

## MEMORANDUM

DATE	October 9, 2020
TO	<b>David Breveglieri, Development Planner, City of Mississauga</b>
CC	Lakeview Community Partners Ltd.
SUBJECT	Lakeview Village Zoning By-law Parking Rate Response 2
FROM	The Municipal Infrastructure Group Ltd. (TMIG)
PROJECT NUMBER	17201

## Introduction

A Transportation Demand Management and Parking Strategy Report was prepared by TMIG, dated March 18, 2019, and was submitted in support of the proposed Official Plan and Rezoning applications for the future development of Lakeview Village. The site is proposed to contain approximately 8,050 residential units, and considerable office, institutional, retail, commercial, civic and green space. The Lakeview Innovation District, along the eastern edge of the site, is planned to include approximately 148,209 m<sup>2</sup> of office and institutional space, plus a 3,340 m<sup>2</sup> Innovation hub and 5,323 m<sup>2</sup> Sustainability Centre. Lakeview Square is proposed to feature a vibrant mix of retail and restaurant spaces, plus ground-floor retail space is proposed to be incorporated into the residential blocks along Lakeview Square, Waterway Common, and The Marina character areas.

Reduced parking rates have been proposed for land uses in Lakeview Village in order to support the goals of the Lakeview Village Development Master Plan (DMP), to create a comprehensive transportation framework which promotes multi-modal alternatives to reduce automobile dependency in a stable and sustainable way while promoting the creation of strong, clean, and healthy communities.

The City of Mississauga reviewed a proposed reduction in parking rates for residential and non-residential uses, as per Zoning By-law 0225-2007 and shared staff-supported rates in a memorandum, dated May 28, 2019. Glen Schnarr & Associates Inc. (GSAI) subsequently prepared a By-law to amend By-law Number 0225-2007, as amended. The City of Mississauga reviewed the revised Zoning By-law and provided comments on the proposed parking rate reductions in a memo dated May 7, 2020, supporting additional reductions for office, residential apartment and visitor parking rates, possible reductions for commercial uses in Lakeview Square and opened discussions for accommodating surplus parking in a municipal structure. The proposed reductions were discussed in detail during a conference call with LCPL and City staff on June 26, 2020, with the City suggesting they may be supportive of additional parking rate reductions beyond those requested.

In response to the City's memo dated May 7, 2020, TMIG prepared a memorandum entitled "Lakeview Village Zoning By-law Parking Rate Reductions Justification", dated August 27<sup>th</sup>, 2020 which proposed revised parking rates of *2.1 spaces / 100 m<sup>2</sup> GFA for office use* in the Lakeview Innovation District, *3.0 spaces / 100 m<sup>2</sup> GFA for commercial uses* in Lakeview Square, *1.0 spaces per unit* for Condominium Apartments, Rental Apartments, Back to Back and Stacked Townhouses within RA5 Residential blocks, and *a co-mingled rate based on shared residential visitor (0.15 spaces per unit) and commercial (3.0 spaces per 100 m<sup>2</sup> GFA) parking rates, where the greater of the two determine the parking supply for ground-floor retail*, within the higher density Residential Zones. These reductions are consistent with discussions with City staff and were justified by comparable municipal parking strategies, the availability of transit and integration of numerous urban design elements, Transportation Demand Management (TDM) strategies, abundance of on-street parking, and the supply of a centrally located and sharable municipal parking facility within Lakeview Village.

Further to our previous memo dated August 27<sup>th</sup>, 2020, the enclosed memorandum has been prepared to address the City's remaining comments on the revised Zoning By-law in their memo dated May 7, 2020, with respect to **mixed-use shared parking formulas, car share, bicycle parking standards, bike share, cumulative parking rate reductions, and a strategy for providing municipal parking.**

# 1 Development Plan

## 1.1 City of Mississauga Parking Strategy

### Mississauga Official Plan

The City of Mississauga Official Plan (MOP) states that parking will be provided within the Lakeview Waterfront Major Node Character Area (Lakeview Waterfront) and confirms the following:

*Policy 13.3.7.1.8: Development applications will be accompanied by traffic impact studies and/or parking utilization studies that will address, among other things, strategies for limiting impacts on the transportation network such as reduced parking standards.*

*Policy 13.3.7.3.2: Reduced and/or maximum parking standards may be considered throughout the area, in conjunction with the provision of mixed-use developments, enhanced transit and active transportation facilities. The extent of the reduction may be considered through a parking utilization study.*

Parking requirements for Lakeview Village will seek to reduce the parking standards in order to encourage a shift toward non-auto modes of transportation. Facilities shall be designed to accommodate bicycle parking, and reserved spaces for car-share, car-pool, and electric cars. “*Shared parking is also encouraged between adjacent developments, where feasible*”, according to the draft Traffic Considerations Report.

### Parking Master Plan

The City of Mississauga’s Parking Master Plan states that “*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 alternate travel modes; public parking facilities; land use; and walkability.*”

Four (4) parking precinct areas are recommended for the City, with the Lakeview Major Node proposed to fall under Precinct 3, which follows a phased approach to reducing parking requirements in proposed transit corridors. The parking management principle for Precinct 3 takes “*a site-focused approach that optimizes parking at appropriate sites and within the City’s parking goals.*” In the Parking Master Plan, it is noted that the Lakeview Major Node is “*car-dependant*” when considering walkability, however this consideration includes all of the lands along Lakeshore Road from Cawthra Road to the city’s eastern boundary. The Lakeview Village community, *within* the Lakeview Major Node, is proposed to have higher densities, walkable mixed-use blocks, transit service, and aggressive Transportation Demand Management (TDM) measures making it akin to an area like Port Credit designated as Precinct 1.

Based on the latest Development Master Plan (DMP 4.0), Lakeview Village surpasses the minimum expectations for a Precinct 3, and when fully realized, will meet the requirements of a Precinct 1 policy area with respect to parking. Parking rates in this major node can be reduced further in accordance with the policy objectives of Precincts 1 which are centred on transit, have a large supply of public parking facilities, mixed use areas, high walk scores, established TDM measures, high residential densities and lower than average vehicle ownership rates. The six elements all work together to reduce the demand for parking spaces.

In particular, the provision of a public parking facility is essential for the success of a Major Node, like Lakeview Village, as this flexible and accessible parking supply is needed to support a robust parking strategy for all private and public land uses, such as Lakeview’s public waterfront facilities. A parking strategy for Lakeview Village will consider these six criteria to establish appropriate parking rates in a new Zoning By-law for the site, and expand considerations towards future potential parking reductions during the Site Plan Application stage of development. It is recommended that the City re-evaluate the Lakeview Major Node based on the six aforementioned criteria and consider re-classifying the area as a Precinct 1 policy area in the next update to the municipal Parking Study.

## 1.2 Development Master Plan

The Development Master Plan (DMP) 4.0 states that “while the district overall is designed to maximize active transportation, the plan does provide parking throughout the district for residents and visitors. For visitors, the main concentration of parking is within the two parking garages in the southeast corner...The parking for the residential block and Innovation Corridor are accommodated in garages with levels underground and above ground.”

A Lakeview Village Traffic Considerations Report, prepared by TMIG, dated June 9<sup>th</sup>, 2020, states that “Lakeview Village is being planned to mitigate external and internal traffic impacts by controlling the supply of parking in the public realm as well as the site-specific parking supply. Visitor parking will be located within specific developments...parking will also be provided on many internal collector and local streets.”

Following this direction, a comprehensive parking strategy is being planned for Lakeview Village which combines an intricately designed network of on-street, podium, under- and above-ground parking facilities, with reduced parking rates for several major land uses, supported by a robust transportation network. **Figure 1-1**, prepared by Sasaki and dated June 25<sup>th</sup>, 2020, presents the Lakeview Village Parking Strategy.

**Figure 1-1 Lakeview Village Urban Design Study, Parking Diagram**



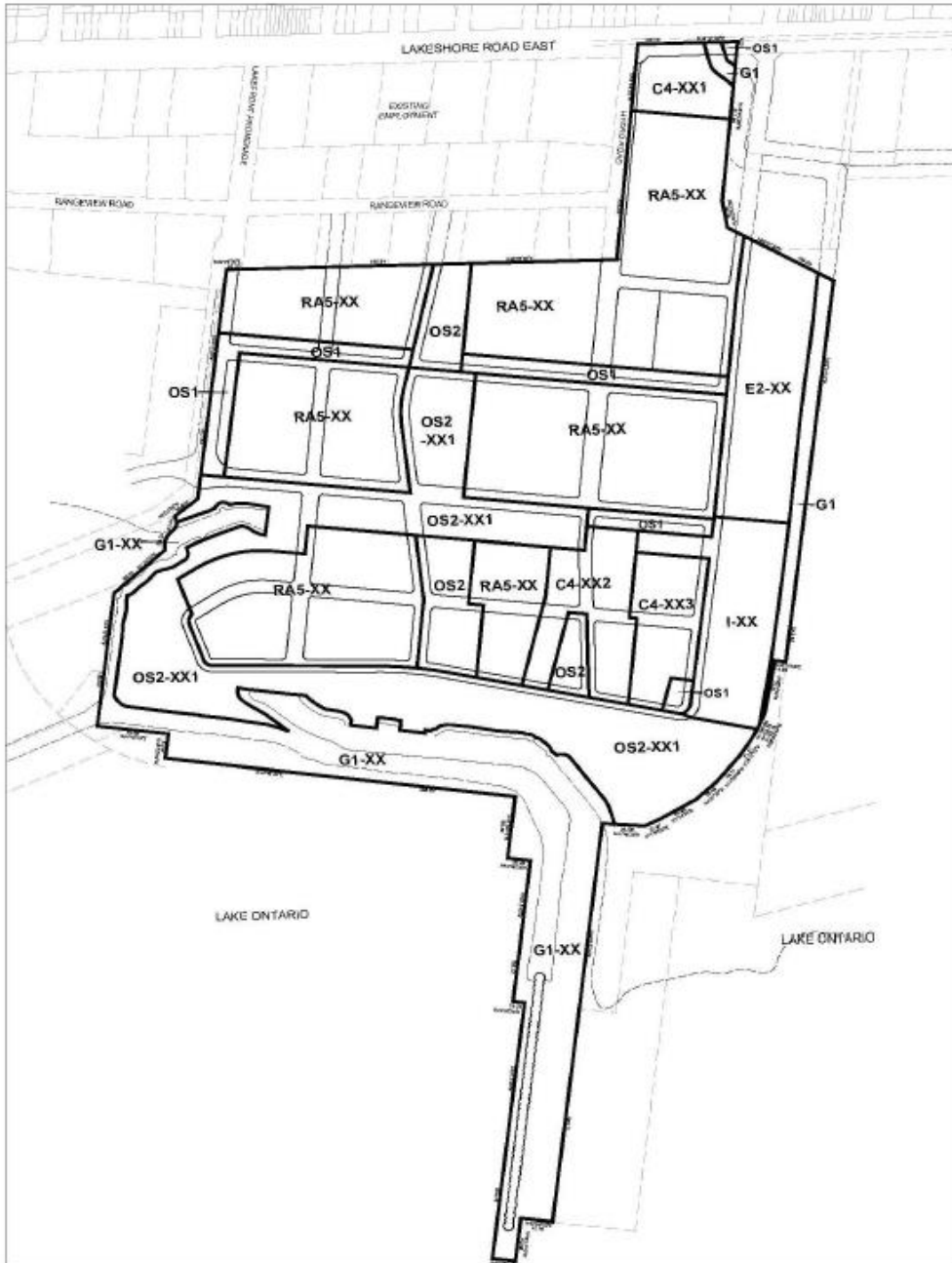
As shown in **Figure 1-1**, the Lakeview Village district provides parking throughout for residents and visitors. For visitors, parking is concentrated in the proposed six-storey parking facility in the southeast corner, located adjacent to Lakeview Square and the highest concentration of cultural, recreational and retail space. There are also substantial on-street parking facilities planned on all major roads in the Village, to help accommodate additional visitors in the residential blocks and support ground-floor retail spaces. Residential and office parking facilities are located in garages with underground and aboveground levels, with the latter hidden from view from the public realm. The tops of courtyard parking facilities in residential blocks will be utilized as open space amenity areas, and the podium parking in the Lakeview Innovation District will have amenity and office spaces rising above.

