CITY OF BRAMPTON
COMPREHENSIVE ZONING BY-LAW REVIEW

Technical Paper #9
Parking and Loading Standards Review

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Table of Contents

List of Figures ..... **iv**
List of Tables ..... **iv**
1 Introduction and Context **1**
1.1 Background 1
1.2 Purpose of this Technical Paper 1
1.3 Overview of this Technical Paper 2
2 Local, Regional and Provincial Policy Context **3**
2.1 Parking as a Planning Tool: Supply and Demand 3
2.1.1 Parking and loading as a site access consideration in the ZBL 3
2.1.2 Planning for supply 3
2.1.3 Understanding parking demand 4
2.2 Parking and the Value of Land 5
2.3 The Need to Update Parking Standards 5
2.4 Criteria used to review parking standards 5
2.5 Policy Considerations 6
2.5.1 2041 Regional Transportation Plan (2017) 6
2.5.2 Ontario Climate Change Action Plan (2016) 6
2.5.3 Brampton Official Plan (2006) 7
2.5.4 Transportation Master Plan 7
2.6 Secondary Plans 8
2.6.1 SPA 7 Downtown Brampton 8
2.6.2 SPA 36 - Queen St Corridor 8
2.6.3 SPA 37 - Airport Rd/Highway 7 Business Centre 9
2.6.4 SPA 55 - Hurontario-Main Corridor 9
2.6.5 SPA 54 - Kennedy Road South 9
2.7 City Feedback 9
2.8 Summary 10
3 Key Components of the Existing ZBL and Associated Parking Standards **11**
3.1 ZBL Structure 11
3.2 Form 11
3.3 Location 11
3.4 Quantity of Parking 12

3.5 Summary 15
4 Practical ZBL Considerations and Modern Parking Management Options 16
4.1 Definition of Parking Management 16
4.2 Vision, Goals and Objectives 16
4.3 Techniques and Examples 17
4.3.1 Reductions in Minimum Parking Requirements in Proximity to Transit, Edmonton, AB 17
4.3.2 Abolition of Minimum Parking Requirements, Buffalo, NY, USA 18
4.3.3 Unbundled Combined Residential and Commercial Parking, Seestadt, Vienna, Austria 18
4.3.4 'Rightsizing' Minimum Parking Requirements, Victoria, BC 19
5 Recommended Approach to Developing New Parking Standards 21
5.1 Issues 22
5.2 Opportunities 23
5.3 Reform Directions 23
6 Next Steps 26

List of Figures

Figure 1 – Comparison of Minimum Parking Requirements in GTHA Municipalities, 2017 (Office and Retail) 13
Figure 2 – Comparison of Minimum Parking Requirements in GTHA Municipalities, 2017 (Industrial and Apartments) 14
Figure 3 – Example of a Parking Vision (Barter, 2017). 16
Figure 4 – Unified Development Ordinance (Buffalo, NY) 18
Figure 5 – Six Garage Park Once Parking Concept in Seestadt, Vienna, Austria 19
Figure 6 – Proposed Geographic Areas for Right-Sized Statutory Parking in Victoria 20
Figure 7 – The role of parking in accessibility 201

List of Tables

Table 1 - Summary of arguments for and against minimum parking requirements 4
Table 2 - Emerging Trends in Parking and summary of GTHA municipalities' adoption of trends, as of late 2017 15
Table 3 - Different Accessible Parking Requirements for Different GTHA Cities and in the Americans with Disabilities Act 15

1 Introduction and Context

The context for this Technical Paper is the Comprehensive Zoning By-law 270-2004 Review project ("the ZBL Review") currently being undertaken by WSP in partnership with the City of Brampton ("the City"). The ZBL Review includes a technical analysis of existing parking and loading standards, referred hereafter as the 'Technical Paper'.

This Technical Paper is concerned with examining and responding to the range of parking and loading issues that have been identified are currently regulated by the ZBL. This Paper identifies opportunities to improve existing regulations and puts forward recommendations to advance the land use and transportation policies of the Official Plan and facilitate economic development.

1.1 Background

The Zoning Issues and Analysis Report (WSP, August 2017) provides the planning policy background for the Parking Standards Review. This Report proposed both a research methodology and relevant zoning principles to be considered as part of the ZBL Review. It outlined key planning and land use zoning issues in major land use areas (residential, mixed use, employment and intensification areas, etc.) and opportunities for improvement.

To do this, the Report examined a number of zoning by-law reviews that have recently been completed as well as a number of ongoing zoning by-law reviews in other municipalities that can help provide a reference for contemporary research and best practice. Affordable housing, natural and cultural heritage and urban design issues are also considered relevant. Of particular significance is the fact that many of these issues trigger a wide range of parking considerations.

Furthermore, the Report identified a roadmap for the ZBL Review and an indicative timeline for the project. The outcome of Phase 1-1 ('Project Initiation') included options for up to 17 individual Technical Papers. The Report suggested that parking and loading standards be reviewed and considered as part of Phase 1-2 of the ZBL Review.

1.2 Purpose of this Technical Paper

The purpose of this Technical Paper is:

1. To review the existing parking and loading standards against relevant city, regional and provincial policies
2. To provide a benchmark so Brampton can compare its current approach to parking standards against other GTHA municipalities and other equivalent jurisdictions
3. To identify transportation issues such as emerging technologies and trends with the potential to influence the demand for parking and explore how alternative approaches to conventional parking standards, such as *parking management*, might be adopted to help assist with responding to these trends.
4. To put forward a course of action to respond to the trends identified, including select recommendations concerning the approach that will be taken to drafting the new parking standards

The term 'parking standards' has been used throughout this paper as a term that collectively refers to all existing City by-laws that have the effect of regulating the **physical form**, **location** (siting on a lot) and **quantity** of parking as permitted under the *Planning Act*. This not only includes the existing statutory provisions of the ZBL, but also the 40 Secondary Plans currently in force and were recently consolidated. Further consolidation in planned in 2019.

A select number of Secondary Plans were reviewed to establish the general nature and intent of parking standards as they appear in existing Secondary Plans.

As the *Planning Act* is primarily concerned with the regulation of land use and not transportation rights of way *per se*, the scope of this paper is largely confined to a review of legislative mechanisms to regulate off-street parking on private lands. While on-street parking is out of the scope of this paper, it is nonetheless identified as a critical component of an effective, coordinated and integrated approach to parking in Brampton. This approach is commonly referred to as **parking management** and is explored further in section 4.

1.3 Overview of this Technical Paper

This Technical Paper consists of the following sections:

1. Local, Regional and Provincial Policy context (Chapter 2)
2. Key components of the existing ZBL and associated parking standards (Chapter 3)
3. Practical ZBL considerations, including contemporary approaches to parking management and emerging trends (Chapter 4)
4. Recommendations and outlook (Chapter 5)

Chapters 2 and 3 contain short summaries of the key issues reviewed including recommendations for the next stages of the ZBL Review.

2 Local, Regional and Provincial Policy Context

This chapter reviews the underlying drivers of parking supply and demand, how it impacts the value of land, the need for updated standards, the criteria used to review the standards as well as a synthesis of the relevant transportation and land use policy considerations as represented by existing plans and strategies affecting Brampton. The main parking issues as highlighted by City staff are also summarised.

2.1 Parking as a Planning Tool: Supply and Demand

2.1.1 Parking and loading as a site access consideration in the ZBL

As noted in the Zoning Issues and Analysis Report, the ZBL '*is an important planning tool used to specifically regulate land use, lot sizes and dimensions, as well as the location, character and scale of buildings and structures*'. Parking and loading are two key considerations that are implicit in this definition. In order to understand the impacts of parking and loading on land use, it helps to understand the premise for site-based parking standards and their relative pros and cons as a planning tool.

A fundamental aspect of contemporary urban planning and development is to provide adequate access and egress from a site. In the modern era, private motor vehicles provide one of the most convenient and practical means of achieving this, however other access methods including active transportation and other modes of transportation often offer viable alternatives, depending on context. In Ontario, zoning by-laws are the primary statutory mechanism by which other modes can be regulated and mandated, often as an alternative to, or in lieu of conventional vehicle parking. Bicycle parking is one well-known example of this.

Parking and loading are expected to remain two of the most important forms of site-based access considerations in Brampton. They are represented by various standards and requirements that feature prominently in the ZBL.

2.1.2 Planning for supply

All surface-based transportation systems are made up of three components: **vehicles, rights of way** and **storage space**.

Parking concerns the 'storage space' that vehicles occupy when they are not in use. This space can be either on-street (on-street parking) or off-street. Parking standards are used by municipalities to regulate off-street parking supply.

Where the estimated demand for parking at an individual site is considered significant (technically defined as 'parking generation'), municipalities typically use their ZBL as an opportunity to implement parking standards as a method of mandating a certain **supply** of off-street parking at a particular site. The most common approach involves the application and enforcement of 'minimum parking requirements' to require a minimum amount or 'floor' to parking on every site, depending on prevailing zoning and/or intended land use.

