structure should draft guidelines to help the Committee of Adjustment to ensure that there is supporting evidence to warrant parking variances.

It should be emphasized that a goal of the Zoning By-law review is to establish a precinct approach and set appropriate parking requirements for each. Once the Zoning By-law review is complete and new parking rates are in effect, the need for rezoning and minor variances should be significantly reduced.

5.2.7 RECOMMENDATIONS: COMMITTEE OF ADJUSTMENT

It is recommended that the City Council and applicable standing committees of Council continue to be the decision-making body associated with parking policies including, for example, fee setting, expansion of parking facilities, joint ventures with the private sector, new technologies, and integrating TDM with parking and other policy issues.

6 FINANCE

This Section discusses how the City`s Municipal Parking operations are financed and how the future operations would be funded. The Section is divided into two sub-sections: existing context and future directions.

It is important that the City formalizes its approach to funding and financing parking especially as ongoing parking operations, maintenance and future capital expansion all become increasingly expensive.

Why Finance Matters?

The City of Mississauga faces a few key issues including:

- Parking is costly to provide, but drivers rarely pay.
- Land is increasingly costly. Surface parking is increasingly too costly to be feasible.
- Payment-in-Lieu of parking and DC revenues are insufficient for the construction of new public parking.
- Parking enforcement ticket revenues are not currently directed towards parking capital and operations.
- A comparison of parking revenue and expenditures shows that there is a cost associated with parking provision in the City.

6.1.1 CURRENT SOURCES OF PARKING REVENUE

The City currently funds its Municipal Parking capital and operations from three main existing sources: parking revenues; Payment-in-Lieu of parking charges; and Development Charges. These are known as parking reserves.

Additional revenues are generated from parking tickets (APS Notices), towing, and other parking enforcement revenues. These are known as parking regulatory services.

Exhibit 6-1 shows the City's current sources of parking revenue.

Exhibit 6-1 Sources of Parking Revenue Today

1. Paid parking
2. Payment-in-Lieu (PIL) of parking
3. Development Charges

→ Parking reserves

4. Administrative Penalty System Notices
5. Towing
6. Other Parking Enforcement revenues

→ Regulatory services

Parking Revenues

Parking revenues are used to offset operating costs and any surplus is currently recognized as operating revenues. The City's parking services are also funded partly by the property tax base for such services as reviewing development applications, driveway widenings, administration of PIL, business planning, budgeting, and other activities.

Although Municipal Parking is a "Parking Service Area," this status has not been formalized. (In contrast, Parking Enforcement is a formalized "Regulatory Service Area.") The Parking Service Area consists of non-tax supported on and off-street parking spaces delivered to the public. Surpluses generated from parking revenue from these parking spaces are contributed either to the capital reserve funds for parking infrastructure improvements or expansion, or to an annual contribution to the City to offset property tax increases. Municipal Parking should become a formalized Parking Service Area which would then have its own Business Plan as do other Service Areas of the City.

The Regulatory Services Area's parking enforcement activities generated $9 million in 2017 mainly from Administrative Penalty Notices (for example, parking tickets). This revenue is currently used to fund the Regulatory Services Area. The revenue does not contribute to Parking Services Area's capital or operations requirements. Parking enforcement officers' activities also generate revenue from:

- Towing fees
- Parking consideration fees
- Service charges
- Fines

The City's paid parking operations are in the Downtown, Port Credit, Clarkson, Cooksville, Lakeview, and Streetsville. Some or all revenue from these parking operations flows into six separate Reserve funds.

In 2017, the total balance in the six funds was $6.8 million. The funds are used for new public parking facilities such as surface parking lots and parking structures.

In the case of the Downtown parking revenue, 50% of net operating expenses flows to the Downtown Parking Reserve and 50% flows to general revenue.

In the case of Port Credit, Clarkson, Cooksville, Lakeview, and Streetsville, 100 percent of net revenue after operating expenses is allocated to reserve accounts for use in these areas of the City.

The six geographically-delineated parking reserve accounts should be merged into one capital reserve. The City follows a principle that prioritizes its City-wide capital program on a need-basis. Merging the six capital reserves into one account would help the City to maintain this principle.

Development Charges

Development Charges are fees collected from developers at the time of building permit issuance. The fees help to pay for the cost of the infrastructure required to provide municipal services to new developments.

In 2009, under the City's DC By-law, the City began collecting funds for a parking structure. The funds are collected from City-wide new developments and can be used for a growth-related parking structure anywhere within the City's limits. At the end of 2017, the balance was $2.9 million.

6.1.2 FUTURE FUNDING OPTIONS

The sources of parking funding outlined in Chapter 6.1.1 will be important for supporting the expanded role of parking as a tool for city building as well as a service that is financially self-supporting for ongoing operations, maintenance and future new infrastructure. In addition to the current sources of funding, it should be acknowledged that another funding option is the sale or lease of the City's property holdings.

The common public perception that parking should be "free" does not consider the costs associated with providing and maintaining the parking. The cost of parking spaces in new parking facilities includes land acquisition, design and construction, lighting, power, signage, access control, safety and security, fencing, landscaping, parking planning, and insurance. The cost of parking spaces in existing parking facilities includes the ongoing maintenance costs of snow and litter removal, power sweeping, resurfacing, landscaping, line painting, lighting, and insurance. Additional costs include marketing, promotion and enforcement. Free parking during certain time periods increases enforcement costs as additional patrols are required.

In some cities, parking enforcement revenue is used to support the entire parking program and operations including enforcement costs. When parking is "free," the costs must be covered from sources such as taxes and it is not possible to build reserves to fund future capital projects.

Aligning parking revenue streams from on-street, off-street, PIL and development charges will provide clarity regarding how much of a parking service is self-funded and how much is being subsidized through the tax base.

As the parking service area becomes established, any potential impact on the operating budget will become known, and will be reported on during implementation. It is anticipated that as parking fees increase, more and more of the ongoing and capital expenses will be covered through parking fees. It is unlikely that all capital programs and new parking technologies will be funded fully through parking fees.

6.1.3 FUTURE PRICING FOR PARKING

Several matters related to parking finance at the City require formalization.

Parking Fees

Municipal Parking's current parking fees generally fall into one of three groups:

- Free parking
- $1/hour or $6/day, $5/overnight
- $1.50/hour for the first 2 hours and $2/hour for the third hour (3-hour maximum)

Parking is mostly free in off-street lots where utilization levels are low or where there is no market for paid parking while on-street parking fees are designed to encourage turnover.

Hourly, daily maximum and monthly parking fees should be set at the level that best manages demand and supply. Technological advances in parking provide the tools to collect and analyze large amounts of data about parking utilization. Regular reporting on utilization throughout the day would allow the City to define clear policy goals and accurately adjust pricing to meet those goals. Better technology has already improved revenue management, provided users with more payment options, and improved enforcement while lowering associated costs.

Dynamic Pricing

A dynamic pricing strategy structures pricing to reflect estimated demand at that point in time Exhibit 6-2 shows the dynamic pricing costs at a parking facility in San Francisco.

Exhibit 6-2 Dynamic Pricing in San Francisco

In the long-term, implementing dynamic pricing parking based on performance objectives for the street and transportation system would allow the City to better manage its parking supply. A parking occupancy of 80% to 90% (one or two parking spaces vacant) for on-street parking reduces or eliminates drivers circling to find a parking space. Lower parking occupancy can indicate that pricing may be too high.

Implementing a performance-based pricing program begins with accurate and up to date on-street and off-street parking data as a basis for developing an understanding of local parking patterns and establishing a balance between parking supply and demand.

All-day and Monthly Discounts

The City currently offers lower fees for all-day parking and or monthly parking permits. This practice encourages driving and discourages the use of transit and other modes in two ways:

- Monthly parkers must pay for parking whether they need it daily or not.
- The all-day commuter typically has the best transit service options so should not be given a discount for parking all day.

Multi-visit and Monthly Permits

The City should continue to offer multi-visit and monthly parking permits. To discourage daily driving to work, the City may wish to move towards reducing its discounts for multi-visit and monthly permits. This program is highly valued by staff but is also logistically a lot of work by Municipal Parking staff. Recommendations made about updating the technology used to process and distribute parking permits could improve the return on investment for this program.

6.1.4 RECOMMENDATIONS: FUTURE FUNDING OPTIONS

- It is recommended that as the City's paid parking market matures, the City undertake an analysis of the benefits and costs of reducing the daily and monthly parking discount and that the City aligns its parking passes with surrounding commercial monthly parking fees.
- It is recommended that the City increases its parking fees at regular intervals to keep pace with inflation.
- It is recommended that over the long-term, the City's fee-setting strategy should evolve to meet specific parking utilization objectives. The strategy could include setting parking fees that vary by location, time of day, and special event type.
- It is recommended that the City supports its April 2018 TDM Strategy pricing parking measure by setting monthly parking fees higher than the MiWay adult monthly transit pass fee.
- It is recommended that the City establish a formal Corporate Policy for financing and funding Municipal Parking operations. The policy should adhere to the following principles:
    - Revenue-generating parking activities should be funded through parking revenues (separate cost centre).
    - Non-revenue parking activities should be funded by the property tax base (separate cost centre).
- Municipal Parking fees should reflect market conditions (supply and demand).
- It is recommended that the annual parking ticket revenue should be used to cover all costs of enforcement including parking ticket processing. Any surplus revenue should be placed into the reserve account to pay for new capital projects (For example, surface lots, parking garage structures and necessary equipment).
- It is recommended that the City undertakes an analysis to determine the benefits and costs of implementing dynamic or escalating on-street pricing in each precinct.
- The existing six geographically-delineated parking reserve accounts are merged into one capital reserve account.

6.1.5 FINANCIAL EVALUATION OF NEW PARKING STRUCTURES

Deciding whether to construct an above-ground or below-ground parking structure requires a financial evaluation to determine:

- The parking markets served (For example, retail customers, monthly employees and shared parking).
- The walking distances to and from surrounding land use.
- The best location for the parking structure.
- The type of parking structure (For example, above-ground precast concrete, prefabricated steel beam or underground).
- The parking fees. Fees should be charged based on market rates and should support a reasonable payback period, normally between 25 and 30 years.
- Forecasts of parking demand and supply.
- Non-financial considerations such as City's policy to encourage more environmentally sound modes of transportation.
- Potential partnerships with compatible land use interests.