### 1.3 The By-law

Opportunities to explore shared parking formulas and commercial, employment and recreational parking solutions to unlock parking rate reductions may be considered in later stages of this development plan. Accordingly, the proposed Zoning By-law may include additional provisions to permit a scenario with shared and off-street parking.

Each Exception above refers to a zoning area lot code identified in **Figure 1-2**, "Schedule A" of the proposed by-law to amend Zoning By-law Number 0225-2007.

**Figure 1-2 Development Lot Codes - "Schedule A" of the by-law to amend Zoning By-law Number 0225-2007**



## 2 Parking Supply

### 2.1 Mixed Use Shared Parking Formula

The City's Parking Master Plan states that if a parking space is provided on a property with a mix of land uses with differing peak periods, the City's Zoning By-law allows for shared parking strategies. For example, land uses such as office and restaurants are able to share a single parking supply because office parking requirements typically peak Monday to Friday between 9 am and 5 pm, and restaurants peak in the evening and on weekend, with a smaller demand during mid-day hours. Shared parking spaces may be provided on-site, on-street, or off-site in a publically available parking facility.

In considering shared parking, the "City of Mississauga Parking Strategy – Phase II Port Credit and Lakeview, Final Report" prepared by BA Group for the City of Mississauga, dated June 2014 states:

*"With the emphasis on minimizing on-site development parking supply, it will be important for the City to actively promote on-street parking at every opportunity as well as establish off-street shared public parking resources that can be used to assist private development and help achieve a gradual reduction in parking supply needs over time as transit and active transportation use increases."*

Given these goals, we expect that the City will consider and accept a shared parking strategy with office parking during peak business hours and retail/restaurant/destination parking during evenings and weekends, to accommodate their respective peak demands.

Accordingly, a mixed-use shared parking formula was proposed for Lakeview Village in the March 2019 report, and was subsequently revised to be consistent with the Port Credit & Lakeview Parking Strategy in the proposed Zoning By-law. The inclusion of a mixed-use shared parking formula is recommended for inclusion in the Zoning By-law, however consideration during the Site Plan Application development stage would be an appropriate measure to support an efficient parking strategy through carefully considered rate reductions based on proposed land use plans on a site by site basis. **Table 2-1** presents the newly revised mixed use development shared parking formula, as supported by City staff, based on revisions requested in the City's memo dated May 7, 2020. As stated, the shared parking formulas may be included in the proposed by-law, or considered during the SPA stage for developments within commercial and residential blocks zoned **C4-XX1**, **C4-XX2**, and **RA5-XX** in Lakeview Village.

**Table 2-1 Mixed Use Shared Parking Formulas**

Type of Use	Percentage of Peak Period			
	Morning	Noon	Afternoon	Evening
Office / Medical Office	100 (10)	90 (10)	95 (10)	10 (10)
Real Estate Office	90 (50)	80 (50)	100 (50)	50 (20)
Financial Institution	70 (90)	75 (90)	100 (90)	80 (20)
Various Commercial*	50 (50)	50 (75)	70 (100)	75 (10)
Restaurant / Take-out Restaurant	25 (20)	65 (90)	25 (50)	100 (100)
Overnight Accom. – Rooms	50 (70)	25 (25)	25 (25)	65 (50)
Overnight Accom. – Function Space**	95 (95)	100 (95)	90 (90)	95 (95)
Residential	90 (90)	65 (65)	90 (90)	100 (100)
Residential Visitors	20 (20)	20 (20)	50 (60)	100 (100)

XX – Weekday, (XX) – Weekend

\*Various Commercial includes **Retail Store**, **Personal Service Establishment**, and **Repair Establishments**. Within RA5-XX zones, Various Commercial also includes **Animal Care Establishments**.

\*\*Function Space includes restaurants, meeting rooms, and banquet and conference facilities.

As stated, the mixed use shared parking formulas above are consistent with the Port Credit & Lakeview Parking Strategy and can be applied with the following criteria:

A shared parking formula may be used for the calculation of required parking for a mixed use development. A mixed use development means the following:

1. Non-office uses in an office or medical office building or group of buildings on the same lot
2. Office or medical office space in a building or group of buildings on the same lot primarily occupied by retail uses
3. A building or group of buildings on the same lot containing a mix of office or medical office, commercial uses and dwelling units
4. Non-residential uses in an apartment

It is noted that the parking spaces required for a Mixed Use Shared Parking Formula may not be included in the Residential Visitor and Non-Residential Uses shared parking arrangement proposed within RA5-XX zones during the Site Plan Application stage of development or within the proposed Zoning By-law.

Overall, the shared parking formula provides a clear and flexible parking requirement based on the mix of uses provided on site and their respective peak period parking demands. For the purposes of this study, a potential breakdown is provided in **Section 2.6** to determine the amount of office, commercial and public waterfront parking that can be accommodated in a shared municipal parking facility, which will be refined as public parking details are made available.

## 2.2 Car Share

Car-share services allow members to make use of a vehicle on a daily / hourly basis as required and offers such access without the need for residents / tenants to own a vehicle themselves. This, in turn, reduces the need for residents / tenants to own a private vehicle which lowers parking space needs and also contributes to a reduction in automobile use for day-to-day commuting activity.

A survey in Metro Vancouver cited that respondent's top reasons for joining car-share included: cost savings compared to owning or leasing a vehicle; convenience of car share to transit; additional mobility provided by car share; and availability of a car share vehicle near home. With the inclusion of car-share facilities proposed as part of Lakeview Village's Transportation Demand Management strategy, demand will be present which would justify a reduction in the number of private residential parking spaces required.

Considering the long-term Sustainability Strategy for Lakeview Village, and their value in supporting the community's aggressive Transportation Demand Management (TDM) measures, car-share parking spaces were introduced within the proposed Zoning By-law, stating that only "*One parking lot containing only accessible, and car-share parking*" shall be permitted for lands zoned OS2-XX1. Further sections define a car-share parking space as "*a parking space dedicated to a short-term vehicle rental for residents*" within applicable land use zones.

Accordingly, specific parking rate reductions are proposed for residential vehicle parking based on the provision of car-share parking spaces for zones C4-XX1, C4-XX2, C4-XX3 and RA5-XX, for consideration during the Site Plan Application stage of development, as follows:

Total resident parking spaces per residential dwelling unit **may be reduced at a rate of 4 vehicle parking spaces for every 1 car-share parking space** provided on the site up to a maximum of 1 car-share parking space per 60 dwelling units.

With the ability to reduce residential vehicle parking at a rate of four (4) vehicle parking spaces for every car-share parking space provided on site, with a max of 1 car-share for 60 dwelling units, it is recommended that the provision of ample car-share facilities for residents and visitors be considered for inclusion during the Site Plan Application stage of each development in Lakeview Village.

## 2.2.1 Response to City Comments

In their memo dated May 7, 2020, City staff were not supportive of the above car-share parking rate reduction provision due to concerns regarding the scope of parking reductions, the inclusion of “as of right” regulation in the Zoning By-law, and challenges to car-share management in ensuring long-term viability.

### Scale of Residential Car-Share

City staff noted that when the proposed maximum car-share parking rate is applied (1 car-share space / 60 dwelling units), approximately 134 car-share parking spaces could be provided in Lakeview Village, for approximately 8,050 residential units, with a potential reduction of 536 residential parking spaces. Staff cited the currently available 8 car-share vehicles available in Mississauga’s Downtown Core, which has far more residential and office space than Lakeview Village, as reason why there is concern the community could financially sustain 134 car share vehicles.

LCPL acknowledges the City’s concern regarding a potential over-supply of car-share parking spaces, when taken in totality across all land uses in Lakeview Village. However, as per the Development Master Plan, Lakeview Village is being planned to mitigate external and internal traffic impacts, in part by controlling the supply of parking across the entire community. To avoid an over-supply or under-supply of parking, LCPL notes that the potential vehicle reduction effect within a building must account for both the on-site car-share vehicle and the availability of nearby car-share vehicles, whether in other development sites or on nearby streets. Another possibility is to link the provision of car share with “parking unbundling”, whereby a prospective resident is provided the option to buy/rent an apartment unit without a parking stall (and the option to have a stall for an extra fee). That parking stall could be converted into a car-share space, while reducing the overall required vehicle parking supply and without negatively impacting the needs of any residents.