This site-based approach has clear benefits, but it also has the consequence of making off-street parking a planning consideration that does not always take into account what is happening or possible at surrounding sites. The practical effect of precise standards is to guarantee supply without necessarily taking the broader effects of parking on the transportation and land use system into account. These impacts can include urban sprawl, environmental pollution, automobile dependency and an inequitable transportation system.

Table 1 is a summary of the main arguments in support of and against minimum parking requirements as noted by Willson (2013):

Table 1 - Summary of arguments for and against minimum parking requirements

For	Against
• Reduce congestion around a site caused by vehicles cruising for parking	• Encourage private vehicle use and lengthen trips
• Avoid parking spillover	• Adversely impact transit ridership and alternative modes
• Anticipate possible intensification of changes in use of a development	• Ignore additional costs of parking compared with potentially lower costs associated with alternative travel modes
• Create 'orderly' development patterns	• Reduce development densities/yields[1]
• Create a 'level' playing field among developers	• Create inhospitable site design
• Encourage growth of core areas by increasing parking supply in those areas	• Make the construction of affordable housing more challenging
• Reduce the need for parking management by making the adjudication of conflicts between property owners unnecessary	• Reduce development and economic activity[2]
• Reduce demands for public provision of parking	• Hamper investment in infill development and adaptive reuse
	• Directly and indirectly harm the environment
	• Disadvantage non-drivers
	• Lower physical activity with consequences for public health
	• Often imprecisely represent actual parking utilisation levels

2.1.3 Understanding parking demand

Another important consideration is a basic understanding of the nature of the **demand for parking.** Parking demand is both *derived* and *spatiotemporal* in nature.

Derived demand means that most of the time, people rarely want or desire a parking space to be able to sit in their vehicles for extended periods of time; instead, the parking space is used as a convenient means by which to access a particular site or location for a different activity or purpose.

This means that demand for parking generates demands *on land use* and *for vehicles*. The decision to cater to this demand comes with an opportunity cost[3]. In this case, this typically means forfeiting opportunities to develop at higher yields or densities. This is because the land that could have been used for this purpose is instead used for parking when parking standards are applied formulaically.

Spatiotemporal means that demand for parking varies by area **by time of day** and **place** as people travel from one destination to another. Historically speaking, zoning by-laws have tended to cater to peak estimated use with little regard for the aforementioned wider cumulative effects of increasing parking supply on a site by site basis. This often leads to situations in which parking demand in a given area experiences peak use for a small portion of the day and is oversupplied for the rest of the day. GO station parking, which typically experiences peak demand on weekday mornings and are often underutilised for the remainder of the day or week, are one example of this.

To summarise: site-based parking approaches that focus on and mandate minimum supply without sufficient regard for demand often come at the expense of viable alternatives such as public parking, shared parking and transit. **For**

[1] A common practice is to determine the amount of land available for building only after the parking generation (demand as represented by the parking requirement as determined either by commercial imperatives or the applicable municipal parking requirements) has been determined

[2] Particularly where cost associated with fulfilling minimum parking requirement causes return on investment to be too low for development to proceed

[3] Opportunity cost is defined by Investopedia as '[the] benefit that a person [or city] could have received, but gave up, to take another course of action'

these reasons, it is recommended that the new parking standards should aim to address this imbalance by better reflecting the underlying drivers of parking demand and move away from the conventional site-based parking supply approach.

2.2 Parking and the Value of Land

In recent years, housing supply and commercial development pressures have been increasingly recognised as an important issue for land use policy and regulation across the Greater Toronto and Hamilton Area (GTHA). Real estate markets in Brampton have experienced pressures as resident populations grow, economic activity and land values increase and the amount of developable land diminishes over time.

The Province of Ontario has also sought to tightly regulate and restrict land uses through the Greenbelt Plan and the introduction of Urban Growth Centres with minimum density targets to encourage higher density living that supports more compact forms of development, including transit-oriented development.

Another important issue is the effect of ubiquitous free parking on transportation and land use patterns. Although the ZBL does not directly regulate the price of parking to the end-user, there is an increasing recognition by all levels of government that parking standards have contributed to the existing supply of off-street parking and that minimum parking standards often represent significant barriers to intensification and redevelopment. The recently released *Regional Transportation Plan* (cf. section 2.4.1) and *The Big Move* (2009) acknowledged this issue and have suggested that new policies are needed to address the previous 'one size fits all' suburban approach.

The above issues have led to a fundamental rethink of how municipalities should regulate parking and loading standards in their ZBL given the large amounts of developable land that have already been dedicated to parking but are progressively being redeveloped for other purposes.

2.3 The Need to Update Parking Standards

The main approach that is explored in this Review is to harmonise the policy intentions of Official Plans with the updated ZBL provisions and suggest ways in which ZBL provisions could become more contemporary and aligned and regional and provincial policies. This is based on the observation in the *Zoning Issues and Analysis* report that a number of existing parking standards are thought to date back to the 1980s. Without reform, there is a risk that the existing parking standards may become anachronistic, or out of date, as new transportation technologies develop and land use and housing typologies change to reflect quickly changing consumer and transportation trends. Depending on the timeline for change and extent of impacts under this scenario, private investment in the City may be affected.

2.4 Criteria used to review parking standards

As identified in the introduction, in order to try and simplify the potentially wide range of issues for consideration as part of this Technical Paper, the parking provisions reviewed here have been classified into three major categories, namely:

1. **Quantity of parking** (the amount of, or required supply).
2. **Location** (in the context of the Zoning By-law, this typically refers to how parking is situated on an individual site); and
3. **Form** (at grade, above grade, sub-grade as well as the dimensions of individual parking spaces and their geometry).

Quantity and location of parking, insofar as they are policy considerations represented by parking standards in Brampton, are explored further in section 3. Section 4 is dedicated to issues of form and comparing Brampton's existing minimum parking requirements with those other municipalities in the GTHA.

2.5 Policy Considerations

2.5.1 2041 Regional Transportation Plan (2017)

The Regional Transportation Plan (RTP) was approved by Metrolinx's board of directors in March 2018. The new RTP supersedes the previous 2009 RTP, *The Big Move.*

Strategy 4 of the RTP is to integrate land use and transportation. One of the specific actions adopted is [to] *'Address parking management in land use planning'.* It notes that responses to previous Big Move recommendations to update municipal parking zoning by-laws have been 'inconsistent' and challenges municipalities to adopt a comprehensive approach to parking management.

To this end, the RTP notes that the *Metrolinx Act* (2006) provides Metrolinx with the ability to release Transportation Planning Policy Statements (TPPS) that would require the alignment of municipal land use planning provisions with the 2041 RTP. Metrolinx contends that the TPPS would provide more specific transportation policy direction than is currently found in the Growth Plan.

Given that parking management (cf. section 4) is a major recommendation foreshadowed in the 2041 RTP, it is therefore considered a policy risk to Brampton if no action is taken to update parking standards that are more contemporary and flexible in their intent and application. A 'do nothing scenario' could result in a situation in the foreseeable future in which the TPPS could require municipalities to update to conform to provincial requirements rather than their own self-determined requirements. It is therefore considered timely that the City embark on reforms to parking standards before other tiers of government may attempt to do so.

To get a sense of what may happen, it is useful to reflect on previous attempts to exert influence in this space. For example, Strategy 7 of The Big Move included an objective to *build communities that are pedestrian, cycling and transit-supportive*. This included the following supportive action policy:

7.13 Municipal parking and zoning by-laws shall be updated to:

- *establish maximum parking requirements;*
- *decrease minimum parking requirements where appropriate;*
- *permit off-site, on-street and shared-parking capacity to be counted towards meeting parking requirements;*
- *provide priority parking for car-sharing; and*
- *give landowners and developers the option of providing alternatives to free on-site parking, such as transit passes, car-sharing memberships, carpooling services, and/or financial contributions towards transit or active transportation infrastructure.*

2.5.2 Ontario Climate Change Action Plan (2016)

In June 2016 the Province released a Climate Change Action Plan with over 90 actions to be implemented over the next 5 years. The Plan is designed to complement Ontario's climate change legislation by ensuring that proceeds from the province's cap and trade program are invested in emission reduction activities in a transparent and accountable way.

Significantly, the Climate Change Action Plan includes a reference to:

"Eliminat[ing] minimum parking requirements […] over the next five years for municipal zoning bylaws, ***especially in transit corridors and other high-density, highly walkable communities****. Minimum parking requirements are a barrier to creating complete, compact and mixed-use communities. Instead, bylaws will encourage bike lanes, larger sidewalks, and enhanced tree canopies*" (**emphasis** added).

As with the RTP, the threat of provincial regulation overruling the ability for municipalities to maintain control over their parking provisions is another policy risk that must be considered in the context of the ZBL Review and its objectives.