Exhibit 6-3 shows an above ground pre-fabricated steel beam parking garage in Markham and Exhibit 6-4 shows an above ground precast concrete parking garage in Mississauga. Underground parking garages are constructed of concrete structures.

Exhibit 6-3 Pre-engineered, Prefabricated- Centennial GO Station, Markham

Exhibit 6-4 Recast concrete- Clarkson GO Station, Mississauga

The framework for the financial evaluation of a new parking facility requires an assessment of:

- Investment Costs
- Operating Assumptions
- Revenue Assumptions
- Operating Costs

Exhibit 6-5 provides a simple financial summary of a 1,000 parking space facility located on a one acre parcel of land. It should be noted that land costs are not included. Land costs would need to be added to the estimate of total costs, if land acquisition is required.

Exhibit 6-5 Parking Structure Investment Costs

1,000 Space Facility	Above-Ground Parking Facility (Concrete)	Above-Ground Parking Facility (Pre-Fab Steel)	Underground Parking Facility
Estimated construction cost	$60M ($44K/space + fixed costs)	$33M ($20K/space + fixed costs)	$81M ($62.5K/space + fixed costs)
Estimated Annual Operating Costs	$2.7M	$2.2M	$3.2M
Estimated annual profit (assuming $5.7M revenue from utilization assumptions and future prices)	$2.9M	$3.5M	$2.5M
Payback period once operational[14]	20.1 years	9.3 years	32.2 years

Note: Example for 1,000 Space Facility

Exhibit 6-5 shows that the capital costs of building parking structures are high. The cost per parking space ranges from $20,000 (above-ground prefab structure) to $62,500 (underground). The payback period ranges from 9.3 years (above-ground prefab structure) to 32.2 years (underground). The payback period is affected by the time required to build the garage. The above-ground concrete and pre-fab structures would be built faster than the underground garage so the payback period would start sooner.

It is clear that parking structures are expensive and require significant capital investment. The revenue stream from parking fees is important for contributing to capital and ongoing operating costs. Before deciding whether to build a parking garage, a full business case and detailed financial analysis are required. The up-front investment and associated borrowing costs and or loss of investment income and or opportunity costs must be weighed against future operating costs and revenue cash flows (i.e. the net present value of the investment must be considered).

[14] The payback period is affected by the time required to build the garage. The above-ground concrete and pre-fab structures would be built faster than the underground garage so the payback period would start sooner.

6.1.6 RECOMMENDATION: THE COST OF NEW PARKING

It is recommended that a formalized process for determining the business case associated with any parking capital project be adopted.

6.1.7 GO TRANSIT PARKING

All GO Transit rail and bus stations in Mississauga have customer parking. Wherever the City offers paid parking, but GO Transit offers a free parking facility in the same area, GO Transit is in effect in competition with the City.

GO Transit's current policy for most of its spaces is free parking on a first-come, first served basis. Customers can park in any space for a maximum of 48 hours.

GO Transit also offers reserved parking at all its Mississauga parking lots. A reserved parking space for the minimum term of six months is $98 per month (including all taxes).

Exhibit 6-6 shows an example of reserved parking at a GO Transit parking lot.

Exhibit 6-6 Reserve Parking at GO Transit Parking Lot

GO Transit's parent agency, Metrolinx, understands that the practice of providing free parking at all GO stations is unsustainable in the long-term. The Metrolinx 2041 Regional Transportation Plan (RTP), adopted in March 2018, notes that:

"New rapid transit projects across the GTHA will bring quality transit services closer to many more people and jobs. Maximizing the use of these new services will require a renewed emphasis on providing multimodal options for the first- and last-mile of every passenger trip. It is not sustainable to rely primarily on rapid transit users driving to stations and parking for free. New solutions are needed."

The 2016 GO Rail Station Access Plan set targets for reducing the growth in parking requirements at GO stations. The Plan advocates improving multi-modal connections at GO Transit stations. Improvements would include quality station access amenities and a range of travel options (such as conventional and micro-transit, carpooling, walking, and cycling).

Although GO Transit understands the need for greater incentives to discourage commuters from parking at the station, it may be challenging to influence behaviour in any meaningful way while the vast majority of parking spaces at GO stations remain free.

6.1.8 RECOMMENDATION: GO PARKING

It is recommended that the City work with Metrolinx to develop a strategy to reduce all-day free parking at GO Transit rail and bus stations.

6.2 SPECIAL CONSIDERATIONS IMPACTING REVENUE

There are a number of instances in Mississauga where exceptions are made in an area that would otherwise have paid parking that can lead to a loss of revenue. For example, the CarShare vehicle permits that cost the carshare company $65.00 per month is limiting the amount of revenue the City can acquire from that designated space. (There are currently five types of on-street parking permits offered by the City of Mississauga, some are paid permits and others have no fee. The five permits are residential short-term temporary, residential long-term, commercial blanket, residential blanket, and carshare permits.)

Another on-going culture building project involves allowing businesses to set up patio spaces in existing on street parking in neighbourhoods where there is high traffic. While these programs help to improve the City's culture and foster businesses it limits the revenues from parking in the same space.

The City should gain an accurate understanding of the value of a specific parking space that is being requested to be used for other purposes and ensure that accommodations are made for the lost revenue where necessary, potentially at the cost of those requesting the special consideration.

6.2.1 RECOMMENDATION: SPECIAL CONSIDERATIONS

It is recommended that the City develop a strategy to accurately account for lost revenue where special considerations are given in paid parking locations.

7 TECHNOLOGY AND INNOVATION

As technology continues to evolve related to parking, cities should monitor these new tools for parking management and apply them where they can be most effective. This Chapter provides a review of existing and new trends in parking technology and provides recommendations on how they could improve the customer experience and parking management.

In the past, paid parking involved simply dropping coins into a meter that would track how much time remained for a vehicle to be parked in that spot. As new technologies have become available the City has updated its network to improve the user experience but also to be able to track parking usage more accurately. This Chapter will discuss the current forms of technology being used for parking in the City. Then an analysis of some other, emerging technologies will be presented and some recommendations about how they can be used to continue to improve the City's paid parking network.

7.1 CURRENT PAYMENT TECHNOLOGY

7.1.1 PAY AND DISPLAY MACHINES

Pay and Display units have been used in Mississauga for nearly 10 years in the Downtown parking garages, on-street in the Downtown Core, Port Credit and Streetsville. The units are sited at on and off-street parking facilities. Pay and Display is Canada's most widely used parking payment technology. On arrival, drivers walk to the Pay and Display unit, pay for parking, received a printed receipt and then return to the vehicle to display the receipt on the dashboard for inspection by parking enforcement officers.

The system accepts coins, credit cards and pre-programmed cards such as monthly permits and multi-visit cards. The machines are connected to a cellular network where credit card transactions are processed in real time and statistical/financial information recorded on a cloud server through a contract with the City's parking supplier, Precise Parklink. The units are solar-powered which minimizes the infrastructure work required for installation.

The City has made substantial investment in the current Pay and Display system and has a long-term relationship and contract with Precise Parklink for supply and maintenance.

7.1.2 MULTI-VISIT PAYMENT CARDS

For individuals who frequent the Downtown, the City currently offers a multi-visit payment card. This allows individuals to buy parking visits in bulk at a discounted rate rather than paying the daily maximum. These cards are compatible with the current Pay and Display machines in the parking garages. An individual received a printed receipt from the Pay and Display machine that they place on their dashboard for inspection by parking enforcement officers. The card is a pre-paid, reloadable card for up to 250 daily parking visits.

To reload a Multi-Visit card, a customer must complete an application form, take the form to the City's cashier desk in the Civic Centre and pay in-person. This program currently requires a significant amount of administrative work to operate as there is no online option for reloading. Further complicating this process is the fact that the City offers different rates depending on the applicant and their individual circumstances. Opportunities to update this program with new technology are explored in Section 7.2.3 .

7.1.3 ANNUAL AND MONTHLY PERMITS

In addition to the Multi-Visit Payment Cards discussed above, the City also offers Annual and Monthly permits for City staff, members of the public and Sheridan College students and staff. The permit is given to the driver in the form of a hangtag which is hung from the driver's rear-view mirror for inspection by parking enforcement officers. These passes are strictly offered in the municipally owned and operated lots in the Downtown.

This process is equally challenging to administer as there is no digital process and all paperwork and permits are coordinated by staff in Municipal Parking. There are also a number of different passes including, annual, monthly, and part-time staff rates that add further complexity to the program. Opportunities to update this program with new technology are explored in Section 7.2.4.

7.2 NEW PAYMENT METHODS AVAILABLE

Section 7.1 discussed the current payment methods being employed by the City to facilitate the existing paid parking program. It also identified areas where there is room to improve and streamline the payment process to improve the customer experience as well as limit the amount of staff time required to process all applications.

This Section will explore new technologies available within the parking industry that can be used to improve Mississauga's current paid parking program. It is important to note that while these technologies may improve the customer experience and the City's ability to monitor parking, many of these technologies may not result in an increase in revenue for the City and may be expensive to implement and maintain.

Should the City transition to any of the new technologies discussed in this section, it will need to be completed as a part of a coordinated effort to update the City's enforcement processes and technologies. Those requirements will be reviewed in further detail in Section 7.3.

7.2.1 PAY-BY-LICENSE-PLATE

Some cities are now considering Pay-By-License-Plate (PBLP) payment stations rather than Pay and Display machines.

Customers park their vehicles and make their payment transaction at a PBLP terminal. The system records license plate information (entered by the customer) and collects payment for the parking transaction using coins or credit cards. The customer's license plate number acts as a "permit" eliminating the need to return to their vehicle to display a receipt.

PBLP uses solar power and a cellular network. The system processes credit card transactions in real-time and stores the statistical/financial information recorded on a cloud server.