Beyond justifying a reduced parking rate, these car-share models support the long-term Sustainability Strategy of Lakeview Village, which envisions a complete mobility network available from ‘Day 1’ of occupancy, in order to immediately lean into the aggressive sustainable modal splits for the community and support the City and Region’s sustainability goals and objectives. The provision of car-share services in Lakeview’s RA5 residential zones would reduce individual vehicle ownership due to their convenience and elimination of vehicle capital costs from individuals. By eliminating the ownership of vehicles from ‘Day 1’, residents are more likely to consistently opt towards choosing sustainable modes of transportation including walking, cycling and transit for short and medium length trips in Lakeview Village and around the City. With reduced vehicle ownership across the community, residents will then choose car-share services more frequently for longer distance trips across the region or to areas inaccessible by transit, on evenings, weekends and holidays. As a result, a larger supply of car-share vehicles would be supported by the overarching transportation sustainability strategy for the Lakeview Village community.

We understand that the City is generally supportive of enhanced car-share provisions within Lakeview Village and as such we are open to further consultation with city staff to discuss the financial viability of a car-share network, potential limits on the number of vehicles in the network, and considerations for overall parking supply reductions (discussed in **Section 2.5**). We are confident that the inclusion of a robust car-share strategy in Lakeview Village will help position the City of Mississauga as a leader in multi-modal transportation planning, and set the standard for other large cities to learn from and adopt across Canada.

### Inclusion within the Zoning By-law

City staff noted that the incorporation of car-share regulation within the proposed Zoning By-law will allow developers to convert residential parking spaces into car-share spaces “as of right”, with developers having no further obligation to ensure a car share vehicle is provided, available or viable. We understand the “as of right” situation would block the City from having input on the number of car-share spaces provided in the community, the location of vehicles to avoid clustering and ensure equitable access in private parking garages or on-street, and limit the ability to secure agreements with car-share companies to ensure the long-term viability of the program.

LCPL understands that the City would prefer to handle the inclusion of car-share parking reductions on a case-by-case basis through the development application process, in order to allow a better chance of success beyond potential short-term agreements with developers.

Accordingly, LCPL is willing to explore alternatives to ensure that the impacts of these parking rate reductions are not directly tied within the proposed Zoning By-law, but rather referenced during the Site Plan Application (SPA) stage of development, supporting the parking strategy for each land use zone. The provision of car-share services in public spaces, whether on-street or in public facilities, would support reductions on a site by site basis during the SPA stage, and should be considered.

Given the array of car-share service choices available through public, private, or public-private models with a mix of round-trip versus free-floating, and fleet-based versus peer-to-peer services, LCPL is confident that the right model can be refined and applied within the Lakeview Village community. As one example, a fleet of cars could be operated directly by a condo board, with vehicle bookings managed by a concierge, which would ensure the long-term management and viability of car-share services on a building to building basis. Should further consultation be required to approve the proposed Zoning By-law, or refine the proposed SPA parking strategy, LCPL can provide details on the various car-share service options available for consideration.

## 2.3 Bicycle Parking

The provision of bicycle parking throughout Lakeview Village will encourage the use of bicycles as an alternative travel mode beyond the private automobile. The supply of both long-term and short-term bicycle parking will be strongly encouraged to serve the needs of both residents, employees and visitors to Lakeview Village across all land uses in the community. Provisional upon operational feasibility, employees could be provided with end of trip facilities to shower, change and/or store clothes (commuters who cycle may often arrive wet, dirty, or sweaty), which will help encourage residents / employees to cycle for their commute. This fundamental TDM measure will support the overall Sustainability Strategy and travel modal split for Lakeview Village.

The City of Mississauga's Zoning By-law currently does not have standards outlined for bicycle parking space dimensions, bicycle parking rates, or end of trip facilities such as showers, lockers and change rooms. The 2009 City Centre Parking Strategy and the 2014 Port Credit and Lakeview Parking Strategy recommended regulations regarding bicycle parking rates and end of trip facilities, which were incorporated into the proposed draft Zoning By-law for the Lakeview Village community.

In their memo dated May 7, 2020, City staff indicated that the City's most recent 2017 TDM Strategy and Implementation Plan outlined recommended regulations regarding parking rates and end of trip facilities which are slightly different than those proposed in the 2014 Port Credit and Lakeview Parking Strategy report, which was adopted for this development. **LCPL requests that staff from the City of Mississauga's Transportation Infrastructure Management, Transportation Projects Section provide comments regarding these standards and confirm which bicycle parking rates should be utilized.** For the purposes of this memorandum, the rates extracted from the Parking Strategy and utilized in the draft Zoning By-law for Lakeview Village will be maintained and recommended for inclusion during the Site Plan Application stage of development on a site by site basis.

Similarly, the City's Zoning By-law does not currently provide regulations regarding bicycle parking space dimensions and standards. However, in the City of Mississauga's Cycling Master Plan (Draft March 2010) recommendations on parking space dimensions are made, for future inclusion in the City's Zoning By-law. Section 10.2 recommends the inclusion of parking dimensions in addition to parking quantity, definitions of long term and short term parking and the requirement for shower/change facilities. City of Toronto's *Guidelines for the Design and Management of Bicycle Parking Facilities* are outlined below as a reference for spacing standards. The recommendations related to horizontal and vertical parking dimensions, and long-term and short-term bicycle parking definitions were incorporated within the draft Zoning By-law for Lakeview Village, and are outlined below. **LCPL requests that Transportation Infrastructure Management staff evaluate the appropriateness of the parking and aisle space dimensions proposed and confirm the standards to be incorporated into the final Zoning By-law.**

It should be noted that the City of Mississauga's TDM Strategy and Implementation Plan (2017) identified a short-term (1-2 year) "Quick Win" of "Incorporate Bike Parking into the Zoning By-law", within its Action Plan to help demonstrate success, attract partners, and build confidence in TDM, including bicycle infrastructure and facilities, among decision makers and the public. The TDM Strategy's Appendix D: Bike Parking, further states that "*Bicycle parking requirements in Mississauga were recommended in the previous Mississauga Cycling Master Plan (2010). Mandatory bicycle parking*



and provision of end of trip facilities are considered significant prerequisites for cycling to work as a TDM measure. Consequently, they have been included in this Plan.” Therefore, it is understood that the provision of the following standards is in alignment with the City’s own objectives and plans, and that all agencies are supportive of promoting bicycle parking facilities within Lakeview Village.

Finally, during a public meeting held at the City’s Planning and Development Committee on September 21<sup>st</sup>, 2020, to consider Lakeview Waterfront Development Plans, City Council provided feedback on the proposed Draft Plan of Subdivision which included a desire to see plenty of bike parking across residential and specifically non-residential land uses for visitors coming to Lakeview Village.

**2.3.1 Bicycle Parking Dimension Standards**

The Lakeview Village draft Zoning By-law incorporated bicycle parking dimension standards recommended in the City of Mississauga’s Cycling Master Plan (draft March 2010). These standards are recommended for consideration during the SPA stage of development for sites within blocks zoned OS2-XX1, I-XX, E2-XX, C4-XX1, C4-XX2, C4-XX3 and RA5-XX in Lakeview Village, as follows:

A bicycle parking space must comply with the following:

- (1) The minimum dimension of a bicycle parking space is:
  - (1.1) Minimum length 1.8 m
  - (1.2) Minimum width 0.6 m
  - (1.3) Minimum vertical clearance from the ground 1.9 m
- (2) The minimum dimension of a bicycle parking space if placed in a vertical position on a wall, structure or mechanical device is:
  - (2.1) Minimum length or vertical clearance 1.9 m
  - (2.2) Minimum width 0.6 m
  - (2.3) Minimum horizontal clearance from the wall 1.2 m
- (3) The minimum vertical clearance for each bicycle parking space if a stacked bicycle parking space is provided: 1.2 m
- (4) An area used to provide bicycle parking spaces must have a minimum vertical clearance of:
  - (4.1) for a stacked bicycle parking space 2.4 m
  - (4.2) all other cases 1.9 m
- (5) A bicycle parking space must have a minimum aisle clearance of:
  - (5.1) when facing a wall or other obstacle 0.9 m
  - (5.2) when facing a bicycle parking space 1.5 m

Note: Bicycle parking standards are proposed for lands zoned C4-XX3 and were mistakenly omitted in the draft reviewed by City staff.

The above proposed bicycle parking standards are consistent with the City’s Cycling Master Plan and are visualized in the following figures. **Figure 2-1** shows a stacked horizontal bicycle parking rack, which would require additional available height. This type of rack is commonly used in indoor secure bicycle parking facilities. **Figure 2-2** shows an example of a vertical bicycle parking rack, which is typically wall-mounted indoors, with sufficient room to manoeuver. Vertical bike racks are also available as stand-alone frames which can be used outdoors for visitor parking.

**Figure 2-1 Horizontal Bicycle Parking Rack**



**Figure 2-2 Vertical Bicycle Parking Rack**



Consequently, the following definitions of long term and short term bicycle parking, which are based upon descriptions from the same section of the Cycling Master Plan, are recommended to be included in the proposed Zoning By-law, and within Lakeview's parking strategy to be referenced during the SPA stage of development.

- **Long term (resident)** parking must be provided in the form of racks or lockers in an enclosed, secured area such as a room or cage with controlled-access or in the form of bike lockers.
- **Short term (visitor)** parking must be provided in the form of racks either at-grade in highly visible locations close to major building entrances, sheltered wherever possible, or within publically-accessible and visibly identifiable locations below grade.

It is noted that while visitor parking is not required to be sheltered, it is recommended where possible, as a supportive cycling infrastructure feature. Where bicycle visitor parking is provided below grade, appropriate signage should be provided at-grade in order to direct cyclists to the designated location. While these recommended dimensions are not formalized standards, they are comparable to the City of Toronto's dimensional standards, which provide additional measurements for the spacing required around a bike rack outdoors. The City of Toronto guidelines are as follows.