2.5.3 Brampton Official Plan (2006)

The Brampton Official Plan sets out a vision for a city that will increasingly include mixed-use, walkable, transit-accessible places where residents live, work, shop and play. Understanding the policy intent of the Official Plan is key to this review, since the new ZBL will be prepared to implement and conform to the Official Plan.

The policy framework for growth to 2031 places emphasis on mixed-use intensification, transit, and a more pedestrian- and cycling-friendly environment. The Sustainable City Structure, outlined in OPA 43, establishes a clear hierarchy of growth centred around the Urban Growth Centre/Central Area, Primary and Secondary Intensification Corridors, and Mobility Hubs and Major Transit Station Areas. Intensification targets and an urban boundary consistent with the population and employment targets of the Growth Plan have also been adopted.

Traffic congestion is proposed to be addressed by encouraging higher densities and mixed-use development on main corridors in an effort to make transit more appealing to a greater number of people and better serve key origins and destinations around the municipality.

Official Plan Amendments (OPAs) 43 and 74 were officially adopted in 2012. These have been aligned to the intensification and transit-oriented development policies of the Provincial Growth Plan and Big Move. It is likely that further amendments will be required once the RTP is officially adopted.

Chapter 4.4 of the Official Plan contains the long-term transportation objectives for Brampton. Chapter 4.4.1 outlines a transportation system plan that places more emphasis on parking management component (see section 4). This includes *'policies to achieve planning (sic) of the location, quantity, and cost of parking to ensure appropriate provision and accessibility of parking areas facilitating efficient functioning of the transportation system in keeping with the transit objectives of the Plan'*.

2.5.4 Transportation Master Plan

The 2015 Transportation Master Plan Update (TMPU) was approved in principle by Council on July 8, 2015. The 2015 TMPU supersedes the 2009 TMP by reviewing and adjusting the underlying assumptions for growth based on new population and employment forecasts, planning directives from the Province and the City's own Strategic Plan and Official Plan.

The TMPU sets out to optimise the role of transit, active transportation and transportation demand management (TDM) to achieve following modal splits in the peak travel periods by the year 2041:

- 16% Brampton Transit;
- 6% active transportation;
- 28% auto passenger; and
- 50% auto driver.

The TMPU adopted ten sustainable transportation principles to help frame the TMPUs policy framework. The plan included the following demand-side recommendations applicable to parking:

In relation to the Official Plan:

Recommendation 5. Develop parking regulations that support TDM programs. This will require a Parking Study to be developed, which should be undertaken within 2 years of the Sustainable Mobility Coordinator being hired.

In relation to TDM in Planning and Development Applications:

Recommendation 5. Reduce parking regulations to maximums and consider minimal or zero parking requirements in areas near transit nodes, as a means of controlling the number of cars in an area.

2.6 Secondary Plans

As noted in the introduction, a select number of secondary plans were reviewed to establish the general nature of existing parking standards in these plans.

2.6.1 SPA 7 Downtown Brampton

The Downtown Brampton Secondary Plan includes a number of provisions that stipulate the location of parking on individual sites. Section 5.2.3.3 that deals with existing proposals for reuse of residential lands on Church St East for instance includes the following requirement *'for residential or commercial parking shall be located in the rear yard only'* (a **location** requirement).

The plan also reinforces the intent of minimum parking requirements in places such as Special Policy Area 1 by noting that *'adequate parking shall be provided on-site, shall be located in the rear yard only and shall be appropriately screened and buffered from adjacent residential properties' (*a **quantity** requirement).

Finally, the plan notes in special policy area 3 that there is a technical requirement to discourage underground parking due to flood risk (cf. 5.6.3.2 xiii) (a **form** requirement).

2.6.2 SPA 36 - Queen St Corridor

The main parking considerations in this SPA can be found in chapter 6.6 ('parking'):

1. '*Less stringent parking standards to facilitate commercial, residential and mixed-use development/ redevelopment within the Secondary Plan Area. This flexible approach is based on the current supply of parking spaces*' (section 6.6.1)
2. Council discretion on exemption from '*commercial and mixed-use developments within the Queen Street Corridor Secondary Plan from on-site parking requirements of the appropriate zoning by-law and/or may enact a comprehensive by-law to establish reduced parking standards across the Secondary Plan Area*'. (cf. section' 6.6.2)
3. Policy endorsement of the Shared parking concept for mixed use development (cf. 6.6.3)
4. Temporary parking that accords with urban form policies (cf. 6.6.4)
5. Off-site parking for business uses in the Central Mixed-Use area where 'the City is provided with adequate evidence that legal agreements and leases are in effect and registered on title for such parking arrangements' (cf. 6.6.5)
6. Policy support for cash in lieu payments 'which cannot economically provide on-site parking as a means of providing financial support to transit and public parking facilities' (cf. 6.6.6)

2.6.3 SPA 37 - Airport Rd/Highway 7 Business Centre

The main parking considerations can be found under sections 3 (land use) and 4 (other special policies).

1. Policy support for shared parking that serve multiple land uses in a business area (cf. 3.2.4)
2. An acknowledgment that '*reduced parking requirements may be warranted for certain development proposals' and an onus on developers 'to demonstrate why parking requirements should be reduced for individual sites 'shall only be considered for zoning approval where a detailed parking demand analysis, for the specific range and type of uses proposed, undertaken by a qualified traffic engineer, has been prepared to the satisfaction of the City.'* (cf. 4.1.1)

2.6.4 SPA 55 - Hurontario-Main Corridor

The Hurontario Main Corridor SPA generally contains policy aspirations to transition to an urban living precinct over time. The following parking standards apply (cf. section 5.9.6):

1. Live/work buildings shall not be required to provide additional parking for the "work" component
2. Parking structures, underground parking and side-street parking are encouraged. Surface parking is discouraged but, if provided, shall be located behind or beside buildings
3. No parking between a building and Hurontario/Main Street or at intersections;
4. Parking structures are discouraged from fronting Hurontario/Main Street and all major cross streets.
5. A requirement for ground floor activation for parking structures
6. Policy support for shared parking facilities and shared vehicle access points by requiring landowners to enter into agreements;
7. The ability to *'use City-owned parking facilities, where provided, may be used to meet parking standards for commercial and other non-residential development, subject to the City's specific parking policies';*
8. A desire to review *'Parking standards along the corridor […] periodically in conjunction with the implementation of higher order transit';* and
9. A requirement for *'all parking structures that front onto a public street should generally have a minimum ground floor height of 4 metres and have retail uses fronting the street."*

2.6.5 SPA 54 - Kennedy Road South

The Kennedy Road South SPA is most notable for the fact that it makes extensive use of Urban Design and Sustainability Guidelines to influence the **form** and **location** of parking on individual sites. This includes guiding principles for the design of surface parking (cf. 5.2.1) and orientation and site layout of commercial areas (cf. 5.2.3).

2.7 City Feedback

Discussions with City staff during the course of the ZBL Review have generated a number of important issues that also warrant further consideration in the subsequent phases of the project. These include:

1. Investigating options for new parking concepts and solutions with respect to live-work uses
2. Configuring and managing parking for various townhouse formats (stacked, back-to-back).
3. A desire to see responsible parking requirements that balance policy aspirations with on the ground realities.

2.8 Summary

In summary, the current range of plans and strategies contain a wide range of parking policies with limited consistency in terms of the scope and type of parking standards required in each of the plans examined.

Instead, it is observed that the ZBL parking standards and Secondary Plans currently act as the de facto policy for regulating off-street parking in Brampton. These parking standards have the practical effect of providing the effective starting point for setting a floor for the **quantity** (as represented by the minimum parking requirements) and – in some limited cases in the Secondary Plans – regulating the **location** (siting of parking on a lot) of parking in Brampton.

To the extent that **form** is currently addressed in existing plans, it is observed that it is the regional and provincial plans that regard surface parking as being undesirable, but ultimately stop short of providing practical solutions for municipalities such as Brampton to substantively consider the workability and suitability of alternatives to minimum parking requirements and the built form that they have helped to create over time.

Within the Secondary Plans examined, there is significant emphasis on enforcing minimum parking requirements to avoid parking spillover risk as noted in Table 1. Many of these considerations appear to be based ostensibly on the commonly cited arguments in favour of minimum parking requirements, however it is likely that this justification is more implied in nature instead of being part of a broader integrated transportation and land use policy that is based on the policy directions outlined in the Official Plan.

The Official Plan's stated intention is to reduce traffic congestion and expand the role of parking policy and transportation demand management to provide safe and affordable alternatives to on-site parking. The Secondary Plans examined contain limited references to the Official Plan or acknowledgment of the known effects of minimum parking requirements as noted in Table 1.

What is notable, however, is that a number of the secondary plans express a broad policy desire to deviate from the default minimum parking requirements. Some SPAs make reference to 'less stringent parking standards', 'exemption(s)', 'policy support for shared parking' and an acknowledgement that reduced parking requirements may be warranted'. The parking standards review presents an opportunity to address the intent of these plans in a revised ZBL.

