



Parking and TDM Strategy for Developments – Recommendations Report **FINAL**

Richmond Hill Parking and TDM Strategy for
Developments

City of Richmond Hill, Ontario
August 20, 2024

Executive Summary

The City of Richmond Hill initiated the City of Richmond Hill Parking and Transportation Demand Management Strategy for Developments (PTDMS) in 2019, with the goal of modernizing the parking standards, developing a comprehensive set of requirements which would cover all land uses in all areas of the City, incorporating Transportation Demand Management (TDM) into the parking requirements, and to ultimately adopt and consolidate these recommendations into the Comprehensive Zoning By-law (CZBL). This PTDMS Recommendations Report was developed as a result.

The 2010 Richmond Hill Parking Strategy (2010 PS) recommendations were not formally adopted into the City's by-laws but did provide direction and recommendations for the City to consider. Since 2010, the industry has shifted towards sustainability and encouraging other modes of transportation with a desire for less reliance on single-occupant vehicles, and for that reason it was important to revisit the City's approach to parking in this context. The intent is for the PTDMS to be updated periodically every 5 years to ensure that further changes in the industry have been adopted as part of the PTDMS.

TDM has been incorporated into the recommendations to allow developers the flexibility to reduce parking requirements by offering enhanced on-site TDM while supporting City and York Region goals of encouraging more sustainable travel. Incorporating tiered parking rates tied with the provision of TDM also reduces the need for City oversight in the approvals process and will reduce the number of site-specific zoning by-laws and minor variance applications. Finally, surrounding context is also factored into the potential minimum parking rate reductions.

This Recommendations Report summarizes the findings and recommendations of the PTDMS, and incorporates comments on the interim studies which included the following reports:

- **Current Practices Report** – This report primarily reviewed municipal parking rates contained in Zoning By-laws from various other municipalities within Canada to establish the best practices (or “current practices”) which would be the starting point for the recommendations contained in this report. This included minimum and maximum parking rates, and shared parking formulas.
- **Design Criteria Review Report** – This report reviewed parking design criteria from other municipal Zoning By-laws relating to parking, loading, and electric vehicle support.
- **TDM and Parking Efficiencies Memorandum** – This memorandum reviewed the approaches that other municipalities are taking towards incorporating TDM into their parking requirements and/or Zoning By-laws and investigated how similar concepts could be applied in Richmond Hill. Concepts included direct integration of TDM into the by-law as well as point systems.
- **Data Collection Summary Report** – This report summarized the data collection findings of the study. The data collection included two public surveys and two developer (BILD) surveys which were conducted online and asked opinions regarding parking supply and mode choice from each perspective. Additionally, the data collection report

reviewed minor variances and site-specific zoning by-law requests the City has received over the past several years to identify trends and opportunities to reduce these requests through the recommendations in this report.

- **Parking Research Review and Survey Analysis Report** – Tate Economic Research Inc. conducted additional parking research as well as residential phone surveys using a market research firm focusing on multi-storey buildings located near major transit station areas within the Greater Toronto Area. The report prepared by Tate provided an overview of the industry trajectory and future directions to provide protection for modernization in the medium- to long-term. The report reviewed emerging technologies including automated vehicles and the impacts on parking, and shared mobility options which have reached the market in recent years. The report also looked at parking policy trends including case studies. The results of the market research were primarily used to support and validate the residential parking rate recommendations within this study.

At the core of this PTDMs is the 2010 PS which laid the foundation and medium to long-term recommendations which the PTDMs emerged from. The recommendations within this PTDMs were also built on the background research and data collection listed above, and were guided by the **Council Strategic Priorities**, the City's **Official Plan**, and programs such as the **Richmond Hill Sustainability Metrics**.

A. Parking Strategy Areas

The 2010 PS previously established five parking strategy areas with varying parking rates for each strategy area depending on the anticipated land uses, transit availability, density, and built-form.

Six parking strategies were also devised within the 2010 PS, and depending on the parking strategy area, some or all of these strategies were applied. The parking strategies included:

- A. Reduced on-site parking supply requirements
- B. Maximize use of on-street and/or off-site public parking
- C. Implement shared parking formula for mixed-use developments
- D. Cash-in-lieu
- E. Parking charges for non-residential development
- F. Travel Demand Management

These six concepts have generally been carried forward within the PTDMs's recommendations. In particular, the concept of varying parking rates by parking strategy area with reduced rates, as appropriate, has been maintained. In addition to varying of parking rates, the updated parking strategy areas also include tiered parking rates for each parking strategy area which allows for reduced minimum parking rates for the provision of TDM measures which will tangibly affect mode shares. With this in mind, strategies A (reduced parking requirements), C (shared parking), and F (travel demand management) from the 2010 PS have been incorporated into the PTDMs, while strategies B (public parking) and D (cash-in-lieu) are also contemplated.

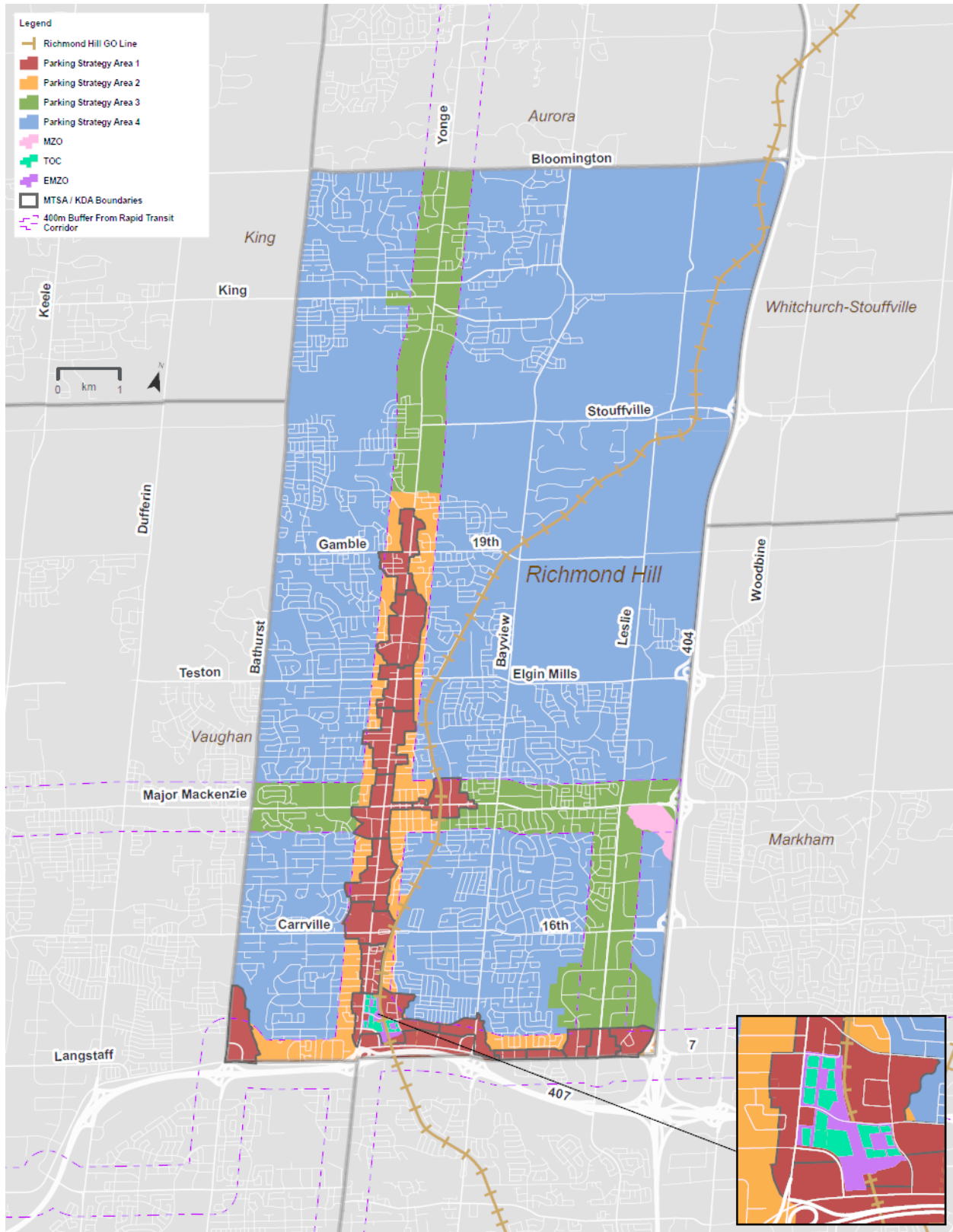
The four **Parking Strategy Areas** in the PTDMS are generally defined as:

- **Parking Strategy Area 1:** Richmond Hill Regional Centre Secondary Plan Area, Key Development Areas, and Protected Major Transit Station Areas. Best transit availability. No minimum parking requirements following Provincial legislation. Highest minimum TDM requirements. TDM requirements are based on the amount of parking provided.
- **Parking Strategy Area 2:** Areas generally within 400m of existing rapid bus transit served by dedicated rights-of-way that have been completed. Low parking requirements but high minimum TDM requirements. Availability of two reduced parking rate tiers through the provision of TDM measures.
- **Parking Strategy Area 3:** Areas generally within 400m of a Rapid Transit Corridor that are not already part of Parking Strategy Areas 1 or 2, lands immediately adjacent to the East Beaver Creek Road and West Beaver Creek Road corridors, and other intensification areas identified in the City's Official Plan. Moderate parking requirements and moderate minimum TDM requirements. Availability of two reduced parking rate tiers through the provision of TDM measures.
- **Parking Strategy Area 4:** All other areas of the City. Least transit availability. Highest minimum parking requirements but lowest minimum TDM requirements. Availability of one reduced parking rate tier through the provision of TDM measures.

There are some special consideration sub-areas, such as the Enhanced Minister's Zoning Order (EMZO) and Transit-Oriented Communities (TOC) areas within the Richmond Hill Regional Centre Secondary Plan area which has parking requirements stipulated by the Province, and the Minister's Zoning Order (MZO) areas at Major Mackenzie Drive East and Highway 404.

- **Special Areas**
 - ↳ EMZO and TOC at High Tech Road
 - ↳ MZO areas at Major Mackenzie Drive East and Highway 404

Figure ES-1: Richmond Hill Parking Strategy Areas





B. Parking Rates and Shared Parking

Parking rate recommendations include a base tier of minimum parking rates for each Parking Strategy Area beginning with the highest base requirements in Parking Strategy Area 4 and the lowest in Parking Strategy Area 2. Parking Strategy Area 1 and the EMZO and TOC areas will have no minimum parking requirements in accordance with Provincial legislation.

Notwithstanding, a minimum amount of TDM still must be provided within each area, with Parking Strategy Area 1 and the EMZO and TOC areas having the highest minimum TDM requirements, and Parking Strategy Area 4 having the lowest TDM requirements.

If ample TDM is provided, then a development will be allowed to apply the next tier of parking rates which are lower than the base rates. The potential reduction is dependent on the sensitivity of the land use as well as the potential impact TDM may have on mode choice or auto ownership. For this reason, there is a range in the reductions for Tier B and Tier C rates.

Maximum parking rates are generally 25% higher than the minimum base rates for Parking Strategy Areas 2 and 3. There are no maximums applied to Parking Strategy Area 4. The parking rate structure is shown in **Table ES-1**. Recommended minimum and maximum parking rates are presented in **Table ES-2** through to **Table ES-5**, for residential and non-residential land uses.

Table ES-1: Parking Rate Structure

Parking Strategy Area (PSA)	Minimum Parking Rates			Maximum Parking Rates (vs. Base Rates)
	Tier A (Base Rates)	Tier B (Up to 10% lower than Base Rates)	Tier C (Up to 20% lower than Base Rates)	
1	No minimum parking			Same as PSA 2
2	✓	✓	✓	Generally 25% higher
3	✓	✓	✓	Generally 25% higher
4	✓	✓		No maximums

Shared parking is recommended to be reflected in the CZBL in a way that captures the majority of shared parking opportunities expected within the City. Blended ‘commercial plaza’ and ‘commercial uses within mixed-use building’ parking rates are recommended to be established that permits a grouping of land uses, but will have limits in Parking Strategy Area 4 on the proportion of restaurants and medical offices. In the event that either of these land uses individually exceed the limit which is expressed as a maximum percentage of the total gross floor area (GFA) of the commercial uses, then the parking requirement for the GFA exceeding the limit must be calculated using the required minimum parking rates specific to those uses, instead of the blended commercial rate.



Additionally, if there is a parking supply within a mixed-use condominium building that is shared between residential-visitors and commercial uses within the same building, then a 10% reduction can be applied to the parking requirement for those commercial uses. This reflects the shared parking opportunity between residential-visitors and commercial uses which can have different peak times. However, this reduction shall not be available for commercial uses that are outside of the mixed-use condominium building.

Table ES-2: Minimum Residential Parking Rates and Tiers

Land Use	Tier 4A	Tier 4B	Tier 3A	Tier 3B	Tier 3C	Tier 2A	Tier 2B	Tier 2C	Tier 1	EMZO & TOC	Units
Condominium / Apartment											
Bachelor (+ 1-bed ≤ 55 m2)	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.50	0.00	0.00	/unit
One Bed > 55 m2	1.00	0.95	0.90	0.85	0.80	0.75	0.70	0.60	0.00	0.00	/unit
Two Bed+	1.20	1.10	1.00	0.95	0.90	0.85	0.75	0.70	0.00	0.00	/unit
Condominium / Apartment Visitor	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	/unit
Affordable Housing											
Bachelor (+ 1-bed ≤ 55 m2) (Affordable)	0.55	0.50	0.50	0.45	0.40	0.40	0.35	0.30	0.00	0.00	/unit
One Bed > 55 m2 (Affordable)	0.60	0.55	0.55	0.50	0.50	0.45	0.40	0.40	0.00	0.00	/unit
Two Bed+ (Affordable)	0.70	0.65	0.60	0.55	0.55	0.50	0.45	0.45	0.00	0.00	/unit
Visitor (Affordable)	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	/unit
Block / Condo / Stacked Townhouse											
Block / Condo / Stacked Townhouse Resident	1.50	1.50	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Block / Condo / Stacked Townhouse Visitor	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	/unit
Low Density Residential Land Uses											
Seniors' Residence / Retirement Home	0.50	0.50	0.33	0.33	0.33	0.33	0.33	0.33	0.00	0.00	/unit
Single-detached	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Semi-detached	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Duplex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Triplex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Double Duplex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Street Townhouse	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Other Residential Land Uses											
Additional Residential Units (ARU) ¹	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
Home Based Live-work	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Home Occupation ²	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
Short Term Accommodation ²	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
Shared Housing with Support (including Long Term Care Homes, Group Homes)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	/bed
Shared Housing without Support (including Rooming Houses, Lodging Houses, and Boarding Houses)	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Multi-Tach ²	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note

Note: 1) Refer to the Richmond Hill ARU parking rate requirements established through the 4x4 Housing Accelerator Fund (HAF) initiative
 2) No additional parking requirement. Parking requirement is the same as the primary dwelling time (i.e. single-family, condominium/apartment etc.)

Table ES-3: Minimum Non-Residential Parking Rates and Tiers

Land Use	Tier 4A	Tier 4B	Tier 3A	Tier 3B	Tier 3C	Tier 2A	Tier 2B	Tier 2C	Tier 1	EMZO & TOC	Units
Commercial Plaza	4.30 ¹	3.85 ¹	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Commercial Uses within Mixed-Use Building	4.30 ¹	3.85 ¹	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Office	2.80	2.50	2.20	2.10	1.75	2.00	1.90	1.60	0.00	0.00	/100m ²
Medical Office	4.50	4.00	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Retail	4.00	3.60	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Personal Service Shop	4.00	3.60	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Restaurant	6.00	5.40	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Financial Institution	4.50	4.00	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Veterinary Clinics	4.00	3.60	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Day Care / Day Nursery	2.50	2.25	2.25	2.15	1.80	1.75	1.65	1.40	0.00	0.00	/100m ²
Places of Entertainment	6.40	5.80	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Places of Assembly	6.40	5.80	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Places of Worship	6.40	6.40	4.70	4.70	4.70	4.25	4.25	4.25	0.00	0.00	/100m ²
Recreation Centre	4.50	4.05	3.50	3.30	2.80	2.50	2.40	2.00	0.00	0.00	/100m ²
Library	2.85	2.55	2.00	1.90	1.60	1.50	1.45	1.20	0.00	0.00	/100m ²
Arts & Cultural	6.00	5.40	4.70	4.45	3.75	4.25	4.05	3.40	0.00	0.00	/100m ²
Social Services	6.00	5.40	4.70	4.45	3.75	4.25	4.05	3.40	0.00	0.00	/100m ²
Elementary School	1.50	1.35	1.40	1.35	1.10	1.35	1.30	1.10	0.00	0.00	/classroom
Secondary School	3.00	2.70	2.80	2.65	2.25	2.70	2.55	2.15	0.00	0.00	/classroom
Post-Secondary School	2.30	2.05	1.80	1.70	1.45	1.60	1.50	1.30	0.00	0.00	/classroom
Commercial School	3.80	3.40	3.00	2.85	2.40	2.70	2.55	2.15	0.00	0.00	/classroom
Hotel/Motel (room-based requirement) plus...	0.80	0.80	0.70	0.70	0.70	0.65	0.65	0.65	0.00	0.00	/room plus...
... Hotel/Motel # (GFA-based requirement)	5.00	4.50	4.70	4.45	3.75	4.25	4.05	4.05	0.00	0.00	.../100m ² %
Theatre	1.00	0.90	0.80	0.75	0.65	0.60	0.55	0.50	0.00	0.00	/6 seats
Warehousing	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.00	0.00	/100m ²
All other Institutional Uses	4.50	4.05	4.00	3.80	3.20	3.00	2.85	2.40	0.00	0.00	/100m ²
Industrial	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	0.00	0.00	/100m ²
Hospital	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	0.00	0.00	/100m ²
Community Centre	4.50	4.05	3.50	3.30	2.80	2.50	2.40	2.00	0.00	0.00	/100m ²
Fuel Station (Kiosk-based requirement) plus Restaurant	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00	/100m ² (kiosk)
Fuel Station (Restaurant)	6.00	6.00	3.10	3.10	3.10	2.80	2.80	2.80	0.00	0.00	/100m ² (restaurant)
Automotive Body Shop / Repair Shop	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00	/100m ²
Car Wash (Manual/Vacuum/Stall)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/bay
Car Wash (Automated) and Restaurants - Drive-Thru Stacking Lane	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	0.00	0.00	/drive-thru facility
Financial Institution - Drive-Thru Stacking Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	0.00	0.00	/drive-thru facility
Automotive Dealership / Rental Agency	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00	/100m ²

Note:

1) Permits up to 30% and 50% of the GFA of the premises to be used for restaurant and medical office uses, respectively. If the GFAs of these uses exceed the percentage, then the parking rate for restaurant and/or medical office shall apply.

Table ES-4: Maximum Residential Parking Rates

Land Use	PSA 4	PSA 3	PSA 2	PSA 1	EMZO & TOC	Units
Condominium / Apartment						
Bachelor (+ 1-bed ≤ 55 m2)	No max	1.00	0.80	0.80	0.40	/unit
One Bed > 55 m2	No max	1.15	0.95	0.95	0.40	/unit
Two Bed+	No max	1.25	1.05	1.05	0.40	/unit
Condominium / Apartment Visitor	No max	0.20	0.20	0.20	0.06	/unit
Affordable Housing						
Bachelor (+ 1-bed ≤ 55 m2) (Affordable)	No max	0.65	0.50	0.50	0.40	/unit
One Bed > 55 m2 (Affordable)	No max	0.70	0.55	0.55	0.40	/unit
Two Bed+ (Affordable)	No max	0.75	0.65	0.65	0.40	/unit
Visitor (Affordable)	No max	0.20	0.20	0.20	0.06	/unit
Block / Condo / Stacked Townhouse						
Block / Condo / Stacked Townhouse Resident	No max	2.00	2.00	2.00	0.40	/unit
Block / Condo / Stacked Townhouse Visitor	No max	0.20	0.20	0.20	0.06	/unit
Low Density Residential Land Uses						
Seniors' Residence / Retirement Home	No max	0.40	0.40	0.40	0.40	/unit
Single-detached	No max	No max	No max	No max	0.40	/unit
Semi-detached	No max	No max	No max	No max	0.40	/unit
Duplex	No max	No max	No max	No max	0.40	/unit
Triplex	No max	No max	No max	No max	0.40	/unit
Double Duplex	No max	No max	No max	No max	0.40	/unit
Street Townhouse	No max	No max	No max	No max	0.40	/unit
Other Residential Land Uses						
Additional Residential Units (ARU) ¹	See note	See note	See note	See note	See note	See note
Home Based Live-work	No max	2.00	2.00	2.00	0.40	/unit
Home Occupation ²	See note	See note	See note	See note	See note	See note
Short Term Accommodation ²	See note	See note	See note	See note	See note	See note
Shared Housing with Support (including Long Term Care Homes, Group Homes)	No max	0.40	0.40	0.40	0.40	/bed
Shared Housing without Support (including Rooming Houses, Lodging Houses, and Boarding Houses)	No max	2.00	2.00	2.00	0.40	/unit
Multi-Tach ²	See note	See note	See note	See note	See note	See note

Note: 1) Refer to the Richmond Hill ARU parking rate requirements established through the 4x4 Housing Accelerator Fund (HAF) initiative
 2) Parking requirement is the same as the primary dwelling type (i.e. single-family, condominium/apartment etc.)



Table ES-5: Maximum Non-Residential Parking Rates

Land Use	PSA 4	PSA 3	PSA 2	PSA 1	EMZO & TOC	Units
Commercial Plaza &	No max	3.75	3.15	3.15	0.50	/100m ²
Commercial Uses within Mixed-Use Building &	No max	3.75	3.15	3.15	0.50	/100m ²
Office	No max	2.75	2.50	2.50	0.50	/100m ²
Medical Office	No max	3.75	3.15	3.15	0.50	/100m ²
Retail	No max	3.75	3.15	3.15	0.50	/100m ²
Personal Service Shop	No max	3.75	3.15	3.15	0.50	/100m ²
Restaurant	No max	3.75	3.15	3.15	0.50	/100m ²
Financial Institution	No max	3.75	3.15	3.15	0.50	/100m ²
Veterinary Clinics	No max	3.75	3.15	3.15	0.50	/100m ²
Day Care / Day Nursery	No max	2.80	2.20	2.20	0.50	/100m ²
Places of Entertainment	No max	3.75	3.15	3.15	0.50	/100m ²
Places of Assembly	No max	3.75	3.15	3.15	0.50	/100m ²
Places of Worship	No max	5.90	5.30	5.30	0.50	/100m ²
Recreation Centre	No max	4.40	3.15	3.15	0.50	/100m ²
Library	No max	2.50	1.90	1.90	0.50	/100m ²
Arts & Cultural	No max	5.90	5.30	5.30	0.50	/100m ²
Social Services	No max	5.90	5.30	5.30	0.50	/100m ²
Elementary School	No max	1.75	1.70	1.70	0.50 ¹	/classroom
Secondary School	No max	3.50	3.40	3.40	0.50 ¹	/classroom
Post-Secondary School	No max	2.25	2.00	2.00	0.50 ¹	/classroom
Commercial School	No max	3.75	3.40	3.40	0.50 ¹	/classroom
Hotel/Motel (room-based requirement) plus...	No max	1.00	0.80	0.80	0.50 ¹	/room plus...
Hotel/Motel # (GFA-based requirement)	No max	5.90	5.30	5.30	0.50	.../100m ² %
Theatre	No max	1.00	0.75	0.75	0.50 ¹	/6 seats
Warehousing	No max	0.90	0.90	0.90	0.50	/100m ²
All other Institutional Uses	No max	5.00	3.75	3.75	0.50	/100m ²
Industrial	No max	1.40	1.40	1.40	0.50	/100m ²
Hospital	No max	3.15	3.15	3.15	0.50	/100m ²
Community Centre	No max	4.40	3.15	3.15	0.50	/100m ²
Fuel Station (Kiosk-based requirement) plus Restaurant	No max	3.75	3.75	3.75	0.50	/100m ² (kiosk)
Fuel Station (Restaurant)	No max	3.90	3.50	3.50	0.50	/100m ² (restaurant)
Automotive Body Shop / Repair Shop	No max	3.75	3.75	3.75	0.50	/100m ²
Car Wash (Manual/Vacuum/Stall)	No max	1.25	1.25	1.25	0.50 ¹	/bay
Car Wash (Automated) and Restaurants – Drive-Thru Stacking Lane	No max	No max	No max	No max	No max	/drive-thru facility
Financial Institution – Drive-Thru Stacking Lane	No max	No max	No max	No max	No max	/drive-thru facility
Automotive Dealership / Rental Agency	No max	3.75	3.75	3.75	0.50	/100m ²

Note: 1) Unit is per 100m²

C. Transportation Demand Management

TDM measures are infrastructure and policies that encourage alternative modes of travel, a reduction in single-occupant vehicle trips, and more efficient use of the transportation systems.

TDM measures may be in the form of “soft” measures such as policies which give people more flexibility and can include flex hours for offices, working from home, unbundling of parking spaces from unit sales in residential developments, or other ways to reduce transportation demand. TDM may also be in the form of “hard” or physical measures that are shown on site plans, such as improved bicycle parking in the form of weather protection or ease of access, bicycle maintenance stations, carpool parking spaces, and car-share parking spaces.

TDM is typically applied on a site-by-site basis and makes using the available surrounding infrastructure more desirable by removing barriers that may discourage its use. For example, bicycle lanes may be provided throughout the City, but without providing long-term bicycle parking on-site some people may not feel they can reasonably store their bicycles in a convenient way, thus discouraging them from cycling. Similarly, providing shower-change facilities at places of employment removes a barrier for those who need to wash or change when they arrive at their destination.

Hard TDM measures are preferable for incorporating into the CZBL since they can be assessed using the site plan. Hard TDM measures can include car share parking spaces which can be indicated on site plans and accounted for in the parking calculations. Soft TDM measures require other documentation and agreements which would be required outside of the CZBL, such as car-share agreements with service providers and financial guarantees associated with acquiring that service. As such, soft TDM measures are most appropriately secured through planning approvals instead of the CZBL.

TDM requirements have been incorporated into these recommendations in the form of a TDM Toolbox. The TDM Toolbox awards points for hard TDM measures applied on a site-by-site basis and requires a minimum amount of TDM for all developments and awards reduced rates for additional TDM beyond the minimum requirement. This TDM tier and points system is recommended to be incorporated into the CZBL. A TDM Toolkit (spreadsheet tool) shall be provided to assist developers, City staff, and the public with navigating the points system and calculating parking requirements.