**REFERENCE: City of Toronto Guidelines for the Design and Management of Bicycle Parking Facilities:**

**Spacing:** Required minimum spacing between bicycles parked in a horizontal position is 0.6 metres by 1.8 metres with a vertical dimension of 1.9 metres. For bicycles parked in a vertical position the required spacing is 0.6 metres by 1.2 metres with a vertical dimension of 1.9 metres.

For bicycle racks that hold more than 2 bicycles the following guidelines include preferred aisle spacing and spacing between a linear series of racks in order to give bicycles adequate room to manoeuvre:

- 1) A minimum distance of 2.5 m from any fire hydrant, entrance or loading area
- 2) For racks that hold multiple (>2) bicycles (*based on rack manufacturers' installation guides*):
  - (a) Distance between rack and wall, or other obstacle:
    - i. Minimum 0.45 m if bikes parked parallel to obstacle;
    - ii. Minimum 2.5 m if bikes parked perpendicular to obstacle and rack has double-sided access;
    - iii. Minimum 0.6 m if bikes parked perpendicular to obstacle and rack has single-sided access (side facing wall would not accommodate bicycles).
  - (b) Aisle width (space between bicycles):
    - i. Preferred spacing: 1.8 m. For typical bike racks this leaves approximately 4.2 m between racks, however this spacing will differ depending on the design of the rack.
  - (c) Space between rack ends (for a linear series of racks placed end to end):
    - i. 0.9m for maximum parking capacity.

**Figure 2-3** shows the recommended spacing for racks which hold multiple bicycles.

- 3) For racks that hold 2 bicycles:
  - (a) Distance between rack and wall, curb or other obstacle:
    - i. Minimum 1.5 m for racks perpendicular to wall or other obstacle
    - ii. Minimum 0.7m for racks parallel to wall, or other obstacle
  - (b) Distance between individual racks:
    - i. Minimum 2.5 m for racks parallel to wall, or other obstacle (3.5 m preferred in areas with high bicycle parking turnover).
    - ii. Minimum 1.0 m for racks perpendicular to wall or other obstacle

**Figure 2-4** shows the recommended spacing for racks which hold 2 bicycles.

Figure 2-3

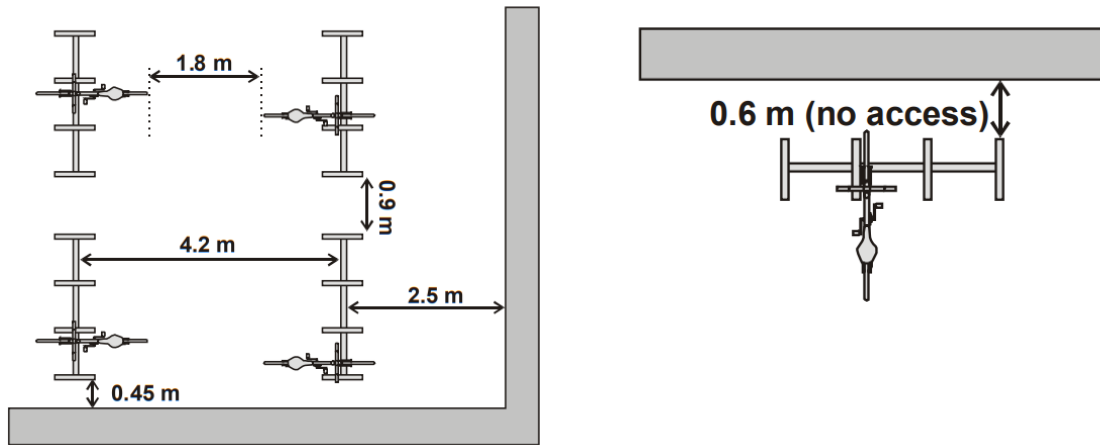
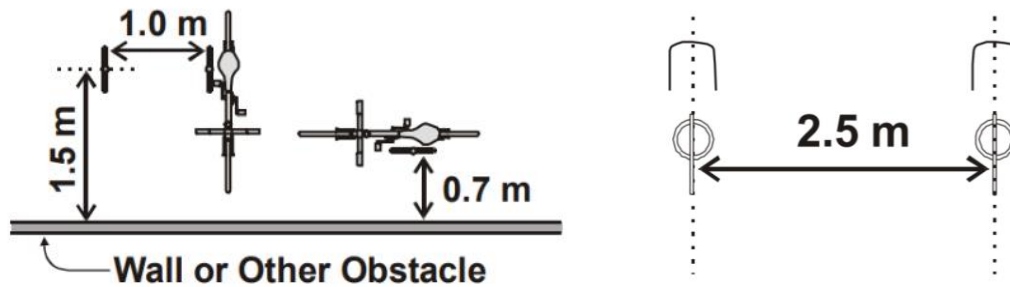


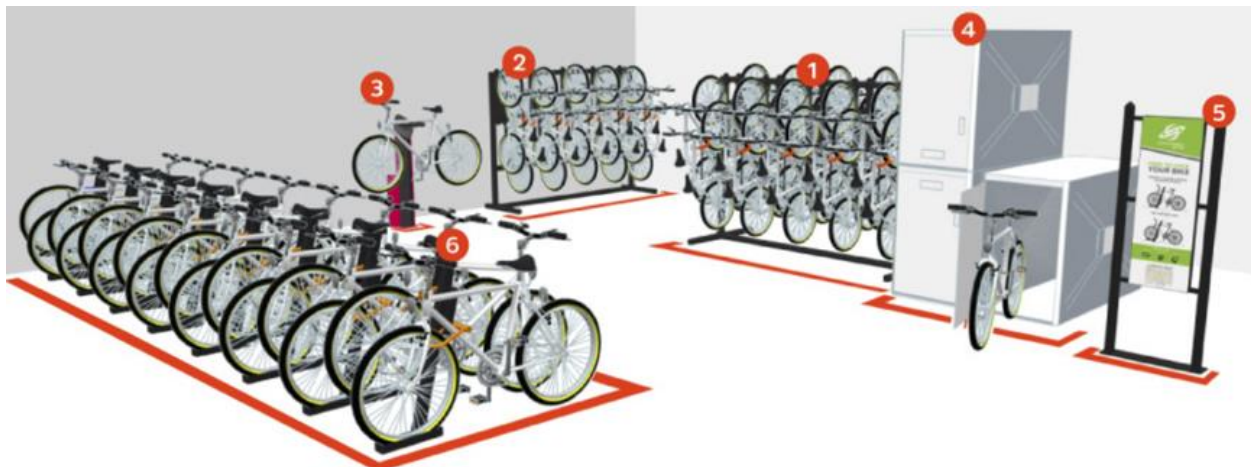
Figure 2-4



The orientation of bicycle racks determines the amount of spacing

Similarly, the City of Vancouver Municipal Code 20.945.050 outlines the City's standards for bicycle parking facilities. These dimensions are almost the exact same, but do provide the additional guidance that Bicycle parking can be provided with wall-mounted bicycle racks, but the rack must allow for the use of "U" locks that can be locked to the bicycle's frame. The dimensions for the rack must be 2 feet by 6 feet with adequate clear distance behind the rack for easy maneuvering. As shown in **Figure 2-5**, wall-mounted racks can be incorporated with ground racks, however they cannot be placed above one another.

Figure 2-5



Based on the above guidelines, we recommend the City of Mississauga's bicycle parking space dimensions from the Cycling Master Plan be incorporated into the draft Zoning By-law, and/or taken under consideration for inclusion within the SPA stage of development for sites within Lakeview Village. For additional guidance on spacing of bike racks, the City of Toronto guidelines are recommended for reference, until such time the City of Mississauga publishes additional standards. The proposed Zoning By-law will be finalized once comments are received from the City's Transportation Infrastructure Management staff regarding the standards to be used.

### 2.3.2 Bicycle Parking Rates (Residential Uses)

As mentioned above, the City of Mississauga does not currently have standard bicycle parking rates outlined in its Zoning By-law. The 2014 Port Credit and Lakeview Parking Strategy recommended regulations regarding bicycle parking rates and end of trip facilities, which were incorporated into the proposed draft Zoning By-law for the Lakeview Village community. Prior to inclusion, a cursory review was conducted of various municipalities to compare rates and identify which would be most appropriate within the Lakeview Village development context. A comparison of municipal bicycle parking standards within the Mississauga Cycling Master Plan, dated July 2009, provided a solid overview and was cross-checked for updates.

Following the review, it was determined that while the proportion of residential (long term) and visitor (short term) bicycle parking rate varies, the City of Mississauga's required total of 0.75 spaces per unit is average relative to other cities in Canada. The bicycle parking rate in downtown Toronto is 1.0 (0.8 long term, 0.2 short term) spaces per unit, and the rest of the City has a total of 0.75 (0.6 long term, 0.15 short term) spaces per unit. Rates in Vancouver range from 0.75-1.25 depending on the unit size. In Ottawa, the bicycle parking rate totals to 0.5 (0.125 long term, 0.375 short term), and in London the provision is for 0.75 long term spaces for buildings with 5 or more units. These rates were derived based on historical data and surveys and comparatively determined across municipalities and as a result there is no specific formula to calculate bicycle parking rates relative to vehicle parking.

Accordingly, the bicycle parking rates recommended in the Port Credit and Lakeview Parking Strategy are proposed for commercial and residential land uses within zones C4-XX1, C4-XX2, and RA5-XX, for consideration during the Site Plan Application stage of development, as follows:

The minimum number of bicycle parking spaces for an apartment, townhouse, townhouse on a CEC road, back to back townhouse, back to back townhouse on a CEC road, stacked townhouse and stacked townhouse on a CEC road, which do not have an exclusive garage, are supported by the following rates:

Minimum number of bicycle parking spaces

<b>Residential</b>	0.6 spaces per unit*
<b>Visitor</b>	0.15 spaces per unit

\*The residential bicycle parking space requirement may be accommodated, in part or in full, within private bicycle parking lockers.

**Note:** All dwelling units with an exclusive garage space are recommended to be exempt from the bicycle parking requirement for residents and visitors.

This total residential bicycle parking rate of 0.75 bicycle parking spaces per unit is average relative to other comparable sized municipalities in Canada and is considered appropriate for the scale and mixed-use nature of the Lakeview Village development.