The Hurontario Main Corridor SPA is perhaps the most significant of the secondary plans reviewed, insofar that it contains provisions to allow for minimum parking requirements to be met off site, to limit the physical dominance of parking structures in the urban form by seeking to activate street space at ground level and also makes references to new parking services such as car sharing, but does not (or perhaps cannot) effectively regulate these aspects of parking at present.

The above examples would suggest that there is an opportunity to address these policy intentions through updates to the existing parking standards and that these would potentially benefit and provide clearer direction to the land use aspirations in Brampton's Secondary Plans and across the municipality more generally.

The next section examines both the above two issues in greater detail and turns to the question of **form** in the existing parking standards.

3 Key Components of the Existing ZBL and Associated Parking Standards

This section examines the key areas of the existing ZBL where parking standards exist and how they are currently structured. It identifies issues that are worthy of further detailed consideration as part of the next phases of the ZBL review. It concludes by summarising the analysis and suggesting a review framework for the issues identified.

3.1 ZBL Structure

The ZBL currently contains both general provisions (sections 1-6) and provisions that apply to specific land use categories (residential, commercial and industrial).

Section 5 is sets out a number of standardised definitions of key terms, including:

LOADING SPACE *shall mean an unobstructed area of land upon the same lot or lots upon which the principle use is located, for use in connection with that principle use, which area is provided for the parking of one motor vehicle while such vehicle is being loaded or unloaded*.

PARKING LOT *shall mean an area at, above or below establishment grade, other than a street, used for the temporary parking, of four (4) or more motor vehicles for a period of not more than twenty-four (24) hours except for an accessory purpose related to a residential purpose, and available for public use whether free, for compensation, or as an accommodation for clients, visitor, customers or residents.*

PARKING SPACE *shall mean an area accessible from a street or a lane for the parking or temporary storage of one motor vehicle but shall not include any part of an aisle and does not include any area used by a motor vehicle manufacturer or motor vehicle sales establishment for the storage of motor vehicles.*

PARKING SPACE, TANDEM *shall mean a parking space, which has access through another parking space*.

The remainder of this chapter is concerned with outlining how the ZBL deals with issues of **form**, **location** and **quantity of parking** as they appear in the ZBL.

3.2 Form

Section 6.17 'Parking Spaces' and 6.20 'Loading Spaces' are designed to regulate the form of off-street parking in the ZBL by regulating basic parking space dimensions and geometry. Section 6.17 defines a standard parking space dimension used for off street spaces as being 2.75m x 6.5m and also makes special accommodations for parallel parking spaces and driveway widths. These are considered standard dimensions for the North American context.

Section 6.20 prescribes minimum loading space dimensions for accommodating trucks and larger vehicles where loading vehicles are contemplated. A minimum vertical clearance of 4.25m is stipulated.

The only other major form considerations concern the requirement for physical separation of drive through facilities from parking areas (section 20.4.1). There are no provisions in the ZBL that prescribe the physical form of parking, such as whether parking spaces should be located at, above or below grade for certain land uses.

3.3 Location

At present, the ZBL contains relatively few provisions that deal with where parking and loading facilities should be located on a lot relative to other structures or site infrastructure. Section 10.6 contains provisions in relation to the parking of trailers on private land. Section 10.9 is one specific instance where driving and parking on required Residential Landscaping areas is not permitted. In other instances, it is not always clear if locating off-street parking on the same lot as the use is desirable, or not.

Some parking standards that prescribe driveway widths also have the practical effect of ensuring that many sites are developed in accordance with particular physical access and egress characteristics. The greater the degree of angle parking, the wider aisle widths are necessary to ensure vehicles can enter and exit parking spaces.

To prevent against excessive driveway paving and impermeable surfaces, provisions are included that prevent driveways exceeding a certain percentage of the width of the lot (Section 10.9.1C(ii) for example for detached dwellings in residential zones).

3.4 Quantity of Parking

The ZBL principally establishes minimum parking space requirements for private motor vehicles. The conventional three step process for defining a minimum parking requirement is as follows:

1. Define the land use
2. Choose the basis for the requirement
3. Specify how many spaces are required per unit of this basis (per gross floor area, per patron, etc.)

At present, the ZBL contains over 50 different minimum parking requirements. Each of the three major land use categories (residential, commercial and industrial) contain a wide variety of minimum parking requirements.

In some cases in Brampton, minimum parking requirements for the same land use differ depending on the prevailing land use zone. Medical offices provide a good illustration of this. Where a medical or dental office is located in a private residence in a residential zone, a minimum of 6 parking spaces per practitioner is required (section 10.9F). When a medical office in located in a shopping centre with a gross leasable floor area of 2000m^2 or less, the applicable minimum parking requirement depends on whether medical offices occupy 10% of gross commercial floor area or not (a different requirement applies to shopping centres with more than 2000m^2). Finally, in commercial zones with premises dedicated to physicians, dentists, or drugless practitioners there is a requirement to provide 1 parking space for each 12 square metres of gross commercial floor area or portion thereof.

The fact that the same land use can be subject to different parking standards and employ a different basis for the requirement (number of practitioners, percentage of commercial floor area vis-à-vis other uses on site and gross floor area) illustrates one of the key shortcomings of minimum parking requirements: the basis for the requirement is not always consistent. These kind of requirements also fail to take into account broader site access considerations such as travel alternatives and their relative costs, shared parking or more sophisticated and modern methods of ascertaining demand for parking through travel surveys or modelling.

To gain a better understanding how Brampton's existing minimum parking requirements compare with that of other GTHA municipalities, the following charts provide a number of useful points of comparison.

Figure 1 – Comparison of Minimum Parking Requirements in GTHA Municipalities, 2017 (Office and Retail)

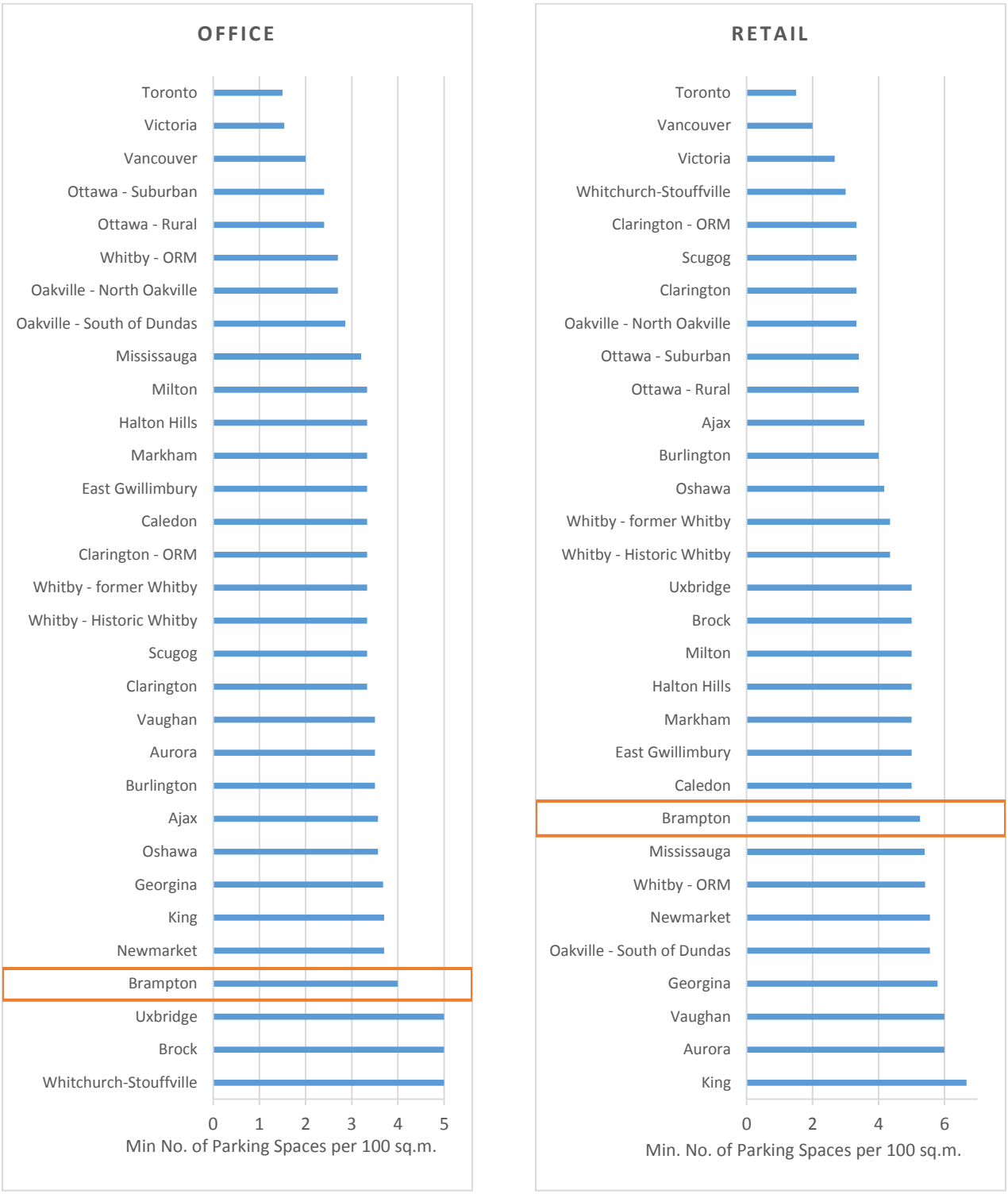


Figure 2 – Comparison of Minimum Parking Requirements in GTHA Municipalities, 2017 (Industrial and Apartments)