The TDM measures incorporated into the parking requirements and parking tiers are presented in **Table ES-6**.



Table ES-6: Transportation Demand Management Measures

TDM Measure	Residential	Non-Residential
Car-share parking spaces	✓	
Carpool parking spaces		✓
Bicycle parking (short-term) exceeding minimum requirements	✓	✓
Bicycle parking (long-term) exceeding minimum requirements	✓	✓
Shower/change facilities exceeding minimum requirements		✓
Long-term bicycle parking ease of access	✓	✓
Short-term bicycle parking weather protection and location	✓	✓
Bicycle maintenance facilities – long-term	✓	
Public bicycle parking spaces	✓	✓
Bike share parking spaces or docking area	✓	✓
Pick-up/drop-off area	✓	✓
Office/co-working/meeting space in common element	✓	
Maximum Potential Points	28	26

TDM point ranges and minimum requirements are presented visually in **Figure ES-7** and **Figure ES-8**.

Figure ES-7: TDM Point System Visualized (Residential)

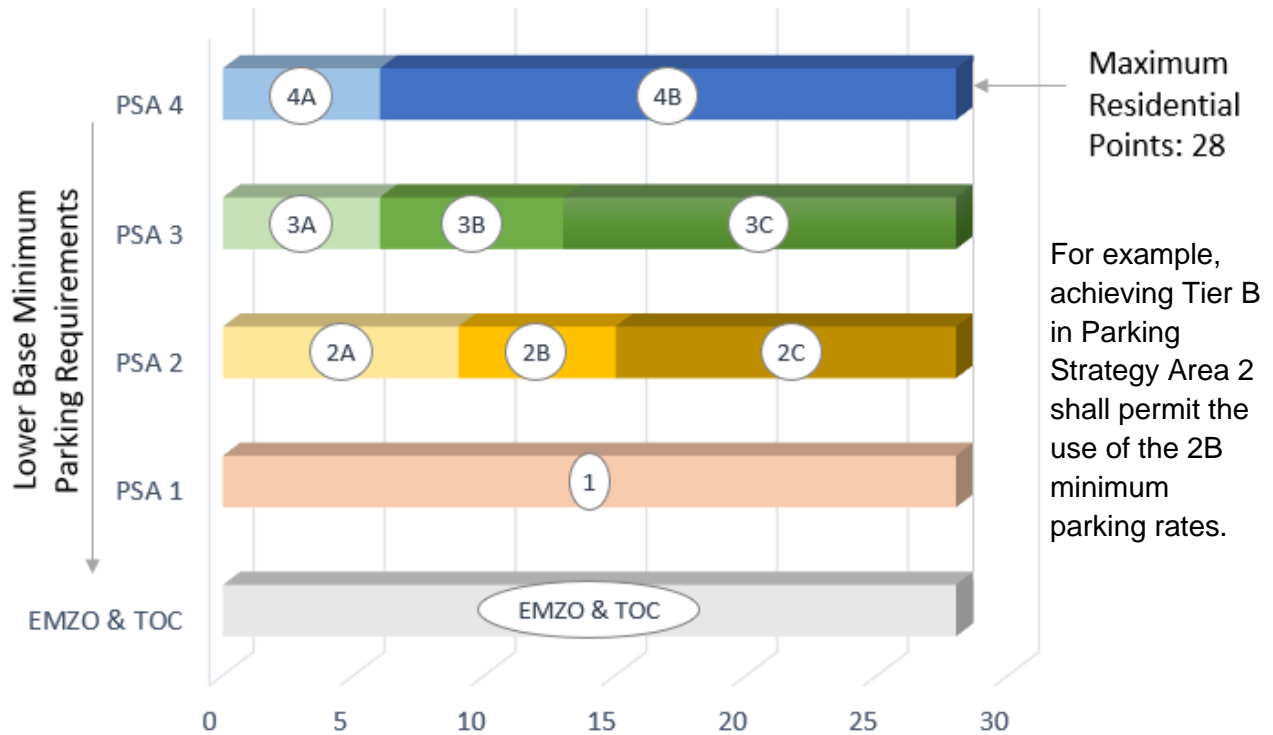
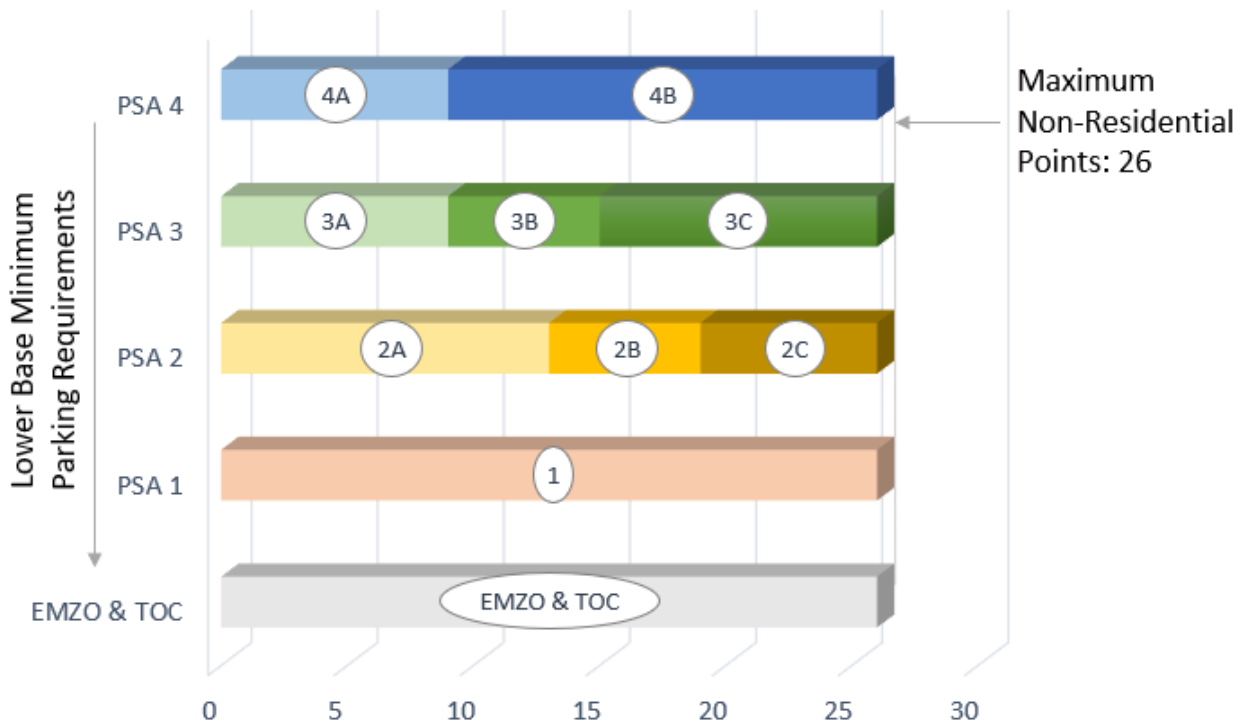


Figure ES-8: TDM Point System Visualized (Non-Residential)



D. Design

Design criteria includes dimensional requirements for parking spaces and access to parking areas. Design requirements from the zoning by-laws of other municipalities were reviewed in order to validate and fill in gaps in the City’s existing parking standards. In addition to general dimensional design criteria, electric vehicle parking requirements in terms of electrification of parking spaces and the charger levels was also captured in the review.

The design criteria recommendations added the following new criteria:

- Requirements relating to obstructions to parking spaces
- Compact car parking dimensional requirements (and supply limits)
- Tandem parking space requirements (and supply limits)
- Bicycle parking space and amenity dimensional requirements
- Accessible parking requirements consistent with the Accessibility for Ontarians with Disabilities Act, and
- Refinements to loading space requirements for non-residential developments

High-level dimensional recommendations are summarized in **Table ES-9**.



Table ES-9: Minimum Dimensions of Various Types of Spaces

Parking Space	Length (m)	Width (m)	Vertical Clearance (m)
Perpendicular Parking Space	5.7	2.7	2.0
Perpendicular Compact Parking Space (Type A) ¹	5.2	2.6	2.0
Perpendicular Compact Parking Space (Type B) ²	5.0	2.5	2.0
Parallel Parking Space	6.7	2.5	2.0
Tandem Parking Space	5.7	2.7	2.0
Stacked Parking Space	5.7	2.7	2.0
Accessible Parking Space (Type A) ³	5.7	3.4	2.0
Accessible Parking Space (Type B) ³	5.7	2.4	2.0
Accessible Parking Barrier-free Aisle ³	5.7	1.5	2.0
Stacking Lane Spaces	6.0	2.7	2.0
Loading Space – A	13.0	4.0	6.5
Loading Space – B	9.0	3.7	4.3
Bicycle Parking Space (Horizontal)	1.8	0.6	1.9
Bicycle Parking Space (Vertical)	1.9 ⁴	0.6	1.2 ⁴
Bicycle Parking Space (Stacked)	1.8	0.6	1.2 ⁵
Bicycle Maintenance Facility	1.8	2.6	1.9

Notes:

- 1) Type A compact parking space shall be limited to a maximum of 40% of the parking supply for residents.
- 2) Type B compact parking space shall be limited to a maximum of 10% of the parking supply for residents.
- 3) An accessible parking barrier-free aisle is required to be adjacent to accessible parking spaces. One access aisle can be shared by two accessible spaces.
- 4) Dimensions for vertical bicycle parking spaces are based on the orientation of the bicycle.
- 5) Vertical clearance applies to each space within the set of vertically stacked spaces.

E. Electric Vehicle Parking and Infrastructure

The City's Community Energy and Emissions Plan (CEEP) has targeted zero emission passenger vehicle sales to reach 10% of industry sales by 2025, 30% by 2030, and 100% by 2040. The Federal Government has similar targets. To support this major shift, it is important that the City develops a modernized CZBL that includes electric vehicle (EV) charging requirements.

There are three levels of electric vehicle charging equipment, ranging from Level 1 (slow) to Level 3 (fast). The recommended EV and electric bicycle (e-bike) requirements are summarized in **Table ES-10**.



Table ES-10: Recommended EV and E-Bike Minimum Requirements

Land Use / Parking Space Type	EV-Ready	EV-Ready & EVSE Installed ¹	Charging Level ²
Residential – Condominium / Apartment, and Townhouse without exclusive use garage. Excludes visitor parking spaces.	100%	-	Level 2 or higher
Residential – Detached, Semi-detached, Townhouse with exclusive use garage, Duplex, Triplex, and Double Duplex. Excludes ARUs. Excludes visitor parking spaces.	1 per dwelling unit	-	Level 2 or higher
Non-residential – Office	10% or 1 space, whichever is higher	5%	Level 2 or higher
Non-residential – Other uses	5% or 1 space, whichever is higher	2.5%	Level 2 or higher
Car share	100%	-	Level 2 or higher
E-bikes (where long-term bicycle parking is required)	20%	-	Level 1

Notes:

- 1) This requirement is in addition to the EV-Ready requirement shown in the adjacent left column.
- 2) Energized outlet shall be capable of providing the EVSE level even if the EVSE is not required to be installed.

Residential uses without exclusive use garages should have level 2 or higher energized outlets in 100% of residential parking spaces. Dwellings of residential uses with exclusive use garages shall have at least one required space outfitted with an energized outlet.

Offices should have 5% of parking spaces with EVSE installed, plus an additional 10% that are EV-Ready for easy conversion if there is demand. Other non-residential uses should have 2.5% of parking spaces with EVSE installed, plus an additional 5% that are EV-Ready for easy conversion if there is demand.

In addition to supporting EVs, the City is also recommended to implement e-bike charging requirements in long term bicycle parking facilities. Given that e-bikes are still an emerging trend, providing energized outlets at 20% of long-term bicycle parking spaces is recommended.

F. Municipal Parking and TDM Administration

Richmond Hill is entering a period of significant population and employment growth focused within the City’s urbanizing Centres and Corridors. The City’s 2023 Transportation Master Plan Update has recommended that the City should assess its role in the provision of municipal parking services and parking structures, as well as consider the establishment of a parking authority. Shared mobility services, provision of bicycle parking and bicycle hubs, dynamic

parking management, and municipal TDM services should also be reviewed. The TDM component ensures that the City is maximizing its road network potential to address aforementioned growth pressures.

The City should undertake a study to assess the City's role in provision of municipal parking and TDM services, and the establishment of a municipal parking authority. A monitoring program should also be established to assess the successfulness of the adopted strategy.

G. Implementation Plan

The PTDMS recommendations should be applied to developments and implemented through the City's CZBL. The provision of tiered parking requirements through the implementation of TDM measures provides developers with flexibility to pursue lower parking supplies by supporting sustainable travel modes.

Summarizing the aforementioned, the following implementation steps are recommended:

- The Official Plan Update should consider the parking and TDM directions provided in the PTDMS as the basis for the formulation of the appropriate Official Plan policies relating to parking and TDM at developments.
- Explore the implementation of the recommended parking rates and tiers by Parking Strategy Area, as well as the direct integration of TDM measures into parking supply standards, into the City's CZBL.
- Adopt the recommended parking design standards, such as parking and loading space dimensions, EV requirements, accessibility requirements, and bicycle parking, etc. into the CZBL.
- Undertake a cash-in-lieu study to modernize the City's cash-in-lieu fee structure and assess the expansion of cash-in-lieu from the Village Local Centre to other intensification areas or across the City.
- Develop a Municipal Parking and TDM Strategy, as was also recommended in the City's 2023 Transportation Master Plan, to evaluate the establishment of a municipal parking authority and to assess the City's role in the provision of municipal parking and TDM services.
- Review and update this PTDMS approximately every five years to ensure that they are in keeping with the City's vision and policies. As part of the updates:
 - ↳ Continue to monitor parking in intensification areas and update the PTDMS accordingly.
 - ↳ Re-evaluate the removal of the minimum parking requirements in additional select areas when critical rapid transit and other sustainable transportation modes and services are more prevalent.



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- Appendix B Design Criteria Review Report
- Appendix C TDM and Parking Efficiencies Memorandum
- Appendix D Data Collection Summary Report
- Appendix E Parking Research Review and Survey Analysis Report
- Appendix F Municipal Review of Emerging Land Uses
- Appendix G Automotive Uses Current Practices Comparison
- Appendix H Compact Car Parking Space Review
- Appendix I EV Charging Requirements Review

Glossary

2010 PS – 2010 Richmond Hill Parking Strategy

AODA – Accessibility for Ontarians with Disabilities Act

ARU – Additional Residential Unit

BILD – Building Industry and Land Development Association

BRT – Bus Rapid Transit

CAV – Connected and Autonomous Vehicle

CEEP – Community Energy and Emissions Plan

CZBL – Comprehensive Zoning By-law

DCFC – Direct Current Fast Charge

EMZO – Enhanced Minister’s Zoning Order

EV – Electric Vehicle

EVEMS – Electric Vehicle Energy Management System

EVSE – Electric Vehicle Supply Equipment

GFA – Gross Floor Area

GHG – Greenhouse Gas

GTA – Greater Toronto Area

HTA – Highway Traffic Act

KDA – Key Development Area

MTSA – Major Transit Station Area

MZO – Minister’s Zoning Order

OP – Official Plan

PMTSA – Protected Major Transit Station Area

PTDMS – Parking and Transportation Demand Management Strategy for Developments

RIND – Rural Industrial

RTC – Rapid Transit Corridor

TDM – Transportation Demand Management

TOC – Transit-Oriented Communities

ZBLA – Zoning By-law Amendment

1 Introduction

The City of Richmond Hill initiated the City of Richmond Hill Parking and Transportation Demand Management (TDM) Strategy for Developments (PTDMS) in 2019, with the goal of modernizing the approach to parking standards, incorporating TDM into the parking requirements, and to ultimately adopt the new standards into the City's Comprehensive Zoning By-law (CZBL). This PTDMS Recommendations Report was developed as a result.

The City has been using the recommended parking rates from the 2010 Richmond Hill Parking Strategy (2010 PS) to assess development applications across the City. In general, the 2010 parking rates have been meeting the goals of the City, however, given improvements in City infrastructure, transit services, and transportation mode choices which have emerged in the last few years and which are planned in the future, there are opportunities to modernize the requirements. There have also been requests from the development community to apply lower minimum parking rates.

This Recommendations Report summarizes the findings and recommendations for the PTDMS and includes refinements and incorporates comments on the interim studies.

The interim studies included the following reports:

1. Current Practices Report

This report was a consolidation and update of two previous reports prepared for the Yonge/Bernard Key Development Area (KDA) and a second report prepared for the general areas of the City outside of the previously established Parking Strategy Areas from the 2010 PS. This report focused on vehicle parking rates (minimums and maximums), bicycle parking rates (minimums), and TDM approaches. The report reviewed current standards from comparable municipalities in the Greater Toronto Area (GTA) as well as Vancouver, and evolving industry current practices and expectations for future standards.

2. Design Criteria Review Report

This report reviewed the same municipalities as the Current Practices Review. The Design Criteria Review included dimensional reviews and design requirements for standard parking space dimensions, dimensions and rates for loading spaces (and variations), and parking space variations and rates for compact cars, tandem spaces, electrified spaces, accessible spaces, and short- and long-term bicycle spaces. Cash-in-lieu, design of parking areas, and driveway designs were also investigated.

3. TDM and Parking Efficiencies Memorandum

This memorandum outlined the general recommended directions and approach for the City to incorporate TDM within parking requirements, and within the development application process. The recommendations were heavily influenced by the Region of Waterloo Checklist and Parking

Management Worksheet and the City of Vancouver’s Transportation Demand Management for Developments.

4. Data Collection Report

This report summarized data collection undertaken to support the preliminary recommendations presented in previous reports. It was initially intended to be comprised of in-field parking data collection, but this approach was adjusted as a result of COVID-19 related impacts (both in driving behavior and access to parking spaces). Instead, data collection focused on online surveys of the general public, developer community (BILD) surveys in the GTA, and a 10-year review of the City’s minor variances and site-specific zoning by-law approvals. The data collection findings generally validated the other interim studies’ preliminary recommendations.

5. Parking Research Review and Survey Analysis Report

Tate Economic Research Inc. conducted additional parking research as well as residential phone surveys using a market research firm (Logit) focusing on multi-storey buildings. The report prepared by Tate provided an overview of the industry trajectory and future directions to provide guidance to the City to account for modernization, new technologies, and overall industry directions in the medium- to long-term. For example, the report reviewed emerging technologies including automated vehicles and the impacts on parking. This could include reduced design criteria for parking facilities which do not have to account for the presence of drivers, thus reducing the space needed for a parked vehicle. Other emerging technologies include shared mobility options which have reached the market in recent years and which are expected to continue to occupy a larger market share such as e-scooters and e-bikes, and shared mobility services. The report also looked at parking policy trends including case studies with reduced parking or elimination of parking minimums, such as the City of Toronto and Vaughan Metropolitan Centre. The results of the market research were primarily used to support and validate the residential parking rate recommendations within this PTDMS by focusing the survey on intensification areas within the GTA that are located on or near rapid transit, such as subway stations, GO stations, and VIVA transit hubs. The survey also captured the opinions of respondents regarding auto ownership and the potential factors which would contribute to them reducing their auto ownership and dependency and relying on other modes of transportation.

2 Guiding Principles and Documents

2.1 Council Strategic Priorities

Richmond Hill Council’s Strategic Priorities for 2020-2022 set the City on a solid path to recover from the COVID-19 pandemic, minimizing the financial impact on residents while continuing to emphasize environmental initiatives, community building and transportation. This PTDMs supports the pillars, which are summarized below:




Balancing Growth and Green

Recognizing the critical balance between economic development and environmental protection, this includes stewardship of green spaces such as wetlands, parks and trails and longer-term sustainability planning and climate action initiatives, alongside decisions that promote responsible economic intensification and prosperity.

Examples of major projects:

- Official Plan Update
- Parks, Recreation and Culture Master Plans
- Urban Forest Management Plan
- Resilient Richmond Hill
- Comprehensive Zoning By-law
- Climate Change Framework
- City Transformation Project
- Single-use Plastics Reduction




Strong Sense of Belonging

This placemaking priority combines a desire for everyone to feel welcome in Richmond Hill and a commitment to community building in places like the downtown core, Lake Wilcox and the Richmond Hill David Dunlap Observatory.

Examples of major projects:

- Diversity, Equity and Inclusion Initiative
- Age Friendly Community Initiative
- Recover Richmond Hill Action Plan
- Affordable Housing Strategy
- Official Plan Update
- myRichmondHill community e-newsletter




Getting Around the City

Council will prioritize ease of movement around the city by promoting Richmond Hill’s multiple transportation interconnections, being well-positioned for the Yonge subway extension and improving active transportation networks for cyclists and pedestrians.

Examples of major projects:

- Richmond Hill Centre Secondary Plan
- Yonge North Subway Extension project
- Transportation Master Plan
- Official Plan Update



Fiscal Responsibility

Council will endeavour to keep tax increases below the cost of inflation and will avoid unnecessary expenditures in order to emerge from COVID-19 in a strong financial position.

Examples of major projects:

- Financial Sustainability Strategy
- Revenue Generation Initiative
- Asset Management Plan
- City Transformation Project
- Investment Attraction Strategy

2.2 Community Energy and Emissions Plan

The City's Community Energy and Emissions Plan (CEEP) was developed with stakeholders such as residents, businesses and community partners to reduce greenhouse gas (GHG) emissions, conserve energy and explore economic opportunities. In regard to transportation, the CEEP aims to transform transportation such that 40% of community GHG reductions by 2050 is contributed from transportation transformation¹. The transportation transformation plan within the CEEP is segmented into 7 key strategies, which are:

- Increase / improve cycling and walking infrastructure
- E-bike and car share
- Zero-emission ownership vehicle targets
- Electrify transit
- Expand subway
- Expand VIVA
- Areas with zero-emission vehicle exclusivity

2.3 2010 Richmond Hill Parking Strategy

The 2010 PS recommended vehicle parking rates in the City's previous five parking strategy areas, and also recommended next steps such as the development of a more comprehensive approach that includes TDM. This PTDMS builds on the 2010 recommendations, establishes updated parking strategy areas, and incorporates TDM into the parking requirements for developments.

2.4 Official Plan Policies

The City's Official Plan (OP) Update aligns Regional Official Plan policies on the local scale. The OP Update Key Directions Report provides a framework for updating the OP that ensures the proposed Vision and Urban Structure for City Plan 2041 can be achieved while applying the 4 Pillars of the OP Update for evaluating policy and/or mapping changes. The 4 Pillars of the OP are: Grow Our Economy, Protect and Enhance, Design Excellence, and Green and Sustainable.

The urban structure recommends that the City strive to:

- Direct the majority of population growth to intensification areas (Centres and Corridors);
- Direct the majority of job growth to employment areas;

¹ <https://www.richmondhill.ca/en/shared-content/resources/documents/Richmond-Hill-Community-Energy-and-Emissions-Plan.pdf>

- Undertake preliminary transportation and infrastructure modelling to confirm capacity to accommodate forecasted 2051 growth, and consider potential build-out beyond 2051; and
- Determine public realm needs (i.e., streets, parks, recreational facilities, transit, power schools etc.) to support forecasted growth to ensure that new development and existing communities are appropriately served.

The OP will preserve the overall hierarchy of urban places to provide a variety of destinations and communities, where the most urbanized areas will provide the highest range of mobility and options and will promote active transportation over private vehicle use. The hierarchy of urban places was previously established at the time of the 2010 PS in the development of the previous five parking strategy areas:

- Richmond Hill Regional Centre (lowest parking requirements)
- Downtown Local Centre and Key Development Areas
- Rapid Transit Corridors
- Business Parks
- 'Rest of Richmond Hill' (highest parking requirements)

The following six key strategies listed in Section 12.4.3 of Appendix A to the OP² were first introduced as part of the Yonge/Bernard KDA Secondary Plan with the intent to be incorporated into the City's OP Update.

1. Encouraging and supporting the implementation of car-share facilities
2. Encouraging and supporting the implementation of bike-share or other micro-mobility facilities to offer opportunities for short distance trips to be made by employees or residents
3. Introducing public bicycle parking within the enhanced streetscape
4. Establishing a system of thematic wayfinding signage to emphasize the proximity of destinations within each quadrant and serve as a branding opportunity
5. Developing and preparing a TDM Strategy to the City's satisfaction, and
6. In addition to the TDM measures outlined above, reductions in parking supply may be permitted through the extent of TDM Implementations

² <https://www.richmondhill.ca/en/shared-content/resources/documents/Appendix-A-Yonge-Bernard-KDA-Secondary-Plan.pdf>

2.5 Existing Programs and Policies

The City currently uses the 2010 PS's recommended parking rates to assess development applications. In general, those rates have met the City's goals. However, given improvements in City infrastructure, transit services, and transportation mode choices which have emerged in the last few years, and future improvements that have been planned, there are opportunities to modernize the requirements and prepare for future changes in the transportation environment. There have also been requests from the development community to apply lower parking rates.

In addition to parking rates, there are a number of existing TDM programs in Richmond Hill:

Richmond Hill – Sustainability Metrics Program

The City has been using the Sustainability Metrics program, which is a tool used to encourage developers to work with the City to achieve healthy, complete, and sustainable communities. The Sustainability Metrics act as green development standards that promote sustainable development based on five sets of indicators and are implemented through the development application process for Site Plans and Draft Plan of Subdivision. Under the Sustainability Metrics Program, a “good” performance level is considered a baseline performance and is required for an application to be considered for approval by Council. TDM measures are not mandatory beyond base requirements, however they are encouraged and provide a way to gain points toward satisfying the minimum Sustainability Metrics' point requirement. The City currently uses base requirements for bicycle parking rates presented in the Sustainability Metrics as requirements for new developments, thus guaranteeing some sustainability points. These metrics are not directly incorporated into the CZBL, however the OP contains policies which direct for the achievement of applicable minimum threshold scores as determined by Council. In that regard, City staff do request and require adherence to the Sustainability Metrics. One component of the Sustainability Metrics has been incorporated unto the Yonge and Bernard KDA Secondary Plan Zoning By-law (By-law 111-17) by adopting the bicycle parking rates.

York Region – Transportation Mobility Plan Guidelines for Development Applications

Through York Region's Transportation Mobility Plan Guidelines for Development Applications, Transportation Mobility Plan Studies are required for developments under York Region's jurisdiction that generate over 100 person trips. Completion of the Guidelines' TDM Checklist is required as part of a Transportation Mobility Plan Study. The TDM Checklist outlines TDM measures, notes when they are required or may be considered, and the responsible party (applicant or Region/Municipality). Although the Mobility Plan Guidelines may not apply to developments in the City if they are not located on or nearby York Region roadways, the City has been requesting that some development applications adhere to them.