Parking payment is enforced by existing by-law enforcement officers using handheld computers or by a License Plate Recognition (LPR) system. LPR requires a monitoring vehicle mounted with specialized cameras and software that scan the license plates of all parked cars to detect vehicles for expired transactions and vehicles that have not paid. PBLP increases customer convenience and improves enforcement.

7.2.2 GATED PAY-ON-FOOT

Pay on Foot parking stations are unmanned payment stations used in a gated revenue control system. The terminals dispense tickets or read pre-programmed cards allowing people to pay for parking 24 hours a day. Customers press the button on the terminal to obtain a ticket or present their access card. Some systems allow customers to enter a pin code. Pay on Foot stations can also accept bills, coins, and credit cards in addition to giving out change. Barrier gates and terminals are installed on each entry or exit lane. Most entry points now detect the presence of a vehicle via a loop detection system.

Gated Pay-On-Foot (POF) systems provide very effective revenue control. The systems are used mainly for large surface parking lots and for above and below ground parking garages. The technology is not usable for on-street parking.

There are two primary benefits of gated systems: the operator can leave the lot unattended, and the system is self-enforcing (the customer has to complete a transaction before leaving the lot or garage). The primary drawback is possible revenue loss if equipment such as the gate arms malfunction. With mobile payment, transactions in the queue to exit can still be processed. Remote connections can also be used to restore system operability.

Entry ticket and access card information is transmitted in real time to a central server which processes payments, validates parking tickets, and applies "anti-passback" rules.

In most systems, the customer pays on exit (by credit card), but the system may include a central pay station. This pay station is connected to the server and can retrieve and process transactions in real time.

A very important component of a POF system is access control for monthly parking permit holders and property management staff. The latest technologies include proximity cards, wireless transponders, and mobility phones.

Most POF systems involve human interaction, but new technologies require no action from customers upon entry or exit. For example, a (2017) pilot program in the Los Angeles Metro LA transit parking lots automatically linked the automobile license plate to a valid TAP card through LPR technology. Monthly parkers pre-register their vehicles and payments. The license plate acts as the permit identifier that is validated by the LPR allowing for smooth uninterrupted flow into and out of parking lots.

LPR offers tremendous flexibility for various applications depending on site specific needs.

7.2.3 PAY-BY-PHONE

Payment through an app is increasing in popularity as people are relying more on their smartphones. Apps are available for a number of medium and large municipalities including Toronto, Ottawa, Vancouver, Montreal, Burlington, Guelph, and Whitby. Where apps are available, their use ranges from 2% to 40% of total parking payments. Private commercial parking lots are also adopting payment by smartphone app. The use of smartphone apps is expected to rise significantly in the next few years.

The main advantages of paying by a smartphone are convenience for customers and no physical changes are needed to existing parking infrastructure. Some shortfalls of a pay-by-phone system include:

- Alternative payment methods must be available to customers without smartphones (76% of Canadians owned smartphones in 2016 according to Statistics Canada).
- Some customers are reluctant to register online with app providers because they are concerned about privacy and sharing personal information (although service providers guarantee that the personal information is not shared).
- The customer pays a convenience fee in addition to the parking fee. The convenience fee typically ranges $0.25 to $0.40 per transaction. Some municipalities absorb the convenience fees.
- An anticipated loss in revenue from lack of overspending by customers who no longer over-estimate the length of their visit.
- Reduced vehicle turnover because drivers can add more time to their parking meter without the need to return to the car.

Customers must download the smartphone app from a service provider's website, register for an account and give permission for parking fees to be paid from their credit card. The parking operator posts phone and code numbers throughout the parking lots on highly visible signs. The customer enters the code of the parking location and the time period required into the app. The app sends a warning text message about 15 minutes before the time period expires and allows the customer to add more time from the customer's location. Customers can go online at any time to check their list of transactions, add, or amend vehicle details, and update payment or security settings.

7.2.4 PAY-BY-ONLINE PERMIT

Pay-By-Online Permit are available on the internet. Customers can buy daily, monthly, and annual parking permits before arriving at the on-street parking zone of special events such as sports events, concerts, and festivals.

The customer purchases a daily, weekly, or monthly permit by logging on to a parking permit application (offered by several parking vendors) using a credit card. The customer then prints a copy of the barcoded permit on regular paper or retains the 3D barcode on a smart phone. Parking is controlled by on-site event parking personnel.

Motorists arrive at the pay parking zone, park, and display the permit on the dashboard for inspection and barcode scanning by patrolling enforcement officers. The system is a very convenient and low-cost way for customers to pay for parking.

Drawbacks include confusion among motorists who are not familiar with the parking zone or who dislike paying online. Existing Pay and Display machines provide an alternative for such customers.

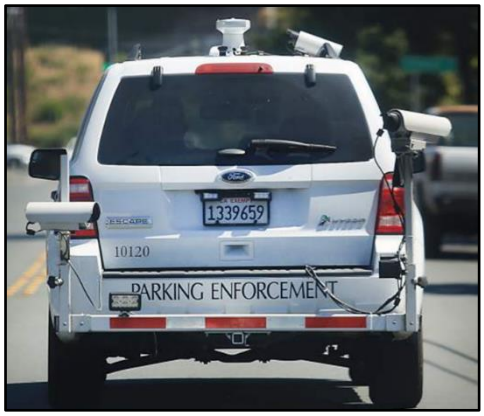
Similar systems allow customers to conveniently replenish monthly or multi-visit permits online instead of having to go to an office in person to acquire a permit.

7.2.5 RECOMMENDATIONS: PAYMENT METHODS

- It is recommended that the City undertake a business case analysis to determine the feasibility and benefits of upgrading its Pay and Display machines and enforcement technology to a PBLP system.
- It is recommended that the City consider a Pay-On-Foot (POF) system possibly combined with License Plate Recognition (LPR) technology at locations that require additional parking controls. Depending on circumstances, POF may offer a better solution than Pay and Display and or PBLP.
- It is recommended that the City consider POF for any new parking structures planned for the Downtown Core.
- It is recommended that the City consider converting the City Hall parking garage from Pay and Display machines to a POF system.
- When installing POF systems, it is recommended that the City consider systems with the latest technologies available including access control for monthly parking permit holders and property management staff proximity cards, wireless transponders, and mobility phones.
- It is recommended that the City offer the convenience of Pay-By-Phone at all the City's on-street and off-street parking facilities.
- It is recommended that the City use a phased approach to introduce Pay-By-Phone.

7.3 PARKING ENFORCEMENT TECHNOLOGY

Recent advances in parking enforcement technology have made new approaches economic even for smaller municipalities to use License Plate Recognition (LPR) for parking enforcement.



LPR for parking enforcement uses a normal vehicle equipped with two cameras on the roof just above the windshield to scan the license plates of cars parked on a street. A second set of cameras at the back of the vehicle scans the position of the tire valves to determine whether a vehicle has moved and re-parked in the same location.

A computer logs the plate number, the GPS location of the vehicle, the date, and the time. The system can use the internet to link with PBLP and mobility payment (pay by cell) systems and check the validity of monthly parking permits (as license plates act as parking permits).

The system can be used for on-street and off-street surface lots and within parking garages. Within parking garages, stationary cameras create a virtual gate. The system alerts enforcement officers to vehicles with expired parking.

For areas where parking is free at certain times of day and prohibited at other times, the parking enforcement officer can drive at the posted speed limit past vehicles parked in the free period and scan the details. The officer then returns when the free parking period has expired and issues a parking ticket to vehicles that remain.

All the data is stored on a secure server. The system follows the recommendations provided by the Information and Privacy Commissioner of Ontario about the handling of data.

Efficient and streamlined enforcement is a major benefit of mobile LPR. In Calgary, for example, 10 mobile enforcement officers can do the same amount of work as 16 officers who simply walk and issue tickets. The number of disputed tickets has decreased by 60 percent because of the strength of photo evidence. The number of court challenges and the cost of staff administration and court time costs also has been reduced.

A pilot project in underway in the City's Parking Enforcement group to test License Plate Recognition technology and Digital Chalking equipment. This will eliminate the need for manual chalking, offers immediate recognition of vehicles plates and a review of existing permit data. Digital Chalking will allow officers to enforce the City's parking bylaws more efficiently and within the safety of their vehicle. In addition to efficiencies of a single pilot vehicle for Chalking duties is an expected 25 per cent improvement to process productivity.

7.4 PARKING DATA COLLECTION AND MANAGEMENT

Fundamental to any discussion of policy change is an understanding of existing conditions such that strengths can be built upon and weaknesses remediated or removed. A review of Mississauga's Municipal Parking's existing data collection and storage methods identified the following gaps:

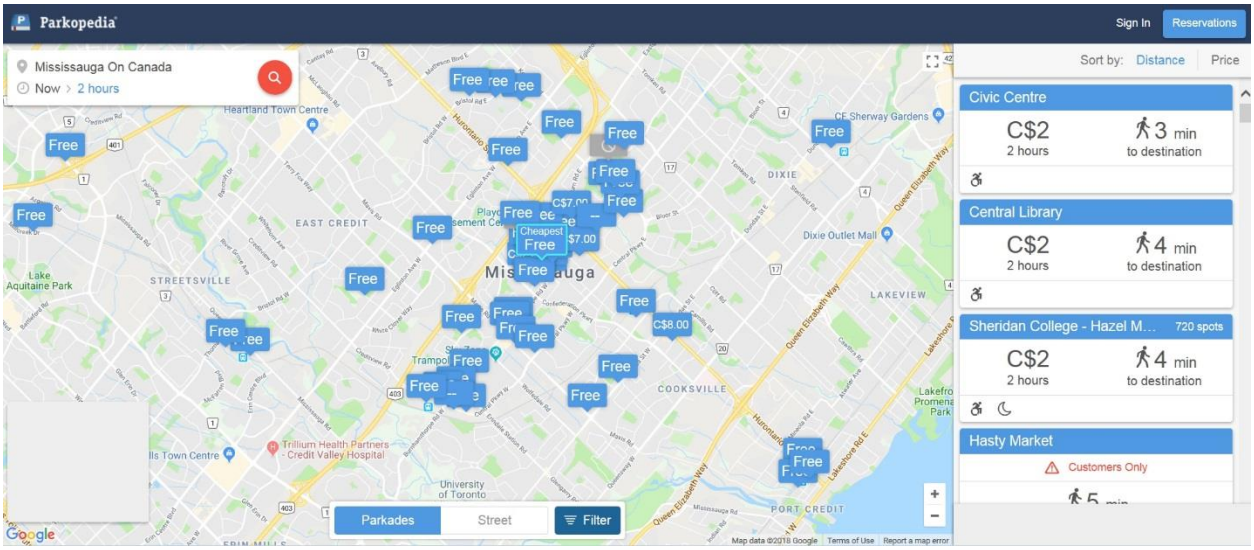
- Information such as machine number, address, tariff, and installation date on parking machines at off-street garages and lots is not standardized.
- On-street parking machines have a database that includes machine number, location, fee, and installation dates, but the database lacks basic supply information. Data from monthly utilization surveys would be a useful addition to the database.
- Data for City-owned parking, parks, recreational centres, and the Transitway need to be standardized, linked, and consolidated. In the case of MiWay Station lots, for example, information on locations, operating hours and supply was readily available, but there was no information on fees at each lot and there were no utilization surveys. Fees should be updated, and regular surveys should be conducted. Fee data can also be extracted from parking machines that are not part of the Precise Parklink Inc. data warehouse.
- The City has some data on privately-owned parking lots. The information is spatial (referenced to a specific location). Information on the quantity and form of parking is limited.
- Information on parking enforcement violations is available in spreadsheet format. This information includes the types of infraction, but does not include geo-spatial data for the location of the infractions. By comparison, the City of Toronto, however, links parking enforcement activities to locational data and can display the information in layers on a map.

Information about parking machines on-street and at off-street garages and lots should be saved and consolidated into an operational database. If parking machines are electronic, information such as utilization should be extracted and added to the database. The information would help to identify lots and garages that are at capacity or under-utilized. Information on utilization could be collected once a month and used to track parking trends.

Private providers such as Parkopedia are already crowdsourcing similar data for Mississauga, see Exhibit 7-1. Registered customers can supply Parkopedia with fee data via their phones. The data is uploaded to Parkopedia's site and can be searched by price and or time of day. Partnerships with, for example, Google Maps will allow the data to be displayed in real-time data via apps and the web.

Please refer to Appendix 6-1 for further details.

Exhibit 7-1 Parkopedia Parking Information for Mississauga



Source: https://en.parkopedia.ca/parking/mississauga

7.4.1 RECOMMENDATIONS: DATA COLLECTION AND MANAGEMENT

- It is recommended that the City's Municipal Parking organization develop an annual parking data collection program and create a comprehensive database of City-provided parking supply and utilization. The data collected should be openly available online. This work will begin the process of creating the back-end infrastructure required to provide parking and utilization information to the end-user.
- It is recommended that the City consolidate existing data files regarding privately-owned parking and add information at key locations of interest across the municipality (For example at Intensification Areas). The data collected could be used to develop a more comprehensive understanding of existing parking supply for development and long-range planning purposes.
- It is recommended that future data collection and storage methods for parking enforcement link infraction and infraction location data, and the data should be mapped.

7.5 DIGITAL SIGNAGE AND WAYFINDING

Parking guidance systems are useful in large areas where alternative parking locations are available close to destinations.

A combination of digital variable message signs and wayfinding signs direct drivers to the parking available. Signs are placed at entry points to the area covered, key decision-making points within the area, and the access points to each parking facility. Wayfinding signs provide information for parking locations where real-time information is unavailable.

Parking guidance systems typically include a website and mobile app that provide real-time, map-based information on parking availability and pricing.

7.5.1 RECOMMENDATIONS: DIGITAL SIGNAGE AND WAYFINDING

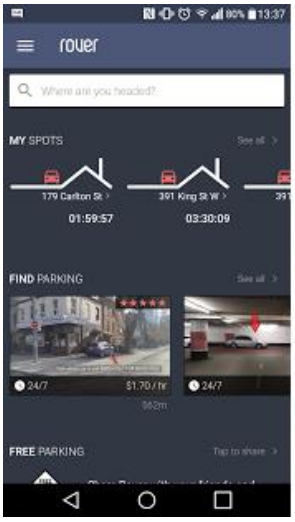
- It is recommended that the City consider implementing a parking guidance system in locations such as Precinct 1 where there are large municipal parking facilities and large private parking facilities. The system should combine digital variable message signs and wayfinding signs to direct drivers to available parking.
- It is recommended that the signs be placed at Precinct entry points, key decision-making points within the Precinct, and access points to each parking facility.
- It is recommended that the wayfinding signs be provided for parking locations where real-time information is unavailable.
- It is recommended that the all City parking guidance technology in all parking facilities be compatible to ease integration into the City's information system.
- It is recommended that the parking guidance system include a website with an associated app that makes parking availability and pricing data available to customers.
- It is recommended that the City promote the use of the online tools, particularly during peak demand periods such as special events. The web-based tools may be developed by the City or through a private partnership.
- It is recommended that the City regularly:
  - Review the geographical areas where a parking guidance system is implemented.
  - Assess the parking guidance technology available and consider advances in technology and best practices.

7.6 PEER-TO-PEER PARKING SHARING

Peer-to-Peer parking is an example of the sharing economy. In the case of parking, private parking space owners are linked to drivers seeking a space (see *Existing Policy and Best Practices Review*). A sharing economy approach would allow the flexible use of surplus residential parking spaces.

This chapter discusses two approaches of interest to the City: Driveway Parking and digital platforms for renting parking.

Rented Driveway Parking



A more common form of sharing economy on parking is driveway parking, which is observed in Canada, UK, and Australia. For instance, mobile applications exist to allow property owners to rent parking spaces on private property by the hour. Examples of apps available in Toronto include Rover Parking and HonkMobile. In Rover Parking, the property owner sets the price. The upper limit is $2 an hour to ensure that the spaces are competitive when compared with traditional parking spaces.

City of Toronto by-law officials generally accept renting out unused garage space, but regard renting out driveway spaces to multiple drivers as illegal. The renting out of driveway spaces is considered illegal because officials wish to discourage additional traffic in local neighbourhoods, and because the presence of unknown drivers and passengers may result in nuisance complaints and risks to neighbourhood safety.

The Sharing Economy Public Design project is a collaboration between MaRS Solutions Lab, the Province of Ontario, and the City of Toronto. The project conducted a comprehensive review of sharing economy issues to improve understanding the role that government should play. The study recognized that Toronto has a city-wide shortage of parking spaces whereas condo buildings often have empty parking spots. A sharing economy approach to surplus condo parking spaces would require Toronto to make appropriate changes to by-laws for zoning, building and condo boards. The response to the sharing of driveways has been mixed.

Exhibit 7-2 provides examples where sharing is accepted (the Borough of Rosemont-La-Petite-Patrie (Montreal), Sydney (Australia), and Melbourne (Australia) examples where sharing is not accepted (Ottawa and Perth).

Exhibit 7-2 Municipal Response to Commercial Driveway Parking

Municipalities	Response
Accepted Practice	
Borough of Rosemont-La-Petit-Patrie (Montreal)	Allows residents to rent out their off-street parking facilities including driveways and garages
City of Sydney	Allows residents to lease parking spaces on their property using any online resource, but the permit given to the property owners is not transferable Planning conditions and strata by-laws prevent spaces in some apartment buildings from being leased out to non-residents. The conditions and by-laws ensure a) that private buildings cannot be used as public car parks, and b) that security of apartment residents is not compromised.
City of Melbourne	Allows residents to rent out their driveways, but the permit cannot be transferred or sold Leasing private parking lots or spaces are not regulated by Council.

Prohibited Practice	
City of Ottawa	City's Zoning By-law requires parking spaces to be reserved for persons residing in or visiting that property.
City of Perth	City retains the legal right to prevent the sale or transfer of resident parking permits.

Source: Existing Policy and Best Practices Review, City of Mississauga, 2017

Parking Rental Platforms

There are digital apps that distribute information about parking spaces.

Users of the app can auction the privately-owned parking spaces to the highest bidder. Users can also use the app to profit from prepaid parking permits in public city-owned parking spaces.

San Francisco officials claim that MonkeyParking violates the City's Police Code which prohibits individuals or companies from buying, selling, or leasing public on-street parking. MonkeyParking and the associated practice of profiting from renting out public parking have been made illegal by the City of Los Angeles.

7.6.1 RECOMMENDATIONS: SHARING OF PRIVATE PARKING

- It is recommended that the City initiate a "Share Your Parking" program to encourage shared parking opportunities between private parties. The program could:
    - Facilitate private lease arrangements for shared off-site parking in existing and future parking facilities.
    - Coordinate between public and private parking providers, places of worship, BIAs, businesses, and the City to prepare agreements among parties to better use existing parking facilities.
    - Remove or minimize administrative barriers (For example, Property Title changes) to allow off-site shared parking.
    - Identify a simple one-page set of criteria and conditions for permitting shared parking arrangements. If an application meets the conditions, the application should not be required to go to the Committee of Adjustment.
    - Add elements to the City's Urban Design Guidelines to facilitate shared parking including shared access between or among sites.
- It is recommended that the City prohibit the practice of profiting from renting out public parking.

7.7 CONNECTED AUTOMATED VEHICLES

Connected automated vehicles (CAVs) are an emerging technology that could profoundly change transportation systems. This Section describes the possible impact of CAVs on parking in the future.

As CAV technology has not yet been perfected, the timeline for widespread uptake of CAV is uncertain. However, experts speculate that the impact on parking could include:

- Parking density
- Parking location and distribution
- Reduced demand due to changes to vehicle ownership

Parking Density

The first and most immediate impact is already appearing with the self-parking car. When drivers can leave their vehicles before parking, it is possible to increase parking density by reducing the dimensions of parking bays and aisles. Over time, parking deck design will change as decks accessed and used exclusively by self-parking vehicles will require less headroom, ventilation, signing, and lighting.