In addition, as part of the RA5-XX residential zoning category, a regulation is recommended to allow a reduction in residential vehicle parking based on the provision of bicycle parking spaces in excess of the minimum recommended. The supported reduction rate for residential bicycle parking spaces is stated as follows:

Total resident parking spaces per residential dwelling unit **may be reduced at a rate of 1 vehicle parking space for every 5 bicycle parking spaces** provided in excess of the minimum number of bicycle parking spaces, if the reduction of the vehicle parking space is not greater than 20% of the total minimum vehicles parking spaces required.

The inclusion of this provision into the proposed Zoning By-law for Lakeview Village was not originally supported by City staff. Following consultation, LCPL proposes the consideration of this parking rate reduction on a site by site basis during the SPA development stage.

While the above rates are consistent to what was proposed for the Lakeview community, based on the 2014 Port Credit and Lakeview Parking Strategy, we recognize that the City’s most recent 2017 TDM Strategy and Implementation Plan outlined slightly different recommendations for bicycle parking rates, illustrated in **Figure 2-6**.

**Figure 2-6 Recommended Minimum Bike Parking Requirements - Residential**

Land Use	Bicycle Requirement Class	
	CLASS A (LONG-TERM)	CLASS B (SHORT-TERM)
<b>Residential apartments and multi-unit dwellings</b>	0.8 spaces per unit	Minimum 6 spaces for visitors

Source: City of Mississauga TDM Strategy and Implementation Plan, 2017

As shown in **Figure 2-6**, the proposed bicycle parking rates within the TDM Strategy and Implementation Plan, which the City indicated was the most updated regulation in their memo dated May 7, 2020, are in fact higher for residential land uses, compared to what is proposed for Lakeview Village. The recommended Class A long-term (resident) bike parking rate is 0.8 spaces per residential unit, which is higher than the combined long-term (resident) and short-term (visitor) rate of 0.75 bike parking spaces per unit proposed for Lakeview Village. However, the additional proposed regulation to reduce residential vehicle parking based on the provision of additional bicycle parking spaces may result in a bicycle parking supply which matches the recommended minimum bike parking requirements from the City’s TDM Strategy. On the other hand, the recommended minimum of 6 visitor bike parking spaces appears to be more of a generic rate and is not comparable to similar rates from other municipalities, and may result in an inconsistent and reduced supply across developments.

**2.3.2.1 Response to City Comments**

In their memo dated May 7, 2020, City staff were not supportive of the above provision within the proposed Zoning By-law to decrease residential vehicle parking spaces based on the provision of additional bicycle parking spaces in excess of what is required by the Zoning By-law due to concerns over the quantity of spaces and limitations with City management once the regulation becomes “as of right” through the By-law.

**Scale of Residential Bicycle Parking**

LCPL acknowledges the City’s concern regarding a potential over-supply of bicycle parking spaces across all residential blocks in Lakeview Village. However, as per the Development Master Plan, the Lakeview Village district is designed to maximize active transportation, control vehicle parking and mitigate external and internal traffic impacts across the community. Considering the vast cycling network within Lakeview Village and its connections to the City’s cycling network via Lakeshore Boulevard and the Waterfront Trail, as well as to destinations across the region via transit connections, short and medium distance commuters can conveniently utilize cycling to reach their destinations. Therefore, as a forward-thinking, sustainable community, cycling will play a major role in the multi-modal transportation network, above and beyond what is seen in other developments.

**Inclusion within the Zoning By-law**

City staff noted that the incorporation of the above bicycle parking regulation within the proposed Zoning By-law will allow developers to convert residential vehicle parking spaces into bicycle parking spaces “as of right”. We understand that the “as of right” situation would prevent the City from providing input into the conversion with the developer if there is an over-supply of bicycle parking spaces and there is no demand for additional spaces.

LCPL understands that the City would prefer to handle the inclusion of residential vehicle parking reductions through the provision of additional bicycle parking spaces on a site-by-site basis through the development application process. Accordingly, LCPL is willing to explore alternatives to ensure that the impacts of these parking rate reductions are not necessarily directly tied within the proposed Zoning By-law, but rather referenced during the Site Plan Application (SPA)

stage of development, supporting the parking strategy for each land use zone. In addition, the provision of bicycle parking facilities in public spaces, whether on-street or in public facilities, would support reductions on a block-by-block basis during the Site Plan Approval stage of development, and should be considered at that time.

### 2.3.3 Bicycle Parking Rates (Non-Residential Uses)

Similar to the residential rates above, bicycle parking rates for non-residential uses including offices and various commercial spaces were adopted from the City's Port Credit and Lakeview Parking Strategy and are proposed for non-residential land uses within zones OS2-XX1, I-XX, E2-XX, C4-XX1, and C4-XX2, for consideration during the Site Plan Application stage of development, as follows:

The minimum number of bicycle parking spaces for all permanent structures and buildings are supported by the following rates.

Minimum number of bicycle parking spaces

**Office**

Employee 0.17 spaces per 100 m<sup>2</sup> GFA – non-residential  
Visitor 0.03 spaces per 100 m<sup>2</sup> GFA – non-residential

**Retail store, personal service establishment, and restaurant**

Employee 0.085 spaces per 100 m<sup>2</sup> GFA – non-residential  
Visitor 0.25 spaces per 100 m<sup>2</sup> GFA – non-residential

**All other non-residential uses**

Employee 4% of required parking  
Visitor 4% of required parking

**Note:** Non-residential bicycle parking rates for Office uses apply only to zones I-XX, E2-XX, C4-XX1, & C4-XX2.

The recommended non-residential long term and short term bicycle parking rates total to 0.2 bicycle parking spaces per 100 m<sup>2</sup> GFA at offices, and total to 0.335 bicycle parking spaces per 100 m<sup>2</sup> GFA for all retail, personal service and restaurant uses. Following a cursory review and based on the Mississauga Cycling Master Plan, these rates are average relative to other comparable sized municipalities in Canada and considered appropriate for the scale and mixed-use nature of the Lakeview Village development.

However, as discussed previously, City's most recent 2017 TDM Strategy and Implementation Plan outlined slightly different recommendations for bicycle parking rates, illustrated in **Figure 2-7**, which are in fact much higher than what is proposed in the draft Zoning By-law for Lakeview Village, or could be considered during the SPA stage.

**Figure 2-7 Recommended Minimum Bike Parking Requirements – Non Residential**

Land Use	Bicycle Requirement Class	
	CLASS A (LONG-TERM)	CLASS B (SHORT-TERM)
<b>Retail</b>	0.5 per 500m <sup>2</sup> (GFA)	1.0 per 500m <sup>2</sup> (GFA)
<b>Business office</b>	0.5 per 500m <sup>2</sup> (GFA)	0.5 per 500m <sup>2</sup> (GFA)
<b>Medical office</b>	0.5 per 500m <sup>2</sup> (GFA)	0.5 per 500m <sup>2</sup>
<b>Employment</b>	0.5 per 500m <sup>2</sup> (GFA)	Minimum 2 spaces
<b>Elementary school, secondary school</b>	1 per 15 students	1 for every 10 students
<b>Post-secondary school</b>	1 per 15 students	1 per 15 students
<b>Institutional</b>	0.5 per 500m <sup>2</sup> (GFA)	0.5 per 500m <sup>2</sup> (GFA)

Source: City of Mississauga TDM Strategy and Implementation Plan, 2017

As shown in **Figure 2-7**, the total long-term and short-term recommended bicycle parking requirements are generally higher in total than the rates that were proposed in the draft Zoning By-law for Lakeview Village. For retail land uses, the total rate is 0.3 spaces per 100 m<sup>2</sup> GFA (0.1 long-term and 0.2 short-term), which is higher and lower for long-term (employee) and short-term (visitor), respectively, compared to the proposed rates, which totals to a marginally higher rate of 0.335 spaces per 100 m<sup>2</sup> GFA. For offices and institutional land uses, while the long-term and short-term rates differ, the total proposed supply of 0.2 spaces per 100 m<sup>2</sup> GFA is equivalent to what was proposed in the By-law and is recommended for consideration during the SPA stage of development. The recommended and proposed rates for other non-residential uses differ with non-comparable rates.

### 2.3.4 End of Trip Facilities

As stated above, the City of Mississauga's Zoning By-law does not currently have standards for end of trip facilities such as showers, lockers and change rooms. The Port Credit and Lakeview Parking Strategy recommended regulations which are proposed for consideration during the Site Plan Application stage of development for non-residential land uses within zones OS2-XX1, I-XX, E2-XX, C4-XX1, and C4-XX2, as follows:

One change facility per gender containing a change room and shower stalls shall be provided accessory to each building in accordance with the following.

**Table 2-1 Minimum number of shower stalls per gender in a change facility**

Required number of employee bicycle parking spaces	Required number of shower stalls per gender
0-4	0
5-29	1
30-59	2
60-89	3
90-119	4
120-149	5
150-179	6
Over 179	7 plus 1 for each additional 30 bicycle spaces

The minimum required rates for end of trip facilities are identical to rates in the City of Toronto's Cycling Guidelines. The City's *Guidelines for the Design and Management of Bicycle Parking Facilities* noted that the provision of high-quality bike-friendly infrastructure leads to increased cycling trips. This data correlates with the Statistics Canada 2006 Census, in which it states that approximately 25,000 people in Toronto cycled to work, representing 1% of all commuters, and a 0.2% increase from 2001. By the 2016 Census, this was up to 1.4% of all commutes in Toronto. As a result, the 2008 *Toronto Green Developments Standard* sets out the minimum target of providing one shower and change facility for every 30 bicycle parking spaces for workplaces. The Sustainability Strategy for Lakeview Village sets a goal to support a far higher cycling modal split within the community. Therefore this finding and guideline was adopted and proposed for inclusion on a site by site basis during the SPA stage of development, for Lakeview Village and the City of Mississauga.

However, as outlined previously, the City's most recent 2017 TDM Strategy and Implementation Plan provided slightly different recommendations for bicycle standards, including end of trip facilities. As shown in **Figure 2-8**, the TDM Strategy's standards provide additional requirements for toilets and sinks, in addition to showers and lockers, which are slightly different to what is proposed in the draft Zoning By-law for Lakeview Village.