Municipal Partnership – Smart Commute Markham Richmond Hill

Along with York Region and the City of Markham, Richmond Hill is a longtime funding partner of Smart Commute Markham Richmond Hill (Smart Commute). Smart Commute is a Transportation Management Agency run by the Richmond Hill and Markham Boards of Trade that connects Richmond Hill workplace employees with sustainable commute options. Smart Commute delivers cost-efficient TDM strategies and programming that contribute to the City's policy priorities, as

well as employer business and sustainability goals. Through the development application process, the Region and City have required that some developments commit to Smart Commute participation as part of their respective TDM initiatives.

2.6 Provincial Programs

Planning Act

On June 6, 2024, the Ontario Planning Act³ was amended through the Province's Bill 185 to include new clauses which removes the City's Official Plan and Zoning By-laws' ability to enforce parking minimums in select areas of the City.

The amended Planning Act stipulates that no official plan or zoning by-law may contain any policy or requirement that has the effect of requiring an owner or occupant of a building or structure to provide and maintain parking facilities, other than parking facilities for bicycles, on land that is not part of a highway and that is located within a protected major transit station area and other potential areas, such as areas in the official plan of the municipality surrounding and including an existing or planned higher order transit station or stop.

As such, minimum vehicular parking requirements cannot be stipulated within Protected Major Transit Station Areas (PMTSAs) in Richmond Hill.

Provincial Minister's Zoning Order

Within the Province of Ontario, the Planning Act authorizes the Minister of Municipal Affairs and Housing to make a Minister's Zoning Order (MZO) or Enhanced Minister's Zoning Order (EMZO) for regulating the use of land, buildings and structures anywhere in Ontario. In all cases where there is a conflict between an MZO or EMZO and a municipal zoning by-law, the MZO or EMZO overrides the requirements.

Within the City of Richmond Hill, there are two MZO or EMZO areas:

- MZO's at Major Mackenzie Drive East and Highway 404: O.Reg 698-20⁴ (amended by O.Reg 90-23⁵) and O.Reg 39-22⁶
- EMZO at High Tech Road: O.Reg 344-22⁷

These MZO's and EMZO allow for varying land uses to be permitted within these zones and determines parking requirements for select land uses. The EMZO at High Tech Road stipulates maximum vehicle parking requirements and minimum bicycle parking requirements.

³ <https://www.ontario.ca/laws/statute/90p13>

⁴ <https://www.ontario.ca/laws/regulation/r20698>

⁵ <https://www.ontario.ca/laws/regulation/r23090>

⁶ <https://www.ontario.ca/laws/regulation/r22039>

⁷ <https://www.ontario.ca/laws/regulation/r22344>

Transit-Oriented Communities

Infrastructure Ontario (IO), with the Ministry of Infrastructure is leading the transit-oriented communities program as it relates to the “New Subway Transit Plan for the GTA,” part of the government’s smart, forward-thinking plan to build new, sustainable transit. The Transit-Oriented Communities (TOC) approach provides real opportunity to build vibrant, higher density, mixed-use communities that are connected to transit stations.⁸

IO, on behalf of the Province, is currently working with the York Region and surrounding municipalities on the future plans to build transit and a TOC at the future High Tech Station.

The High Tech Station site consists of two sites, both of which has been designated for TOC use. The TOC areas are encompassed within the boundaries of the EMZO at High Tech Road. The site will be developed by the Province in line with the stated objectives of the TOC program.

The proposed complete, mixed-use community TOC integrated with High Tech Station will be served by the future Yonge North Subway Extension service to Richmond Hill, GO regional service, VIVA Rapid Transit and the encompassing major highways.

2.7 Planning for the Future

To inform the OP update, the City undertook a growth forecast exercise that aligns with that of York Region. The growth forecast projects future population and job growth within each strategy area based on the City structure and its build out over the long term. Accommodating this projected growth will require supportive transportation infrastructure improvements, including transit expansion and active transportation improvements. The City’s Transportation Master Plan uses the growth forecast to develop mode share targets and transportation infrastructure requirements. The mode share targets also rely on TDM, amongst many other factors, to achieve the desired mode splits, and also influence the City’s parking needs.

Therefore, as build-out of intensification areas occurs and infrastructure improvements are introduced (e.g., Yonge North Subway Extension to Richmond Hill Centre), improvements to active transportation facilities (such as new cycling routes or improved facilities), and improvements to alternative forms of transportation will be pursued (such as rideshare and car-share services). Other soft options such as telework or flex-hours will also be adopted into common use. All of these changes will result in the ability to adjust parking requirements and to allow for reductions to the base parking requirements.

The PTDMS – including recommended base parking rates, tiered parking rates (where applicable), and optional TDM measures – will be updated at regular intervals as the City evolves to rely more on convenient and sustainable forms of transportation, and as planned transportation facilities and non-auto mode share targets are achieved. The PTDMS is expected to be further updated in the near future as density targets are achieved, with considerations to no

⁸ <https://www.infrastructureontario.ca/en/what-we-do/projectssearch/high-tech--transit-oriented-community/>

minimum parking requirements in additional select areas. With that being said, this iteration of the PTDMS should accommodate the City's parking needs into the short- and medium-term.

The City may also consider developing a cash-in-lieu program for parking deficiencies to fund municipal TDM initiatives. The City could also pursue introduction of bike share or other shared mobility options within the City. This will not only add mobility options to encourage a shift in mode splits but will 'unlock' a TDM measure currently included in the TDM Toolkit that cannot be leveraged until bike share is introduced into the City.

3 Parking Strategy Areas

The Parking Strategy Areas, depicted in **Figure 1**, are based on the previous area boundaries of the 2010 PS but have been updated to better align with the City's updated urban structure, taking into account the City's OP, Secondary Plans, and Key Development Areas. In addition, York Region's Major Transit Station Areas (MTSAs), Protected Major Transit Station Areas (PMTSAs), and long-term plans for Rapid Transit Corridors are also considered.

The Parking Strategy Areas are intended to reflect the transportation mode choices for the area based on a hierarchy of automobile reliance. Parking Strategy Area 1 has no minimum parking requirements, the highest TDM requirement, the best transit availability, and the greatest envisioned density. Parking Strategy Area 4 has the highest parking requirements and no maximum parking limits, the lowest transit availability, the lowest TDM requirement, and the lowest envisioned densities.

➤ Parking Strategy Area 1:

- ↳ Richmond Hill Regional Centre Secondary Plan Area
- ↳ Yonge and Bernard KDA
- ↳ Yonge and Carrville/16th KDA
- ↳ PMTSA 8 Chalmers BRT Station
- ↳ PMTSA 11 East Beaver Creek BRT Station
- ↳ PMTSA 14 Leslie-Highway 7 BRT Station
- ↳ PMTSA 23 Valleysmead BRT Station
- ↳ PMTSA 25 West Beaver Creek BRT Station
- ↳ PMTSA 39 16th-Carrville BRT Station
- ↳ PMTSA 40 19th-Gamble BRT Station
- ↳ PMTSA 41 Bantry-Scott BRT Station
- ↳ PMTSA 42 Bathurst-Highway 7 BRT Station
- ↳ PMTSA 43 Bayview BRT Station
- ↳ PMTSA 44 Bernard BRT Station
- ↳ PMTSA 45 Crosby BRT Station
- ↳ PMTSA 46 Elgin Mills BRT Station
- ↳ PMTSA 48 Major Mackenzie BRT Station
- ↳ PMTSA 49 Richmond Hill Centre Subway Station
- ↳ PMTSA 50 Richmond Hill GO Station
- ↳ PMTSA 51 Weldrick BRT Station
- ↳ Areas along Highway 7 between PMTSA 49 and PMTSA 43

➤ Parking Strategy Area 2:

- ↳ Areas generally within 400m of existing rapid bus transit served by dedicated rights-of-way that are completed.

➤ **Parking Strategy Area 3:**

- ↳ Areas generally refer to the lands within 400 metres to the Rapid Transit Corridors identified in York Region’s OP, excluding areas that are already part of Parking Strategy Areas 1 and 2. This includes the lands along:
 - Yonge Street
 - Major Mackenzie Drive, and
 - Leslie Street south of Major Mackenzie Drive
- ↳ Areas immediately adjacent to the East Beaver Creek Road and West Beaver Creek Road corridors
- ↳ Areas identified in the City’s OP as Local Centre, Regional Mixed Use Corridor, Local Development Area, or Local Mixed-Use Corridor, excluding areas that are already part of Parking Strategy Areas 1 or 2.

➤ **Parking Strategy Area 4**

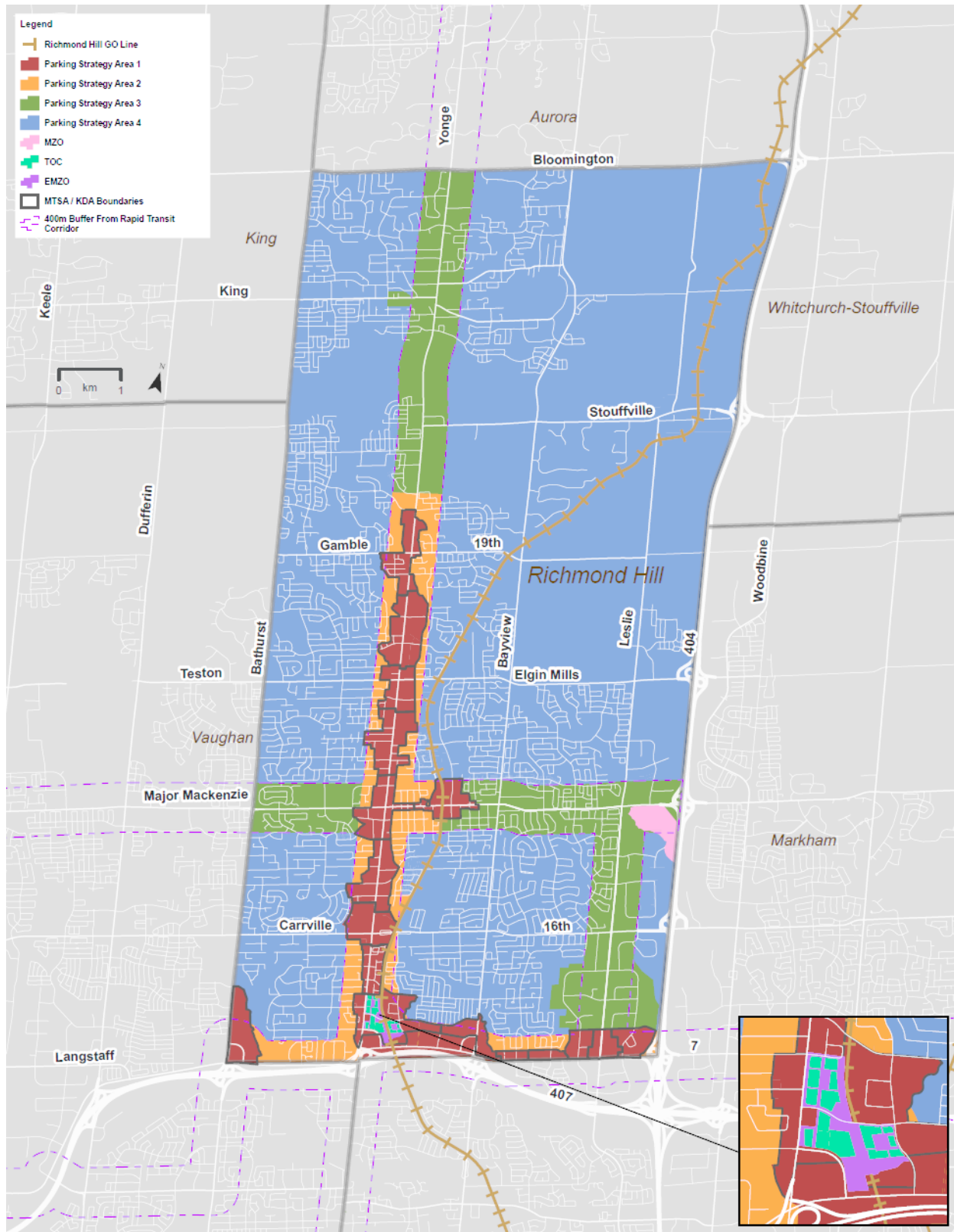
- ↳ All other areas of Richmond Hill, including employment lands, Business Parks and neighborhoods.

There are some special consideration sub-areas, such as the EMZO and TOC within the Richmond Hill Regional Centre Secondary Plan area which has parking requirements stipulated by the Province, and the MZO areas at Major Mackenzie Drive East and Highway 404.

➤ **Special Areas**

- ↳ EMZO and TOC at High Tech Road
- ↳ MZO areas at Major Mackenzie Drive East and Highway 404

Figure 1: Parking Strategy Areas



4 Industry and Market Research

This section discusses the industry and market research that was conducted to help inform and develop the recommendations of the PTDMS on parking supply and design standards.

4.1 Municipal Zoning By-law Review

The municipal review is documented in the [Current Practices Report \(Appendix A\)](#), [Design Criteria Review Report \(Appendix B\)](#), [TDM and Parking Efficiencies Memorandum \(Appendix C\)](#), as well as the [Automotive Uses Current Practices Comparison \(Appendix G\)](#). The [Current Practices Report](#) and [Automotive Uses Current Practices Comparison](#) focused on municipalities within the GTA as well as the City of Vancouver for parking rate and dimensional comparisons. The documents include planning reports, supplementary worksheets, and primarily Zoning By-laws, as summarized in **Table 1**.

Table 1: Municipal Zoning By-law Review Summary

Municipality	Zoning By-law	Planning Report	Worksheet
City of Richmond Hill	Yonge and Bernard KDA Secondary Plan Zoning By-law 111-17	City of Richmond Hill 2010 Parking Strategy	Sustainability Metrics
City of Toronto	<ul style="list-style-type: none"> Zoning By-law 569-2013 Zoning By-law 89-2022 		
City of Markham	<ul style="list-style-type: none"> Zoning By-law 28-97 Zoning By-law 2004-196 (Markham Centre) 		
Town of Newmarket	Zoning By-law 2010-40		
City of Vaughan	<ul style="list-style-type: none"> Zoning By-law 1-88 Draft Comprehensive Zoning By-law – April 2019 	Draft Review of Parking Standards (2010)	
City of Mississauga	Zoning By-law 0225-2007		
City of Brampton	Zoning By-law 270-2004		
Town of Oakville	Zoning By-law 2014-014		
City of Hamilton	<ul style="list-style-type: none"> Zoning By-law 05-200 Zoning By-law 17-240 		
City of Vancouver	Zoning By-law 6059		TDM Worksheets
Region of Waterloo			Checklist and Parking Management Worksheet
York Region			Mobility Plan Guidelines

The **TDM and Parking Efficiencies Report (Appendix C)** focused primarily on the City of Vancouver model for TDM, and also referenced the Region of Waterloo approach. For both parking rates and TDM approaches, the approach used by other municipalities can at best be a useful reference and inspiration, as the approach must be tailored to the needs of Richmond Hill. For the **Design Criteria Report (Appendix B)** the approach can be more directly based on the current practices of other municipalities since the needs are consistent and primarily based on vehicle sizes.

As the PTMDS has been developed, other Canadian municipalities have developed new approaches to parking which were not finalized or fully adopted. Though related emerging trends are not fully incorporated, there are clear parking trends to reduce minimum parking rates and apply maximum parking rates, or fully eliminate minimum parking requirements. For example, Edmonton (Alberta), Brampton (Ontario), and most recently, Toronto (Ontario) have all recently moved toward allowing zero parking developments and open parking policies which allow the market to determine parking needs. The City of Toronto enacted By-law 89-2022 which eliminated parking minimums for most non-residential uses but maintains accessible parking minimum requirements and visitor parking requirements for residential developments. This approach can only be supported when the municipality has assurance that the development industry will not undersupply parking such that it causes infiltration issues in the surrounding neighborhoods. In general, this approach is also tenable only when sufficient transit and other mobility options exist, and developers propose contextually appropriate parking supplies.

4.2 Public and Developer Community Surveys

In addition to reviewing the requirements of other municipalities, public and development community consultation was also undertaken. Public consultation made use of online surveys primarily targeted at residents in Richmond Hill and the GTA; the surveys were open to anyone who wished to answer. Development industry consultation (including the BILD community) included an online presentation by the City and HDR, and also made use of an online survey. Data and outcomes of both the public and developer surveys are contained within the **Data Collection Report (Appendix D)**.

Public surveys were conducted on two occasions. The first survey occurred in March 2021 and had a total of 844 respondents. It focused on information on general residential parking needs and mode of travel, including but not limited to:

- Dwelling type and questions relating to parking (number of bedrooms, available parking spaces, vehicles per household, etc.)
- Demographics, place of residency and employment
- Primary mode of travel

The second public survey was conducted in October 2021 and had a total of 103 respondents. Compared to the first survey, it contained new questions pertaining to the ownership of EVs and availability of charging infrastructure, but still included key topics relating to general residential parking needs.

Number of respondents in the second public survey were significantly lower than the first – likely because no incentive was provided on the second survey, whereas an incentive was provided in the first survey. In both surveys, roughly half of respondents lived in Richmond Hill and the vast majority lived in the GTA, including residents from Richmond Hill and the City of Toronto.

Developer community (BILD) surveys were also conducted on two occasions. The first developer survey occurred in October 2021 and had a total of 19 respondents. It focused on obtaining general parking information and options for developers to offset parking deficiencies, including but not limited to:

- Parking requirements for different areas of the City
- Preferred approach to addressing parking needs for affordable housing
- Cost of parking
- Eliminating parking minimums / zero parking developments / market driven approach
- TDM, and
- Cash-in-lieu collected for parking

The second developer survey focused on EV charging infrastructure and occurred in October 2021. The same group of respondents which responded to the first survey were also provided this survey. However, the second survey only had a total of 9 respondents – lower than the first survey.

Additional review was also performed after the preliminary findings were documented in the [Current Practices Report \(Appendix A\)](#) and included the results of affordable housing parking demand surveys at three locations (Mackenzie Green, Richmond Hill Hub, and Woodbridge Lane), current practices reviews of the City of Guelph, the City of Burlington, and the City of Kitchener's parking requirements, and a more detailed review of the survey results from Public Survey's #1 and #2 with sub-area analysis of Richmond Hill Centre and KDA's.

4.3 Market Research

Tate Economic Research Inc. conducted additional parking research as well as residential phone surveys using a market research firm focusing on multi-storey buildings. The report, entitled [Parking Research Review and Survey Analysis \(Appendix E\)](#), provided an overview of the industry trajectory and future directions to provide protection for modernization in the medium- to long-term. The report reviewed emerging technologies including automated vehicles and the impacts on parking, and shared mobility options which have reached the market in recent years and which are expected to continue to occupy a larger market share. The report also looked at parking policy trends including case studies with reduced parking or elimination of parking minimums. The results of the market research were primarily used to support and validate the residential parking rate recommendations within the PTDMS.

4.4 Emerging Land Uses

Emerging land uses are land uses which were not captured in the previous 2010 PS but have been included in the recommended parking rates for incorporation into the City's CZBL. Many of

these land uses are pre-existing in the City of Richmond Hill and are expected to continue to be proposed through new development, while some are relatively new and have been introduced into the City recently. New land uses that have been more recently introduced include several residential land uses: Short-Term Accommodation, Additional Residential Units (ARUs), Multi-Tach, Affordable Housing, and Live-Work units.

Rate recommendations for these uses were not captured in the [Current Practices Report \(Appendix A\)](#) but have been incorporated into the final recommendations. The background review for each emerging land use is provided in [Appendix F](#) which captures the following land uses:

- Residential:
 - ↳ Short Term Accommodation
 - ↳ Additional Residential Units (ARUs) / Multi-Tach Units
 - ↳ Affordable Housing
 - ↳ Home Based Live-Work / Home Occupations
 - ↳ Shared Housing with Support (including Long Term Care Homes and Group Homes)
 - ↳ Shared Housing without Support (including Rooming Houses, Lodging Houses, and Board Houses)
- Automotive Commercial:
 - ↳ Fuel Station / Automotive Body Shop / Repair Shop
 - ↳ Car Washing / Vehicle Washing Facilities (mechanical drive-through, or manual/bays)
 - ↳ Automotive Dealership / Rental Agency
- Community Centre
- Library
- Theatre
- Warehousing
- All Other Institutional Uses
- Industrial & All uses in a Rural Industrial (or RIND) Zone
- Hospital

In the event a land use that is proposed in a development application is not defined in the PTDMS or the CZBL, it is recommended that the developer submit a Parking Study including the appropriate supporting information as part of the development approval process to evaluate the appropriateness of the parking supply being proposed.

5 Recommended Parking and TDM Strategy

5.1 Transportation Demand Management

5.1.1 What is TDM?

TDM is measures and policies aimed at reducing single-occupant vehicle trips by making more efficient use of transportation infrastructure. It is categorized into “hard” and “soft” measures which are defined as follows:

- **Hard Measures** – physical measures which can be verified on a site plan (e.g., shower and change facilities, bicycle parking, bicycle repair stations).
- **Soft Measures** – programs or services provided by the operator or management of the development (e.g., transit pass subsidies, car-share membership, etc.).

TDM can help distribute transportation demand more equally across the transportation network and the various infrastructure elements (roadways, transit facilities, cycling infrastructure, and walking infrastructure) by encouraging other modes of travel. It can also be achieved by reducing the need for travel during peak periods by allowing for flex hours or working from home. Some of these measures, specifically the hard TDM measures, can be implemented during the site design phase.

TDM goals can be achieved by providing physical improvements (hard measures) such as improved on-site cycling facilities, or car-share parking spaces, and by providing policy/services/program improvements (soft measures) such as transit pass subsidies or telework policies that encourage mode shifts. Some TDM measures can be more broadly implemented across all land uses, while others are land use-specific (e.g., residential vs non-residential). The York Region Transportation Mobility Plan Guidelines for Development Applications and the Richmond Hill Sustainability Metrics already require some TDM consideration. The York Region Mobility Plan Guidelines include a checklist of requirements indicating responsibility by the applicant or by the municipality/region and if the TDM measure is required or not. It also has requirements for monitoring and following-up on TDM implementation and effectiveness. The Sustainability Metrics require a minimum number of points which can be selected from a large list of measures which may not be directly related to transportation and mode choice; the indicators – as they are referred to – including a broad array of measures related to the Built Environment (somewhat related to transportation and mode choice), Mobility (most closely related to transportation), Natural Environment and Parks, Infrastructure and Buildings, and Innovation.

Though TDM is typically intended to reduce peak period motor vehicle demand on the transportation network, and has strong connections with sustainability efforts, there is also a clear correlation with parking demand. In fact, reducing parking supply can affect the transportation mode that residents and/or visitors choose, provide other reasonably convenient modes are available. It is generally understood that oversupply of parking can encourage the use

of vehicles even when there are other feasible alternatives. However, TDM ensures that the other alternatives are viable and desirable.

The 2010 PS recommended that the City expand and develop TDM strategies and apply them to all areas. The recommendations were very high level and provided some possible TDM measures (e.g., car-share, preferential carpool parking incentives, paid parking for non-residential uses, and employer shuttles or van-pools supported by preferential parking). This PTDMS revisits the parking rate recommendations and develops a framework for incorporating a greater range of TDM measures with better defined criteria.

Developers generally do not want to oversupply parking because an oversupply of parking is a cost that is handed down to the customer and can impact marketability and construction efforts. From the City's perspective, the oversupply of parking can result in the underutilization of other modes. Alternatively, the undersupply of parking can also impact a development's marketability, or from the City's perspective, can cause overflow parking issues in surrounding neighbourhoods or on City streets.

It is for these reasons that the City has and continues to establish minimum parking requirements and will apply maximum parking rates in the future. TDM can offer the ability to apply a lower minimum parking requirement when it has been demonstrated that the development supports other modes.

5.1.2 TDM Tiers for Parking Supply Standards

This PTDMS recommends embedding a formalized TDM approach within the CZBL and in direct relation to minimum parking supply standards to provide flexibility to reduce parking requirements in a manner that ensures the movements of people are sufficiently supported by a range of mobility options.

A TDM tier system will allow a development to score points for implementing TDM measures, similar to the City's Sustainability Metrics but with a focus on transportation. The TDM measures are recommended to be limited to "hard" measures only, because they can be directly confirmed by reviewing the site plan or architectural plans, during the development application review process or after the site plan agreement has been executed. These will be the easiest for the developer to incorporate into their plans, require the least follow-up and monitoring, and are expected to have the greatest impact on trip decision making.

The number of accrued points shall correlate with a TDM tier, which shall be used to identify the appropriate parking rate tier which will apply, based on the degree of TDM provided. Reduced tiers shall have lower minimum parking supply standards. Parking Strategy Areas, as discussed in **Section 3**, where it is expected that TDM will have a greater potential impact will have more opportunities to reduce the parking rates by providing them with more tiers.

There will be multiple tiers to the minimum parking standards depending on the Parking Strategy Area, ranging from Tier A (base rates), Tier B (intermediate rates) to Tier C (lowest rates). Parking Strategy Areas 2 through to 3 will have the most tiers (base, plus two tiers) while Parking

Strategy Area 4 will have fewer tiers (base, plus one tier). This is because TDM is expected to have the greatest impacts in high density areas where alternate modes of transportation are well established.

Parking Strategy Area 1 and the EMZO and TOC areas will not have these tiers because they cannot have minimum parking standards following Provincial legislation. Instead, they are recommended to have minimum TDM requirements based on the degree of parking supply provided. These requirements are discussed further in **Section 5.1.3**.

The recommended TDM measures that are eligible for points are presented in the TDM Toolbox shown in **Table 4** and **Table 5**, for residential and non-residential uses, respectively. It is recommended that the TDM Toolbox, including the measures and their points, be integrated into the CZBL.

The applicable parking tier will be identified by using the TDM Toolbox to measure the points accrued, which is recommended to be integrated into the CZBL. The analyst or developer team can then use the associated parking rates to calculate the parking requirements. The associated parking rate tiers and points are shown in **Table 2** and **Table 3** for residential and non-residential uses, respectively. Visualization of the tier and points system is provided in **Figure 2** and **Figure 3**.

The maximum potential number of points for residential uses is 28 if all TDM measures are provided to the fullest potential. The maximum potential number of points for non-residential land uses is 26 points if all TDM measures are provided to the fullest potential. In either case, the maximum points are not likely to be achieved. There are fewer TDM measures applicable to non-residential uses and the points have been adjusted to better reflect the needs or opportunities of non-residential developments.