Parking Location and Distribution

With vehicles able to locate their parking without a driver or passengers, parking location and distribution could change. Cars could park in lower value areas peripheral to city centres freeing higher value areas for other uses.

Reduced Demand Due to Changes to Vehicle Ownership

CAVs could reduce vehicle ownership as shared use of CAVs becomes increasingly attractive. Shared use of vehicles reduces the demand for parking.

Fagnant, Kockelman and Bansal developed a model for central Austin, Texas and suggested that a single shared AV could replace as many as 9 conventional vehicles.[15] The Fagnant et al. study also found that the vehicle miles travelled (VMT) would increase by up to 8 percent.

In contrast, empirical work based on a diary of mileage covered and the trips conveyed by a single Uber vehicle indicted that a shared AV model could result in VMT increasing by nearly 80 percent.[16] This increase is a result of some unoccupied/empty-vehicle travel, but mainly due to induced demand for travel and trips changing from walking, cycling, and transit to Uber vehicles.

A study that modelled the complete adoption of shared AVs showed that 95% of the space required for public parking could be eliminated by only using 3% of the size of today's fleet.[17]

At this point the implications of CAVs and the timeline for adoption are unclear.

Automated Vehicles and Municipal Parking Facilities

If automated vehicles can park themselves after dropping off driver and passengers, significant changes and savings may occur in parking design.

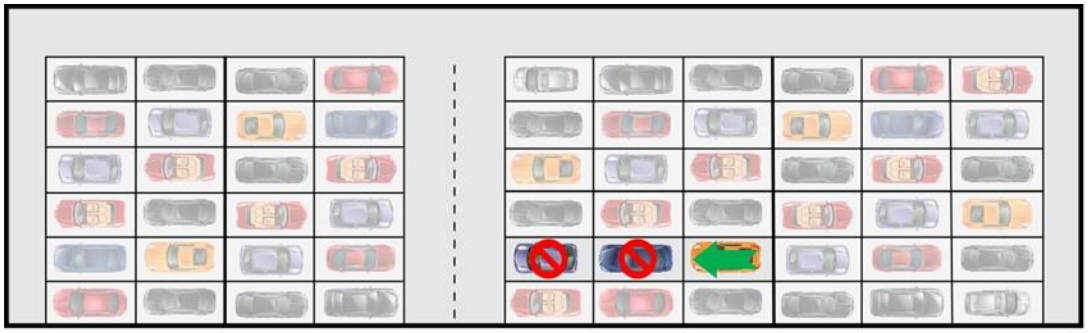
Possible design changes could include:

- Smaller parking spaces. CAVs can park close together as there is no need to open doors. See Exhibit 7-3.
- Reduced turning radii on drive aisles.
- Reduced area required for access.
- Reduced need for human scale and human-oriented amenities such as lighting and elevators.
- Only limited access required for maintenance crews (For example, stairways).

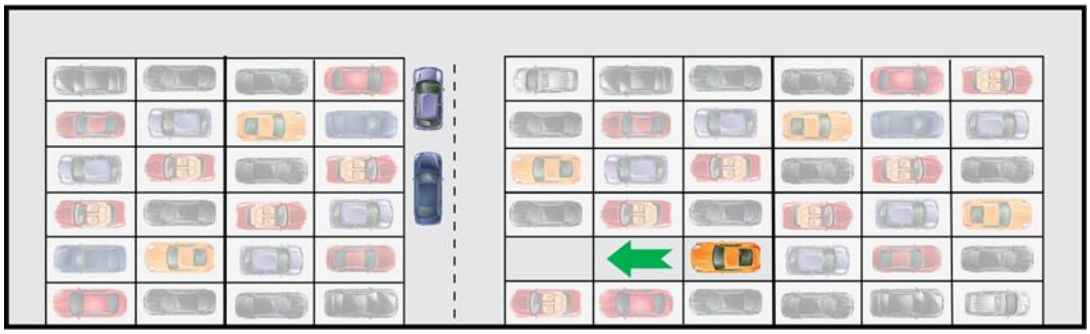
These changes can significantly increase the number of parking spaces on a parcel of land leading to more parking supply for the public and or lower cost for the City.

[15] Operations of a Shared Autonomous Vehicle Fleet for the Austin, Texas Market, Fagnant, Kockelman, and Bansal, 2015
[16] Impacts of Ridesourcing – Lyft and Uber – On Transportation, Henao, 2017
[17] Shared Mobility – Innovation for Liveable Cities, International Transport Forum, 2016

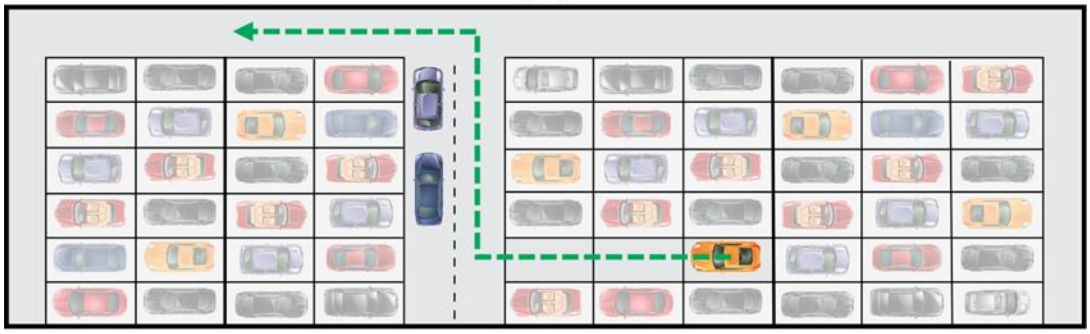
Exhibit 7-3 Automated Parking Garage Operation



(a) Step 1: Subject Vehicle to Exit



(b) Step 2: Temporarily Remove Vehicles



(c) Step 3: Subject Vehicle Exits

Source: Designing Parking Facilities for Autonomous Vehicles; Nourinejad, Bahramib, Roordac

7.7.1 RECOMMENDATIONS: CONNECTED AUTOMATED VEHICLES

The Recommendations are:

- It is recommended that the City note the uncertain implications of CAVs and the uncertain timeline for CAV adoption.
- It is recommended that the City:
  - As part of the Transportation Master Plan process, consider the potential role of CAVs in relation to the City's long-term transportation objectives.
  - Outline the potential contribution of CAVs to long-term City goals.
  - Keep up to date with CAV developments.
  - Develop plans and policies that are flexible and easily updated to be compatible with emerging CAV technologies.
  - Encourage open data sharing to improve decision-making.
  - Through the site plan approvals process, consider future demand for Drop-off and Pick-up facilities for CAVs and potential changes in on-site parking needs.
  - Conduct annual reviews to ensure that the City's policies are in line with evolving trends in CAV technology and applications.
- It is recommended that the City consider the possible implications of CAVs for future parking facilities and should design new parking facilities to take possible future changes in technology into account.

7.8 SMART PARKING

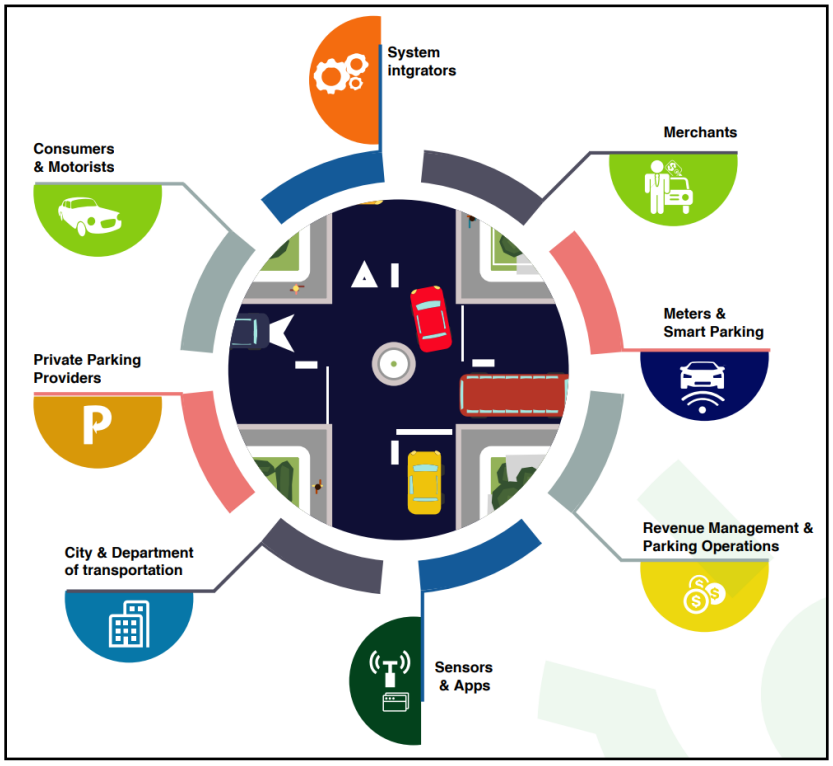
Smart Parking systems use low-cost sensors to obtain and process real-time information about parking spaces available in a particular geographic area. The system uses the information to allocate vehicles to the spaces available. Mobile-phone-enabled automated payment systems allow people to reserve parking in advance (or very accurately predict where they will likely find a space).

Smart Parking has two major benefits. Firstly, the system reduces car emissions in urban centres by reducing the need for people to circle city blocks searching for parking. Drivers circling while searching for a parking space is asignificant problem and cause of congestion. Secondly, the system allows cities to manage their parking supply and control illegal parking.

Exhibit 7-4 shows Smart Parking services and stakeholders.

The *Existing Policy and Best Practices Review* report in 2017 provided details on the various measures and elements the City can deploy to initiate and build on their current system to create a fully functional Smart Parking system.