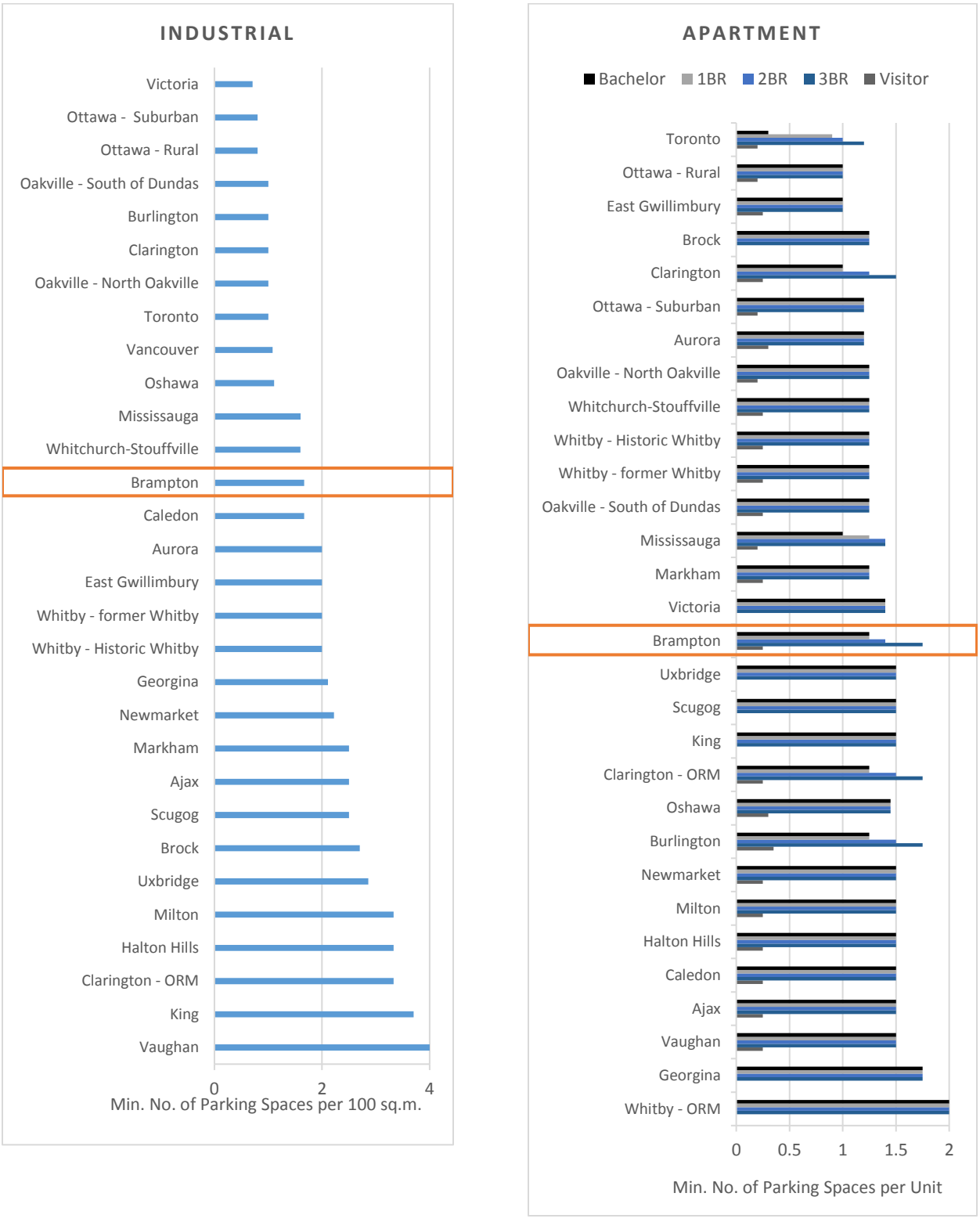


Table 2 - Emerging Trends in Parking and summary of GTHA municipalities' adoption of trends, as of late 2017

LEGEND: 🔴 Municipal policies and/or practices do not align with the trend; 🔵 Municipal policies and/or practices have made progress toward the trend; 🟢 Municipal policies and/or practices have responded to and are implementing steps towards the trend		New Parking Maximums/Minimum	Unbundled Parking	Shared Parking	Electric Vehicle (EV) Parking	Car-share Parking
PEEL	Brampton	🔴	🔴	🟢	🔴	🔴
	Mississauga	🔴	🔴	🟢	🔴	🔴
	Caledon	🔴	🔴	🔴	🔴	🔴
YORK	Vaughan	🔵	🔴	🟢	🔴	🔴
	Markham	🔴	🔴	🟢	🔴	🔴
	Aurora	🔴	🔴	🔴	🔴	🔴
	East Gwillimbury	🔴	🔴	🟢	🔵	🔴
	Georgina	🔴	🔴	🔴	🔴	🔴
	Newmarket	🔴	🔴	🟢	🔴	🔴
	Richmond Hill	🔴	🔴	🟢	🔴	🔴
	Whitchurch-Stouffville	🔴	🔴	🔴	🔴	🔴
	King	🔴	🔴	🔴	🔴	🔴
	Toronto	🔵	🔴	🟢	🔵	🔵
	Hamilton	🔵	🔴	🔴	🔴	🔴
HALTON	Burlington	🟢	🔴	🔴	🔴	🔴
	Halton Hills	🔴	🔴	🔵	🔵	🔴
	Milton	🔴	🔴	🔴	🔴	🔴
	Oakville	🔴	🔴	🔴	🔴	🔴

The minimum parking requirements for office, retail, industrial and apartments show that Brampton's existing requirements tend to be on the high side for office and retail and more towards the middle of the pack for apartments and industrial uses. Based on the information presented here, it is considered that there is scope for revision to existing minimum parking requirements to bring them more in line with other GTHA municipalities.

Another useful point of comparison is a recent study by WSP (2017) concerning Emerging Trends in parking standards in the GTHA. Table 2 provides a summary of the progress of municipalities to adopt new rules and regulations to accommodate the most recent parking trends across the GTHA.

The table demonstrates that that Brampton has yet to make significant inroads in terms of instituting revised minimums or new maximums, unbundling parking from residential development, supporting car-sharing, or electric vehicle parking. Some progress has been made however towards implementing shared parking through By-law 266-06 which allows mixed use developments to share parking in the Central Area.

Given these 'emerging trends' are reflective of broader transportation and land use shifts already underway, there is strong rationale for assessing the viability of accommodating these trends within the revised parking standards as part of the ZBL Review.

3.5 Summary

The results presented here show that zoning is merely one aspect of managing parking in a municipality. There are clearly limitations on the extent to which a municipality such as Brampton can rely on zoning to solve broader auto-oriented behaviour and demand.

Zoning for parking is often found to be inflexible and create challenges, particularly in mixed-use contexts. This is because a developer might design a site for retail, restaurants and other uses, however as site conditions evolve, parking requirement can restrict the ability of the site to adopt to new and expanded uses.

Parking requirements can also create difficulties for city staff in being able to confirm clear and concise parking requirements through the development review process, since specific tenants often aren't known at earlier stages of the development process and the developer wants to be flexible. The results shown here indicate that more flexibility should be pursued in zoning where possible. This includes greater recognition that there are limitations due to the inherent characteristics and limitations of zoning.

The next chapter introduces the parking management concept as an alternative to parking standards and how this works in theory and in practice.

4 Practical ZBL Considerations and Modern Parking Management Options

4.1 Definition of Parking Management

'Parking management' refers to various policies and programs that result in more efficient use of parking resources (Litman 2016). 'Parking resources' can be thought of as the overall amount of land, labour and capital dedicated to parking in all three levels of land use considerations:

1. At site level (i.e. through the application of the ZBL provisions)
2. At a district or area level (in Ontario, the Secondary Plan is generally considered the preferred method of addressing this)
3. At a whole of City or transportation system-level (Official Plan and other policies)

A strategic approach to parking management is designed to bring together existing ZBL parking standards with broader transportation and land use objectives by linking the ZBL to the City's broader policy objectives and integrating parking with the three levels of land use plans.

This approach could be adopted for example with a view to making more efficient use of existing and future parking resources for the benefit of the wider Brampton community.