<p>RECOMMENDATION It is recommended that the City adopt the TDM Toolbox and individual TDM measures as requirements into the CZBL to allow for TDM point calculations for developments.</p>
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Table 2: TDM Toolbox Points and Associated Parking Rate Tier (Residential)

Parking Strategy Area (PSA)	Tier A (Base Rates)	Tier B (Up to 10% lower parking than Base Rates)	Tier C (Up to 20% lower parking than Base Rates)
1	No minimum parking		
2	≤ 9 pts	10-15 pts	≥ 16 pts
3	≤ 6 pts	7-13 pts	≥ 14 pts
4	≤ 6 pts	≥ 7 pts	

Figure 2: TDM Toolbox Point System Visualized (Residential)

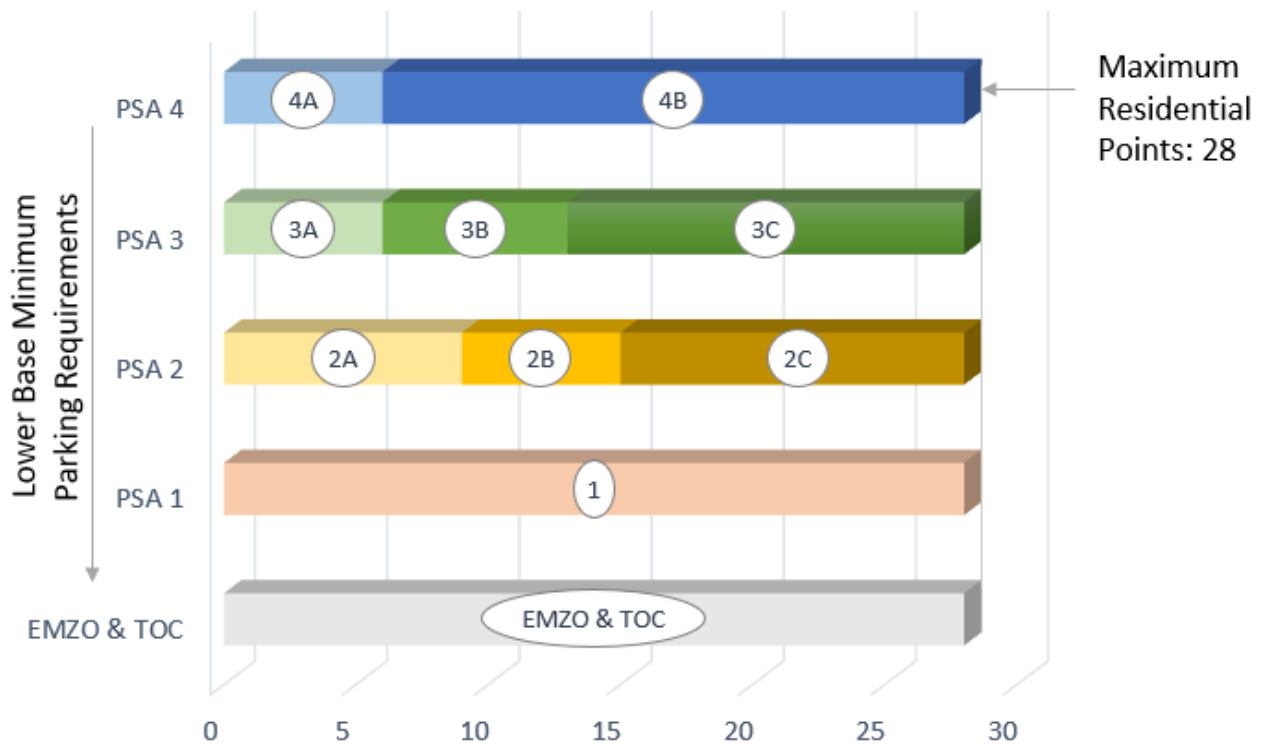


Table 3: TDM Toolbox Points and Associated Parking Rate Tier (Non-Residential)

Parking Strategy Area (PSA)	Tier A (Base Rates)	Tier B (Up to 5% lower parking than Base Rates)	Tier C (Up to 10% lower parking than Base Rates)
1	No minimum parking		
2	≤ 13 pts	14-19 pts	≥ 20 pts
3	≤ 9 pts	10-15 pts	≥ 16 pts
4	≤ 9 pts	≥ 10 pts	

Figure 3: TDM Toolbox Point System Visualized (Non-Residential)

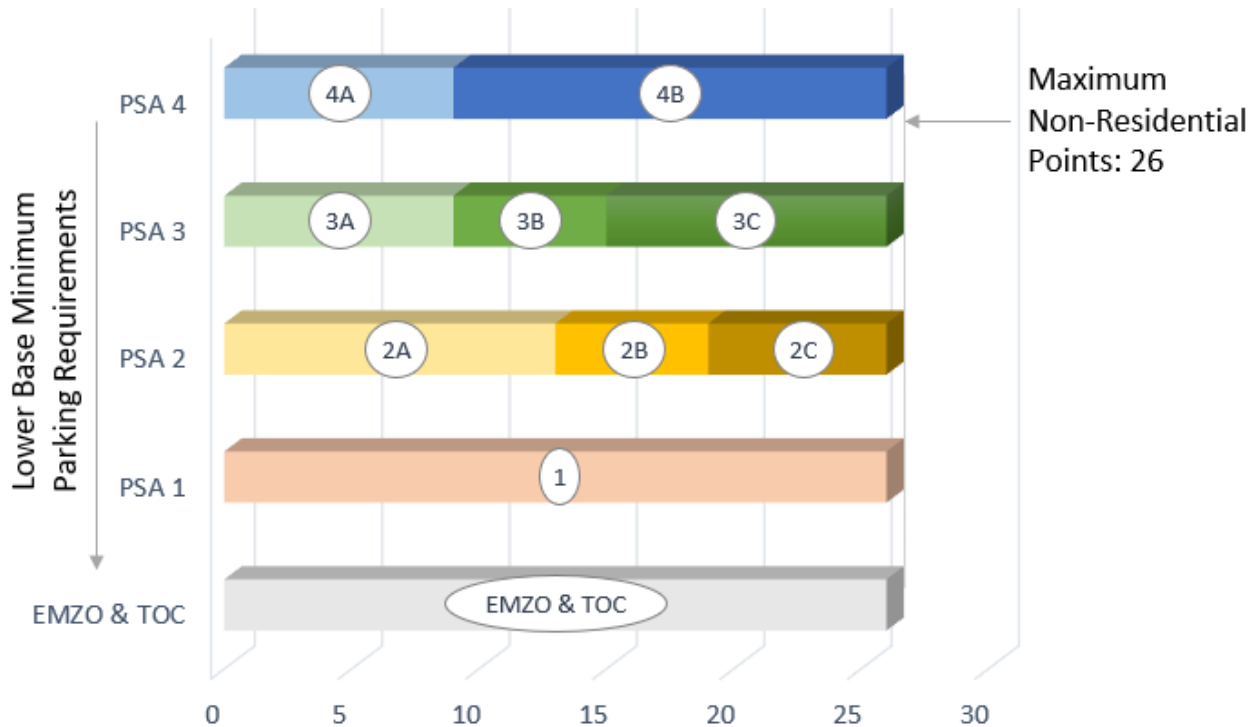




Table 4: TDM Toolbox Measures (Residential)

TDM Measure	Description	Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Car-share Parking Spaces	<p>Car-share parking spaces are provided. To achieve maximum points, car-share parking spaces shall be provided at a rate of one (1) car-share parking for every 200 dwelling units. The number of points awarded is scaled proportionally to the number of car-share parking spaces that are provided against the number of spaces required to achieve maximum points.</p> <p>Permitted in Parking Strategy Areas 1 through to 3, and the EMZO/TOC areas at High Tech. Not recommended in Parking Strategy Area 4.</p>	<ul style="list-style-type: none"> A new definition shall be provided in the CZBL for car-share parking spaces. The spaces shall be separate from the residential and non-residential parking supplies. Furthermore, all car-share spaces shall be on the surface, publicly accessible, and contain energized outlets. To achieve points, a minimum of 2 car-share parking spaces shall be provided. To achieve maximum points, car-share parking spaces shall be provided at a rate of one (1) car-share parking for every 200 dwelling units. The number of points awarded shall be scaled proportionally to the number of car-share parking spaces that are provided against the number of spaces required to achieve maximum points. 	<ul style="list-style-type: none"> Car-share parking spaces shall be appropriately shown on the site/floor plans. As part of the development approval process, the developer is required to: <ul style="list-style-type: none"> Initiate and secure a contract with a reputable car-share operator to operate a minimum of two car-share vehicles at the development for a minimum of three years. The operator may request a minimum monthly revenue guarantee as a condition of the contract. Demonstrate to the City that the contract with the reputable car-share operator has been secured prior to the execution of the Site Plan Agreement. For Zoning By-law Amendment (ZBLA) applications where such contract may be premature, the developer shall submit to the City a Letter of Interest prepared by a reputable car-share operator prior to ZBLA approval. Provide a financial security to the City for the full sum of the minimum revenue guarantee if it is requested by the car-share operator as part of the Site Plan Agreement. Guarantee that the City will receive usage data from the car-share operator on a monthly basis as part of the contract between the developer and the operator. Register a public access easement over the car-share spaces and the vehicular and pedestrian paths between the spaces and the public right-of-way. Convey all car-share parking spaces to the City. 	Range	6
Bicycle Parking (Short-Term) Exceeding Minimum Requirements	<p>Bicycle parking (short-term) exceeds the minimum requirement of 0.03 spaces per dwelling unit recommended in Table 18 by 50% or more.</p>	<ul style="list-style-type: none"> To achieve 1 point, short-term bicycle parking shall be provided at a minimum rate of 0.045 spaces per dwelling unit. 	<ul style="list-style-type: none"> Short-term bicycle parking shall be appropriately shown on the site/floor plans. 	Fixed	1



TDM Measure	Description	Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Bicycle Parking (Long-Term) Exceeding Minimum Requirements	<p>Bicycle parking (long-term) exceeds the minimum requirement of 0.6 spaces per dwelling unit that is recommended in Table 18 by 10%: 1 point</p> <p>Bicycle parking (long-term) exceeds the minimum requirement of 0.6 spaces per dwelling unit that is recommended in Table 18 by 20%: 2 points</p>	<ul style="list-style-type: none"> To achieve 1 point, long-term bicycle parking shall be provided at a minimum rate of 0.66 spaces per dwelling unit. To achieve 2 points, long-term bicycle parking shall be provided at a minimum rate of 0.72 spaces per dwelling unit. 	<ul style="list-style-type: none"> Long-term bicycle parking shall be appropriately shown on the site/floor plans. 	Range	2
Long-Term Bicycle Parking Ease of Access	<p>Long-term bicycle parking is provided on the ground floor, or on the first below grade or above grade levels within a building. Entrances to long-term bicycle parking areas shall have a minimum clear width of 1.7 metres.</p> <p>50% or more of long-term bicycle parking meets criteria: 1 point</p> <p>100% of long-term bicycle parking meets criteria: 2 points</p>	<ul style="list-style-type: none"> To achieve 1 point, a minimum of 50% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. To achieve 2 points, 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powering. 	Range	2
Short-Term Bicycle Parking Weather Protection	<p>A minimum of 50% of the required short-term bicycle parking is weather protected.</p>	<ul style="list-style-type: none"> To achieve 1 point, a minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans 	Fixed	1



TDM Measure	Description	Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Bicycle Maintenance Facilities – Long Term	Provide bicycle maintenance facilities located in the long-term bicycle parking area at a rate of 1 maintenance facility per 200 required long-term bicycle parking spaces or part thereof.	<ul style="list-style-type: none"> A new definition shall be provided in a CZBL for bicycle maintenance facilities. To achieve 1 point, bicycle maintenance facilities shall be provided at a minimum rate of 1 facility per 200 required long-term bicycle parking spaces for residential uses or portion thereof. The area for each facility shall have minimum dimensions of 1.8m x 2.6m as recommended in Table 19. 	<ul style="list-style-type: none"> Bicycle maintenance facilities shall be appropriately shown on site/floor plans. They shall be located in the long-term bicycle parking areas. 	Fixed	1
Public Bicycle Parking Spaces	Provide public bicycle parking spaces intended for use by the public, clearly marked, and located within 10 metres of the property line adjacent to a public right-of-way. A minimum of 6 spaces shall be provided. These spaces are separate from the supply of short-term bicycle parking spaces.	<ul style="list-style-type: none"> A new definition shall be provided in the CZBL for public bicycle parking spaces. To achieve 1 point, a minimum of 6 public bicycle parking spaces shall be provided. These spaces shall be located within 10 metres of a public right-of-way. 	<ul style="list-style-type: none"> Public bicycle parking spaces shall be appropriately shown on site/floor plans. The developer is required to register a public access easement over the public bicycle parking spaces and the paths between the spaces and the public right-of-way. 	Fixed	1



TDM Measure	Description	Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Bike Share Parking Spaces or Docking Area	<p>Provide bicycle parking spaces intended for use by bike share users, clearly marked, and located within 5 metres of a public right-of-way. A minimum of 6 spaces shall be provided. 3 points are awarded for providing the spaces. An additional 1 point is awarded if 2 or more of the spaces contain energized outlets.</p> <p>Only permitted in Parking Strategy Areas 1 through to 3, and the EMZO/TOC areas at High Tech. Not recommended in Parking Strategy Area 4.</p>	<ul style="list-style-type: none"> • A new definition shall be provided in the CZBL for bike-share parking spaces. • To achieve 3 points, a minimum of 6 bike share spaces shall be provided. Spaces shall be located within 5 metres of a public right-of-way. • An additional 1 point is awarded if 2 or more of the spaces contain energized outlets. 	<ul style="list-style-type: none"> • Bike share parking spaces shall be appropriately shown on site/floor plans. Plans shall indicate whether the spaces contain energized outlets. • As part of the development approval process, the developer is required to: <ul style="list-style-type: none"> ○ Initiate and secure a contract with a reputable bike share operator to operate the bike share service at the development for a minimum of three years. The operator may request a minimum monthly revenue guarantee as a condition of the contract. ○ Demonstrate to the City that the contract with the reputable bike share operator has been secured prior to the execution of the Site Plan Agreement. For ZBLA applications where such contract may be premature, the developer shall submit to the City a Letter of Interest prepared by a reputable bike share operator prior to ZBLA approval. ○ Provide a financial security to the City for the full sum of the minimum revenue guarantee if it is requested by the bike share operator. ○ Guarantee that the City will receive usage data from the bike share operator on a monthly basis as part of the contract between the developer and the operator. ○ Register a public access easement over the bike share spaces and the paths between the spaces and the public right-of-way. 	Fixed	4



TDM Measure	Description	Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Pick-up/Drop-off Area	Accommodation for a pick-up/drop-off area with a minimum of 2 lay-by spaces that are located within 25 metres of an entrance to the building. The pick-up/drop-off area and lay-by spaces shall not be part of a public right-of-way.	<ul style="list-style-type: none"> A new definition shall be provided in the CZBL for lay-by spaces. These spaces shall be located within 25m of an entrance to a building and shall not form part of a public right-of-way. Parallel lay-by spaces shall have minimum dimensions of 6.7m x 2.5m and perpendicular lay-by spaces shall have minimum dimensions of 5.7m x 2.7m. To achieve 2 points, a minimum of 2 lay-by spaces shall be provided. 	<ul style="list-style-type: none"> Lay-by spaces shall be appropriately shown on the site/floor plans. Lay-by spaces shall be evaluated for vehicle maneuverability. 	Fixed	2



TDM Measure	Description	Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Office/co-working/meeting space in common element	<p>Provide an office/co-working/meeting space where residents can “work from home” but outside of their personal apartment spaces. This will encourage working from home for those who live with others and need private spaces with internet connection to conduct meetings or to focus. It is recommended that the work from home space provides free internet access for building residents. The minimum size of the space shall be 50 square metres.</p> <p>The space shall provide:</p> <ul style="list-style-type: none"> • A washroom facility, and • One or more small private meeting/call rooms for spaces less than or equal to 75 square metres, or • Two or more small private meeting/call rooms for spaces greater than 75 square metres <p>Points are scaled proportionally to the floor area of the space that is provided, up to a maximum rate of 34 square metres per 100 residential units.</p>	<ul style="list-style-type: none"> • A new definition shall be provided in the CZBL for work from home space. The definition shall require the inclusion of one washroom facility at the minimum. • To achieve points, a minimum of 50 sq.m. shall be provided, up to a maximum rate of 34 square metres per 100 dwelling units to achieve maximum points. The number of points awarded shall be scaled proportionally according to the area of the work from home space provided against the maximum area required to achieve maximum points. • Where the provided work from home space is less than or equal to 75 square metres, a minimum of one small private meeting/call room is required. • Where the provided work from home space is greater than 75 square metres, a minimum of two small private meeting/call rooms are required. 	<ul style="list-style-type: none"> • The work from home space shall be appropriately shown on the site/floor plans. • It is recommended that the site/floor plans annotate that the work from space shall have free internet access for building residents. 	Range	8
				Total	28

Note: Fixed points are awarded if the TDM measure is provided and in full compliance with the requirement. For fixed point TDM measures, either all points are awarded or zero points are awarded. Ranged points will be awarded commensurate to the degree of TDM provided for that specific measure, with the limit indicated in the description or calculated within the TDM Toolkit spreadsheet tool. More TDM could be provided, but points are limited.



Table 5: TDM Toolbox Measures (Non-Residential)

TDM Measure	Description	Requirements to be captured through the CZBL	Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Car-pool Parking Spaces	Designate 2% or more of the total non-residential parking supply as car-pool parking spaces, located preferentially for convenience near major entrances. Car-pool parking spaces shall be signed or have pavement markings to indicate their use.	<ul style="list-style-type: none"> A new definition shall be provided in the CZBL for car-pool parking spaces. To achieve 2 points, a minimum of 2% of the non-residential parking supply shall be designated as car-pool parking spaces. 	<ul style="list-style-type: none"> The car-pool parking spaces shall be appropriately shown on the site/floor plans. Plans shall provide signage and pavement marking details. 	Fixed	2
Bicycle Parking (Short-Term) Exceeding Minimum Requirements	<p>Bicycle parking (short-term) exceeds the minimum requirement of 0.15 spaces per 100 sq.m. that is recommended in Table 18 by 20%: 2 points</p> <p>Bicycle parking (short-term) exceeds the minimum requirement of 0.15 spaces per 100 sq.m. that is recommended in Table 18 by 50%: 4 points</p>	<ul style="list-style-type: none"> To achieve 2 points, short-term bicycle parking shall be provided at a minimum rate of 0.18 spaces per 100 sq.m. To achieve 4 points, short-term bicycle parking shall be provided at a minimum rate of 0.225 spaces per 100 sq.m. 	<ul style="list-style-type: none"> Short-term bicycle parking shall be appropriately shown on the site/floor plans. 	Range	4
Bicycle Parking (Long-Term) Exceeding Minimum Requirements	<p>Bicycle parking (long-term) exceeds the minimum requirement of 0.13 spaces per 100 sq.m. that is recommended in Table 18 by 20%: 2 points</p> <p>Bicycle parking (long-term) exceeds the minimum requirement of 0.13 spaces per 100 sq.m. that is recommended in Table 18 by 50%: 4 points</p>	<ul style="list-style-type: none"> To achieve 2 points, long-term bicycle parking shall be provided at a minimum rate of 0.156 spaces per 100 sq.m. To achieve 4 points, long-term bicycle parking shall be provided at a minimum rate of 0.195 spaces per 100 sq.m. 	<ul style="list-style-type: none"> Long-term bicycle parking shall be appropriately shown on the site/floor plans. 	Range	4
Shower/Change Facilities Exceeding Minimum	<p>Shower / change facilities exceed the minimum requirement of 1 facility per 30 long-term spaces or part thereof that is recommended in Table 18.</p> <ul style="list-style-type: none"> Exceed the minimum by 50%: 1 point Exceed the minimum by 100%: 2 points 	<ul style="list-style-type: none"> To achieve 1 point, shower / change facilities shall be provided at a rate of 1 facility per 20 required long-term bicycle parking spaces for non-residential uses or portion thereof. To achieve 2 points, shower / change facilities shall be provided at a rate of 1 facility per 15 required long-term bicycle parking spaces for non-residential uses or portion thereof. 	<ul style="list-style-type: none"> Shower / change facilities shall be appropriately shown on the site/floor plans. 	Range	2



TDM Measure	Description	Requirements to be captured through the CZBL	Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Short-Term Bicycle Parking Weather Protection	A minimum of 50% of the required short-term bicycle parking is weather protected.	<ul style="list-style-type: none"> To achieve 2 points, a minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans 	Fixed	2
Long-Term Bicycle Parking Ease of Access	<p>The required long-term bicycle parking is provided on the ground floor, or on the first below grade or above grade levels within a building. Entrances to bicycle parking areas shall have a minimum clear width of 1.7 metres. It is recommended that these entrances are automatic/powering.</p> <ul style="list-style-type: none"> 50% or more of long-term bicycle parking meets criteria: 2 points 100% of long-term bicycle parking meets criteria: 4 points 	<ul style="list-style-type: none"> To achieve 2 points, a minimum of 50% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas have a minimum clear width of 1.7 metres wide. To achieve 4 points, 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to long-term bicycle parking areas shall be annotated on plans as automatic/powering. 	Range	4
Public Bicycle Parking Spaces	<p>Provide bicycle parking spaces intended for use by the public, clearly marked, and located within 10 metres of the property line adjacent to a public right-of-way. A minimum of 6 spaces shall be provided. These spaces are separate from the supply of short-term bicycle parking spaces.</p> <p>For non-residential uses that are part of a mixed-use condominium building, public bicycle spaces that are provided to obtain points in the Residential TDM Toolbox are also valid for points in the Non-Residential TDM Toolbox.</p>	<ul style="list-style-type: none"> A new definition shall be provided in the CZBL for public bicycle parking spaces. To achieve 2 points, a minimum of 6 public bicycle parking spaces shall be provided. These spaces shall be located within 10 metres of a public right-of-way. Where the non-residential uses are part of a mixed-use condominium building, public bicycle spaces that are provided to obtain points in the Residential TDM Toolbox are also valid for points in the Non-Residential TDM Toolbox. 	<ul style="list-style-type: none"> Public bicycle parking spaces shall be indicated on site/floor plans. The developer is required to register a public access easement over the public bicycle parking spaces and the paths between the spaces and the public right-of-way. 	Fixed	2



TDM Measure	Description	Requirements to be captured through the CZBL	Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
<p>Bike Share Parking Spaces or Docking Area</p>	<p>Provide bicycle parking spaces intended for use by bike share users, clearly marked, and located within 5 metres of a public right-of-way. A minimum of 6 spaces shall be provided. 3 points are awarded for providing the spaces. An additional 1 point is awarded if 2 or more of the spaces contain energized outlets.</p> <p>For non-residential uses that are part of a mixed-use condominium building, bike share spaces that are provided to obtain points in the Residential TDM Toolbox are also valid for points in the Non-Residential TDM Toolbox.</p> <p>Only permitted in Parking Strategy Areas 1 through to 3, and the EMZO/TOC areas at High Tech. Not recommended in Parking Strategy Area 4.</p>	<ul style="list-style-type: none"> • A new definition shall be provided in the CZBL for bike share parking spaces. • To achieve 3 points, a minimum of 6 bike share spaces shall be provided. Spaces shall be located within 5 metres of a public right-of-way. • An additional 1 point is awarded if 2 or more of the spaces contain energized outlets. • Where the non-residential uses are part of a mixed-use condominium building, bike share spaces that are provided to obtain points in the Residential TDM Toolbox are also valid for points in the Non-Residential TDM Toolbox. 	<ul style="list-style-type: none"> • Bike share parking spaces shall be appropriately shown on site/floor plans. Plans shall indicate whether the spaces contain energized outlets. • As part of the development approval process, the developer is required to: <ul style="list-style-type: none"> ○ Initiate and secure a contract with a reputable bike share operator to operate the bike share service at the development for a minimum of three years. The operator may request a minimum monthly revenue guarantee as a condition of the contract. ○ Demonstrate to the City that the contract with the reputable bike share operator has been secured prior to the execution of the Site Plan Agreement. For ZBLA applications where such contract may be premature, the developer shall submit to the City a Letter of Interest prepared by a reputable bike share operator prior to ZBLA approval. ○ Provide a financial security to the City for the full sum of the minimum revenue guarantee if it is requested by the bike share operator. ○ Guarantee that the City will receive usage data from the bike share operator on a monthly basis as part of the contract between the developer and the operator. ○ Register a public access easement over the bike share spaces and the paths between the spaces and the public right-of-way. 	<p>Fixed</p>	<p>4</p>



TDM Measure	Description	Requirements to be captured through the CZBL	Requirements to be captured through the Development Approval Process	Point Type	Maximum Points
Pick-up/Drop-off Area	<p>Accommodation for a pick-up/drop-off area with a minimum of 2 lay-by spaces that are located within 25 metres of an entrance to the building.</p> <p>For non-residential uses that are part of a mixed-use condominium building, lay-by spaces that are provided to obtain points in the Residential TDM Toolbox are also valid for points in the Non-Residential TDM Toolbox.</p>	<ul style="list-style-type: none"> A new definition shall be provided in the CZBL for lay-by spaces. These spaces shall be located within 25m of an entrance to a building. Parallel lay-by spaces shall have minimum dimensions of 6.7m x 2.5m and perpendicular lay-by spaces shall have minimum dimensions of 5.7m x 2.7m. To achieve 2 points, a minimum of 2 lay-by spaces shall be provided. Where the non-residential uses are part of a mixed-use condominium building, lay-by spaces that are provided to obtain points in the Residential TDM Toolbox are also valid for points in the Non-Residential TDM Toolbox. 	<ul style="list-style-type: none"> Lay-by parking spaces shall be shown on the site/floor plans. Lay-by spaces shall be evaluated for vehicle maneuverability. 	Fixed	2
				Total	26

Note: Fixed points are awarded if the TDM measure is provided and in full compliance with the requirement. For fixed point TDM measures, either all points are awarded or zero points are awarded. Ranged points will be awarded commensurate to the degree of TDM provided for that specific measure, with the limit indicated in the description or calculated within the TDM Toolkit spreadsheet tool. More TDM could be provided, but points are limited.

5.1.3 Minimum TDM Requirements

It is recommended that select “hard” TDM measures from the TDM Toolbox shown in **Table 4** and **Table 5** should be required as a minimum TDM requirement, such that these requirements are applicable even if Tier A (base) parking rates are being provided. The amount of minimum TDM required shall vary depending on the Parking Strategy Area.

Table 6 through to Table 11 show the recommended minimum TDM requirements for residential and non-residential uses for each Parking Strategy Area, as well as the EMZO and TOC areas.