Exhibit 7-4 Smart Parking System



Source: Smart Parking, Happiest Minds, 2014

An integrated Smart Parking System has a number of important benefits. The system can:

- Accurately predict and sense spot/vehicle occupancy in real-time.
- Guide residents and visitors to available parking.
- Optimize parking space usage.
- Help traffic in the city flow more freely leveraging Internet of Things (IoT) technology.
- Play a major role in creating a better urban environment by reducing the emission of CO_2 and other pollutants.
- Simplify the parking experience and add value for drivers, merchants, and other parking stakeholders.
- Enable intelligent decision using data, including real-time status applications and historical analytics reports.
- Allow better monitoring and managing of available parking space using real-time monitoring and managing leading to significant revenue generation.
- Provide tools to optimize workforce management.

Internet of Things (IoT), as explained in a 2014 Forbes article, "is the concept of connecting any device with an on and off switch to the Internet and or to each other. This includes everything from cellphones, coffee makers, washing machines, headphones, lamps, wearable devices and almost anything else you can think of."[18]

[18] A Simple Explanation Of 'The Internet of Things', Forbes, 2014

7.8.1 RECOMMENDATIONS: SMART PARKING

The Recommendations are:

- When selecting and implementing Smart Parking technology and equipment, it is recommended that the City consider and prioritize:
    - Flexibility to ensure that new technologies can be incorporated
    - Integration of parking data into a centralized system that can provide:
        - information to parking customers
        - information to decision makers and parking managers
- It is recommended that the City continue to work and partner with key private and public-sector stakeholders (developers, parking providers, transit operators, businesses, etc.).

8 IMPLEMENTATION AND MONITORING

To ensure the vision of the Parking Masterplan is achieved it is critical to develop a robust and comprehensive Implementation Plan and corresponding Monitoring Program to guide next steps – day to day work completed by staff, decision making by Council and input / support provided by stakeholders and partners. The following sections provide an overview of the proposed implementation plan and monitoring program for the City of Mississauga Parking Master Plan.

8.1 Implementation Plan

A typical implementation plan includes discussion around the proposed timelines i.e. phasing for implementation. For the purpose of the Mississauga Parking Master Plan we have not identified a strict set of timelines to guide implementation. Implementation of the master plan recommendations will be determined by City staff based on available resources – staff and budget, Council priorities, community interest and support as well as internal processes related to policy revisions and updates.

To support implementation of the parking master plan a comprehensive implementation plan has been prepared. The plan is documented in a summary table which is intended to be used by City staff to guide next steps. The information contained within the "plan" includes:

- The recommendation and page number where it can be found in the report;
- Identification of the lead agency or individual as well as support staff or stakeholders to the lead;
- A preliminary proposed timeline i.e. short, medium and long-term – to be confirmed based on a review and update of the master plan;
- A preliminary budget range to facilitate the implementation of the recommendation which includes both staff time as well as start-up and maintenance costs;
- Identification of policy or process changes that will be required to ensure that the recommendation can be realized; and
- An overview of next steps.

Exhibit 8-1 contains the proposed Parking Implementation Plan for Mississauga. Recommendations identified throughout the Master Plan Report pertaining to parking precincts, parking regulations, parking facilities, technology and innovation, governance and finance have been summarized and implementation consideration have been detailed for each. The Implementation Plan is based on the City's current organization structure, which is subject to change.

Exhibit 8-1 Implementation Plan

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Chapter 2 | Parking Precincts in Mississauga										
2.1	Adopt a precinct based approach to parking provision, each precinct with its own approach	Planning & Building Department*	Transportation & Works; Community Services and Corporate Services	▪			▪		▪		1. Report to Council for endorsement 2. Planning Department to initiate OP Amendment process or include in next round of OP Review.
2.2	Adopt the goals and parking management principles for each precinct as outlined in the parking strategy	Planning & Building Department*	Transportation & Works; Community Services and Corporate Services	▪			▪		▪		3. Report to Council for endorsement 4. Planning Department to initiate OP Amendment process or include in next round of OP Review.
2.3	Review the City's current Zoning By-law to determine appropriate parking requirements for each precinct and ensure that the parking requirements align with this study's criteria for defining and establishing the precinct areas	Planning & Building Department*	Transportation & Works; Community Services and Corporate Services	▪				▪		▪	5. Planning Department to initiate Zoning By-Law review process and exercise 6. Determine if parking rate adjustment are required and where and what should the new rates be. 7. Include public and stakeholders input
2.4	Conduct regular reviews (not more than five years apart) to assess whether precinct boundaries are still appropriate or need to be changed	Planning & Building Department*	Transportation & Works		▪		▪		▪		8. Conduct a review exercise of changes within each Precincts
	**Transportation & Works to assume the lead for this recommendation should the Parking Planning function be transferred from Planning and Building*										
	Chapter 3 | Parking Regulations										
	Motor Vehicle Parking Standards Recommendations										
3.1	The City should consider establishing maximum parking requirements in all Precincts as part of a future, detailed Zoning By-law review	Planning & Building Department*	Transportation & Works		▪		▪		▪		1. The Zoning By-Law review determine if maximums are appropriate and which Precincts and what would be the maximums.
3.2	It is recommended that the City require any development proponent who wishes to exceed the maximum parking requirement to provide a justification report that considers the five key questions outlined in the parking strategy	Planning & Building Department	Transportation & Works		▪		▪		▪		2. Include in development review process and document such request.
	Shared Parking Recommendations										
3.3	The City's future Zoning By-law review should examine current shared parking categories to determine whether additional land uses and land use categories should be added	Transportation & Works	Planning & Building Department		▪		▪			▪	1. Review the shared parking formula as part of Zoning By-law review and update where necessary.
3.4	It is recommended that the City review current parking occupancy percentages to determine whether the shared parking percentages are appropriate	Transportation & Works	Planning & Building Department		▪						2. Maintain inventory of parking occupancy rates conducted through regular surveys and conduct analysis.
	**Transportation & Works to assume the lead for this recommendation should the Parking Planning function be transferred from Planning and Building*										

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Bicycle Parking Recommendations										
3.5	The current Zoning By-law should be updated to include bicycle parking requirements determined by the 2018 Cycling Master Plan and Mississauga TDM Strategy and Implementation Plan to ensure they are mandatory for all future development.	Transportation & Works	Planning & Building Department		▪						1. Coordinate the recommendations of the TDM study with the Zoning By-Law review to set appropriate bicycle parking rates.
	Payment-in-Lieu of Parking Recommendations										
3.6	It is recommended that the City conduct a review of the PIL program	Planning & Building Department*	Municipal Parking Group, Corporate Services (Realty Services)	▪	▪						1. Complete a PIL Policy Review and Report to Council
3.7	It is recommended that the City continue considering applications not meeting the Zoning By-law requirements to be candidates for a contribution to the PIL program	Planning & Building Department	Transportation & Works; Community Services and Corporate Services	▪	▪						2. Complete a PIL Policy Review and Report to Council
3.8	It is recommended that the City review the PIL program to address the following: a. Find an appropriate methodology to address land value in consultation with Corporate Services Incorporate current benchmark costs for surface, structure, and below ground parking facilities including concrete and pre-fab construction options and applied City wide.	Planning & Building Department*	Transportation & Works and Corporate Services (Realty Services)		▪		▪			▪	3. Complete a PIL Policy Review and Report to Council
3.9	It is recommended that the City conduct a review to determine the impact of expanding the PIL program to include residential uses, in coordination with other aspects of the parking system.	Transportation & Works	Planning & Building Department		▪		▪			▪	4. Complete a PIL Policy Review and Report to Council
3.10	The City's should conduct regular updates of parking fees to incorporate current construction costs and land costs.	Transportation & Works	Corporate Services (Realty Services)	▪	▪		▪			▪	5. City staff should review PIL fees in less than five-year periods.
3.11	The City's PIL program should be is administered and managed by the Municipal Parking group in consultation with the Planning & Building Department	Transportation & Works	Planning & Building Department		▪		▪			▪	6. The administration of the PIL Program should be specified during the reorganization of the Parking Unit.
	**Transportation & Works to assume the lead for this recommendation should the Parking Planning function be transferred from Planning and Building*										

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Chapter 4 | Parking Facilities										
	On-Street Parking Time Restriction Recommendations										
4.1	It is recommended that the City continue to allow on-street parking between 8 am and midnight beyond the 5-hour limit on all Statutory Holidays	Transportation & Works		▪				▪		▪	1. City Parking should clearly outline On-street parking regulations within the City and this should be communicated to residents and business. 2. Where necessary update relevant on-street parking regulations.
	Lower Driveway Boulevard Parking Recommendations										
4.2	It is recommended that the City continue to offer LDBP but without the need for a resident's petition. LDBP can help to alleviate the shortages of residential parking in some areas	Transportation & Works		▪			▪		▪		1. Council decision is required on proposed changes to LDBP policy 2. Communicated to residents any change in the City's current LDBP policy
4.3	It is recommended that the City develop a communications campaign to explain LDBP and the expectations on residents to park properly	Transportation & Works	Planning & Building Department and Corporate Services	▪				▪		▪	3. City conduct a communication campaign to educate residents on LDBP and other On-Street parking policies, regulations especially changes to current policy. 4. The communication should be multi-lingual and include numerous forums.
	On-Street Parking Permits Recommendations										
4.4	It is recommended that the City develop a digital on-street parking permit program (for processing, operating and enforcing the program)	Transportation & Works	Planning & Building Department		▪		▪		▪		1. Council decision is required on proposed Replacement of all City issued parking permits with a comprehensive digital permit system 2. City to initiate a study to determine the various parking permits to be offered for on-street parking. The study should also determine candidate streets and if fee should be charged for on-street parking and if so how much 3. The study should also determine how the parking permit program should be administered
4.5	It is recommended that the City replace the various parking permits currently available by implementing a comprehensive digital parking permit system for residents and businesses	Transportation & Works	Planning & Building Department		▪		▪		▪		
4.6	It is recommended that the City undertake further study and review to specify the most appropriate types of permit to adopt	Transportation & Works	Planning & Building Department		▪		▪		▪		
4.7	It is recommended that the City implement an on-street overnight parking program in residential areas to work in alignment with the review of the Zoning By-law requirements and the potential reductions in certain precincts.	Transportation & Works	Planning & Building Department		▪		▪		▪		