**Figure 2-8 Recommended End-of-Trip Facilities**

Required number of Class A Bicycle Spaces	Toilets	Bathroom Sinks	Showers and lockers
<b>0-3</b>	0	0	0
<b>4-29</b>	1	1	1
<b>30-64</b>	2	1	2
<b>65-94</b>	3	2	3
<b>95-129</b>	4	2	4
<b>130-159</b>	5	3	5
<b>160-194</b>	6	3	6
<b>Over 194</b>	6 plus 1 for each additional 30 bicycle spaces	3 plus 1 for each additional 30 bicycles spaces	6 plus 1 for each additional 30 bicycle spaces

Source: City of Mississauga TDM Strategy and Implementation Plan, 2017

## 2.4 Bike Share

A bicycle-sharing system, or bike share, is a service in which bicycles are made available for shared use by individuals on a short term basis for a fixed or variable fee. Public bike share systems are a popular strategy in many cities to encourage more cycling, and have been successfully implemented worldwide, providing 24-hour access to shared bicycles for residents and visitors alike. The key draw of bike share programs is that they provide residents and employees of a city, district or downtown area access to bicycles without the responsibility of owning, maintaining, and storing a bicycle themselves. Cyclists are also provided the flexibility to bike for only parts of their trip, or just one-way, utilizing other modes of transportation for their trip to balance efficiency and affordability.

In a growing suburban-built city like Mississauga, the provision of bike share can help address first-mile/last-mile connectivity issues for public transit services by providing access to bike share at transit stops and within communities with bicycle-friendly routes. This would encourage people to choose cycling to travel from their origin and/or destination to transit, rather than driving a single-occupancy vehicle, supporting sustainable mobility and adding value to transit and multi-modal investments.

The City of Mississauga's Cycling Master Plan, which aims to make the city safer for and more appealing to cyclists, called for the creation of bike-share systems and the City's Transportation Master Plan recommended creating a shared system of bikes, e-bikes or e-scooters. The 2018 Cycling Master Plan identifies service areas for future bike share in the downtown City Centre and around Port Credit, serving approximately 150,000 residents, employment areas and key destinations. It is noted that connected cycling routes are needed to make people feel comfortable riding and thereby support bike share systems and a cycling culture within the city.

Considering the scale of residential, employment, commercial, civic and recreational development within Lakeview Village, LCPL recommends the City consider expanding the Port Credit Service Area to Lakeview, creating a Lakeshore Service Area for future bike share programs in the city. The two communities would be strongly connected for cyclists via the Waterfront Trail and future cycling facilities on Lakeshore Road. The extensive cycling network within Lakeview Village will serve to promote cycling as a go-to choice for travel between destinations in the city and would benefit from the provision of bike share facilities within the community. This is supported in various plans and policies, including in Metrolinx's 2016 GO Rail Station Access Plan which suggested the Inspiration Lakeview planning area as a potential bike share location to work in conjunction with those located at nearby Long Branch and Port Credit GO Stations.



City of Mississauga staff are currently conducting a study to determine available options and models including publicly owned and operated, privately owned and operated as well as mixed publicly and privately owned and operated. This will include a review of bikes, e-bikes and e-scooters that operate within a docked (devices are picked up and dropped off at specific locations) and dockless (users can park the device within certain zones) style. Currently, the Ontario Highway Traffic Act doesn't allow e-scooters on roads and sidewalks. The Government of Ontario is in the process of reviewing that Act. Active, shared mobility is coming to Mississauga, with questions soon to be addressed regarding how it will be regulated.

Bike share could bring numerous positive impacts to the Lakeview Village community, through support of the area's sustainability strategy, and contributing towards the Region, City and Lakeview's goals and objectives for over 50% sustainable transportation modal splits. A public bike share system would help connect Lakeview to the rest of the city in a sustainable and active way, and reduce residents' reliance on private automobiles. Therefore, for Lakeview Village, bike share parking spaces are recommended to be defined within the proposed Zoning By-law, for commercial and residential land uses within zones C4-XX1, C4-XX2, C4-XX3, and RA5-XX, as follows:

Bicycle-share parking spaces shall be dedicated to short-term bicycle rental for residents and shall be required to meet size requirements as specified [Section 2.3.1 of this memorandum].

Subsequently, parking rate reductions are recommended to reduce the quantity of vehicle parking spaces by providing bicycle share parking spaces, as a step towards promoting bike share and active mobility. For Lakeview Village, these parking rate reductions are recommended for consideration during the Site Plan Application stage of development, alongside considerations for short-term bicycle parking (as outlined in Sections 2.3.2 and 2.3.3), for commercial and residential land uses within zones C4-XX1, C4-XX2, C4-XX3, and RA5-XX, as follows:

Total resident parking spaces per residential dwelling unit **may be reduced at a rate of 3 vehicle parking spaces for every 10 bicycle-share parking spaces**, if the reduction of the vehicle parking space through a combination of bicycle parking and bike share parking is not greater than 20% of the total minimum vehicles parking spaces required.

This bike share provision should be closely considered in conjunction with numerous factors including the provision of short-term bicycle parking spaces which would impact the demand for bike share, as well as the vehicle parking supply when considering combined reductions. Bike share may not be ideal within private spaces of residential developments, however users of bike share programs may jointly benefit from the provision and usage of short-term bicycle parking, lockers, and other end-of-trip facilities in non-residential blocks. LCPL proposes that bike share parking reductions be considered on a site by site basis during the SPA stage to ensure a balance in parking for all modes, while ensuring its provision incentivises developers and future residents to adopt more sustainable transportation choices and support a cycling culture within Lakeview Village.

#### 2.4.1 Response to City Comments

In their memo dated May 7, 2020, City staff were not supportive of a previous version of the above bike share parking rate reduction provision due to concerns regarding the viability and implementation of bike share in Mississauga, the City's conceptual bike share service area, the type and scattering of bike share system, and justification for the scope of the reduction.

Regarding the scope of the parking reduction, it should be noted that the previously included verbiage related to a possible reduction in residential vehicle parking of up to 25% of the total parking supply has been revised and is noted that a bike share threshold would be accurately determined on a site by site basis during the SPA stage of development.

#### Bike Share in Mississauga

City staff noted that their position on the viability of bike share services in Mississauga is still undetermined, and will be based on the recommendations from the ongoing multi-phase bicycle share study by Active Transportation staff, which is expected to take a minimum of two years. The municipal study will determine if the City wants to get into the business of municipally provided bike share services, will study the viability of such a system and determine the study area.

Accordingly, LCPL understands that there is no guarantee that this type of service will be recommended, however, considering the overall alignment between bike share and the City's TDM Strategy, active transportation modal split goals, and sustainability objectives, we are confident that some form of bike share system will be implemented in Mississauga and can be made accessible to the future Lakeview Village community.

LCPL acknowledges that the City's 2018 Cycling Master Plan outlined a potential bicycle share service area stretching from Highway 403 to Lake Ontario, and generally between Confederation Parkway and Cawthra Road, which does not include Lakeview. However, considering the progress and information now available regarding the massive opportunity present from the Lakeview Waterfront Development, its integration and expansion of the City's cycling network, and the growth of shared mobility services worldwide in recent years, we urge staff to officially include the Lakeview Community within the recommended service area in the next update to the plan.

### **Type of Bike Share**

LCPL acknowledges that the type of bike share service implemented will significantly impact the scale and method of its adoption and implementation within Lakeview Village, and may result in alterations to the provisions proposed for consideration during the SPA stage of development.

In their memo dated May 7, 2020, the City notes that "the Cycling Master Plan (2018) identifies two possible types of bicycle share systems; station-based bike share where bikes must be parked at fixed docking station, or bike-based bike station where GPS-equipped bikes must be parked in a service area and may have designated parking areas usually located in the public realm."

We understand that there are a multitude of options in between the two aforementioned bike share systems, and that it is difficult to plan with such uncertainty. We recognize that a key element is the accessibility of all bike share bicycles in the system, meaning that bike share stalls should ideally be located in the public realm and not in private garages or facilities. Accordingly, bike share may possibly be located outside residential buildings in public spaces, or accessible in public parking for commercial and recreational land uses. Regardless, it is agreed that a "scattering" of bicycle share stalls in private, un-accessible spaces would not work well with either station-based or bike-based systems as bicycles may become unavailable to the public. Therefore, we propose a systematic and well-thought out network of bike share stalls, available across all land uses and accessible by residents, employees, and visitors alike.

It should be noted that a fixed docking system would be more amenable to Zoning By-law restrictions and regulations, as these can be planned and provided in limited quantities within the various blocks in Lakeview Village, and focused in key origin and destination points. A flexible or free docking system that is community-wide would not be the recommended form of bicycle share as similar services in other cities have resulted in an urban mess of bicycles not properly parked in recommended zones. However, as mentioned, there are many ways to regulate a fixed or flexible shared service, and could be defined following the City's study and the bike share model supported by staff.

While the above discussion is in relation to publically owned and operated bicycle share services, LCPL notes that private bike share is also a possibility, and could be handled through a variance for Lakeview. Based on the current development plan and active transportation strategy, a private Lakeview bike share system is not the direction LCPL would like to take at this time. This is because a private network would limit the system's reach and connectivity to future potential bike share networks and locations across the City of Mississauga and into the City of Toronto. At the end of the day, it is important that there be a single, integrated network for residents, employees and visitors to seamlessly utilize to travel to, from, and around Lakeview Village and the City of Mississauga.

### **Public vs. Private Bike Sharing**

Similar to public car-share, a public bike-share model would allow the city to regulate the number of bikes in neighbourhoods, ensure an appropriate distribution across communities, connect a larger network, and manage parking within public spaces. Public bike share would require a capital investment from cities for the bikes, parking stations and maintenance, however this would be far less costly than car-sharing provisions. Parking could also be provided at transit stops, within the public right-of-way, where space is available.

Public bike share could be linked to existing transit systems, and require the same Presto card to unlock the bike as when transferring to transit. This would open up options for fare integration within a fully-public system. As the City of

Mississauga Cycling Master Plan suggests: *“integrated bike share access and fares with conventional transit can assist with journeys from a transportation hub to a final destination to and from the home (‘last mile’ journeys).”*

### **Justification**

The consideration of parking rate reductions due to the provision of bike share is justifiable based on municipal strategies which promote the implementation of bike share and sustainable modes within the city.