For Parking Strategy Areas 2 through to 4 where there are parking rate tiers, the recommended minimum TDM required is relatively nominal. The TDM points achieved through the implementation of these minimum required measures shall count towards the points needed to achieve higher TDM tiers.

Because Parking Strategy Area 1 and the EMZO and TOC areas have no parking minimums and have the best opportunity for lower automobile reliance, a higher amount of minimum TDM should be required to help support non-automobile modes of travel. The degree of which TDM measures are required is recommended to be dependent on the supply of auto parking being provided. Where little to no parking is provided, more TDM measures should be required to help support non-auto modes of travel as much as possible. Where more parking is provided, there can be a lesser degree TDM measures that is required.

RECOMMENDATION It is recommended that the City adopts the recommended minimum TDM requirements shown in Table 6 through to Table 11 through the CZBL.
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Table 6: Recommended Minimum TDM Requirements in Parking Strategy Area 1 (Residential)

Land Use	Parking Rate Provided	Minimum TDM Requirements
Condominium / Apartment		
Inclusive of resident and visitor parking. Excludes non-residential parking.	≥ 0.90	Baseline TDM Measures ¹
	$0.85 \leq x < 0.90$	10 pts ²
	< 0.85	16 pts ²
Affordable Housing		
Inclusive of resident and visitor parking. Excludes non-residential parking.	≥ 0.60	Baseline TDM Measures ¹
	$0.55 \leq x < 0.60$	10 pts ²
	< 0.55	16 pts ²
Baseline TDM Measures¹	Minimum Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans

Note:

- (1) See Baseline TDM Measures in the latter part of the table.
- (2) Points correspond to the TDM measures outlined in Table 4. The measures provided to achieve the number of points shall include the Baseline TDM Measures.

Table 7: Recommended Minimum TDM Requirements in Parking Strategy Area 1 (Non-Residential)

Land Use	Parking Rate Provided	Minimum TDM Requirements
Commercial Plaza Commercial Uses within Mixed-Use Building Medical Office Retail Personal Service Shop Restaurant Financial Institution Veterinary Clinics Places of Entertainment Places of Assembly	≥ 2.50	Baseline TDM Measures ¹
	$2.20 \leq x < 2.50$	14 pts ²
	< 2.20	20 pts ²
Office	≥ 2.00	Baseline TDM Measures ¹
	$1.90 \leq x < 2.00$	14 pts ²
	< 1.90	20 pts ²
Day Care / Day Nursery	≥ 1.75	Baseline TDM Measures ¹
	$1.65 \leq x < 1.75$	14 pts ²
	< 1.65	20 pts ²
Places of Worship	All	Baseline TDM Measures ¹
Recreation Centre	≥ 2.50	Baseline TDM Measures ¹
	$2.40 \leq x < 2.50$	14 pts ²
	< 2.40	20 pts ²
Library	≥ 1.50	Baseline TDM Measures ¹
	$1.45 \leq x < 1.50$	14 pts ²
	< 1.45	20 pts ²
Arts & Cultural Social Services	≥ 4.25	Baseline TDM Measures ¹
	$4.05 \leq x < 4.25$	14 pts ²
	< 4.05	20 pts ²
Elementary School	≥ 1.35	Baseline TDM Measures ¹
	$1.30 \leq x < 1.35$	14 pts ²
	< 1.30	20 pts ²
Secondary School	≥ 2.70	Baseline TDM Measures ¹
	$2.55 \leq x < 2.70$	14 pts ²
	< 2.55	20 pts ²
Post-Secondary School	≥ 1.60	Baseline TDM Measures ¹
	$1.50 \leq x < 1.60$	14 pts ²
	< 1.50	20 pts ²
Commercial School	≥ 2.70	Baseline TDM Measures ¹
	$2.55 \leq x < 2.70$	14 pts ²
	< 2.55	20 pts ²
Hotel/Motel (room-based requirement) plus...	All	Baseline TDM Measures ¹
... Hotel/Motel # (GFA-based requirement)	≥ 4.25	Baseline TDM Measures ¹
	$4.05 \leq x < 4.25$	14 pts ²
	< 4.05	20 pts ²
Theatre	≥ 0.60	Baseline TDM Measures ¹
	$0.55 \leq x < 0.60$	14 pts ²
	< 0.55	20 pts ²
Warehousing	All	Baseline TDM Measures ¹
All other Institutional Uses	≥ 3.00	Baseline TDM Measures ¹
	$2.85 \leq x < 3.00$	14 pts ²
	< 2.85	20 pts ²
Industrial	All	Baseline TDM Measures ¹
Hospital	All	Baseline TDM Measures ¹
Community Centre	≥ 2.50	Baseline TDM Measures ¹
	$2.40 \leq x < 2.50$	14 pts ²
	< 2.40	20 pts ²
Fuel Station (Kiosk-based requirement) plus Restaurant	All	Baseline TDM Measures ¹
Fuel Station (Restaurant)	All	Baseline TDM Measures ¹
Automotive Body Shop / Repair Shop	All	Baseline TDM Measures ¹

Car Wash (Manual/Vacuum/Stall)	All	Baseline TDM Measures ¹
Automotive Dealership / Rental Agency	All	Baseline TDM Measures ¹
Baseline TDM Measures¹	Minimum Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powered.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans

Note:

(1) See Baseline TDM Measures in the latter part of the table.

(2) Points correspond to the TDM measures outlined in Table 5. The measures provided to achieve the number of points shall include the Baseline TDM Measures.



Table 8: Recommended Minimum TDM Requirements in Parking Strategy Area 2 (Residential)

Required TDM Measure	Minimum Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans

Table 9: Recommended Minimum TDM Requirements in Parking Strategy Area 2 (Non-Residential)

Required TDM Measure	Minimum Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans



Table 10: Recommended Minimum TDM Requirements in Parking Strategy Areas 3 and 4 (Residential)

Required TDM Measure	Minimum Requirements to be captured through the CZBL	Description
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 50% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans

Table 11: Recommended Minimum TDM Requirements in Parking Strategy Areas 3 and 4 (Non-Residential)

Required TDM Measure	Minimum Requirements to be captured through the CZBL	Description
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 50% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans



Table 12: Recommended Minimum TDM Requirements in EMZO and TOC at High Tech (Residential)

Required TDM Measure	Minimum Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process
Bicycle parking (short-term)	<ul style="list-style-type: none"> Short-term bicycle parking shall be provided in accordance with the provisions required by O.Reg 344-22. 	<ul style="list-style-type: none"> Short-term bicycle parking shall be appropriately shown on the site/floor plans.
Bicycle parking (long-term)	<ul style="list-style-type: none"> Long-term bicycle parking shall be provided in accordance with the provisions required by O.Reg 344-22. 	<ul style="list-style-type: none"> Long-term bicycle parking shall be appropriately shown on the site/floor plans.
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans
Bicycle Maintenance Facilities – Long Term	<ul style="list-style-type: none"> Bicycle maintenance facilities shall be provided at a minimum rate of 1 facility per 200 required long-term bicycle parking spaces for residential uses or portion thereof. The area for each facility shall have minimum dimensions of 1.8m x 2.6m as recommended in Table 19. 	<ul style="list-style-type: none"> Bicycle maintenance facilities shall be appropriately shown on site/floor plans. They shall be located in the long-term bicycle parking areas.
Office/co-working/meeting space in common element (with free internet access)	<ul style="list-style-type: none"> An area with a minimum of 50 sq.m. to be used as an office/co-working/meeting space for building residents shall be provided. The area shall provide a minimum of one washroom facility. Where the provided work from home space is less than or equal to 75 square metres, a minimum of one small private meeting/call room is required. Where the provided work from home space is greater than 75 square metres, a minimum of two small private meeting/call rooms are required. 	<ul style="list-style-type: none"> The work from home space shall be appropriately shown on the site/floor plans. It is recommended that the site/floor plans annotate that the work from space shall have free internet access for building residents.



Table 13: Recommended Minimum TDM Requirements in EMZO and TOC at High Tech (Non-Residential)

Required TDM Measure	Minimum Requirements to be captured through the CZBL	Additional Requirements to be captured through the Development Approval Process
Bicycle parking (short-term)	<ul style="list-style-type: none"> Short-term bicycle parking shall be provided in accordance with the provisions required by O.Reg 344-22. 	<ul style="list-style-type: none"> Short-term bicycle parking shall be appropriately shown on the site/floor plans.
Bicycle parking (long-term)	<ul style="list-style-type: none"> Long-term bicycle parking shall be provided in accordance with the provisions required by O.Reg 344-22. 	<ul style="list-style-type: none"> Long-term bicycle parking shall be appropriately shown on the site/floor plans.
Long-term bicycle parking ease of access	<ul style="list-style-type: none"> 100% of long-term bicycle parking shall be located on the ground floor, one level below grade, or one level above grade within a building. Entrances to the long-term bicycle parking areas shall have a minimum clear width of 1.7 metres. 	<ul style="list-style-type: none"> Long-term bicycle parking areas shall be appropriately shown on the site/floor plans. Long-term bicycle parking areas shall be accessible via ramps or elevators from the building entrance. Entrances to areas shall be annotated on plans as automatic/powerd.
Short-term bicycle parking weather protection and location	<ul style="list-style-type: none"> A minimum of 50% of the required short-term bicycle parking shall be located within a building or in a covered area. 	<ul style="list-style-type: none"> Method of weather protection (e.g., canopies, accessory structures, etc.) shall be appropriately shown on the site/floor plans
Public bicycle parking spaces	<ul style="list-style-type: none"> A minimum of 6 public bicycle parking spaces shall be provided. These spaces shall be located within 10 metres of a public right-of-way. 	<ul style="list-style-type: none"> Public bicycle parking spaces shall be appropriately shown on site/floor plans. The developer is required to register a public access easement over the public bicycle parking spaces and the paths between the spaces and the public right-of-way.

5.1.4 TDM Toolkit

A supplementary TDM Toolkit (spreadsheet tool) that is based on the TDM Toolbox shown in **Table 4** and **Table 5** shall be made available to assist developers, the public, and City staff with calculating the appropriate TDM tier and corresponding parking rate standards based on the degree of TDM that has been provided. The TDM Toolkit would not be required to calculate the parking requirements in the CZBL upon the adoption of the tiered rates and the points system, but it is provided to assist with the calculations.

RECOMMENDATION It is recommended that a TDM Toolkit in the form of a spreadsheet tool shall be available to assist in the parking standards calculations in the CZBL upon the adoption of the tiered rates and the points system. The TDM Toolkit shall be verified to ensure consistency with the CZBL.

5.1.5 Monitoring Surveys

For new residential developments in the City where a TDM Plan is required, TDM monitoring surveys are recommended to be required and included as part of the TDM Plan for the development. The purpose of the TDM monitoring surveys would be to confirm the TDM measures that are in place, assess the parking and storage needs of motor vehicles and forms of micromobility (e.g., bicycles, e-bikes, and e-scooters), and to determine the effectiveness of the provided TDM measures. Questions assessing typical methods of travel, commute times and distances may also be included to assist the City with decisions on future transportation planning and initiatives.

The City is recommended to develop TDM monitoring surveys which would be distributed to developers and completed by residents of the new developments on two occasions:

- **Initial Survey** – conducted at approximately 50% occupancy of the development, and
- **Follow-up Survey** – conducted at approximately 2 years after the date of the Initial Survey

To encourage residents to complete the survey, the City is recommended to develop an incentive strategy or program to increase the number of survey respondents. The findings of the **Data Collection Report (Appendix D)** indicate that providing an incentive can help increase the number of survey respondents from the public. It is recommended that developers shall be required to provide an incentive for residents that complete the survey. For example, residents who complete the survey may be entered into a raffle where prizes could be nominal gift cards.

The City is recommended to collect securities as part of the development application process to ensure that the surveys and incentive are distributed by the developer.

RECOMMENDATION The City is recommended to develop TDM monitoring surveys which would be distributed to developers after the site plan approval on two occasions – Initial Survey and Follow-up Survey. The developers shall distribute the surveys at the required times to be completed by residents of the new development.

The City is also recommended to develop an incentive strategy or program to encourage residents to complete the survey. Developers will be required to provide an incentive to residents that complete the survey.

It is recommended that the City collect securities as part of the site plan approval process to ensure proper completion of the surveys and distribution of the incentives.

5.2 Parking Supply Standards

5.2.1 Tiered Minimum Vehicle Parking Rates

Vehicle minimum parking rate recommendations are provided in **Table 14** and **Table 15**, for residential and non-residential land uses, respectively. They are tiered according to TDM provisions and are categorized by Parking Strategy Area. The recommendations were determined based on the review of the current practices of other municipalities, the provision of sustainable transportation such as transit, the City’s past minor variance and zoning by-law amendment approvals, parking surveys and market research, and developer community (BILD) surveys. It is recommended that the minimum parking rates should be re-evaluated at every PTDMS update occurring approximately every five years to ensure that they are keeping with parking trends and the City’s vision and policies.

For each land use, and for each Parking Strategy Areas 2 to 4, there will be a base minimum parking rate (Tier A) which will be applicable to the development by default. However, there will be no parking minimums in Parking Strategy 1 and the EMZO and TOC areas to follow Provincial legislation.

For Parking Strategy Areas 2 to 4, there will be reduced/tiered minimum rates (Tiers B and C) available for some land uses and Parking Strategy Areas, however, maximums will always be calculated using the base rates (Tier A). For example, the Tier B minimum parking rates for Parking Strategy Area 2 is denoted as column 2B in **Table 14** and **Table 15**, and the base (Tier A) minimum parking rates for Parking Strategy 3 is denoted as column 3A.

The development will only be subject to the reduced/tiered minimum parking rates (Tiers B and C) if sufficient TDM measures are proposed in accordance with the TDM Toolbox discussed in **Section 5.1.2**. The tiered system of minimum parking rates and TDM requirements is recommended to be adopted into the City’s CZBL.

While the details will be captured within the CZBL, the TDM Toolkit (spreadsheet tool) will be supplementary and available for use by the public or the City to assist in the assessment. The

developer will also be expected to provide a minimum amount of TDM, as outlined in **Section 5.2.1**.

If the developer wishes not to, or cannot, provide the minimum amount of parking, then the City may use cash-in-lieu as an alternative mechanism to permit the development.

In the event a land use that is proposed in a development application is not defined in the PTDMS or the CZBL, it is recommended that the developer submit a Parking Study as part of the development approval process to evaluate the appropriateness of the parking supply being proposed.

<p>RECOMMENDATION It is recommended that the City adopts the recommended tiered minimum parking rates shown in Table 14 and Table 15. Tiers with reduced minimum parking rates shall be permitted dependent on the degree of TDM measures provided.</p>
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Table 14: Recommended Minimum Parking Rates (Residential)

Land Use	Tier 4A	Tier 4B	Tier 3A	Tier 3B	Tier 3C	Tier 2A	Tier 2B	Tier 2C	Tier 1	EMZO & TOC	Units
Condominium / Apartment											
Bachelor (+ 1-bed ≤ 55 m2)	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.50	0.00	0.00	/unit
One Bed > 55 m2	1.00	0.95	0.90	0.85	0.80	0.75	0.70	0.60	0.00	0.00	/unit
Two Bed+	1.20	1.10	1.00	0.95	0.90	0.85	0.75	0.70	0.00	0.00	/unit
Condominium / Apartment Visitor	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	/unit
Affordable Housing											
Bachelor (+ 1-bed ≤ 55 m2) (Affordable)	0.55	0.50	0.50	0.45	0.40	0.40	0.35	0.30	0.00	0.00	/unit
One Bed > 55 m2 (Affordable)	0.60	0.55	0.55	0.50	0.50	0.45	0.40	0.40	0.00	0.00	/unit
Two Bed+ (Affordable)	0.70	0.65	0.60	0.55	0.55	0.50	0.45	0.45	0.00	0.00	/unit
Visitor (Affordable)	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	/unit
Block / Condo / Stacked Townhouse											
Block / Condo / Stacked Townhouse Resident	1.50	1.50	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Block / Condo / Stacked Townhouse Visitor	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	/unit
Low Density Residential Land Uses											
Seniors' Residence / Retirement Home	0.50	0.50	0.33	0.33	0.33	0.33	0.33	0.33	0.00	0.00	/unit
Single-detached	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Semi-detached	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Duplex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Triplex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Double Duplex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Street Townhouse	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Other Residential Land Uses											
Additional Residential Units (ARU) ¹	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
Home Based Live-work	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Home Occupation ²	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
Short Term Accommodation ²	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
Shared Housing with Support (including Long Term Care Homes, Group Homes)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	/bed
Shared Housing without Support (including Rooming Houses, Lodging Houses, and Boarding Houses)	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/unit
Multi-Tach ²	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note

Note: 1) Refer to the Richmond Hill ARU parking rate requirements established through the 4x4 Housing Accelerator Fund (HAF) initiative
 2) No additional parking requirement. Parking requirement is the same as the primary dwelling time (i.e. single-family, condominium/apartment etc.)



Table 15: Recommended Minimum Parking Rates (Non-Residential)

Land Use	Tier 4A	Tier 4B	Tier 3A	Tier 3B	Tier 3C	Tier 2A	Tier 2B	Tier 2C	Tier 1	EMZO & TOC	Units
Commercial Plaza	4.30 ¹	3.85 ¹	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Commercial Uses within Mixed-Use Building	4.30 ¹	3.85 ¹	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Office	2.80	2.50	2.20	2.10	1.75	2.00	1.90	1.60	0.00	0.00	/100m ²
Medical Office	4.50	4.00	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Retail	4.00	3.60	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Personal Service Shop	4.00	3.60	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Restaurant	6.00	5.40	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Financial Institution	4.50	4.00	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Veterinary Clinics	4.00	3.60	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Day Care / Day Nursery	2.50	2.25	2.25	2.15	1.80	1.75	1.65	1.40	0.00	0.00	/100m ²
Places of Entertainment	6.40	5.80	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Places of Assembly	6.40	5.80	3.00	2.70	2.50	2.50	2.20	2.00	0.00	0.00	/100m ²
Places of Worship	6.40	6.40	4.70	4.70	4.70	4.25	4.25	4.25	0.00	0.00	/100m ²
Recreation Centre	4.50	4.05	3.50	3.30	2.80	2.50	2.40	2.00	0.00	0.00	/100m ²
Library	2.85	2.55	2.00	1.90	1.60	1.50	1.45	1.20	0.00	0.00	/100m ²
Arts & Cultural	6.00	5.40	4.70	4.45	3.75	4.25	4.05	3.40	0.00	0.00	/100m ²
Social Services	6.00	5.40	4.70	4.45	3.75	4.25	4.05	3.40	0.00	0.00	/100m ²
Elementary School	1.50	1.35	1.40	1.35	1.10	1.35	1.30	1.10	0.00	0.00	/classroom
Secondary School	3.00	2.70	2.80	2.65	2.25	2.70	2.55	2.15	0.00	0.00	/classroom
Post-Secondary School	2.30	2.05	1.80	1.70	1.45	1.60	1.50	1.30	0.00	0.00	/classroom
Commercial School	3.80	3.40	3.00	2.85	2.40	2.70	2.55	2.15	0.00	0.00	/classroom
Hotel/Motel (room-based requirement) plus...	0.80	0.80	0.70	0.70	0.70	0.65	0.65	0.65	0.00	0.00	/room plus...
Hotel/Motel # (GFA-based requirement)	5.00	4.50	4.70	4.45	3.75	4.25	4.05	4.05	0.00	0.00	.../100m ² %
Theatre	1.00	0.90	0.80	0.75	0.65	0.60	0.55	0.50	0.00	0.00	/6 seats
Warehousing	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.00	0.00	/100m ²
All other Institutional Uses	4.50	4.05	4.00	3.80	3.20	3.00	2.85	2.40	0.00	0.00	/100m ²
Industrial	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	0.00	0.00	/100m ²
Hospital	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	0.00	0.00	/100m ²
Community Centre	4.50	4.05	3.50	3.30	2.80	2.50	2.40	2.00	0.00	0.00	/100m ²
Fuel Station (Kiosk-based requirement) plus Restaurant	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00	/100m ² (kiosk)
Fuel Station (Restaurant)	6.00	6.00	3.10	3.10	3.10	2.80	2.80	2.80	0.00	0.00	/100m ² (restaurant)
Automotive Body Shop / Repair Shop	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00	/100m ²
Car Wash (Manual/Vacuum/Stall)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	/bay
Car Wash (Automated) and Restaurants - Drive-Thru Stacking Lane	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	0.00	0.00	/drive-thru facility
Financial Institution - Drive-Thru Stacking Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	0.00	0.00	/drive-thru facility
Automotive Dealership / Rental Agency	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00	/100m ²

Note:
 (1) Permits up to 30% and 50% of the GFA of the premises to be used for restaurant and medical office uses, respectively. If the GFAs of these uses exceed the percentage, then the parking rate for restaurant and/or medical office shall apply.

5.2.2 Maximum Vehicle Parking Rates

Maximum parking rates help to ensure that parking is not over-supplied and are recommended to be generally 25% higher than the base minimums (Tier A), except for Parking Strategy Area 4, which will not have maximum parking rates. Parking Strategy Area 4 is associated with the least transit served areas and therefore will have the flexibility of providing as much parking as desired.

Because there are no parking minimums in Parking Strategy Area 1, its maximum parking rates are recommended to be equivalent to Parking Strategy Areas 2 to allow for flexibility in site design while ensuring that parking is not over-supplied. Maximum parking rates in the EMZO and TOC shall be as prescribed by the Province.

Notwithstanding, maximum parking rates are not recommended for ground-related residential uses in Parking Strategy Areas 1 through to 4 due to potential parking requirement implications on ARUs. The City's ARU parking requirements are being reviewed through the 4x4 Housing Accelerator Fund (HAF) initiative.

The recommended maximum parking requirements are shown in **Table 16** and **Table 17**.

RECOMMENDATION	It is recommended that the City adopts the recommended maximum parking rates described in Table 16 and Table 17 through the CZBL.
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Table 16: Recommended Maximum Parking Rates (Residential)

Land Use	PSA 4	PSA 3	PSA 2	PSA 1	EMZO & TOC	Units
Condominium / Apartment						
Bachelor (+ 1-bed ≤ 55 m2)	No max	1.00	0.80	0.80	0.40	/unit
One Bed > 55 m2	No max	1.15	0.95	0.95	0.40	/unit
Two Bed+	No max	1.25	1.05	1.05	0.40	/unit
Condominium / Apartment Visitor	No max	0.20	0.20	0.20	0.06	/unit
Affordable Housing						
Bachelor (+ 1-bed ≤ 55 m2) (Affordable)	No max	0.65	0.50	0.50	0.40	/unit
One Bed > 55 m2 (Affordable)	No max	0.70	0.55	0.55	0.40	/unit
Two Bed+ (Affordable)	No max	0.75	0.65	0.65	0.40	/unit
Visitor (Affordable)	No max	0.20	0.20	0.20	0.06	/unit
Block / Condo / Stacked Townhouse						
Block / Condo / Stacked Townhouse Resident	No max	2.00	2.00	2.00	0.40	/unit
Block / Condo / Stacked Townhouse Visitor	No max	0.20	0.20	0.20	0.06	/unit
Low Density Residential Land Uses						
Seniors' Residence / Retirement Home	No max	0.40	0.40	0.40	0.40	/unit
Single-detached	No max	No max	No max	No max	0.40	/unit
Semi-detached	No max	No max	No max	No max	0.40	/unit
Duplex	No max	No max	No max	No max	0.40	/unit
Triplex	No max	No max	No max	No max	0.40	/unit
Double Duplex	No max	No max	No max	No max	0.40	/unit
Street Townhouse	No max	No max	No max	No max	0.40	/unit
Other Residential Land Uses						
Additional Residential Units (ARU) ¹	See note	See note	See note	See note	See note	See note
Home Based Live-work	No max	2.00	2.00	2.00	0.40	/unit
Home Occupation ²	See note	See note	See note	See note	See note	See note
Short Term Accommodation ²	See note	See note	See note	See note	See note	See note
Shared Housing with Support (including Long Term Care Homes, Group Homes)	No max	0.40	0.40	0.40	0.40	/bed
Shared Housing without Support (including Rooming Houses, Lodging Houses, and Boarding Houses)	No max	2.00	2.00	2.00	0.40	/unit
Multi-Tach ²	See note	See note	See note	See note	See note	See note

Note: 1) Refer to the Richmond Hill ARU parking rate requirements established through the 4x4 Housing Accelerator Fund (HAF) initiative

2) Parking requirement is the same as the primary dwelling type (i.e. single-family, condominium/apartment etc.)



Table 17: Recommended Maximum Parking Rates (Non-Residential)

Land Use	PSA 4	PSA 3	PSA 2	PSA 1	EMZO & TOC	Units
Commercial Plaza &	No max	3.75	3.15	3.15	0.50	/100m ²
Commercial Uses within Mixed-Use Building &	No max	3.75	3.15	3.15	0.50	/100m ²
Office	No max	2.75	2.50	2.50	0.50	/100m ²
Medical Office	No max	3.75	3.15	3.15	0.50	/100m ²
Retail	No max	3.75	3.15	3.15	0.50	/100m ²
Personal Service Shop	No max	3.75	3.15	3.15	0.50	/100m ²
Restaurant	No max	3.75	3.15	3.15	0.50	/100m ²
Financial Institution	No max	3.75	3.15	3.15	0.50	/100m ²
Veterinary Clinics	No max	3.75	3.15	3.15	0.50	/100m ²
Day Care / Day Nursery	No max	2.80	2.20	2.20	0.50	/100m ²
Places of Entertainment	No max	3.75	3.15	3.15	0.50	/100m ²
Places of Assembly	No max	3.75	3.15	3.15	0.50	/100m ²
Places of Worship	No max	5.90	5.30	5.30	0.50	/100m ²
Recreation Centre	No max	4.40	3.15	3.15	0.50	/100m ²
Library	No max	2.50	1.90	1.90	0.50	/100m ²
Arts & Cultural	No max	5.90	5.30	5.30	0.50	/100m ²
Social Services	No max	5.90	5.30	5.30	0.50	/100m ²
Elementary School	No max	1.75	1.70	1.70	0.50 ¹	/classroom
Secondary School	No max	3.50	3.40	3.40	0.50 ¹	/classroom
Post-Secondary School	No max	2.25	2.00	2.00	0.50 ¹	/classroom
Commercial School	No max	3.75	3.40	3.40	0.50 ¹	/classroom
Hotel/Motel (room-based requirement) plus...	No max	1.00	0.80	0.80	0.50 ¹	/room plus...
Hotel/Motel # (GFA-based requirement)	No max	5.90	5.30	5.30	0.50	.../100m ² %
Theatre	No max	1.00	0.75	0.75	0.50 ¹	/6 seats
Warehousing	No max	0.90	0.90	0.90	0.50	/100m ²
All other Institutional Uses	No max	5.00	3.75	3.75	0.50	/100m ²
Industrial	No max	1.40	1.40	1.40	0.50	/100m ²
Hospital	No max	3.15	3.15	3.15	0.50	/100m ²
Community Centre	No max	4.40	3.15	3.15	0.50	/100m ²
Fuel Station (Kiosk-based requirement) plus Restaurant	No max	3.75	3.75	3.75	0.50	/100m ² (kiosk)
Fuel Station (Restaurant)	No max	3.9	3.5	3.5	0.50	/100m ² (restaurant)
Automotive Body Shop / Repair Shop	No max	3.75	3.75	3.75	0.50	/100m ²
Car Wash (Manual/Vacuum/Stall)	No max	1.25	1.25	1.25	0.50 ¹	/bay
Car Wash (Automated) and Restaurants - Drive-Thru Stacking Lane	No max	No max	No max	No max	No max	/drive-thru facility
Financial Institution - Drive-Thru Stacking Lane	No max	No max	No max	No max	No max	/drive-thru facility
Automotive Dealership / Rental Agency	No max	3.75	3.75	3.75	0.50	/100m ²

Note: 1) Unit is per 100m²



5.2.3 Bicycle Parking Rates and Amenities

The recommended minimum bicycle parking and amenity requirements are shown in **Table 18**. It is recommended that the CZBL establish separate definitions for long-term and short-term bicycle parking spaces, as well as bicycle maintenance stations. A definition for public bicycle parking spaces, as described in the TDM Toolbox in **Section 5.1.2**, is also recommended to be established in the CZBL.