4.2 Vision, Goals and Objectives

One way of addressing the lack of a common objective for parking in Brampton is to develop a **Vision for Parking**. A **Vision** can be thought of as a mission statement which represents the desired outcomes of an organization for a particular activity that it is involved in.

Such a Vision could form the basis for more comprehensive updates to existing Zoning By-law provisions, in order to align new Official Plan objectives with broader parking management strategies and provincial policy requirements. This is particularly useful for those areas of the municipality that are looking to give extra policy definition to parking matters through their Secondary Plans.

A generic, but useful example of a vision for parking and a number of overarching strategies that support such a vision is shown in Figure 3: Example of a Parking Vision. Each of the objectives outlined in Figure 3 has a role to play in ensuring effective parking management in this "avoiding excess" model.

Figure 3 – Example of a Parking Vision (Barter, 2017).

Avoiding the promotion of parking supply (associated with the above Vision) should not be equated with a blunt cap or blanket restriction on parking. Instead, it involves a recognition that in some locations where space is at a premium and especially where transportation alternatives exist, it may be better for the City to rely on other statutory or policy mechanisms to ensure a healthy balance between supply and demand for parking. Rather than default a one-size-fits-all, site-based minimum parking requirement that promotes parking supply, other objectives need to be explored to try and solve parking issues.

It is considered that integrating the land use aspirations of the revised secondary plans into any ZBL parking standards will go a long way to achieving a Vision of limiting excess supply. It contains an explicit acknowledgment by the City that departures from the status quo are not only warranted, but in many cases desirable, for the sake of giving statutory effect to realising the

Official Plan goals and meeting regional and provincial policy objectives. However, it would also need to be met with a recognition by the City that strong city policy and effective regulation through by-laws still remains necessary to ensure 'parking success' (as noted in the Vision).

In this case, instead of relying on minimum parking requirements as the default starting position for planning considerations at a site and zoning/district level, a Vision could be used to develop both the relevant policies and by-laws concerning the desired location, form and quantity of parking for a given district or area. Parking management strategies noted in Figure 3, such as park once districts, efficient pricing and greater recognition of the value of parking to local stakeholders could be formally adopted to integrate the vision into updates to the Official Plan and this could provide the basis for an effective policy linkage between the Official Plan and updates to the ZBL parking standards.

A practical example of a parking vision objective in action is a 'parking benefit district' that invests the proceeds of parking into localised services such as street beautification and urban realm projects. This would be predicated however on a certain level of City jurisdiction over both off- and on-street parking and mechanisms to ensure fees are consistent and all funds collected are declared and spent in accordance with this approach.

Equally, it is important to recognise approaches to implementing the vision will likely vary based on geographic context. The application of the Vision will differ in the residential context, but the principles and considerations remain the same: aim for parking success without excess by varying the underlying strategies. By-law changes can be tailored to context, including more detailed considerations for visitor parking and other shared parking concepts.

4.3 Techniques and Examples

A number of case studies of parking management challenges and solutions are provided below.

4.3.1 Reductions in Minimum Parking Requirements in Proximity to Transit, Edmonton, AB

In 2010, Edmonton reviewed its by-laws with the objective of reducing parking requirements by 20-30% and introducing maximum requirements in proximity to LRT and other transit corridors. This was subsequently implemented in 2011 as it was considered these requirements overprovided parking in locations with good alternatives and imposed unnecessary costs on residential development and households.

In 2017, another review is taking place that is intended to, "*Evaluate the assumptions behind the existing parking ratios, and bring those assumptions in line with the Municipal Development Plan (MDP) and TMP, as appropriate*." The stated objective is:

"Prevent new, non-accessory surface parking lots; achieve a 20-per-cent reduction in parking requirements throughout the entire downtown area; implement zero parking minimum within the Urban Warehouse zone on a test-pilot basis; and promote the addition of car-sharing parking opportunities throughout the downtown area."

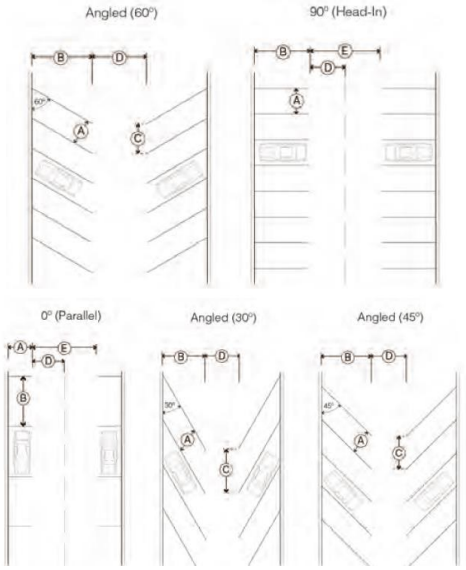
This parking management approach is an example of the 'stop promoting parking supply' objective in action and could be used to give practical effect to the Hurontario Main Corridor SPA aspiration of merely '*not requiring additional parking for the work component*' [of an individual's site use] to a broader corridor planning aspiration that would apply along the entire corridor, thanks to the existence of rapid transit and other access alternatives.

4.3.2 Abolition of Minimum Parking Requirements, Buffalo, NY, USA

In early 2017, Buffalo, New York, became one of the first municipalities in North America to completely abolish minimum parking requirements. Zoning and land-use regulations introduced a form-based zoning code ('Unified Development Ordinance') that was designed to foster more predictable built form results and a high-quality public realm by using physical form (rather than separation of uses) as the organising principle. **Figure 4** illustrates parking stall and aisle dimensions, which are one of the few remaining parking standards in the Unified Development Ordinance in Buffalo.

Development projects above 5,000 square feet (465m^2) in area will still require parking analysis that factors in alternative transportation options in the vicinity as part of an overhauled review. In other words, a discretionary element still remains in place.

Figure 4 – Unified Development Ordinance (Buffalo, NY)



This example, often cited as one of the most ambitious in North America, was pursued with vigour by the City and with the intention to stimulate economic development due to the high prevalence of surface parking in the downtown, that had previously been required by the by-law. It was found by the City to place significant constraints on development opportunities.

4.3.3 Unbundled Combined Residential and Commercial Parking, Seestadt, Vienna, Austria

Seestadt is a new 240 hectare residential and commercial district located 7 kilometres east of the centre of Vienna in Austria on the site of a former airfield. 10,500 apartments are being built for 20,000 persons that are expected to live there. The district is also targeting 15,000 office jobs and 5,000 light industry jobs. One of the key parking management strategies pursued was to unbundle parking from residences. This meant that home owners and renters are not required to purchase or rent parking as part of their living situation. This parking management solution offers value to local stakeholders by co-locating jobs and residential uses, reducing the need for a private vehicle, integrating new mobility alternatives into the built form such as car and bike sharing as well as providing a direct rapid transit connection to downtown Vienna in (approximately 35 mins journey time).

Figure 5 illustrates the six garage 'park once' parking concept and present day build out of residential and mixed use development in Seestadt with underground parking that is seamlessly woven into streetscape which helps to minimise interruption of pedestrian realm by vehicles and maximises access of parking to surrounding areas.

The park once concept is based on the notion that people seeking a parking space within a 500m radius of the district have the choice between a tightly regulated supply of short-term, on-street parking or one of six, centralised, publicly accessible, underground off-street garages. Along with the real-time information on parking availability, the street grid, particularly the 'ring street' that intersects with many local streets, is designed to minimise amount of the road space and time required by vehicles entering and exiting the district. This in turn helps to reduce traffic volumes and cut down significantly on cars cruising for parking. Shoup (2009) and (2018) notes that in sixteen studies carried out between 1927-2001, cars cruising for parking was found to constitute between 8 to 74 per cent of local traffic.

The co-location of jobs and employment is designed in part to reduce distances travelled by locals, but also to boost the demand and financial viability of parking constructed in the district, while it is also intended to minimise the footprint of parking on the urban realm in terms of concealing parking facilities, and minimising intrusive elements of parking by limiting driveway entrances.

Other mobility options include the completed extension of the local U2 LRT line with high frequency connection to downtown Vienna, a central bike parking facility, 42 electric car charging stations, a local bikeshare scheme, cargo bikes and kiss and ride facilities. Developers were required to pay into a mobility fund both for dwellings completed as well as based on the number of car parking spaces constructed.

Figure 5 – Six Garage Park Once Parking Concept in Seestadt, Vienna, Austria

4.3.4 'Rightsizing' Minimum Parking Requirements, Victoria, BC

Victoria, British Columbia, is currently embarking on a project to "right-size" minimums to align the existing regulations with actual demand, current trends and community objectives. Off-street parking regulations have not had a significant update since 1981. Since that time, Victoria has evolved with new growth and development and new policies. The City believes that off-street parking regulations need to support development in balance with the City's growth and sustainability policies. This new regime is proposed to be implemented in the geographies shown in **Figure 6**.

The City's stated position is that updated off-street parking regulations will help to support active transportation (e.g. cycling, walking, and transit), encourage economic development, enable affordable housing and maintain healthy communities.