The City’s 2018 TDM Strategy and Implementation Plan brings forward bike share services as a recommended and viable TDM measure to help shift travel demand from predominantly single-occupancy vehicles to more sustainable modes of transportation. The following is extracted from Appendix B: Best Practices of the TDM Strategy:

*“Recent research into bike share systems has demonstrated that their application and success is heavily dependent on a number of factors, such as: proximity to bikeshare; availability of bikes at bike docking stations; existing travel patterns; distance travelled; and access to legible bike network. The 2011 show that there is significant potential for bike share in a variety of contexts, however it has also been demonstrated in this and other studies that many bike share users were already predisposed towards transit and that the mode shifts away from vehicles is heavily dependent on travel distances and patterns.*

*In order to establish the viability for bikeshare for Mississauga, more information and data analysis would be required to establish typical travel distances and patterns, especially for journeys to and from major nodes and Downtown, as bikeshare is generally considered to be best suited for journeys of 5km or less. This kind of information would also be of high relevance for the Mississauga Bike Plan, currently underway.”*

The TDM Strategy acknowledges that:

*“Locating bike share stations at specific locations within the community such as major transit hubs, shopping hubs, multi-unit residential developments, employment areas and tourist attractions will encourage the use of cycling over the single occupant vehicle and lead to more active populations.”*

In summary, the Plan calls on the City to work with a bike share provider to develop a program to implement a system of bike share facilities within the City. As these facilities are best utilized when located in mixed-use areas and areas with multi-unit residential buildings, Lakeview Village will be ideally suited for a major bike share facility and integrated bike share parking across its various land uses for public and private use.

LCPL acknowledges that the inclusion of a bicycle share parking provision within the Zoning By-law may be new and unprecedented due to a lack of comparable regulations in Canadian cities. Accordingly, we propose to consider such regulations on a site by site basis during the SPA stage of development. Considering the innovative and future tone-setting nature of the entire Lakeview Waterfront Development, we are confident that the inclusion of a robust bike share strategy in Lakeview Village will help position the City of Mississauga as a leader in multi-modal transportation planning, and set the standard for other large cities to learn from and adopt across Canada.

### **2.4.2 Bike Share Parking Standards**

As discussed, there are currently no specific requirements for bike-share parking standards in Mississauga or around the GTA, beyond the need for bike share stations to be publically accessible. As stated in the City of Mississauga’s Cycling Master Plan, up to 10 bikes can be parked in the same area required for one car. As bike share bicycles are scarcely different than privately-owned bikes, similar bicycle parking rates based on GFA and building usage may be justified. The existing bicycle parking rates (and associated vehicle parking reduction rates) discussed in this memo may still apply to bike-share. In fact, the rates could be increased with a recommended split built in for privately-owned and bike-share bicycles. Bike-share may be predominantly used by employees and visitors, however studies in Germany show bike share being used as a reliable first-mile/last-mile solution to reach transit stations. To best promote active transportation and reduce vehicle demand, bike share parking may be one day provided at every development and transit hub at rates equivalent to existing bicycle parking standards.

## 2.5 Cumulative Reductions

LCPL acknowledges that city staff expressed reservations regarding the potential accumulation of vehicle parking rate reductions across all land uses within Lakeview Village, within their memo dated May 7, 2020, in review of the then proposed Zoning By-law.

Accordingly, each rate was reviewed and considered thoroughly for its appropriateness in inclusion within the draft Zoning By-law for Lakeview Village. The final set of vehicle parking rates for inclusion within the By-law were determined and proposed with justification within TMIG's previous memorandum entitled "Lakeview Village Zoning By-law Parking Rate Reductions Justification", dated August 27<sup>th</sup>, 2020.

Subsequently, this memorandum has been prepared to propose further parking rate reductions during the Site Plan Application stage of development. The enclosed sections include recommendations for a mixed use shared parking strategy and bicycle parking standards, while proposing reductions to (Zoning By-law approved) vehicle parking rates based on car share, bicycle parking, and bike share parking facilities. It is expected that the rates outlined in this memo will be harmoniously and collectively considered on a site by site basis during the SPA, to ensure that each development sufficiently provides parking for all forms of mobility in a balanced and sustainable manner.

## 2.6 Municipal Parking Facility

The availability of public parking facilities in areas such as City Centre and Port Credit help reduce the requirement for additional office, commercial and civic parking. Municipal parking supply, whether on-street or off-street, is utilized by various groups in a week through a shared parking method. Parking spaces are typically occupied by office employees during peak business hours, and then the vehicles are replaced in off-peak hours by visitors to surrounding commercial, retail, and cultural amenities. As a result, municipally provided parking spaces have a higher utilization when compared to privately-owned parking lots, as discussed in "City of Mississauga Parking Strategy – Phase II Port Credit and Lakeview, Final Report" prepared by BA Group for the City of Mississauga, dated June 2014.

In Lakeview Village, the proposed municipal parking garage at the south end of the Lakeview Innovation District is planned to provide flexibility for strategic use as both office, commercial and public parking space, thereby reducing the stress and demand for additional parking to be provided within the office blocks for employment use, within Lakeview Square for commercial uses, the cultural blocks and in particular for the I-XX zoned city-owned block. Accordingly, the non-residential / employment parking rates should be reduced to consider the impact of available public parking within immediate proximity of the Lakeview Innovation District office blocks. While the final design, height and subsequent capacity of this proposed public parking facility is to be determined based on design requirements specified by the City, its presence would justify reduced office and commercial non-residential parking rates when considering the same arrangement is provided at Mississauga Civic Centre and is approved for future office developments in the city.

### 2.6.1 Public Parking Supply Required

As per the Lakeview Village Land Use Plan, prepared by Gerrard Design, dated October 3 2019, and included on page 28 of the Transportation Considerations Report, dated June 2020, a total of 36.22 acres (14.66 hectares) of Public Open Space (including water feature) are provided in Lakeview Village. In addition to public open space along the Lakeview Village waterfront and in the Jim Tovey Lakeview Conservation Area, a landmark Waterfront Cultural Centre, Waterfront Pavilion, Innovation Hub, Concert Space, Kayak Boat Launch and more are proposed to be provided to attract the public and tourists to Lakeview Village.

According to the Port Credit and Lakeview Parking Strategy Report, prepared by BA Group for the City of Mississauga, dated June 2014, the City has a 'negligible' role in public parking in the Lakeview area, as public parking in a development node or downtown area can range from 25% to 60% of the total commercial parking supply, depending on the municipality. The report suggests that the City initially aim for 40% of the overall commercial parking supply in Lakeview to be publicly available, similar to the amount the City supplies in the Port Credit area.

As per the calculations in our previous parking memo dated August 27<sup>th</sup>, 2020, if 40% of the currently estimated 252 required commercial spaces in Lakeview Square (at a blended rate of 3.0 spaces per 100 m<sup>2</sup> GFA for retail and

restaurant spaces) were to be provided by the City as part of the parking structure, 101 public parking spaces would need to be supplied.

In addition to the commercial space around Lakeview Square, public parking would be required for the City-owned lands and the cultural and recreational uses proposed along the waterfront. Based on parking rates provided by ITE Parking Generation, an estimated 717 parking spaces (depending on the final City programming) would need to be supplied to support open park space (43 spaces), the proposed Cultural Centre (397 spaces), Innovation Hub (200 spaces), and the Jim Tovey Lakeview Conservation Area (77 spaces). The proposed kayak boat launch area may accommodate an additional 20 spaces, self-contained for its own use. **Additional consultation with the City on expected programming and utilization of the public areas is required to better determine the anticipated public parking demand.** Through such consultation with City services, and the provision of the city's expected programming plans for the site, we can determine overlapping peak periods for parking demand, and estimate the over public parking demand for the Village.

Municipal studies and plans recommend the provision of public parking to be centralized off-site, ideally using a parking facility as identified in Lakeview Village. Consequently, when considering the shared public parking supply, it is important to consider the various peak hour demands from each land use. In this case, we can confidently assume that the peak parking demand for Lakeview Square commercial spaces and the public waterfront cultural and recreational areas will overlap during weekday evening and weekend periods (i.e. not during typical office business hours). Therefore, the total public parking demand is estimated to be at least **818 spaces** (inclusive of 101 commercial and 717 park), and is expected to fluctuate as detailed parking rates are determined for the public waterfront programming. The estimated parking demand of 818 vehicle spaces, for commercial and open park land uses, within the off-street parking garage could be further reduced through the provision of on-street parking and shared parking strategies.

### 2.6.2 On-Street Parking

The City of Mississauga Official Plan (MOP) Policy 13.3.7.3.1 (a) states that on-street parking will be provided within the Lakeview Waterfront Major Node Character Area (Lakeview Waterfront) *"as appropriate and integrated into the streetscape design, balancing the needs of all modes of transportation & the public realm that share the right-of-way"*.

Currently, **288 on-street parking spaces** will be provided across the Lakeview Village community. As shown in **Figure 1-1**, one-sided street parking will be provided along the entire Lakeview Innovation District, through Lakeview Square on Hydro Road, and along the Waterfront on Street 'D'. These destinations are woven into a network of one-sided street parking on all east-west and north-south links connecting to the corridor, and two-sided street parking along Street 'B' and a portion of Street 'A'.

An estimated total of approximately 750 on-street parking spaces (subject to detailed road network design) could be provided across the entire Lakeview Major Node, extending beyond the draft plan, with a range of between 190 and 413 considered within reasonable walking distance of the lakefront park lands and the Lakeview Square commercial uses, according to the Parking Strategy Report, dated March 2019.

The City of Mississauga's Parking Master Plan (2019) states that *"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 6am. 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."* The plan continues to recommend the City to continue to allow on-street parking between 8 am and midnight beyond the 5 hour limit.

### 2.6.3 Parking Garage Facilities

A single multi-storey municipal parking facility is proposed to be built by the City at the south end of the Lakeview Innovation District, adjacent to Lakeview Square and the Waterfront. The proposed parking garage is planned as an integral element of the Lakeview Village parking strategy and is centrally located in order to provide surplus vehicle parking spaces for usage by visitors to Lakeview Square, visitors to the public parks and recreational facilities, and for the cultural and institutional uses along the Innovation District. While the City will be building this, and any interim facilities, within the parking garage block, future collaboration with LCPL will be explored once additional details are obtained from city staff regarding the public parking strategy and demand assessment.