Long-term bicycle spaces should be implemented through facilities such as lockers or indoor racks that are placed in limited-access rooms or shelters. They are intended for longer parking durations and should be highly secure. Short-term bicycle space should be implemented through facilities such as outdoor bike racks or bike corrals. They are intended for short parking durations and should be focused on simplicity and convenience.

With long-term bicycle parking, repair and maintenance stations should be provided to not discourage people from riding when there is a minor issue with their bicycle. Therefore, maintenance/repair stations should be provided. These stations typically will have a set of allen keys, a bike pump, a bike stand, and wrenches to do standard repairs and maintenance. The stations may also include bicycle wash facilities.

Table 18: Recommended Minimum Bicycle Parking Rates and Amenities

Land Use	Min. Long-Term Spaces + Amenity Requirement	Min. Short-Term Spaces Requirement
Residential Use. Excludes Shared Housing with Support (Long Term Care Homes, Group Homes, etc.).	0.60 per dwelling unit	0.03 per dwelling unit
Residential Tenant Maintenance / Repair Station	1 bicycle maintenance / repair station. Only required when there are 30 dwelling units or more.	
Non-Residential Use and Shared Housing with Support (Long Term Care Homes, Group Homes, etc.).	0.13 per 100 SM	0.15 per 100 SM
Non-Residential Shower/Change Facilities	1 shower/change facility per 30 long-term bicycle spaces that are required for non-residential use, or part thereof. Only required when there are 30 or more long-term spaces required.	

RECOMMENDATION It is recommended that the City adopts the recommended minimum bicycle parking rates and amenities shown in **Table 18** through the CZBL.

5.3 Shared Parking

Shared parking calculations allow for a shared parking supply to be reduced when the peak demands experienced by the various land uses do not overlap temporally. For example, if a movie theatre that only operated in the evenings and a coffee shop that only operated in the daytime are both located on the same lot, then the parking supply would only need to be large enough to generally accommodate the individual peak parking demands for each use. The parking supply would not need to serve each individual uses as if the peak parking demands occurred simultaneously. This effectively reduces the parking supply by half by leveraging shared parking concepts.

It should be noted that shared parking is intended for uses that are on the same lot or property, and not uses across multiple different lots or properties.

5.3.1 Multi-Unit Commercial Uses

In some cases, a shared parking opportunity is intrinsic and can be permitted. Multi-unit commercial plazas or mixed-use buildings with commercial uses are great opportunities to apply shared parking principles. This approach is effective and reliable assuming that there is not an over representation of land uses that are large generators of parking demand or that are sensitive land uses where it is critical that parking is not under supplied.

‘Commercial plaza’ and ‘commercial uses within mixed-use building’ land uses and their associated parking rates are recommended to be established in the City’s CZBL to account for the typical commercial land use breakdown within a shopping plaza or a mixed-use building with commercial uses. These uses may include:

- Office
- Medical office
- Retail
- Personal service shop
- Restaurant
- Financial institution
- Veterinary clinics
- Day care / day nursery

With these combinations of land uses, the proportion of restaurants and medical clinics is recommended to be limited in car-centric areas to ensure that the parking supply is not deficient due to an over-representative of these uses. In particular, restaurants generate parking demand at relatively high rates, and medical clinics should not be under supplied due to the sensitive nature of the use. In Parking Strategy Area 4, the GFAs of both restaurants and medical clinics are recommended to be individually limited to 30% and 50%, respectively, of the total proposed

commercial GFA, given the higher reliance on parking that is expected. If either of these land uses exceed the GFA limit, then the parking requirement for the GFA exceeding the limit must be calculated using the required minimum parking rates specific to those uses, instead of the blended ‘commercial plaza’ or ‘commercial uses within mixed-use building’ parking rates.

This approach will allow for easier change of uses within commercial plazas or mixed-use buildings containing commercial uses, as well as an easier assessment of parking requirements during the development application process. However, this approach is intended for uses that are on the same lot or property. It is not intended to be applied across multiple lots or properties.

RECOMMENDATION

The CZBL is recommended to establish new definitions and parking rates for ‘commercial plaza’ and ‘commercial uses within mixed-use buildings’ uses, which may permit commercial common uses such as office, medical office, retail, service shop, restaurant, financial institution, veterinary clinic, and day care uses. In Parking Strategy Area 4, restaurant and medical office GFA are recommended to be limited to 30% and 50%, respectively, of the total commercial GFA. The GFA exceeding the limit shall be subject to the required parking rate specific to restaurant and medical office uses.

5.3.2 Commercial and Visitor Parking in Mixed-Use Buildings

In addition to the blended commercial rates (with land use controls) and the inherent shared parking opportunities, a shared parking opportunity should also be considered for mixed-use condominium buildings where a parking supply is shared between residential-visitors and commercial uses in the same building. In this case, a 10% reduction to the required parking supply for the commercial land uses can be awarded, which reflects the fact that residential-visitor parking and these other uses can experience peak parking demands at different times. Where this shared parking arrangement is proposed, it is recommended that the CZBL require that all parking provided for commercial uses and residential-visitors must be available and can be accessed for use by both commercial uses and residential-visitors. Note that this approach is intended only for commercial uses within the same building.

RECOMMENDATION

Where a parking supply within a mixed-use condominium building is shared between residential-visitors and commercial uses, permit a 10% reduction in parking requirements for the commercial uses. This reduction shall not be available for commercial uses that are outside of the mixed-use condominium building.

5.3.3 Other Land Use Combinations

In practicality, most land uses do not have such contrasting peak times as in the above example of a movie theatre and coffee shop, and there is typically a larger degree of overlap. Therefore, other opportunities to apply shared parking reductions may be limited. For unique cases where

there are opportunities to reduce parking based on unique land use groupings, a Parking Study would be needed to provide the rationale and supporting information for City consideration.

RECOMMENDATION

Shared parking could be applied for other land use groupings. However, a Parking Study shall be prepared and submitted to the City to provide the rationale and supporting information for City consideration. The appropriate parking reduction would be evaluated on a case-by-case basis.

5.4 Cash-in-Lieu

Cash-in lieu is a financial contribution model in which applicants are given the option of monetarily compensating the City to address a by-law deficiency. Cash-in-lieu can be used to offset a deficiency relative to the by-law parking requirement. Costs for cash-in-lieu (on a per parking space basis) are typically based on the construction and property costs required to build public parking spaces which would be intended to offset the deficiency. A municipality will pool the money and use it to build public infrastructure, such as public parking or other initiatives.

Cash-in-lieu fees for parking can vary significantly between municipalities, locations, and the built-form of the parking infrastructure that the cash-in-lieu is intended to fund. Rates can broadly range from \$5,000 per parking space (such as structured parking in suburban areas) to \$25,000 per parking space (such as below-grade parking in urban areas).

The City of Toronto has permitted cash-in-lieu of parking in recent development applications, such as at 2586 Yonge Street where the cash-in-lieu fee for two parking spaces was \$10,000, or \$5,000 per parking space⁹. The City of Toronto also has a payment-in-lieu of bicycle parking program which applies to only Bicycle Zone 1 which is the more urbanized area of Toronto. The payment in lieu of bicycle parking also applies to short-term bicycle parking and only up to 50% of the required supply¹⁰. Since the removal of many parking minimums in the City of Toronto, the payment-in-lieu of vehicle parking program may not be as commonly used or may no longer be available.

The City of Mississauga also has a payment-in-lieu of parking program which is only permitted for payments greater than \$15,000¹¹. The costs for the payment are outlined in the Planning Act processing Fees document and range from just under \$2,000 to \$20,000 per parking space depending on the area and the type of structure¹².

⁹ <https://www.toronto.ca/legdocs/mmis/2021/ny/bgrd/backgroundfile-159410.pdf>

¹⁰ <https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/payment-in-lieu-of-bicycle-parking/>

¹¹ <https://www.mississauga.ca/wp-content/uploads/2020/03/20140853/07-09-01-Payment-In-Lieu-of-Parking-Program-Policy.pdf>

¹² <https://www.mississauga.ca/wp-content/uploads/2023/01/Schedule-C-1-Planning-Act-Processing-Fees-Applications.pdf>

Richmond Hill has a cash-in-lieu by-law for parking for the Village Local Centre area (By-law 3-94), which was enacted in 1994 and titled the Payment-In-Lieu of Parking By-law for the Central Business District of the Town of Richmond Hill. The by-law requires the following information to determine the cash-in-lieu amount:

- The number of parking stalls for which cash-in-lieu is requested based on the applicable parking standards for the site
- The average market value of the commercial / residential zoned property within 150 to 400 metres of the proposed development, and
- Construction costs of either a surface or structured parking space depending upon which is most applicable.

The by-law’s cash-in-lieu formulas for surface level and multi-level parking are provided below. The determination of whether to use the surface parking or multi-level parking formula depends on the long-term development goals and is left to the discretion of the City.

$$\text{Cash} - \text{in} - \text{Lieu}_{\text{SurfaceParking}} = (C_1 + (L \times S_1)) \times N \times 50\%$$

$$\text{Cash} - \text{in} - \text{Lieu}_{\text{Multi-levelParking}} = \left(C_2 + \left(\frac{L \times S_2}{F} \right) \right) \times N \times 50\%$$

Where:

- C_1 = Construction cost of surface parking
- C_2 = Construction cost of structure parking
- L = current estimate of land cost of parking space per m^2 based on current market value of the lands where development and/or redevelopment is proposed
- S_1 = 26.0 m^2 being the size of each surface parking space required for aisles and driveways
- S_2 = 29.7 m^2 being the size of each surface parking space in a multi-level parking structure including space required for aisles and driveways
- N = number of parking spaces for which cash-in-lieu is requested by proponent
- F = proposed number of floors in hypothetical parking structure

In 2018, the City approved cash-in-lieu of parking for a development in the Village Local Centre which amounted to just over \$100,000 for four parking spaces, or the equivalent of \$25,000 per space. In 2019, the City enacted By-law 139-19 which is applicable to lands directly within the Village Local Centre which states that no additional parking spaces shall be required for change in use applications to commercial uses.

The City is recommended to undertake a study to modernize the cash-in-lieu fee structure for parking deficiencies and to assess expanding cash-in-lieu for parking to other intensification areas or even across the City. It is also recommended that the modernized program be used to

fund TDM related needs or related active transportation infrastructure improvements to help reduce the reliance on parking, rather than constructing additional public parking.

As the City may plan City-led TDM initiatives through the development of a Municipal Parking and TDM Strategy, the cash-in-lieu study must consider the initiatives recommended by the strategy. The study shall determine the financial structure of these initiatives and provide a plan for the use of the funds.

<p>RECOMMENDATION It is recommended that the City undertake a cash-in-lieu study to modernize the City’s cash-in-lieu fee structure and assess the expansion of cash-in-lieu from the Village Local Centre to other intensification areas or even across the City as an option for developers to address off-street parking deficiencies. The contributions shall be used to fund City-lead TDM initiatives to help reduce the reliance on parking.</p>
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5.5 Emerging Trends

5.5.1 Car Share

Car share is a form of mobility-as-a-service for short-term public vehicle rental. Car share is appealing – relative to conventional car rental service – due to its greater flexibility (rental period, usage permissions) and convenience (closer locations, simple app-based rental process). Successful car share services have an acknowledged effect in reducing users’ total vehicle ownership, which relates directly to lower residential development parking demands. The targeted consumer of car share are people who do not own a personal vehicle and do not require one daily – instead, a personal vehicle may be required once a week.

The City has experience with car share that was implemented through the development application of a high-rise mixed-use condominium in the Yonge and Carrville/16th KDA. Through the contract between the developer and a reputable car share operator, a two-vehicle car share service had operated within the development’s woonerf space for 36 months between February 2019 and January 2022. Originally, the vehicles were to be available at all times to condo residents and the general public. However, City staff speculates – based on missing usage data from the provider and COVID-19 pandemic difficulties – that availability may have been discontinuous for parts of the three-year period.

In 2023, the City interviewed two reputable car share operators. Both operators emphasized the importance of sufficient density and availability of rapid transit – particularly subway service – for the car share business to be viable. As such, the Richmond Hill Regional Centre Secondary Plan Area should be considered the most appropriate location for car share in the City, followed by MTSAs and KDAs. The City is recommended to consider the provision of car share through developments applications in Parking Strategy Areas 1 through to 3, but it is not recommended in Parking Strategy Area 4 due to insufficient density and rapid transit service. This is to help ensure that the service of a reputable car share operator can be secured.

Where car share is proposed in a development application, the developer shall satisfy the following implementation requirements:

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- Designate a minimum of two car share spaces. They must be on the surface, publicly accessible, and contain energized outlets
- Convey all designated car share spaces to the City
- Register a public access easement over the car share spaces and the vehicular and pedestrian paths between the spaces and the public right-of-way
- Initiate and secure a contract with a reputable car share operator to operate a minimum of two car share vehicles at the development for a minimum of three years. The operator may request a minimum monthly revenue guarantee as a condition of the contract
- Demonstrate to the City that the contract with the reputable car share operator has been secured prior to the execution of the Site Plan Agreement. For Zoning By-law Amendment (ZBLA) applications where such contract may be premature, the developer shall submit to the City a Letter of Interest prepared by a reputable car share operator prior to ZBLA approval.
- Provide a financial security to the City for the full sum of the minimum revenue guarantee if it is requested by the car share operator, and
- Guarantee that the City will receive usage data from the car share operator on a monthly basis as part of the contract between the developer and the operator.

It is recommended that the City establish the necessary definitions and requirements for car share parking spaces in the City's CZBL. Car share parking spaces shall be separate from residential and non-residential parking spaces.

RECOMMENDATION

The City is recommended to consider the provision of car share through development applications in Parking Strategy Areas 1 through to 3, but it is not recommended in Parking Strategy Area 4.

Through the development approval process, the City shall require developers to satisfy the implementation requirements outlined above, including but not limited to, demonstrating that a contract with a reputable car share operator has been secured prior to the execution of the Site Plan Agreement. For ZBLA applications, the developer still must submit to the City a Letter of Interest prepared by a reputable car share operator prior to ZBLA approval.

The City is recommended to establish the necessary definitions and requirements for car share parking spaces in the CZBL.

5.5.2 Electric Scooters and Electric Bicycles

Electric scooters (e-scooters) and electric bicycles (e-bikes) or 'power-assisted bicycles' are relatively new forms of mobility that are classified as micromobility and often use the same space as bicycles. Riders can travel at sustained speeds for long distance, encouraging users to complete longer trips that frequently replace car trips. Micromobility also reduces greenhouse gas emissions and are more convenient to park, particularly if part of a shared service.

However, since e-bikes and e-scooters are motorized, they are regulated by the Ministry of Transportation of Ontario with the following rules and regulations:

➤ **E-Bikes:**

- ↳ A maximum speed of 32 km/hr
- ↳ A minimum operator age of 16
- ↳ A maximum weight of 120 kg
- ↳ An electric motor not exceeding 500 watts
- ↳ A permanent label from the manufacturer must be included on the E-Bikes stating it conforms to the federal definition of a power-assisted bicycle
- ↳ Helmet requirements

➤ **E-Scooters:**

- ↳ A maximum speed of 24 km/hr
- ↳ A minimum operator age of 16
- ↳ A maximum weight of 45 kg
- ↳ An electric motor not exceeding 500 watts
- ↳ Helmet requirements

Under Ontario Highway Traffic Act (HTA) Regulation 369/09, e-bikes are permitted on roads and highways where conventional bikes are permitted.

E-Scooters are permitted in accordance with Ontario HTA Regulation 389/19, and all Ontario Highway Traffic Act rules of the road apply to their operation like bicycles. As part of the Province's 5-year E-scooter Pilot Program, municipalities wishing to participate must pass by-laws to permit their use and set out specific requirements based on Provincial requirements and community context.

In November 2020, York Region updated its Lane Designation Bylaw for e-bikes and e-scooters to allow them to be used within designated lanes and high-occupancy vehicle lanes on regional roads. However, municipalities such as Richmond Hill must set their own rules regarding the use of e-bikes and electric scooters. The York Region decision to allow use of these vehicles opens the door for Richmond Hill to follow-suit and permit people to use these forms of transportation that are already gaining in popularity.

In May 2021, the City of Toronto voted unanimously to acknowledge existing safety and accessibility concerns by opting out of the Provincial E-scooter Pilot Program¹³. The rationale referenced pilot projects in other North American cities that have documented high injury rates relative to e-bikes and have subsequently either banned e-scooters completely, or within downtown areas. This was partly due to riders using the e-scooters on sidewalks and within the pedestrian realm. The City of Toronto staff recommendation was that e-scooters should continue to be prohibited until the system for oversight is in place for public safety and the legal and liability implications are more fully understood. The conclusion is to propose a municipal

¹³ <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.IE21.7>
<https://www.toronto.ca/news/toronto-city-council-votes-unanimously-to-support-safety-and-accessibility-by-opting-out-of-e-scooter-pilot/>

service model under the Toronto Parking Authority that is competitively procured, and that is coordinated with, and complements Bike Share Toronto.

At the time of this PTDMS, the City of Richmond Hill is not participating in any micromobility pilot programs but is actively monitoring them. Following suit of other municipalities, the City has implemented restrictions on the micromobility vehicle types that are permitted to operate on the City's transportation facilities, such as roads, cycling facilities, and off-road trail systems. These restrictions will be re-assessed as part of the City's Micromobility Strategy that is planned to be initiated in 2024. The strategy will develop recommendations for the micromobility permissions within the City's transportation network.

<p>RECOMMENDATION The City is recommended to initiate a Micromobility Strategy to develop recommendations for the micromobility permissions within the City's transportation network and re-assess the current restrictions. The strategy shall investigate ways to address public safety concerns for both private use and for public/shared fleets.</p> <p>While the City develops the Micromobility Strategy, the City should also investigate the provision of bike share services within Richmond Hill at which point there may be further investigation to integrate e-scooters with bike share services. Since bike share has yet to be introduced into Richmond Hill, this creates another step in the process if there is a desire to include e-scooters as shared-mobility and to have them managed under that umbrella of shared mobility.</p>
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5.5.3 Bike Share

Bike share is a form of mobility-as-a-service for short-term public bicycle rental. Bike share provides users with an additional transportation option and can provide access to places that are not efficiently reachable on foot. Bike share can be used for short trips that may be less convenient or not possible on transit. It can also provide a crucial first and last mile connection for transit as well as longer journeys on foot. A successful system will complement and extend transit and the pedestrian network.

The City of Toronto is successfully operating a municipal bike share service known as Bike Share Toronto through their municipal parking authority. Their bikes could be taken from any bike share station and returned to any station in the bike share system. The City of Richmond Hill is recommended to assess the provision of municipal bike share services – which would first require establishing a municipal parking authority – through the development of a Municipal Parking and TDM Strategy.

In recent years, non-municipal bike share operator businesses have emerged. Based on discussion with other municipalities, there has been some interest from an emerging operator to work with developers to implement bike share as a form of electrified micromobility through development applications. However, at this time, the City has not yet received any development application where bike share has been proposed.

Because bike share is best used for shorter trips and is complementary to rapid transit, the City is recommended to consider the provision of bike share through developments applications in Parking Strategy Areas 1 through to 3. However, it is not recommended in Parking Strategy Area 4 due to insufficient density and rapid transit.

Where bike share is proposed in a development application, the developer shall satisfy the following implementation requirements:

- Provide a minimum of six bike share spaces intended for use by bike share users, which shall be clearly marked and located within five metres of the property line adjacent to a roadway and/or pedestrian connection
- Register a public access easement over the bike share spaces and the paths between the spaces and the public right-of-way
- Initiate and secure a contract with a reputable bike share operator to operate the bike share service at the development for a minimum of three years. The operator may request a minimum monthly revenue guarantee as a condition of the contract
- Demonstrate to the City that the contract with the reputable bike share operator has been secured prior to the execution of the Site Plan Agreement. For ZBLA applications where such contract may be premature, the developer shall submit to the City a Letter of Interest prepared by a reputable bike share operator prior to ZBLA approval
- Provide a financial security to the City for the full sum of the minimum revenue guarantee if it is requested by the bike share operator, and
- Guarantee that the City will receive usage data from the bike share operator on a monthly basis as part of the contract between the developer and the operator.

RECOMMENDATION The City is recommended to consider the provision of bike share through development applications in Parking Strategy Areas 1 through to 3, but it is not recommended in Parking Strategy Area 4.

Through the development approval process, the City shall require developers to satisfy the implementation requirements outlined above, including but not limited to, demonstrate that a contract with a reputable bike share operator has been secured prior to the execution of the Site Plan Agreement. For ZBLA applications, the developer still must submit to the City a Letter of Interest that is prepared by a reputable bike share operator.

The City is recommended to undertake a Municipal Parking and TDM Strategy to assess the City's role in providing municipal bike share services.

5.5.4 Connected and Automated Vehicles

Connected and Automated Vehicles (CAVs) have features to automate some or all aspects of driving and can also have the functionality to communicate with nearby vehicles and/or infrastructure. While still emerging and evolving, the technology is increasingly seen in vehicle offerings that include the ability to self-park, lane assist, or employ adaptive cruise control.

Vehicle automation levels are expected to increase in the future as many car companies are

improving and testing fully automated vehicles, though initial optimistic timelines for this have mainly given way to a more realistic long-term view.

Fully connected and automated vehicles have the ability to transform the way people move and vehicle parking occurs. They could contribute to parking demand if they park at destinations, but they might also consistently cruise the road network and reduce parking needs. For example, CAVs could be used as ride-share fleet vehicles and circulate the streets to pick up other passengers, which means they would not have a need for parking, and they would simply pick up and drop people off. However, cruising would increase road congestion and would technically add trips because rideshare vehicles always contribute to a two-way trip rather than a one-way trip and would also contribute to increased GHG emissions, poorer local air quality, and reduced road safety due to increased traffic demand. This possibility of automated vehicles being fleet vehicles and acting in ways more akin to rideshare or taxi serves rather than personal owned vehicles is unlikely to occur in the short term. Assuming autonomous vehicles are personal vehicles, there would be little to no impact on parking requirements.

Another option that can both lower road congestion and demand for parking lots is efficiently reallocating parking lot space. If people were able to drop off and pick up vehicles at the entrance of a parking lot, studies suggest that CAVs would be able to more compactly park; there would be no need for space to open doors within lots, similar to how automated parking systems currently work for both bicycles and vehicles.¹⁴

These technologies are currently being explored and fully connected and automated vehicles are highly aspirational at this time, but it is important to consider future adoption. Some jurisdictions and transit agencies in Ontario are already completing studies, such as the Whitby Autonomous Vehicle Electric Shuttle Project. The City of Toronto's Automated Vehicles Tactical Plan¹⁵ does not have a concrete date for adoption and acknowledges the uncertainty in the technologies' adoption. While Advanced Driver Assistance Systems technology is currently in use today in the form of blind spot monitoring, forward collision warning, and lane assist, autonomous vehicles are yet to be adopted and are still being tested in various locations in Ontario and other jurisdictions.

RECOMMENDATION

It is recommended that Richmond Hill review the impact of CAVs on parking during the next PTDMs update – when there is clearer industry direction – to establish if parking standards for CAVs are appropriate. CAV parking standards may introduce reduced dimensional requirements associated with more efficient parking areas that do not require additional space for drivers and passengers to open doors, or through reduced overall parking rates for some or all uses if auto ownership is reduced due to the provision of autonomous vehicle rideshare fleets.

¹⁴ <https://spectrum.ieee.org/autonomous-parking>

¹⁵ https://www.toronto.ca/wp-content/uploads/2020/02/7ec4-TS_AV-Tactical-Plan_Technical-Report.pdf

6 Recommended Parking Design Standards

6.1 Dimension Standards

The City's current standard and accessible parking space dimension requirements are governed by By-law 109-11 and By-law 78-99, respectively. To modernize the City's design standards and requirements, it is recommended that the CZBL adopts the recommendations of this section.

The [Design Criteria Review Report \(Appendix B\)](#) reviewed dimensional requirements for any facilities related to parking or movement of vehicles. The review was based primarily on current practices from nearby municipalities. Since vehicle sizes can be expected to be more or less consistent between municipalities at large as well as throughout the GTA, dimensional requirements are expected to be fairly similar. The [Compact Car Parking Space Review \(Appendix H\)](#) reviewed passenger vehicle types and dimensions to establish recommendations on compact parking spaces.

The recommended design criteria for parking spaces is shown in **Table 19**, aisle and access lane dimensions are shown in **Table 20**, and recommendations for obstructions are contained in **Table 21**. It is recommended that the City adopts the recommended design criteria through the CZBL.

The recommended design criteria are for various different parking spaces, including perpendicular, parallel, tandem, and compact parking spaces as well as bicycle and loading parking spaces. Tandem and perpendicular parking spaces shall have the same dimensions. It is recommended that the City adopts the Province's accessible parking requirements from the Accessibility for Ontarians with Disabilities Act (AODA). The accessible parking standards in the City's Municipal Code 1106 are also recommended to be updated to be consistent with AODA.