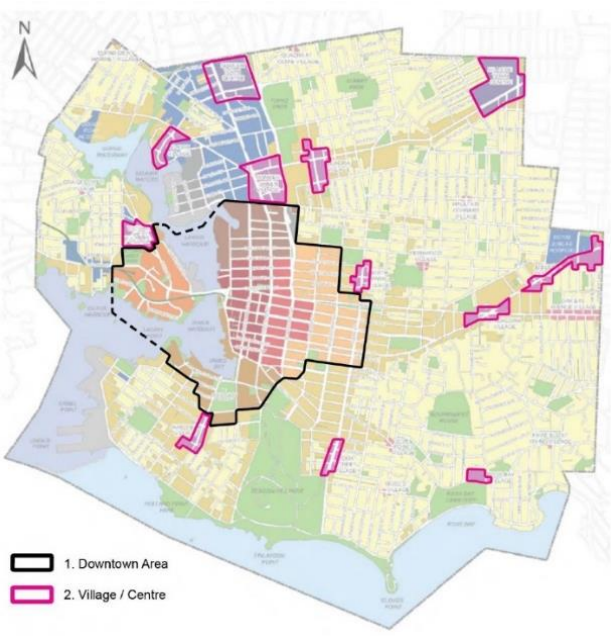
Key proposed changes include:

- Fewer parking stalls required for smaller condominium units, affordable housing and rental housing;
- New parking stall requirements for developments within downtown and in village centres;
- More secure bicycle parking stalls required in multi-residential and office development;
- New parking stall requirements that reflect the actual parking demand

The project is expected to deliver the following benefits:

- A better understanding of actual parking demand for a range of uses throughout Victoria;
- A reduction in parking variances thereby improving the overall development application review process;
- A more user-friendly format for the off-street parking regulations;
- The ability to better support and encourage development and investment;
- Updated regulations and design standards for vehicle and bicycle parking that are better aligned with current practices and trends; and
- Better support for affordable housing and healthier communities.

Figure 6 – Proposed Geographic Areas for Right-Sized Statutory Parking in Victoria



This parking management example demonstrates how revisions to minimum parking requirements across the whole of a downtown can work to ensure that existing standards can be assessed to ensure that they remain contemporary while still meeting the everyday needs of residents and visitors.

5 Recommended Approach to Developing New Parking Standards

In Chapter 2 it was established that an appropriate starting point for determining a strategic approach to developing contemporary parking standards was to explicitly recognise that existing standards are likely to have had a substantial role in shaping Brampton's current-day urban form and transportation patterns.

Policy aspirations to reduce reliance on private motor vehicles will therefore necessitate a rethink about the extent to which supply-based regulations that promote driving and reduce the costs of parking contribute to the extent of the problem.

As parking is often regarded as being at a critical juncture between transportation and land use, it follows from this that any proposed changes to existing standards are also likely to have a significant impact on both the land use and transportation systems.

Changes contemplated must therefore be based on a rationale that is both future-oriented, deliberate and able to withstand public scrutiny.

Given that the existing Official Plan is now 10 years old and many existing issues have evolved and many new ones have emerged since this time, we suggest a reform approach that takes both the Official Plan and the question of improving access between land use into account (refer Figure 1). It is based around three themes:

1. Identification of key issues
2. Development of options to respond to the key issues
3. Preliminary reform directions

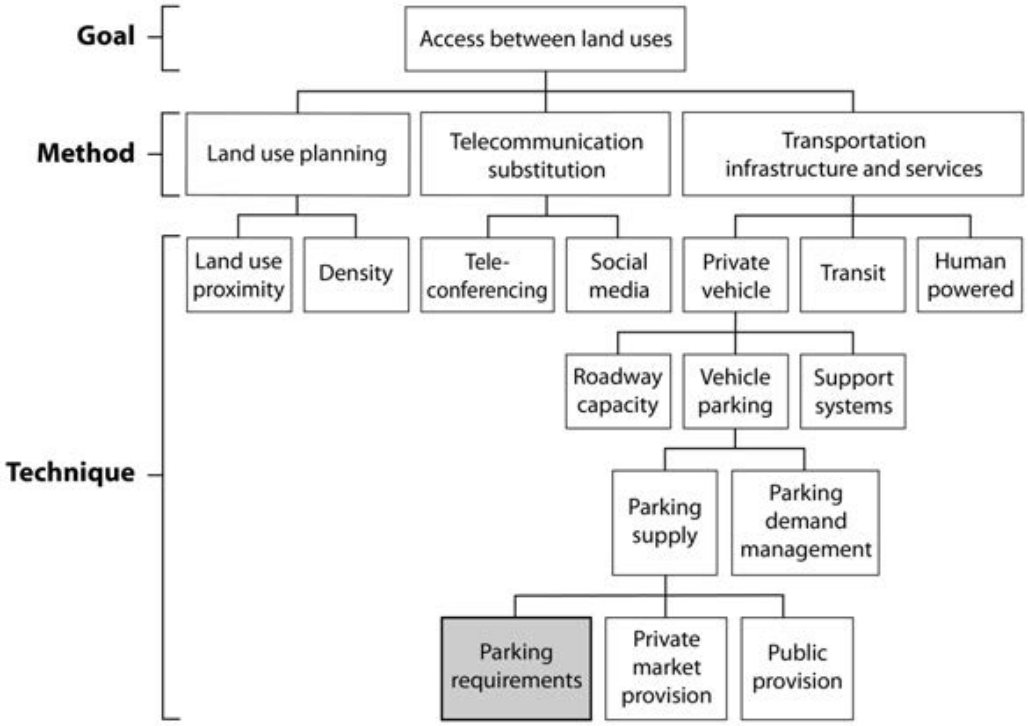


Figure 7 - The role of parking in accessibility (Willson 2013)

5.1 Issues

The following issues are considered of primary importance for determining a strategy for updated parking standards:

ISSUE 1: Identification and agreement from major stakeholders on the role that parking requirements can and should play in the transportation system.

Minimum parking requirements are designed to supply a given quantity of parking in association with a particular land use, yet this is often an implicit legislative requirement instead of an explicit policy position on the part of the City.

There is a wealth of research that has examined the role that parking requirements have on people's travel decisions. This includes questions of whether individuals are likely to own a private motor vehicle or not, the degree to which they are likely to travel by private motor vehicle for their daily travel needs, which mode(s) of travel are within their budget, or whether they are likely to substitute travel with other options like online shopping or telecommuting.

Given this wide range of factors, it is crucial that recommendations are developed that reflect the City's policy priorities and that zoning by-law parking provisions recognise that they are part of a wider public policy question concerning how to deal with accessibility between land uses (Refer Figure 1). It is important to obtain agreement from major stakeholders on these facts as well as generate a basic level of consensus that continued promotion of parking supply is likely to impact the extent to which alternatives will be embraced.

ISSUE 2: A common understanding about which aspects of parking can be reasonably dealt with within the ZBL and their intended direction.

Chapter 3 noted that the ZBL has historically been largely confined to regulating the quantity of parking. There is some scope to investigate other aspects of parking such as form and location of parking as well. However these will need to be clearly identified and carefully analysed to determine whether they are likely to have a tangible effect on parking outcomes. Standardised parking dimensions for instance is generally regarded as being more successful at dealing with parking problems than parking requirements as the relevant issues can be more clearly identified, localised and regulated in a by-law.

Workable alternatives to parking requirements exist, but alternatives need to recognise that no one solution is perfect. By reducing or removing existing parking requirements, landowners must be in a position to make responsible and transparent decisions about their own parking. In some cases, the City will need to adopt a more proactive policy that limits the amount of parking on a lot or in a certain area, particularly where intensification is being pursued. These changes have significant potential to positively influence economic development, public health and the built and natural environment, but they are also based on a recognition that conventional parking requirements are an imperfect science and there is very limited evidence that they can adequately deal with the issue they were designed to resolve, namely access to and from a given site. The problem of relying on minimum parking requirements can become more pronounced the more an area tries to intensify. The zoning by-law needs to recognise the limitations of minimum parking requirements and their potential for harm in certain situations.

ISSUE 3: Acknowledgment that parking and loading are separate, but interlinked policy considerations.

Parking requirements and loading standards both deal with off-street parking supply, however their respective purposes should be kept separate and not be conflated or confused. The former is designed to regulate the accommodation of private motor vehicles on private lands; the latter deals mostly with standardising driveway access to private premises for goods movement using either light or heavy commercial vehicles. Consequently, the proposed changes to each issue involves different considerations and will be treated separately.

5.2 Opportunities

To address the issues highlighted above the following opportunities have been identified:

OPPORTUNITY 1: Harmonisation of statutory parking requirements with Official Plan Policy (also known as 'parking policy consistency'): the Zoning By-Law Review is considered to be the first opportunity to seriously and carefully reflect upon how to better reflect the land use intentions of the Official Plan within the specific provisions of the zoning by-law. The majority of existing parking requirements in Brampton are based on Euclidian zoning, which focusses exclusively on site-based parking needs, rather than having a parking requirement that is reflective of the travel patterns or the context of the site. Many existing standards have not been upkeeping with extinct, dying, or new and emerging land-uses. There was also found to be limited to no consideration of existing transit or TMP targets. Other standards were also found to be higher than comparable jurisdictions within the GTA (see Chapter 3.4, Figures 1 and 2, Table 1).