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Paid On-Street Parking Recommendations										
4.8	It is recommended that the City continue to monitor on-street parking occupancy in Precincts One, Two and Three (specifically Port Credit, the Downtown, Streetsville, Clarkson, and Cooksville)	Transportation & Works			▪		▪		▪		1. Maintain inventory of parking occupancy rates conducted through regular surveys and conduct analysis to determine trend and changes in the various Precincts. 2. Using the trend data adjust parking fees within each Precinct to achieve desired/optimum parking demand and turnover per parking space. 3. Communicate change in parking fees to the public in a variety of forum and indicate why the change
4.9	To improve the management of parking demand and to encourage turnover in areas that charge for parking, the City should increase parking fees when parking occupancy exceeds 85% during peak hours in these areas. See Best Practices review for this study	Transportation & Works			▪		▪		▪		
4.10	To improve the management of parking demand and to encourage turnover in areas that do not charge for parking, the City should consider introduce a parking fees when parking occupancy exceeds 50%during peak hours	Transportation & Works			▪		▪		▪		
	Curbside Management Recommendations										
4.11	It is recommended that the City consider a Curbside Management Study to: a. Frame the discussion regarding on-street parking. b. Determine appropriate locations. c. Determine curbside priorities for each proposed	Transportation & Works	Planning & Building Department		▪						1. The City to initiate a curbside management study after key policy decisions are made about Precinct approach to parking, on-street parking and LDBP.
4.12	Where appropriate, and subject to coordination with other City Departments, the Municipal Parking Section should identify and or approve locations where on-street pick-up and drop-off areas are permitted	Transportation & Works Planning & Building Department			▪		▪		▪		
4.13	Loading regulation should be reviewed in conjunction with parking regulations as part of the zoning by-law review.	Planning & Building Department	Transportation & Works Corporate Services		▪			▪		▪	

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Off-Street Parking Lots Recommendations										
4.14	It is recommended that the City develop a parking demand forecasting model that can be used on an ongoing basis for all of Precinct One and Precinct Two. The model should incorporate the following data: a. Existing parking utilization b. Development applications c. Area Master Plans d. Long-term population and employment forecasts	Transportation & Works			▪		▪		▪		1. The City initiate a study to develop a parking demand model to assist in forecasting parking needs (demand and supply) for each Precincts, but Precincts one and Two should be the priority. 2. The data used in the model should be updated on a frequent basis and should reflect proposed, planned and approved developments. 3. The model should be updated and frequently (not more than 2 years). 4. The results should be reviewed with policy directions, utilization rates, parking rates and decisions make about parking supply, public versus private parking supply, land purchase, and partnership agreements.
4.15	It is recommended that the City review the feasibility of removing overnight parking prohibitions at all its off-street parking facilities, and should determine the capital and or operational changes required to implement the change.	Transportation & Works	Planning & Building Department		▪		▪		▪		5. City initiated On-street Parking permit study should also review overnight parking at City owned/operated off-street parking facilities, 6. The review should address the advantages and disadvantages and how any change to On-street parking permits my alter the need or demand for off-street overnight parking facilities.
4.16	The City's Municipal Parking unit should work with other City business units, such as Parks and Forestry and MiWay Transitway, to align long-term plans for parking expansion and to find opportunities for shared public parking.	Transportation & Works; and Community Services	Planning & Building Department Corporate Services		▪		▪		▪		7. City staff develop criteria and conditions in which the shared parking arrangements can be achieved with various municipal partners.
4.17	It is recommended that the City consider opportunities to partner with the private sector where appropriate and beneficial for providing parking for developing shared parking arrangements	Transportation & Works			▪			▪		▪	8. City staff develop criteria and conditions in which the City will consider partners with the private sector to provide parking. 9. A cost-benefit and risk assessment should be conducted to determine the merit of each potential partnership.
4.18	The City's Zoning By-law review should consider the role and policies of the City's Downtown CIP and how the CIP will work with the City's PIL policy	Planning & Building Department*	Transportation & Works Corporate Services		▪			▪		▪	10. The Zoning By-law study should review current policies and practices related to the CIP program and determine if changes are required, pending Council's decision on the Proposed Parking Precincts approach and any changes to current parking standards resulting from the Zoning By-law review.
4.19	The Zoning By-law Review should recommend any CIP or PIL modifications required to ensure that the CIP and PIL complement the Precinct approach.	Planning & Building Department*	Transportation & Works		▪		▪		▪		

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Parking Lot Design Recommendations										
4.20	It is recommended that the City develop safety standards and best practices for pedestrian and bicycle safety in parking facilities	Municipal Parking, Transportation & Works	Planning & Building Department		▪		▪			▪	1. It is recommended that the City prepare Design Guidelines or Standard for the construction of new Parking facilities (surface, above ground, below ground).
	Chapter 5 | Governance										
	Parking Division Recommendations										
5.1	It is recommended that the City adopt a vertically integrated organizational model that includes a Parking Division.	Transportation & Works	Human Resources	▪			▪		▪		1. Obtain approval from Leadership Team (LT).
5.2	It is recommended that the City approve and support the new governance model of establishing a new Parking Division within the Transportation & Works Department	Transportation & Works	Human Resources	▪			▪		▪		2. Obtain approval from Leadership Team (LT).
	Private Sector Recommendations										
5.3	It is recommended that the City continue to support joint ventures and partnerships with private sector companies to optimize the use of land and infrastructure and meet public needs for parking spaces in the most appropriate way	Transportation & Works	Planning & Building Department	▪				▪		▪	1. When opportunities arise for joint ventures and partnerships, City should be proactive in pursuing them.
	Committee of Adjustment Recommendations										
5.4	It is recommended that the City Council and applicable standing committees of Council continue to be the decision-making body associated with parking policies including, for example, fee setting, expansion of parking facilities, joint ventures with the private sector, new technologies, and integrating TDM with parking and other policy issues	Transportation & Works	Planning & Building Department	▪			▪		▪		1. No further action.

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Chapter 6 | Finance										
	Future Funding Options Recommendations										
6.1	It is recommended that as the City's paid parking market matures, the City undertake an analysis of the benefits and costs of reducing the daily and monthly parking discount and align its parking passes with surrounding commercial monthly parking fees	Transportation & Works	Finance		▪		▪			▪	1. Set geographically priority areas for monthly parking fees.
6.2	It is recommended that the City increases its parking fees at regular intervals to keep pace with inflation	Transportation & Works	Finance	▪				▪		▪	2. Review parking fees annually, as done currently.
6.3	It is recommended that over the long-term, the City's fee-setting strategy should evolve to meet specific parking utilization objectives. The strategy could include setting parking fees that vary by location, time of day, and special event type	Transportation & Works	Finance		▪		▪		▪		3. Perform in conjunction with annual parking data collection and planning process.
6.4	It is recommended that the City supports its April 2018 TDM Strategy pricing parking measure by setting monthly parking fees higher than the MiWay adult monthly transit pass fee	Transportation & Works	Finance	▪			▪		▪		4. Perform in conjunction with review of parking fees annually.
6.5	It is recommended that the City establish a formal Corporate Policy for financing and funding Municipal Parking operations. The policy should adhere to the following: a. Revenue-generating parking activities should be funded through parking revenues (separate cost centre) b. Non-revenue parking activities should be funded by the property tax base (separate cost centre) Municipal Parking fees should reflect market conditions (supply and demand)	Finance	Transportation & Works	▪			▪		▪		5. Begin once the new Parking Division is approved and form a small working group of Finance and T&W staff.
6.6	It is recommended that the City's annual parking ticket revenue should be used to cover all costs of enforcement including parking ticket processing. Any surplus revenue should be placed into the reserve account to pay for new capital projects	Finance	Transportation & Works	▪			▪		▪		6. Commence once the new Parking Division is approved and staffed.
6.7	It is recommended that the City undertake an analysis to determine the benefits and costs of implementing dynamic or escalating on-street pricing in each precinct	Transportation & Works	Finance		▪		▪		▪		7. This may require a City "project charter" as there will be a significant amount of research and financial modelling required.
6.8	The existing six geographically-delineated parking reserve accounts are merged into one capital reserve account	Finance	Transportation & Works	▪			▪		▪		8. Finance should undertake this task in parallel with the other tasks associated with the new Parking Division.

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Cost of New Parking Recommendation										
6.9	It is recommended that a formalized process for determining the business case associated with any parking capital project be adopted	Transportation & Works	Finance	▪				▪	▪		1. This will be triggered when it's determined that new parking facilities are required. 2. The new Business Development section within the new Parking Division should develop guidelines and a process for undertaking business case analysis.
	GO Parking Recommendation										
6.10	It is recommended that the City work with Metrolinx to develop a strategy to reduce all-day free parking at GO Transit rail and bus stations	Transportation & Works	Planning & Building Department	▪			▪		▪		1. Commence immediately after new Parking Division staffed as high parking demand and low supply at GO Stations is a current and growing problem. 2. Develop a discussion paper on clearly defining the problems and alternative solutions before approaching Metrolinx.
	Special Considerations Recommendations										
6.11	It is recommended that the City develop a strategy to accurately account for lost revenue where special considerations are given in paid parking locations	Transportation & Works	Finance, Culture		▪		▪		▪		1. Determine best method of tracking and criteria for assessing considerations and their financial impact.
	Chapter 7 | Technology & Innovation /										
	Payment Methods Recommendations										
7.1	It is recommended that the City undertake a business case analysis to determine the feasibility and benefits of upgrading its Pay and Display machines and enforcement technology to a PBLP system	Transportation & Works			▪			▪		▪	1. City Staff should prepare a phasing plan to address changes in parking payment methods. Appropriate funds should be allocated to the changes subject the findings of the business case analysis. The Plan should be reviewed and updated annually. 2. Obtain 3 price quotations from reputable vendors on POF for City Hall parking garage as a starting point 3. Include all parking equipment and wayfinding signage as part of the capital cost of any new parking facility planned. 4. Develop functional specifications for POF functional specifications are what the system should perform, NOT telling manufacturers how to build the system. 5. Part of the functional specifications noted above.
7.2	It is recommended that the City consider a Pay-On-Foot system possibly combined with LPR technology at locations that require additional parking controls. Depending on circumstances, POF may offer a better solution than Pay and Display and or PBLP	Transportation & Works			▪			▪		▪	
7.3	It is recommended that the City consider POF for any new parking structures planned for the Downtown Core	Transportation & Works			▪			▪		▪	
7.4	It is recommended that the City consider converting the City Hall parking garage from Pay and Display machines to a POF system	Transportation & Works			▪			▪		▪	
7.5	When installing POF systems, the City should consider systems with the latest technologies available including access control for monthly parking permit holders and property management staff proximity cards, wireless transponders, and mobility phones	Transportation & Works			▪			▪		▪	