Table 19: Recommended Minimum Dimensions of Spaces and Amenities

Type of Space or Amenity	Length (m)	Width (m)	Vertical Clearance (m)
Perpendicular Parking Space	5.7	2.7	2.0
Perpendicular Compact Parking Space (Type A) ¹	5.2	2.6	2.0
Perpendicular Compact Parking Space (Type B) ²	5.0	2.5	2.0
Parallel Parking Space	6.7	2.5	2.0
Tandem Parking Space	5.7	2.7	2.0
Stacked Parking Space	5.7	2.7	2.0
Accessible Parking Space (Type A) ³	5.7	3.4	2.0
Accessible Parking Space (Type B) ³	5.7	2.4	2.0
Accessible Parking Barrier-free Aisle ³	5.7	1.5	2.0
Stacking Lane Spaces	6.0	2.7	2.0
Loading Space – A	13.0	4.0	6.5
Loading Space – B	9.0	3.7	4.3
Bicycle Parking Space (Horizontal)	1.8	0.6	1.9
Bicycle Parking Space (Vertical)	1.9 ⁴	0.6	1.2 ⁴
Bicycle Parking Space (Stacked)	1.8	0.6	1.2 ⁵
Bicycle Maintenance Station	1.8	2.6	1.9

Notes:

- 1) Type A compact parking space shall be limited to a maximum of 40% of the parking supply for residents.
- 2) Type B compact parking space shall be limited to a maximum of 10% of the parking supply for residents.
- 3) An accessible parking barrier-free aisle is required to be adjacent to accessible parking spaces. An aisle can be shared by two accessible spaces.
- 4) Dimensions for vertical bicycle parking spaces are based on the orientation of the bicycle.
- 5) Vertical clearance applies to each space within the set of vertically stacked spaces.

Table 20's minimum aisle width recommendations are for one-way and two-way aisles and range from 4.0m to 6.0m depending on the parking angle. If the side of parking space is obstructed based on the definition in **Table 21** then there must be an increase in the minimum parking dimension to allow sufficient area for vehicle doors to open.

Table 20: Recommended Minimum Aisle Widths

Parking Angle (degrees)	One-Way / Two-Way Aisle Minimum Width (m)
Less than 50 degrees	4.0 (one-way)
Greater than 50, up to 70 degrees	5.5 (one-way)
Greater than 70, up to 90 degrees	6.0 (one-way or two-way)

Table 21: Obstructions in Parking Spaces

Recommendations for Consideration
<p>Define obstructions to parking and establish an increase in the minimum parking dimension width by 0.3 metres when the side of a parking space is considered obstructed.</p> <p>The side of a parking space is obstructed if any part of a fixed object such as a wall, column, bollard, fence or pipe is situated within 0.3 metres of the side of the parking space, measured at right angles, and more than 1.0 metre from the front or rear of the parking space. Light standards that are located at the centre corners of four (4) adjoining parking spaces are not considered an obstruction.</p>

If a mechanical vehicle stacking system is used, the perpendicular parking space dimensional requirements would still apply. If the mechanism of the lift system is located such that it causes an obstruction to the lift system when at ground level (i.e., when the vehicle is being loaded or unloaded, and not in the storage position), then the internal space dedicated would need to be increased accordingly. However, the obstruction only applies to the vehicles when being accessed by a person.

RECOMMENDATION The City’s CZBL is recommended to adopt the dimensional requirements listed in **Table 19** through to **Table 21**. The CZBL is recommended to introduce new definitions as required to implement the dimensional requirements.

It is recommended that a maximum of 40% and 10% of the parking supply provided for the resident component of residential uses without an exclusive use garage (e.g., condominiums, apartments, etc.) may be in the form of Type A and Type B perpendicular compact parking spaces, respectively. However, compact car parking spaces shall not be permitted for the visitor parking component or non-residential parking spaces.

It is recommended that stacked parking spaces can be permitted for the resident component of residential uses without an exclusive use garage (e.g., condominiums, apartments, etc.), but they shall not be permitted for the visitor parking component. The appropriateness of stacked parking spaces for non-residential land uses is recommended to be evaluated on a case-by-case basis.

The CZBL is recommended to establish separate definitions for stacked and tandem parking spaces, independent from standard parking spaces. Like tandem spaces, stacked parking spaces do not need to directly abut a drive-aisle.

It is recommended that the City evaluate the appropriateness of tandem parking on a case-by-case basis.

The City’s Municipal Code 1106 is recommended to be updated to be consistent with the requirements of AODA.

6.2 Loading Supply

Minimum loading space recommendations for residential and non-residential land uses are provided in **Table 22**. The number of spaces required increase as the size of development also increases. The residential recommendations are consistent with the existing approach. The non-residential loading space requirements have been adjusted so that the floor area thresholds are round numbers and are more in line with other municipalities. Given that loading space types, land use categories, and the requirement thresholds vary between municipalities, the City should maintain the current approach with these minor adjustments unless there are known issues that need to be resolved.

Table 22: Recommended Minimum Loading Space Supply Rates

Land Use	Size of Development	Standard (Type B)	Extended (Type A)
Residential	0 to 30 dwelling units	-	0
	31 to 399 dwelling units	-	1
	Additional for every additional 400 dwelling units or part thereof greater than 399 dwelling units	-	1 +
Non-residential	Less than 500 SM	-	0
	Equal to 500 SM up to 2,300 SM	-	1
	Equal to 2,300 SM up to 9,900 SM	-	2
	Additional for every additional 9,900 SM or part thereof greater than 9,900 SM	-	1 +

RECOMMENDATION It is recommended that the City adopt the recommended loading supply requirements listed in **Table 22** through the CZBL.

6.3 Accessible Parking Supply

The City’s current accessible parking supply standards are governed by the City’s By-law 10-04. It is recommended that the City adopts the more modernized accessible parking requirements of the AODA. The minimum recommended supply of accessible parking based on the AODA is shown in **Table 23**.

Table 23: Recommended Minimum Accessible Parking Space Rates

Total Parking Supply	Minimum Accessible Parking Requirement
5 to 12	1 Type A Space
13 to 100	4% ^{1,2}
101 to 200	1, plus 3% ^{1,2}
201 to 1,000	2, plus 2% ^{1,2}
Over 1,000	11, plus 1% ^{1,2}

- 1) Where an even number of accessible parking spaces are required, an equal number of Type A and Type B parking spaces must be provided.
- 2) Where an odd number of accessible parking spaces are required, the number of parking spaces must be divided equally between Type A and Type B parking spaces, but the additional parking space (the odd-numbered space) may be a Type B parking space.

RECOMMENDATION It is recommended that the City adopt the recommended accessible parking supply requirements listed in **Table 23**, which are based on the AODA. The City’s Municipal Code 1106 is recommended to be updated to be consistent with AODA.

6.4 Electric Vehicle and Bicycle Charging Infrastructure

The City's CEEP has targeted zero emission passenger / light-duty vehicle sales to reach 10% of industry sales by 2025, 30% by 2030, and 100% by 2040. The Federal Government has similar targets. To support this major shift, it is important that the City develops a modernized CZBL that includes electric vehicle (EV) charging requirements.

To ensure consistent understanding and adoption, defining EV terminology at the outset is crucial:

- **Electric Vehicle Supply Equipment (EVSE):** all equipment necessary to facilitate power transfer and information exchange between the branch circuit and the EV (cables, connectors, devices, apparatus, and fittings).
- **Electric Vehicle Energy Management System (EVEMS):** allows individual or clusters of EVSE to be configured to various charging levels (level 2 or 3), such that the maximum capacity of the service/feeder is not exceeded.
- **Energized Outlet:** a connected point in an electrical wiring installation at which current is taken and a source of voltage for EVSE.
- **EV Ready:** A parking space with an energized outlet capable of supporting EVSE.
- **Level 1 Charging:** Charging with a typical wall outlet that provides 120 volts. This is the easiest to install, but the slowest method of charging an electric or hybrid vehicle.
- **Level 2 Charging:** Relies on higher voltage power sources but can be coupled with Electric Vehicle Energy Management Systems which can be direct circuits or can be load sharing circuits which distribute the loads more equitably.
- **Level 3 Charging / Direct Current Fast Charge (DCFC):** This is the fastest method of charging but requires special equipment and can only be used with fully electric vehicles. Appropriate for publicly accessible spaces where short-duration fast charging may be necessary.

There are currently three different levels of EVSE, which are examined in **Table 24** in terms of cost, charge time, and electric output.

Table 24: Types of Electric Vehicle Charging Stations

	Level 1 (Slow)	Level 2	Level 3 (DCFC)
Availability	High	Medium	Low
Typical Output	1.5 kW (120 volts)	7.2 kW (240 volts)	50 kW – 350 kW (400 – 800 volts)
Range Added per Hour (estimate)	8 km	40 km	300+ km
Charge Time	Slow	8 to 10 hours (full charge)	30 to 45 minutes (full charge)
Equipment and Installation Costs	\$150 – \$1,500	\$5,000 – \$10,000	\$50,000 – \$200,000
Typical Use Locations	Some homes, workplaces, public spaces	Homes, workplaces, public spaces	Major corridors, public spaces
Vehicle Type	Hybrid and fully electric	Hybrid and fully electric	Only fully electric

The Clear Air Partnership (a network of over 30 Ontario municipalities and health units) notes that at-home charging is critical to adoption and that at-work and publicly accessible on-the-go charging are important supplements. The Partnership’s recent **EV Charging Infrastructure Costing Study** focused on current costs for implementing EV Ready parking spaces and provided a blueprint for municipalities moving forward with EV charging requirements. The study outlined that providing energized outlets in new builds currently ranges from \$2,000 to \$6,000 per residential parking space¹⁶.

Incorporating EV charging requirements into the CZBL accomplishes two critical considerations. First, it supports the aspirational EV adoption rates set out by the City’s CEEP and the Federal Government. Second, it greatly reduces implementation costs for a technology that is inevitably succeeding internal combustion engine vehicle. Building retrofit costs to accommodate charging can be four times higher than providing electrical infrastructure during construction.

In Canada, Vancouver and Toronto lead the way in the adoption of EVs and corresponding EV charging requirements. The **City of Toronto Electric Vehicle Strategy** indicates that Toronto should be prepared to accommodate 20% zero carbon¹⁷ vehicles by 2030 (more than 220,000 vehicles) and 100% of personal vehicles by 2050. Currently, only EVs can achieve zero carbon.

¹⁶ <https://cleanairpartnership.org/cac/wp-content/uploads/2021/08/GTHA-EV-Ready-Residential-New-Construction-Costing-Study-AES-Engineering-2021.07.27.pdf>

¹⁷ <https://www.toronto.ca/legdocs/mmis/2020/ie/bgrd/backgroundfile-141449.pdf>

These municipalities, as well as the City of Mississauga and City of Guelph, have recently implemented EV requirements into their zoning by-laws, which are as follows:

Vancouver

- **Residential:** 100% of parking spaces must have energized outlets capable of providing Level 2 or higher charging. This requirement excludes visitor parking.
- **Hotel and Bed and Breakfast Accommodation:** 100% of parking spaces must have energized outlets capable of providing Level 2 or higher charging.
- **Non-residential:** A minimum of 45% of the parking spaces must have energized outlets, of which at least 5% of the total number of parking spaces, or two parking spaces, whichever is greater, must be capable of Level 2 charging or higher and may not implement an EVEMS, and
- **Shared Vehicle Parking Spaces (Car Share):**
 - ↳ **Residential, Hotel, and Bed and Breakfast Accommodation:** EVSE must be installed in 100% of shared vehicle parking spaces, and
 - ↳ **Non-residential:** 100% of shared vehicle parking spaces must have energized outlets capable of providing Level 2 or higher charging

Toronto

- **Residential (apartment, mixed use building, detached, semi-detached, townhouse, duplex, triplex, fourplex, secondary suit, and laneway suite):** 100% of parking spaces must have energized outlets capable of providing Level 2 or higher charging. This requirement excludes visitor parking, and
- **Non-residential and all other residential:** 25% of parking spaces in a building must have energized outlets capable of providing Level 2 or higher charging

Mississauga

- **Residential:**
 - ↳ **Condominium and Rental Apartment, Resident Parking:** 20% of the total required parking spaces or 1 space, whichever is greater, shall contain an energized outlet capable of providing Level 2 or higher charging
 - ↳ **Condominium and Rental Apartment, Visitor Parking:** 10% of the total required parking spaces or 1 space, whichever is greater, shall contain an energized outlet capable of providing Level 2 or higher charging
 - ↳ **Detached Dwelling, Linked Dwelling, Semi-Detached, Street Townhouse, Duplex, Triplex, Back-to-Back and Stacked Townhouse:** 1 parking space with an exclusive use garage shall contain an energized outlet capable of providing Level 2 or higher charging
 - ↳ **Back-to-back and stacked townhouse (without exclusive use garage and/or driveway):** 20% of the total required parking spaces or 1 space, whichever is

greater, shall contain an energized outlet capable of providing Level 2 or higher charging, and

- **Non-Residential (with a parking structure with 10 or more parking spaces):** 10% of the total required parking spaces or 1 space, whichever is greater, shall contain an energized outlet capable of providing Level 2 or higher charging.

Guelph

- **Multi-unit buildings with 3 or more dwelling units and mixed-use buildings on lots with PA suffix:** A minimum of 20% of total required parking spaces shall contain a minimum Level 2 EV charging device
- **Multi-unit buildings with 3 or more dwelling units, cluster / stacked / stacked back-to-back townhouses, mixed-use buildings:** A minimum of 80% of total required parking spaces shall contain an energized outlet
- **Non-residential:** A minimum of 10% of required parking spaces shall contain a minimum Level 2 EV charging device. In addition to this requirement, a minimum of 20% of required parking spaces shall contain energized outlets allowing for future installation of charging devices, and
- **Bicycle parking:** 5% of require long-term bicycle parking spaces shall have access to an electrical outlet.

Consideration of user charging habits should also be considered when establishing EV charging requirements for parking. The **Region of Peel Zero Emission Vehicle Strategy** indicated that zero emission vehicle drivers tend to recharge daily or once every two days, typically overnight at home, and overall, about 70-80% of charging occurs at home or at a workplace parking lot¹⁸. As such, it is important to provide a sufficient supply of charging provisions at residential and workplace uses.

The recommended EV requirements for developments in Richmond Hill, which are based on the **EV Charging Requirements Review (Appendix I)**, are presented in **Table 25**.

¹⁸ <https://www.mississauga.ca/wp-content/uploads/2022/06/10083059/Peel-Zero-Emission-Vehicle-Strategy.pdf>



Table 25: Recommended EV and E-Bike Minimum Requirements

Land Use / Parking Space Type	EV-Ready	EV-Ready & EVSE Installed ¹	Charging Level ²
Residential – Condominium / Apartment, and Townhouse without exclusive use garage. Excludes visitor parking spaces.	100%	-	Level 2 or higher
Residential – Detached, Semi-detached, Townhouse with exclusive use garage, Duplex, Triplex, and Double Duplex. Excludes ARUs. Excludes visitor parking spaces.	1 per dwelling unit	-	Level 2 or higher
Non-residential – Office. Excludes Medical Office.	10% or 1 space, whichever is higher	5%	Level 2 or higher
Non-residential – Other uses	5% or 1 space, whichever is higher	2.5%	Level 2 or higher
Car share	100%	-	Level 2 or higher
E-bikes (where long-term bicycle parking is required)	20%	-	Level 1

Notes:

- 1) This requirement is in addition to the EV-Ready requirement shown in the adjacent left column.
- 2) Energized outlet shall be capable of providing the charging level even if EVSE is not required to be installed.

Residential uses without exclusive use garages should have level 2 or higher energized outlets in 100% of residential parking spaces. Dwellings of residential uses with exclusive use garages shall have at least one required space outfitted with an energized outlet. At the developer’s discretion, home buyers may be provided with the option of upgrading to a parking space with EVSE installed – in addition to an energized outlet – when purchasing a dwelling or unit.

Offices should have 5% of parking spaces with EVSE installed, plus an additional 10% that are EV-Ready for easy conversion if there is demand. Other non-residential uses should have 2.5% of parking spaces with EVSE installed, plus an additional 5% that are EV-Ready for easy conversion if there is demand.

The cost for this format of electrification for development is typically in the range of \$2,000 to \$3,000 per space. These circuit configurations can support vehicles with 45 vehicle kilometers travelled (VKT) per day. All car share parking spaces shall have an energized outlet with EVSE installed which provides Level 2 or higher charging.

Retrofitting existing parking spaces to support EV should follow the same recommendations in **Table 25** and the City should target 2035 at which point approximately 50% of vehicles are expected to be electric, with over 90% of vehicles expected to be electric by 2045.

In addition to supporting EVs, the City is also recommended to implement e-bike charging requirements in long term bicycle parking facilities. Given that e-bikes are still an emerging trend, providing energized outlets at 20% of long-term bicycle parking spaces is recommended. Note that many e-bikes have easy release batteries which can be charged in the comfort of residential dwelling units. As micromobility becomes more popular, the e-bike energized outlets are expected to help facilitate micromobility charging capabilities.

The City is recommended to collect securities as part of the development application process to ensure the agreed upon EV and e-bike infrastructure is constructed.

<p>RECOMMENDATION It is recommended that the CZBL adopt the electrification requirements listed in Table 25.</p> <p>The City is recommended to collect securities as part of the development application process to ensure the agreed upon EV and e-bike infrastructure is constructed.</p> <p>The City shall revisit the requirements in five years in the next PTDMS update as adoption rates may increase and the technology and industry standards are better defined.</p>
--

7 Municipal Parking and TDM Administration

Richmond Hill is entering a period of significant population and employment growth focused within the City's urbanizing Centres and Corridors. With this growth comes attendant pressures related to traffic congestion, parking availability, public health, and transportation-related emissions. A holistic approach to parking supply and management must consider municipal parking as a tool to support and manage parking demand, which is key to supporting economic development and local business. As such, the City's 2023 Transportation Master Plan Update has recommended that the City should assess its role in the provision of municipal parking services and parking structures, as well as consider the establishment of a parking authority.

In addition to parking services, the City's promotion, provision, and/or accommodation of mobility options and services other than single occupant motor vehicles (e.g., cycling, possible future micromobility, TDM services) for getting around the City should also be assessed, to ensure that growth is not only balanced with green, but that the necessary infrastructure and programming supports are in place to allow residents and workers to choose different transportation modes to get around the City. Consideration may also be given to technologies that can reduce the impact of motor vehicles on the road network. Shared mobility services, provision of bicycle parking and bicycle hubs, and dynamic parking management should be reviewed. The TDM component ensures that the City is maximizing its road network potential to address aforementioned growth pressures.

The City should undertake a study to assess the City's role in provision of municipal parking and TDM services, and the establishment of a municipal parking authority. A monitoring program should be included to help gauge success of the recommended strategy and determine ways to adjust the strategy for greater success.

<p>RECOMMENDATION The City is recommended to develop a Municipal Parking and TDM Strategy to assess the City's role in the provision of municipal parking and TDM services, and the establishment of a municipal parking authority.</p>
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8 Implementation Plan

The PTDMS recommendations should be applied to developments and implemented through the City's CZBL. The provision of tiered parking requirements through the implementation of TDM measures provides developers with flexibility to pursue lower parking supplies by supporting sustainable travel modes.

Summarizing the aforementioned, the following implementation steps are recommended:

- The Official Plan Update should consider the parking and TDM directions provided in this Recommendations Report as the basis for the formulation of the appropriate Official Plan policies relating to parking and TDM at developments.
- Explore the implementation of the recommended parking rates and tiers by Parking Strategy Area, as well as the direct integration of TDM measures into parking supply standards, into the City's CZBL.
- Adopt the recommended parking design standards, such as parking and loading space dimensions, EV requirements, accessibility requirements, and bicycle parking, etc. into the CZBL.
- Undertake a cash-in-lieu study to modernize the City's cash-in-lieu fee structure and assess the expansion of cash-in-lieu from the Village Local Centre to other intensification areas or across the City.
- Develop a Municipal Parking and TDM Strategy, as was also recommended in the City's 2023 Transportation Master Plan, to evaluate the establishment of a municipal parking authority and to assess the City's role in the provision of municipal parking and TDM services.
- Review and update this PTDMS Recommendations Report approximately every five years to ensure that they are in keeping with the City's vision and policies. As part of the updates:
 - ↳ Continue to monitor parking in intensification areas and update the PTDMS accordingly.
 - ↳ Re-evaluate the removal of the minimum parking requirements in additional select areas when critical rapid transit and other sustainable transportation modes and services are more prevalent.



Appendix A

Current Practices Report



Parking and TDM Strategy – Current Practices

Richmond Hill Parking and TDM Strategy for
New Developments

City of Richmond Hill, Ontario
October 30, 2022



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1 Study Context

1.1 2010 Richmond Hill Parking Strategy

Since the completion of the 2010 Parking Strategy, many of the recommendations have since been applied to new developments. However, the City would like to modernize the requirements. A current practices review was undertaken which compares aspects of parking requirements from various Zoning By-laws across Canada to the requirements outlined in the 2010 Parking Strategy. The goal is to refine the previous recommendations to reflect changes which have occurred in the past decade including the shift in focus to intensification, urbanization, and transit-oriented development.

The previous study established minimum and maximum parking rates for the various focus areas in the City, but fell short of incorporating TDM measures including bicycle parking standards and opportunities to reduce parking through provision of TDM measures, or to reduce parking requirements over time as the urban form evolves to be more transit supportive.

The 2010 Parking Strategy established five Parking Strategy Areas for which different minimum and maximum parking rates would apply as shown in **Exhibit 1**. These parking strategy areas include:

1. Richmond Hill Regional Centre (RHC)
2. Downtown Local Centre and Key Development Areas (KDA)
3. Rapid Transit Corridors (RTC)
4. Business Parks
5. 'Rest of Richmond Hill'



Exhibit 1: Richmond Hill Parking Strategy Areas

This study, the Richmond Hill 2021 Parking and Transportation Demand Management (TDM) Strategy for New Developments (the “**Parking and TDM Strategy**”) is an update to the Richmond Hill 2010 Parking Strategy Draft Final Report (the “**2010 Parking Strategy**”) which was prepared by HDR | iTRANS. The Parking and TDM Strategy serves to develop clearly defined rates for off-street parking within the City, incorporate rates for emerging uses, as well as to inform the development of the Comprehensive Zoning By-law Review which will include various design standards relating to parking.

Furthermore, this study pursues the recommendation from the 2010 Parking Strategy to integrate the parking requirements with a TDM Strategy that will require the provision of Transportation Demand Management measures that will help reduce single occupant vehicle (SOV) use, encourage transit use, and support increased growth targets. The TDM Strategy will be the linkage between the provision of the TDM measures to tangible and practical reductions to parking requirements.

The Parking and TDM Strategy is comprised of the following tasks, with input from key stakeholders throughout the process:

1. **Current Practices Review** – comparing current parking rates contained within the 2010 Parking Strategy with those of comparable municipalities with more modern requirements, and identifying and addressing gaps in the current Zoning By-law through the introduction of emerging land uses or parking rates for non-standard vehicles (i.e. electric vehicle parking spaces, preferential parking spaces such as carpool parking or carshare parking etc.). Introducing a TDM Strategy tied to parking requirements;
2. **Data Collection** – conducting parking surveys to understand the existing parking demands for various land uses, targeting land uses identified as outliers in the current practices review; and
3. **Recommendations & Implementation** – summarizing the final recommendations of parking rates, TDM strategy, and implementation plan based on the current practices and data collection.

The recommendations presented in this study should be treated as preliminary recommendations for consideration as they are based primarily on the current practices review. Input from the remainder of the study, including data collection and stakeholder input, will be factored into the final recommendations for the Parking and TDM Strategy. A final report will be created which summarizes the recommendations based on all supporting aspects of the study.

1.2 Yonge-Bernard Key Development Area

The City of Richmond Hill is in the process of developing an updated preferred land use structure and framework for the Yonge-Bernard Key Development Area (KDA), located at Yonge Street and Bernard Avenue. The report **Yonge Street and Bernard Avenue Key Development Area Secondary Plan Transportation Considerations** prepared by BA Group in June 2017 (the “Secondary Plan Study”) developed the vision and implementation strategy for the area and supported an overall Floor Space Index (FSI) of between a minimum of 2.54 and a maximum of 3.04. This FSI target was established to encourage and promote intensification and transit oriented development supported by the expansion of the Yonge Street Rapidway Bus Rapid Transit.

The Secondary Plan was approved in 2017 but was appealed by both residents and landowners. Council is interested in being more progressive by increasing the target FSI up to 4.0 to encourage intensification and to remove barriers to development. The Secondary Plan Study is therefore undergoing a review to reassess the potential intensification targets.

This study is also being developed in parallel, and the City requested that parking and Transportation Demand Management (TDM) for the Bernard KDA be reviewed in advance, to support the intensification and work being undertaken through the ongoing Secondary Plan Study update and peer review. Recommendations for the Bernard KDA were presented at the June 2020 Local Planning Appeal Tribunal. The **Yonge/Bernard KDA: Peer Review and Transportation Assessment Update** dated May 1, 2020 (the “**Bernard KDA Peer Review**”) prepared by HDR outlines the proposed parking rates for the Bernard KDA and was based on preliminary work done as part of this Parking and TDM Strategy.

1.3 Current Practices Methodology

The current practices review focused on the following municipalities, mostly concentrated in the Greater Toronto Area:

- City of Richmond Hill 2010 Parking Strategy
- Richmond Hill Yonge and Bernard Key Development Area Secondary Plan Zoning By-law 111-17
- City of Toronto (By-law 569-2013)
- City of Markham (By-law 28-97, 2004-196 for Markham Centre)
- Town of Newmarket (By-law 2010-40)
- City of Vaughan (By-law 1-88, Draft Review of Parking Standards (2010), Draft Comprehensive Zoning By-law – April 2019)
- City of Mississauga (By-law 0225-2007)
- City of Brampton (By-law 270-2004)
- Town of Oakville (By-law 2014-014)
- City of Hamilton (By-law 05-200, 17-240)
- City of Vancouver (By-law 6059)

This review focuses the current practices comparison of parking requirements from the above municipalities – for their general areas – with the expectation that general area rates will be most comparable to the ‘Rest of Richmond Hill’. The **Bernard KDA Peer Review** (May 2020) has already been prepared and includes proposed rates for growth areas comparable to KDAs; however as previously stated, this current practices review uses the 2010 rates as the basis for the comparison, while the recommendations from the Bernard KDA Peer Review are also included for consideration and comparison purposes in this report.