To this end, the proposed strategic approach is to look for opportunities for both horizontal and vertical policy consistency:

a. ***Horizontal consistency*** is where parking requirements are aligned with local plans and initiatives and transit projects

b. ***Vertical consistency*** is where parking requirements support regional, provincial and national funding initiatives

OPPORTUNITY 2: Encouragement of Shared-Use Parking through updated ZBL provisions

At present shared parking is only permitted for mixed-use developments in Brampton in the ZBL. Shared parking is based on the notion that different uses have different peak hour generators and that can be advantageous in reducing overall parking requirements. Extending shared parking provisions to more uses has the potential to reduce the need for excess parking

OPPORTUNITY 3: Improved Parking Geometric Design

Parking lot design typically caters to the lowest common denominator by catering for a 'design vehicle' which is assumed to be the most appropriate vehicle that accommodates the greatest number of parking needs. This in turn influences parking space minimum dimensions, turning circles, minimum heights and maximum inclines, amongst other factors. Opportunities will be examined to increase the spatial efficiency of permitted parking designs in the new ZBL so that an increased number of parking spaces can be accommodated when compared with existing provisions.

OPPORTUNITY 4: Mandating minimum bicycle parking requirements

Bicycle parking standards are not currently included in the City of Brampton Zoning By-law and bicycle parking supply is thought to be relatively low. In areas of intensification, such as Brampton downtown, mandating bicycle parking has the potential to increase the convenience and security of cycling and can provide an alternative to automobile parking, particularly if implemented as part of a comprehensive bicycle improvement and encouragement program.

OPPORTUNITY 5: Review of accessible parking design

Parking requirements for accessible parking spaces are not currently clearly outlined in the existing ZBL provisions. We propose to look at how different cities deal with the parking standards for accessible parking spaces and recommended dimensions and evaluate the effectiveness of existing standards.

5.3 Reform Directions

Based on the issues and opportunities identified, three reform directions are suggested. These are looked at in turn:

REFORM DIRECTION 1: Lower parking requirements wherever possible

Lower minimum parking requirements are considered achievable and realistic as the city's transit improves, particularly in major transit

station areas (MTSAs) and along high-order transit corridors. Other popular mobility alternatives such as Transportation Network Companies (TNCs) and walking and cycling are also growing in popularity. To demonstrate the feasibility of such a proposal, Chapter 3 examined parking requirements for office, retail, industrial and apartment zones across the GTHA (refer Figures 1 and 2). Other jurisdictions have managed to reduce these minimum requirements without reported major impacts.

To use one example, the average minimum parking requirement rate for retail land-uses is between 5-6 parking spaces per 100 m^2. Brampton is at the higher end of municipalities reviewed. Lower parking requirements will not preclude land owners from providing more than the minimum if they determine it is in their commercial interest. Reducing existing minimum parking requirements wherever possible and setting maximum parking requirements is a powerful tool that can assist in reducing automobile use and encouraging alternate modes of transportation.

REFORM DIRECTION 2: Accommodate context-specific parking requirements

Current parking requirements currently only pursue limited consideration of local context. As noted earlier, parking provisions do not distinguish parking requirements based on transit accessibility, but rather based on Euclidian zoning. The City can benefit from different parking requirements based on the site context. Areas with high order transit can accommodate lower parking rates when compared to suburban areas. The proposed standards specify alternative minimum and maximum parking requirements according to different urban structures. Intensification should be targeted specifically for Downtown Brampton, Queen Street Corridor and Hurontario Corridor.

REFORM DIRECTION 3: Develop revised shared use parking requirements

As noted in the opportunities section, parking requirements are designed such that the peak hour traffic of a development is met. Many individual land uses that are clustered experience peak hours at different times of the day. Collective or shared-use parking has the potential to reduce the oversupply of parking in some locations.

REFORM DIRECTION 4: Revise generic geometric designs for parking in the ZBL, but also allow alternatives

As noted in the opportunities section, reform options include

1. Updates to conventional parking space dimensions to accommodate a wider range of vehicles, including provisions for special vehicles, small parking spaces for motorcycles, etc.;
2. Parking space size dimensions that vary based on short-term and long-term parking. Shorter term parking requires larger spaces, but employee and residential parking spaces can be somewhat smaller. A portion of spaces can be sized for compact vehicles, which require about 20% less space than full-size stalls.

For example, the City of Mississauga has parking dimensions of 5.2m x 2.6m with a two-way aisle spacing of 7.0m. The city of Ottawa has parking dimensions of 5.2m x 2.6m and a two-way aisle of 6.0m while the City of Brampton has parking dimensions of 5.4m x 2.7m and 6.6m aisle spacing. It is recommended that all options that have the effect of increasing the capacity of existing off-street parking facilities through updates to geometric design be further investigated.

REFORM DIRECTION 5: New provisions for bicycle parking

Downtown Brampton and Hurontario-Steeles are mobility hubs slated for transit oriented development and improved pedestrian and cycling accessibility. These, along with Brampton Bus Rapid Transit Corridor on Bovaird Drive, Steeles Avenue, Queen Street and Main Street/Hurontario Street are also identified as intensification corridors according to the Official Plan. Therefore, it is important to look at opportunities to accommodate multi-modal transportation in the zoning by-law.

The Official Plan (2006) also addresses specific land uses, such as commercial uses that are intended to be accessed easily by foot or bicycle. The city's objective regarding transportation system policies is to develop a *"balanced, integrated accessible multi-modal transportation system, which provides for safe, economic and efficient movement of people, including persons with disabilities, as well as goods and services"* and ensure *"the provision of adequate and accessible road, transit, pedestrian and bicycle links between Brampton and adjacent municipalities"*. This reflects the importance of incorporating bicycle parking in the zoning by-law around areas identified as intensification corridors. We propose analyzing travel behaviors for areas of higher activity, such as commercial land-uses, mobility hubs and mixed-use developments and promoting cycling by providing bicycle parking in lieu of vehicle parking. In these areas, maximum parking requirements can be applied, as opposed to minimum parking requirements.

Optimal bicycle parking supply depends on the level of cycling that occurs in the community and at particular destinations; some destinations may have up to 10 to 20 percent of visitors arrive by bicycle, at least during peak summer months. The Zoning By-Law is the logical place to regulate bicycle parking on private lands.

REFORM DIRECTION 6: New accessible parking provisions

As noted in the opportunities section, the City does not have clearly outlined accessibility parking requirement at present. Table 3 outlines the parking requirements for disabled parking spaces for Mississauga, Oakville and in the Americans with Disabilities Act. These can act as reference points for determining an appropriate approach in Brampton. The City of Oakville follows the Urban Land Institute's recommendations.

Concerning parking dimensions, the accessibility parking dimensions outlined by the Urban Land Institute have a minimum length of 6.0m, minimum width of 2.4m and 1.5m access aisle adjacent to the parking space. For Mississauga, the parking dimensions are such that if one accessible parking is required, Type A shall be provided (minimum length 5.2m and minimum width 3.4m). If more than one parking spot is required, half would be Type A and the other half Type B (minimum width 2.4m and minimum length 5.2m). Oakville's accessible minimum parking length is 5.2m and the minimum width is 3.65m.

We therefore propose to recommend clearer accessible parking requirements and parking space dimensions, comparing and contrasting with other city's requirements where necessary.

City	TOTAL NUMBER OF REQUIRED VISITOR PARKING SPACES	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
Mississauga	1-12	1
	13-100	4% of total
	101-200	1 plus 3% of total
	201-1000	2 plus 2% of total
	1001 and greater	11 plus 1% of total
Oakville	Less than 10	0
	11-25	1
	26-50	2
	51-75	3
	76-100	4
	101-150	5
	151-200	6
	201-300	7
	301-400	8
	401-500	9
	501-1000	2% of total
	1001 and over	20 plus 1 for each 100 over 10000
Americans with Disabilities Act	1-25	1
	26-50	2
	51-75	3
	76-100	4
	101-150	5
	151-200	6
	201-300	7
	301-400	8
	401-500	9
	501-1000	2%of total
	1001 and over	20, plus 1 for each 100 additional spaces

Table 3 - Different Accessible Parking Requirements for Different GTHA Cities and in the Americans with Disabilities Act

6 Next Steps

Based on the plans, policies and existing standards reviewed here, it is clear that there is significant scope to modernise Brampton's existing parking standards based on the issues and opportunities outlined and reviewed in this paper.

Once the City has provided input into the recommended reform directions outlined in Chapter 5, WSP will proceed to develop draft parking standard recommendations for inclusion in the new zoning by-law in early to mid 2019.