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
7.6	It is recommended that the City offer the convenience of Pay-By-Phone at all the City's on-street and off-street parking facilities	Transportation & Works			▪			▪		▪	6. The business case would include research and site visits to actual LPR installations and the development of functional specifications. 7. Develop specifications for inclusion in an RFP to acquire and implement Pay-By-Phone. Examine the benefits and costs of absorbing the convenience fee. 8. Same as above and part of next recommendation for using smartphone for monthly permit payment. 9. This would be the 2nd phase of implementing Pay-by-Phone. 10. Develop the process and specifications for implementing Pay-by-Online permit.
7.7	It is recommended that the City use a phased approach to introduce Pay-By-Phone	Transportation & Works			▪			▪	▪		
	Data Collection & Management Recommendations										
7.8	The City's Municipal Parking organization should develop an annual parking data collection program and create a comprehensive database of City-provided parking supply and utilization. The data collected should be openly available online.	Transportation & Works		▪	▪		▪			▪	1. Implement a comprehensive data collection system that is frequently updated and analyze for trends and changes in parking demand, utilization, violations 2. It is recommended that the City conduct regular customer satisfaction surveys (annual or bi-annual) to understand and address customers' experience and possible issues with parking facilities and services. The surveys should be short and user-friendly and should be advertised at parking facilities and other key City locations where customers could obtain survey cards and be directed to the City's and social media 3. The survey results should be summarized and posted on the City's website. The website should include information about action taken to address issues and trends identified
7.9	It is recommended that the City consolidate existing data files regarding privately-owned parking and add information at key locations of interest across the municipality (For example at Intensification Areas).	Transportation & Works		▪			▪			▪	
7.10	Future data collection and storage methods for parking enforcement should link infraction and infraction location data, and the data should be mapped.	Transportation & Works			▪		▪		▪		

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Digital Signage and Wayfinding Recommendations										
7.11	It is recommended that the City consider implementing a parking guidance system in locations such as Precinct 1 where there are large municipal parking facilities and large private parking facilities. The system should combine digital variable message signs and wayfinding signs to direct drivers to available parking	Transportation & Works	Planning & Building Department Corporate Services		▪		▪		▪		1. City staff should prepare a business case analysis for implementing a parking guidance system. 2. City Staff should prepare a phasing plan to implement the guidance system subject to the business plan and appropriate funds should be allocated annually. 3. The Plan should be reviewed and updated annually. 4. It is recommended that the City regularly: a. Review the geographical areas where a parking guidance system is implemented b. Assess the parking guidance technology available and consider advances in technology and best practices
7.12	The signs should be placed at Precinct entry points, key decision-making points within the Precinct, and access points to each parking facility	Transportation & Works	Planning & Building Department		▪		▪		▪		
7.13	Wayfinding signs should be provided for parking locations where real-time information is unavailable	Transportation & Works	Planning & Building Department Corporate Services		▪		▪			▪	
7.14	All City parking guidance technology in all parking facilities should be compatible to ease integration into the City's information system	Transportation & Works	Planning & Building Department Corporate Services		▪		▪		▪		
7.15	The parking guidance system should include a website with an associated app that makes parking availability and pricing data available to customers	Transportation & Works	Planning & Building Department Corporate Services		▪		▪		▪		
7.16	It is recommended that the City promote the use of the online tools, particularly during peak demand periods such as special events. The web-based tools may be developed by the City or through a private partnership	Transportation & Works	Planning & Building Department		▪			▪		▪	
	Peer-To-Peer Parking Sharing Recommendations										
7.17	It is recommended that the City initiate a "Share Your Parking" program to encourage shared parking opportunities between private parties.	Transportation & Works	Planning & Building Department Corporate Services		▪		▪		▪		The program could: 1. Facilitate private lease arrangements for shared off-site parking in existing and future parking facilities. 2. Coordinate between public and private parking providers, places of worship, BIAs, businesses, and the City to prepare agreements among parties to better use existing parking facilities. 3. Remove or minimize administrative barriers to allow off-site shared parking. 4. Identify a simple one-page set of criteria and conditions for permitting shared parking arrangements. If an application meets the conditions, the application should not be required to go to the Committee of Adjustment. 5. Add elements to the City's Urban Design Guidelines to facilitate shared parking including shared access between or among sites.
7.18	It is recommended that the City prohibit the practice of profiting from renting out public parking.	Transportation & Works			▪		▪				

Exhibit 8-1 Implementation Plan (Continued)

Section	Recommendation	Lead	Support	Timeline			Policy Changes		Process Changes		Actions/Next Steps
				S (<2yrs)	M (2-5 yrs)	L (+5yrs)	Yes	No	Yes	No	
	Connected Automated Vehicles Recommendations										
7.19	It is recommended that the City note the uncertain implications of CAVs and the uncertain timeline for CAV adoption	Planning & Building Department Transportation & Works	Corporate Services		▪	▪	▪		▪		1. City staff to monitor advances in technology and changes in industry stand, Provincial and Federal change in policies that would impact parking or parking related requirements. 2. It is recommended that the City: a. As part of the Transportation Master Plan process, consider the potential role of CAVs in relation to the City's long-term transportation objectives. b. Outline the potential contribution of CAVs to long-term City goals. c. Keep up to date with CAV developments. d. Develop plans and policies that are flexible and easily updated to be compatible with emerging CAV technologies. e. Encourage open data sharing to improve decision-making. f. Through the site plan approvals process, consider future demand for Drop-off and Pick-up facilities for CAVs and potential changes in on-site parking needs. g. Conduct annual reviews to ensure that the City's policies are in line with evolving trends in CAV technology and applications.
7.20	It is recommended that the City consider the possible implications of CAVs for future parking facilities and should design new parking facilities to take possible future changes in technology into account.	Planning & Building Department Transportation & Works			▪	▪	▪		▪		
	Smart Parking Recommendations										
7.21	When selecting and implementing Smart Parking technology and equipment, the City should consider and prioritize: – Flexibility to ensure that new technologies can be incorporated – Integration of parking data into a centralized system that can provide: ○ information to parking customers ○ information to decision makers and parking managers	Transportation & Works		▪	▪		▪			▪	1. It is recommended that the City continue to work and partner with key private and public-sector stakeholders (developers, parking providers, transit operators, businesses, etc).
	Implementation Plan and Monitoring Strategies Recommendations										
7.22	To support implementation of the Parking Master Plan the comprehensive implementation plan that has been prepared should be monitored using a Monitoring Strategy.	Transportation & Works	Planning & Building Corporate Services	▪	▪		▪		▪		1. As the City proceeds with the implementation of the Parking Master Plan, detailed monitoring Strategies or Plan can be developed for each of the six areas of recommendation

8.2 Monitoring Strategy

It is critical to understand the progress and status of the implementation plan in a meaningful way. It is also important to establish a greater understanding of how the parking within the City of Mississauga is being managed and is functioning.

Monitoring and managing the function of parking in Mississauga can be achieved by asking the following questions among others:

- Is the desired outcome been achieved?
- Are the objectives of the Master Plan been met?
- Should alternate actions be taken?

To facilitate the tracking of progress, a Monitoring Program should be prepared for the City of Mississauga. The program identifies various tools and strategies the City can use to assist in the effective and efficient implementation of the plan.

As the City proceeds with the implementation of the Parking Master Plan, detailed monitoring Strategies or Plan can be developed for each of the six areas of recommendation. Each plan could include potential performance indicators, measures, targets, data collection, frequency, responsibility, and budget. Exhibit 8-2, Exhibit 8-3, and Exhibit 8-4 shows specific examples of individual Monitoring Plans that can be developed.

Exhibit 8-2 Data Collection Framework - Parking Demand Rates

Item	Parking Requirement
Performance Measure	Residential Parking Demand
Baseline Measure	1.00/Unit
Performance Target	0.80
Data Collection	Parking Utilization Surveys
Responsibility	Parking Division-Coordinator
Frequency	Annually
Precinct	1

Exhibit 8-3 Travel and Parking Trends Data

Indicators	Performance Measure	Baseline Measurement	Source
Local Transit Mode Split	Mode share of trips during peak periods	Base year ridership data (2016)	MiWay TTS Census data
Walking and Cycling	Mode share of trips during peak periods	Base year Walking/Cycle data (2016)	TTS Census data
Area Parking Utilization Rate	Occupied number of parking spaces	Base year Survey data (2016)	City surveys
Vehicle Ownership	Number of cars per household	Base year Vehicle Ownership (2016)	TTS Census data

Exhibit 8-4 Precinct Policy Change Tracking

Policy Change	Policy Documents to be changed	Target Date	Required Process	Responsibility	Status
Parking Vision					
Precinct Creation					
Precinct Boundary Areas					
Parking Management Principles					

The monitoring plan can be used to track the implementation of the parking master plan by tracking trends in parking behaviours, parking demand and supply for each Precinct area on an annual or bi-annual basis.

A progress and status review of the master plan should be completed on an annual basis. The City's parking coordinator should be responsible for the monitoring and tracking of the parking master plan and will provide an update to senior management and or Council on an annual basis to document work completed and to identify potential revisions or amendments.

List of Appendices