Considering the multi-year phased approach to the construction and occupancy of the Lakeview Village community, it can be assumed that a full multi-story parking structure may not be required immediately. Based on the area of the parking facility block, a number of surface parking spaces could be provided in the interim, serving the early residents, employees and visitors of the site. To estimate the number of parking spaces that could be provided, the size of the block would need to be finalized and a parking layout developed. Typically, a parking space requires approximately 350 square feet of space, including the area required for the parking stall and drive aisles. In Mississauga, a minimum width of 2.6 m, length of 5.2 m, and aisle width of 3.5m (per side for a two-lane double loaded parking aisle) is required for adequate vehicle storage and movement. As part of the concept design process for the parking garage spaces, a total of 40 m<sup>2</sup> (430.56 ft<sup>2</sup>) of space is required, in order to accommodate all required infrastructure including drive aisles, ramps, etc., for each parking stall.

When developed, and based on the current design, a total of **989 parking spaces** are proposed to be provided in this six-storey parking garage, meeting the needs to visitors and workers to Lakeview Square, the Lakeview Innovation District, and surrounding cultural and recreational uses along the Waterfront. The capacity of the parking facility is dependent on the future design of the facility, to be determined based on forthcoming requirements from the City. As with most public parking facilities, it is envisioned that the parking garage would serve the parking demands of mix of uses, as outlined. This in turn improves the utilization of each parking space, with multiple vehicles using the space over the course of a day or week. In contrast, private parking structures tend to sit empty when the intended occupant is not using the space, such as with office parking on weekends.

While the current plan for Lakeview Village indicates the integration of a single municipal parking facility, as discussed, there exists the possibility of adding underground parking facilities under Ogden Park, Lakeview Square, and in the west side of the Lakeview lands, to potentially allow public parking to be spread out across Lakeview Village. There is also an opportunity to expand public parking within the proposed municipal building to be located north of Street B. It should be noted that any parking structure, outside of the primary parking facility, would be for public use and not required by LCPL for any private land uses. All parking associated with residential, office, commercial, or institutional uses, with the potential exception of Lakeview Square, will be accommodated on-site, and be specifically determined at the Site Plan Application stage on a building by building basis.

#### 2.6.4 Shared Parking Garage

As above, a total of 989 vehicle parking spaces are proposed to be provided in the shared municipal parking facility near the south end of the Lakeview Innovation District and adjacent to Lakeview Square and the Waterfront. Furthermore, it is generally accepted that there are substantial peak hour variances for parking demand for all uses, with office uses primarily peaking during business hours and most other uses peaking during non-business hours.

In order to determine the percentage of garage parking available for office use, even without explicit parking demand forecasts for certain uses such as the Jim Tovey Park and/or the Waterfront attractions in general, we have initiated our investigation using a conservative (high) estimate of shared parking allocation for the office uses and then identify what the supply could be for the other uses.

A shared parking scenario prepared by Sasaki assumes 16.5% of surplus office parking demand (created if office GFA is increased) can be moved to the parking garage. With a proposed increased office GFA of 148,209 m<sup>2</sup>, a total of 3,112 parking spaces would be required at a rate of 2.1 spaces per 100 m<sup>2</sup>. Shifting 16.5% of the parking demand, or 515 cars, to the parking garage would utilize 52% of its projected supply of 989 parking spaces.

Assuming 40% of the total commercial and cultural parking required around Lakeview Village (as calculated in our previous memo dated August 27<sup>th</sup>, 2020) were entirely accommodated within the parking garage, the additional 101 cars would fill another 10% of the garage, leaving 373 parking spaces left for other recreational and waterfront uses. However this assumes that all parking demands occur at the same time. In reality, the office demand will utilize the parking facility during weekday peak daytime hours, and the commercial and recreational uses will use the parking spaces in the off-peak weekday evening and weekend periods, when visitors/tourists come to the site.

Considering the availability of 285 on-street parking spaces spread out throughout the Village, it is likely that the parking demands of the shared facility would be reduced. However, in a hypothetical "worst case" scenario, assuming 100% of the commercial parking demand is accommodated off-street in the shared facility, and assuming both office and commercial uses peak during the same period, a total of 60% of the shared facility would be occupied with the remaining

40% of parking capacity potentially available for additional office use, bringing its shared percentage up to a maximum of **90% for office parking** (890 vehicles) within the shared facility.

Unfortunately, this calculation assumes a lump-sum parking demand for all non-residential, non-office land uses, and therefore does not accurately peak demand per type of use, as per the mixed-use shared parking formula. In addition, the non-office parking demand utilized in the calculations includes retail, cultural, personal service uses, etc., most of which would be accommodated by its own dedicated on-site parking, on-street, or shared with residential visitor parking, rather than in the municipal parking garage.

**In order to effectively understand the parking requirements and propose accurate rates for a shared parking strategy, a discussion with LCPL and key City staff regarding expected city programming and resultant parking demands for cultural and recreational uses around Lakeview Square is requested.** Once these rates are confirmed, appropriate shared parking rates for all the non-office/retail/restaurant/commercial uses can be determined.

### 2.6.5 Paid Parking

The City of Mississauga currently operates *free* public parking facilities located close to *paid* public parking facilities, which, as the City manages its supply, are becoming examples of the need to manage supply consistently and logically. In Port Credit, for example, municipal parking is free at the Library, Arena, and Waterfront Parks, while there is under-utilized paid parking lots in the immediate area. The inconsistency shifts users of a paid facility, such as Port Credit GO Station, to free facilities such as the Port Credit Memorial Arena, leaving spaces unavailable to patrons of that facility.

As outlined in the City's Parking Master Plan, solutions include the construction of new off-street municipal parking (such as the garage in Lakeview Village) as well as extending permissions and times for on-street parking to expand the capacity while being reasonably priced. On the contrary, while City Centre has paid parking on-site, the low rate of just \$1/hour does not deter drivers to instead use available free parking, as those lots are heavily utilized. Higher public parking pricing, along with elimination of free parking where appropriate (and/or tighter controls on its use) would reduce demand and also dwell time, encouraging a faster turnover of vehicles, which increases the capacity for vehicles to enter and exit an area such as Lakeview Village, while reducing the parking supply.

Consistent and logically provided paid parking is a TDM strategy implemented to discourage the use of single-occupant vehicles in the area, which is in line with the goals and vision for the Lakeview Village community. By reducing the demand and diverting trips towards sustainable modes of transportation, fewer parking spaces are required in the area. Accordingly, reducing the non-residential / employment parking rate to 2.1 spaces per 100 m<sup>2</sup> office GFA in the Lakeview Innovation District, and 3.0 spaces per 100 m<sup>2</sup> commercial GFA in Lakeview Square, combined with paid parking would sufficiently reduce overall demand and allow for a shared parking strategy to be feasibly implemented in the municipal garage.

## 2.7 Non-Residential Vehicle Parking

LCPL acknowledges the City's comment requesting a defined parking standard for possible non-residential land uses on City owned lands including for a *Creative Industry Incubator Space* (OS2-XX1 and C4-XX3), *Cultural Infrastructure Facilities* (OS2-XX1 and C4-XX3), and *Cultural Facilities* (I-XX and C4-XX3). In order to provide a more accurately defined rate, a better understanding is required on what type of uses and activities will be accommodated on this City-owned land, and the parking demand associated with the public space. **LCPL requests a meeting with the City's Communication Services, Culture Staff in order to detail the anticipated building programming on city lands, to help move this parking rate determination forward.**

### 3 Conclusion

In conclusion, based on comparable municipal parking strategies and forward-looking sustainable transportation alternatives, it is recommended that parking standards and provisions be identified for consideration on a site by site basis during the Site Plan Application stage of development for all land use zones in Lakeview Village.

Following the City of Mississauga's memorandum dated May 7, 2020, and additional consultation with City staff, a **mixed-use shared parking strategy** is proposed for consideration within commercial and residential zones, to ensure vehicle parking is not oversupplied based on the uses within each block. In addition, recommendations for **bicycle parking dimension standards** and **end-of-trip facilities** are proposed to ensure consistency of such facilities across the development. Based on this, recommended **bicycle parking rates** are identified for residential and non-residential uses, with long-term and short-term bicycle parking rates totalling **0.75 spaces per residential unit, 0.2 spaces per 100 m<sup>2</sup> GFA for offices, and 0.335 spaces per 100 m<sup>2</sup> GFA for all retail, personal service and restaurant uses.**

Subsequently, and in consideration of changing mobility patterns, parking rate reductions are proposed based on the availability of car share, bicycle parking, and bike-share facilities, as follows:

- Total resident parking spaces per residential dwelling unit may be reduced at a rate of **4 vehicle parking spaces for every 1 car-share parking space** provided on the site up to a maximum of 1 car-share parking space per 60 dwelling units.
- Total resident parking spaces per residential dwelling unit may be reduced at a rate of **1 vehicle parking space for every 5 bicycle parking spaces** provided in excess of the minimum number of bicycle parking spaces, if the reduction of the vehicle parking space is not greater than 20% of the total minimum vehicles parking spaces required.
- Total resident parking spaces per residential dwelling unit may be reduced at a rate of **3 vehicle parking spaces for every 10 bicycle-share parking spaces**, if the reduction of the vehicle parking space through a combination of bicycle parking and bike share parking is not greater than 20% of the total minimum vehicles parking spaces required.

Finally, a municipal parking review identified an approximate vehicle parking supply of 818 spaces required for public uses, available on-street parking, and analyzed a potential shared parking strategy between public and private uses within a potential 989-space public parking facility at the southern end of the Lakeview Innovation District.

Following this memorandum, LCPL requests the City's feedback on the proposed mixed-use shared parking formula, bicycle parking rates, and potential vehicle parking reduction strategies. In particular, LCPL requests that staff from the City of Mississauga's Transportation Infrastructure Management, Transportation Projects Section provide comments regarding the proposed bicycle standards and confirm which parking rates and dimension standards should be utilized. Lastly, LCPL requests the City to provide details regarding the expected city programming and resultant parking requirements for the cultural and recreational uses around Lakeview Square and the Waterfront, in order for an appropriate public-private shared parking strategy to be determined.