The current practices review therefore results in two sets of recommendations: one for parking rates in general areas, and another set of recommendations for parking rates in the KDAs. For the development of rates for the remaining Parking Strategy Areas, the rates were developed through interpolation and extrapolation of the general area rates and KDA rates. The inter/extrapolation was based on the vision for each Strategy Area and current practices from other municipalities with varying parking requirements depending on transit accessibility and built form. As detailed later in this study, mode shares and auto-ownership are fairly consistent throughout the City. As a result, the vision for the parking strategy areas needs to be established prior to achieving the targeted and envisioned mode share and auto-ownership levels for some intensification areas. Integration of TDM measures and parking

reductions will allow for the parking requirements to be flexible and dynamic in response to external factors and the evolving auto-ownership and mode share levels, by Strategy Area.

Currently, there is no recommended change to the pre-established Strategy Areas, however we note that in the future the City may wish to expand the KDA policies to include all Major Transit Station Areas which are currently being identified as part of York Region's Municipal Comprehensive Review, with note that this would include GO Station areas and vivaNext station-stop areas. However, through the development of the TDM Strategy, recommendations will also include opportunities to reduce parking requirements for some Strategy Areas due to transit proximity, quality of service, and other site-specific factors which may make the need for additional Strategy Areas unnecessary. This review assumes the same Strategy Area definitions continue to apply and uses the recommendations prepared in the 2010 Parking Strategy as the basis for the current practice comparison. Generally, the parking minimums for KDAs established in the 2010 Parking Strategy were 20% to 30% lower than the preceding By-law rates, and further recommended maximums which were about 25% higher than the minimums.

Additionally, the City's Comprehensive By-Law review will likely recommend emerging land uses that may require minimum parking rates based on a review of other municipalities and through discussions with the City internal stakeholders. For example, affordable housing is being proposed as a new land use as part of the Comprehensive By-law Review and existing parking rates for affordable housing within other municipalities are presented in this report for comparison.

In addition to minimum and maximum parking rates, the 2010 Parking Strategy recommended shared parking formulas for mixed-use developments, cash-in-lieu of parking, paid parking / parking charges for non-residential development, and travel demand management measures.

TDM and other measures to reduce parking, shared parking, TDM monitoring and follow-up practices, compact spaces, cash-in-lieu, structured parking lots, conversion of parking spaces, and electric vehicle parking, are further discussed in this report.

1.4 Report Organization

The remainder of the report is structured as follows:

Section 2	Review of mode choice and auto-ownership rates in Richmond Hill according to the results of the 2016 Transportation Tomorrow Survey
Section 3	<u>Current Practices</u> : General Area Parking Rates ('Rest of Richmond Hill')
Section 0	<u>Current Practices</u> : Key Development Area Parking Rates ('KDAs')
Section 6	<u>Current Practices</u> : Bicycle Parking Requirements
Section 7	<u>Current Practices</u> : Other Dedicated Parking Spaces (i.e. Accessible Parking, Carpool Parking, Carshare Parking, Electric Vehicle Parking)
Section 8	<u>Current Practices</u> : Transportation Demand Management (TDM)
Section 9	TDM Visioning
Section 10	Next Steps & Implementation

2 Richmond Hill Parking Strategy Areas

The City of Richmond Hill currently has five Parking Strategy Areas which were established as part of the 2010 Parking and TDM Strategy. The Parking Strategy Areas are depicted in **Exhibit 1** and described as follows:

1. Richmond Hill Regional Centre (RHC)
 - ⇒ Located at Highway 7 and Yonge Street, this area is a York Region Transit (YRT) hub with connections to all VIVA lines plus other local bus routes, GO Service, and is the expected location for the future Toronto Transit Commission (TTC) Line 1 extension. Due to the increased transit availability, this area will have lowest parking rates compared to general areas.
2. Downtown Local Centre and Key Development Areas (KDA)
 - ⇒ Includes Yonge and Bernard KDA, the Yonge and Carville/16th KDA, and the Downtown Local Centre along Yonge Street from Major Mackenzie Drive to south of Elgin Mills Road. This area is expected to be an urbanized and mixed-use area, well served by transit (in particular the VIVA service along Yonge Street), and will have reduced parking rates compared to general areas.
3. Rapid Transit Corridors (RTC)
 - ⇒ Rapid Transit Corridors are defined as areas with dedicated rapidway in the form of VIVA bus service. These parking strategy areas generally refer to the lands adjacent to the Rapid Transit Corridors identified in the City's Official Plan and are shown on **Exhibit 1**.
4. Business Parks
 - ⇒ Business parks are specifically business-driven and therefore only permit related or accessory land uses. Residential uses are not permitted. Due to there being less mixed-uses and an expectation that there will be lower transit usage, these areas have slightly higher parking rates, and unlike the other Parking Strategy Areas, are not subject to maximum parking ratios.
5. 'Rest of Richmond Hill'
 - ⇒ All other areas that are not part of the above Parking Strategy Areas will adhere to these rates. These rates reflect lower transit availability and higher auto ownership. For land uses that are permitted in both Business Parks and 'Rest of Richmond Hill', the same parking rates apply.

Parking rates from the 2010 Parking Strategy are shown in **Exhibit 2** and **Exhibit 3** for select land uses. The residential rates are based on the rental apartment rates recommended in the 2010 Parking Strategy, and the non-residential land uses were selected based on comparable land uses. In 2010, the City established a City-wide Zoning By-law 100-10 which requires a parking rate of 5.4 spaces per 100m² of GFA for medical office uses. This rate supersedes the 2010 Parking Strategy rates and is used for comparison. The ratio of parking rates for each Parking Strategy Area compared to the 'Rest of Richmond Hill' are also shown in **Table 1** and **Table 2** for condominiums and rental apartments, respectively.

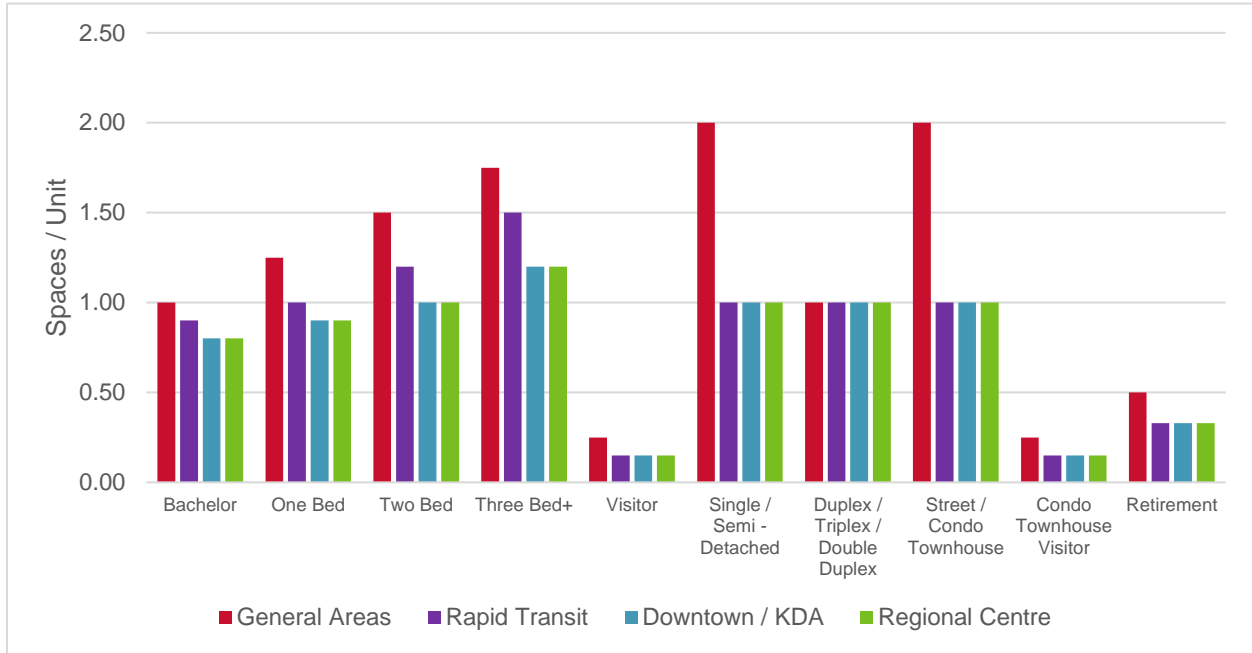
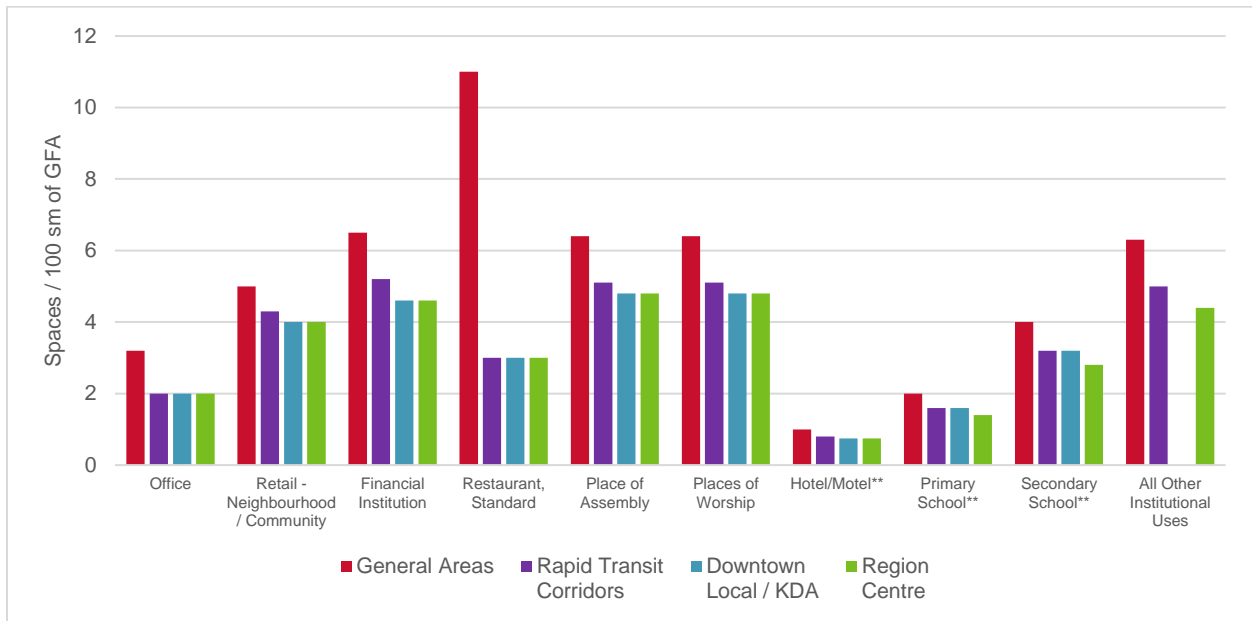


Exhibit 2: Minimum Residential Rates by Strategy Area



* School rates are per classroom, and hotel/motel is per guest room.

Exhibit 3: Minimum Non-Residential Rates by Strategy Area

Table 1: Minimum Residential Rates by Strategy Area (Condo Rates)

Land Use	General Areas	Rapid Transit	Downtown / KDA	Regional Centre
Bachelor	100% (1.00/unit)	90% (0.90/unit)	80% (0.80/unit)	80% (0.80/unit)
One Bed	100% (1.25/unit)	80% (1.00/unit)	72% (0.90/unit)	72% (0.90/unit)
Two Bed	100% (1.50/unit)	80% (1.20/unit)	67% (1.00/unit)	67% (1.00/unit)
Three Bed+	100% (1.75/unit)	86% (1.50/unit)	69% (1.20/unit)	69% (1.20/unit)
Visitor	100% (0.25/unit)	60% (0.15/unit)	60% (0.15/unit)	60% (0.15/unit)
Condo TH Visitor	100% (0.25/unit)	60% (0.15/unit)	60% (0.15/unit)	60% (0.15/unit)
Retirement	100% (0.50/unit)	66% (0.33/unit)	66% (0.33/unit)	66% (0.33/unit)
Min	-	60%	60%	60%
Average	-	75%	68%	68%
Max	-	90%	80%	80%
Median	-	80%	67%	67%

*TH – townhouse

Based on the median reductions in residential rates at condo apartments (**Table 1**), there is an approximate 35% reduction for the Regional Centre, 35% reduction for Downtown / KDA, and 20% reduction for the Rapid Transit Corridors from the general area rates. There are no residential land uses in Business Parks, with the exception of those lands generally adjacent to Rapid Transit Corridors.

Although the Regional Centre and Downtown / KDA share the same condo parking rates, the rental parking rates differ between the two Strategy Areas as shown in **Table 2**. Overall, the rental apartments have slightly lower reductions compared to the general area rates and are equal in some cases, which raises the question of if it is necessary to make a distinction.

Table 2: Minimum Residential Rates by Strategy Area (Rental Apartment Rates)

Land Use	General Areas	Rapid Transit	Downtown / KDA	Regional Centre
Bachelor	100% (0.90/unit)	83% (0.75/unit)	83% (0.75/unit)	67% (0.60/unit)
One Bed	100% (1.10/unit)	77% (0.85/unit)	77% (0.85/unit)	68% (0.75/unit)
Two Bed	100% (1.35/unit)	74% (1.00/unit)	74% (1.00/unit)	74% (1.00/unit)
Three Bed+	100% (1.50/unit)	80% (1.20/unit)	80% (1.20/unit)	80% (1.20/unit)
Visitor	100% (0.25/unit)	60% (0.15/unit)	60% (0.15/unit)	60% (0.15/unit)
Condo TH Visitor	100% (0.25/unit)	60% (0.15/unit)	60% (0.15/unit)	60% (0.15/unit)
Retirement	100% (0.50/unit)	66% (0.33/unit)	66% (0.33/unit)	66% (0.33/unit)
Min	-	60%	60%	60%
Average	-	72%	72%	68%
Max	-	83%	83%	80%
Median	-	74%	74%	67%

*TH – townhouse

Based on the median reductions in non-residential rates for select land uses shown in **Table 3**, there is an approximate 30% reduction for the Regional Centre, 25% reduction for Downtown/KDA rates, and 20% reduction for Rapid Transit Corridors from the general area rates. There is no reduction between the rates for Business Parks and general areas. There are some variations in rates between Richmond Hill Centre, Downtown Local Centres and KDAs, and Rapid Transit Corridors, but they are constrained to within 10%, with Richmond Hill Centre having the lowest rates. Richmond Hill Regional Centre and Downtown Local Centres/KDAs generally share the same rates although the Richmond Hill Centre may have slightly lower rates depending on the land use.

Table 3: Minimum Non-Residential Rates by Strategy Area (Rental Rates)

Land Use	General Areas	Downtown Local / KDA	Regional Centre	Rapid Transit Corridors
Office	100% (3.2/100m ²)	63% (2.0/100m ²)	63% (2.0/100m ²)	63% (2.0/100m ²)
Medical Office	100% (5.4/100m ²)	100% (5.4/100m ²)	100% (5.4/100m ²)	100% (5.4/100m ²)
Retail Neighbourhood	100% (5.0/100m ²)	80% (4.0/100m ²)	80% (4.0/100m ²)	86% (4.3/100m ²)
Financial Institution	100% (6.5/100m ²)	71% (4.6/100m ²)	71% (4.6/100m ²)	80% (5.2/100m ²)
Restaurant, Standard	100% (11/100m ²)	27% (3.0/100m ²)	27% (3.0/100m ²)	27% (3.0/100m ²)
Place of Assembly	100% (6.4/100m ²)	75% (4.8/100m ²)	75% (4.8/100m ²)	80% (5.1/100m ²)
Places of Worship	100% (6.4/100m ²)	75% (4.8/100m ²)	75% (4.8/100m ²)	80% (5.1/100m ²)
Hotel/Motel	100% (1.0/unit)	75% (0.75/unit)	75% (0.75/unit)	80% (0.8/unit)
Primary School	100% (2.0/class)	80% (1.6/class)	70% (1.4/class)	80% (1.6/class)
Secondary School	100% (4.0/class)	80% (3.2/class)	70% (2.8/class)	80% (3.2/class)
Other Institutional	100% (6.3/100m ²)	-	70% (4.4/100m ²)	79% (5.0/100m ²)
Minimum	-	27%	27%	27%
Average	-	70%	68%	73%
Maximum	-	100%	100%	100%
Median	-	75%	71%	80%

2.1 Auto-Ownership and Mode Splits by Area

As discussed in the previous section, the parking rates for the different Parking Strategy Areas differ based on the expected or envisioned auto-ownership and Single Occupant Vehicle (SOV) modal splits expected for the area, which is a function of land uses, built form, and transit availability. These factors are inherent in the rates. To assess the tangible impacts that these ratios have on auto ownership, research into the results of the 2016 Transportation Tomorrow Survey (TTS) was performed.

The TTS is a household transportation survey that covers southern Ontario and the Greater Golden Horseshoe. The survey collects data from households regarding travel patterns (origins and destinations, trip purpose) and behaviours (mode splits) for typical weekdays and for all household members. The survey also collects household specific information such as number of license holders, number of vehicles, and any other information relating to transportation. The survey data is collected on a traffic zone basis and the number of survey responses are

expanded based on census information so that it is representative of each traffic zone. The information may be aggregated based on study areas or other needs.

The 2016 TTS data was used to identify trends in mode choice for residential and non-residential uses, and auto-ownership for residential uses, based on each Parking Strategy Area. The selected TTS zones are shown in **Table 4**.

Table 4: TTS 2006 Traffic Zone Boundaries of the Parking Strategy Areas

Parking Strategy Area – 2006 Traffic Zones	TTS Zone Boundary Zone Map
<p>Richmond Hill Regional Centre (RHC)</p> <p>2205, 2248, 2249, 2250</p>	
<p>Downtown Local Centre and Key Development Areas (KDA)</p> <p>2205, 2207, 2209, 2211, 2215, 2237, 2241, 2244, 2246</p>	

Parking Strategy Area – 2006 Traffic Zones	TTS Zone Boundary Zone Map
<p>Rapid Transit Corridors (RTC)</p> <p>2201, 2204, 2205, 2207, 2209, 2211, 2213, 2215, 2217, 2236, 2237, 2240, 2241, 2244, 2246, 2249, 2250, 2251, 2253, 2272</p>	
<p>Business Parks</p> <p>2238, 2239, 2240, 2242, 2243, 2253, 2254, 2269, 2270, 2271, 2272</p>	
<p>'Rest of Richmond Hill'</p>	<p>All other zones in Richmond Hill excluding those noted for the other Parking Strategy Areas</p>

Mode split was summarized for trips that started in Richmond Hill (TTS 2006 zones 2200 – 2299) where the zone of household was the same as the zone of trip origin. Trips were also filtered to only include trips before 9:00AM to capture the typical peak hour traffic. Because residential land uses are not permitted in Business Parks, the mode split data for Business Parks was based on trips that started before 9:00AM, destined for the Business Park zones, and were home-based work trips. The results of the mode split of each strategy area are shown

in **Exhibit 4**. Vehicle ownership by household is shown in **Exhibit 5**. Note that the TTS zones do not directly align with the boundaries of the strategy area. For example, the Newkirk Business Park zones exclude the households that are captured by the TTS zone. In this case, the vehicle ownership data was excluded from the summary.

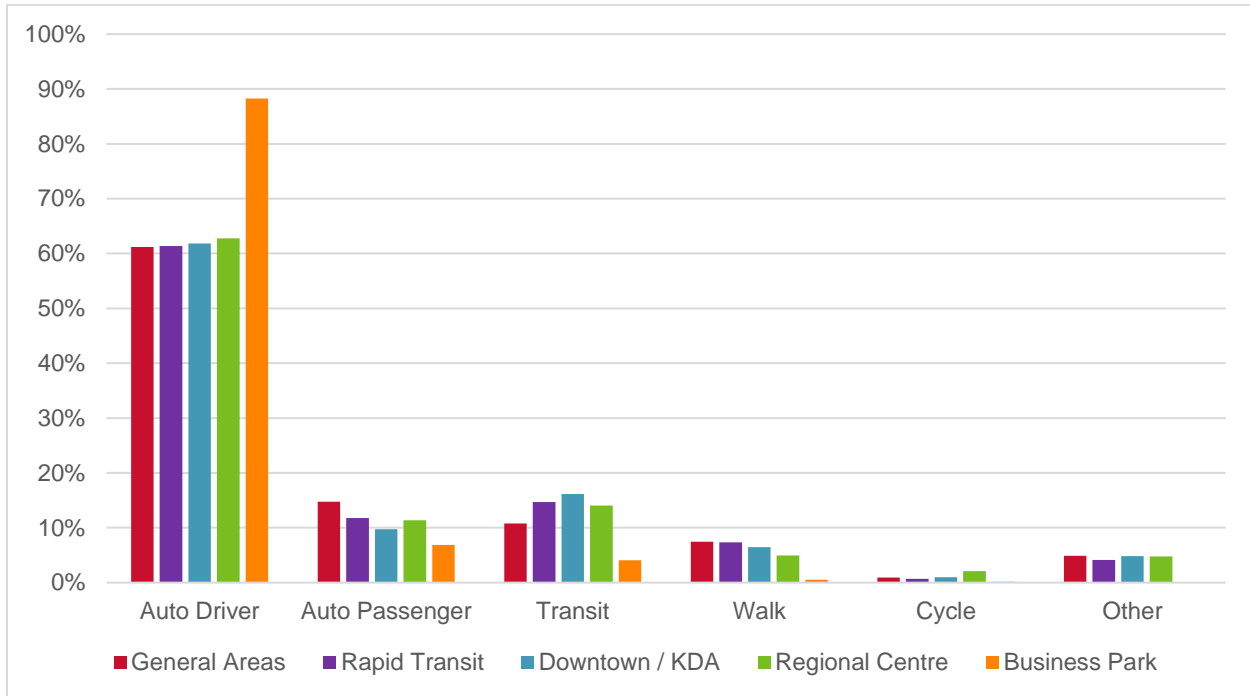


Exhibit 4: Mode Split by Strategy Area (TTS 2016)

As discussed in **Section 2**, the parking rates outlined in the 2010 Parking Strategy for general areas are higher than the other strategy areas (with the exception of Business Parks); however, **Exhibit 4** shows that the mode split across all strategy areas are similar based on the 2016 TTS. It is expected that once the Parking Strategy Areas achieve full build-out along with completion of planned transportation improvements (including the Yonge Street BRT), it is expected that future modal splits will better align with the vision of the Strategy Area (i.e. lower vehicle trips within the Richmond Hill Regional Centre, Key Development Areas, and Rapid Transit Corridors).

The clearest trend is the higher auto driver mode split for Business Parks which may be due to the lack of residential land uses, less mixed-use development, and the fact that many trips destined to Business Parks may be longer distance commutes which would be less conducive to transit due to poor access to transit in the beginning of the trip, and a longer overall travel time. Since the results are based on 2016 data, it is possible that there may have been some changes in mode share in the last 5 years.

Vehicle ownership by household is shown in **Exhibit 5**.

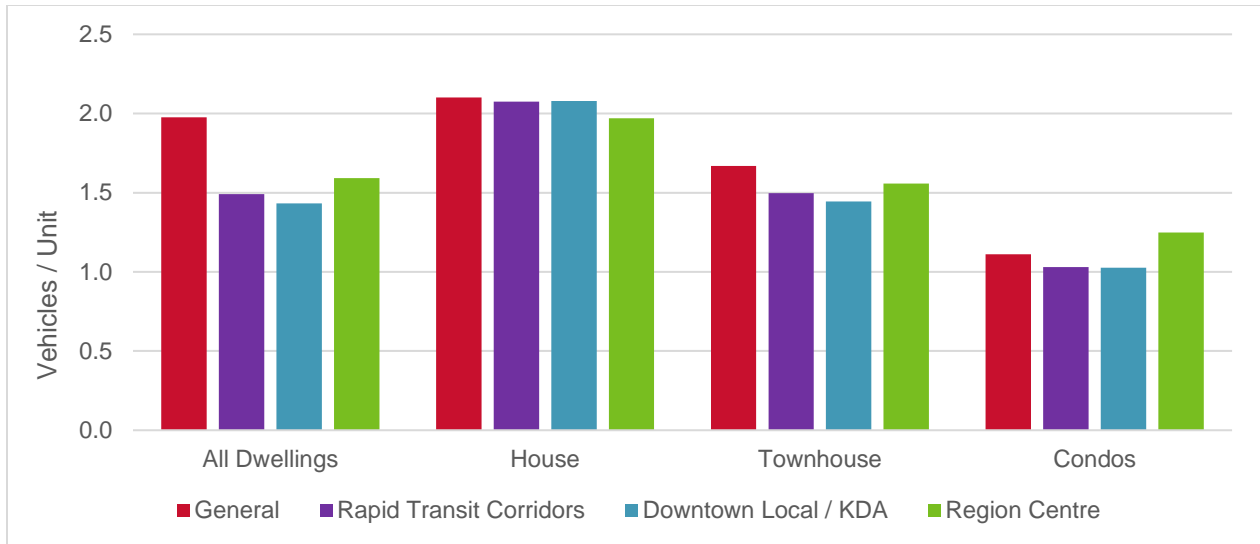


Exhibit 5: Vehicle Ownership by Strategy Area and Dwelling Type (TTS 2016)

For general areas, there is an average of 2.0 cars per household, while the other strategy areas range from 1.4 to 1.7 cars per household (16% to 28% reduction) supporting the reduction of parking rates for the strategy areas, however, the correlation does not align with the vision for the area, since Richmond Hill Regional Centre has a slightly higher auto ownership rate than Downtown Local Centre / KDA and Rapid Transit Corridors. This may be due to the limited intensification in the strategy areas prior to the 2016 survey.

The analysis does indicate that single-detached homes have a higher auto-ownership rate than higher density development. As a result, the higher auto-ownership in the general areas may be due to the higher proportion of single-detached homes compared to townhouses and condos. Thus, the differences in the auto-ownership rates throughout the City could be partially influenced by planning principles which determine the location and intensity of different types of housing, which is also tied to and reflective of the different transit accessibility by area.

Based on the TTS results, there is a clear correlation between auto-ownership and dwelling type with houses having the highest auto ownership rates and condos having the lowest auto ownership rates. Although the mode split does not vary significantly across the strategy areas, reduced parking rates can help align auto-ownership rates and mode splits with the vision for the area and would be supported by future transit improvements.

3 Vehicle Parking Rates ('Rest of Richmond Hill')

The following sections focus on the current practices review for general areas, or areas comparable to 'Rest of Richmond Hill'.

Once the recommended rates for general areas ('Rest of Richmond Hill') and for KDAs are established, the Richmond Hill Centre and Rapid Transit Corridors will be developed by taking into account the findings of **Section 2**, current practices from other municipalities, and the hierarchy of rates presented in the 2010 Parking Strategy. The recommended rates for the strategy areas will generally maintain the proportionality of rates for each Strategy Area established in the 2010 Parking Strategy.

This section focuses on rates for general areas and any outliers will be identified for data collection.

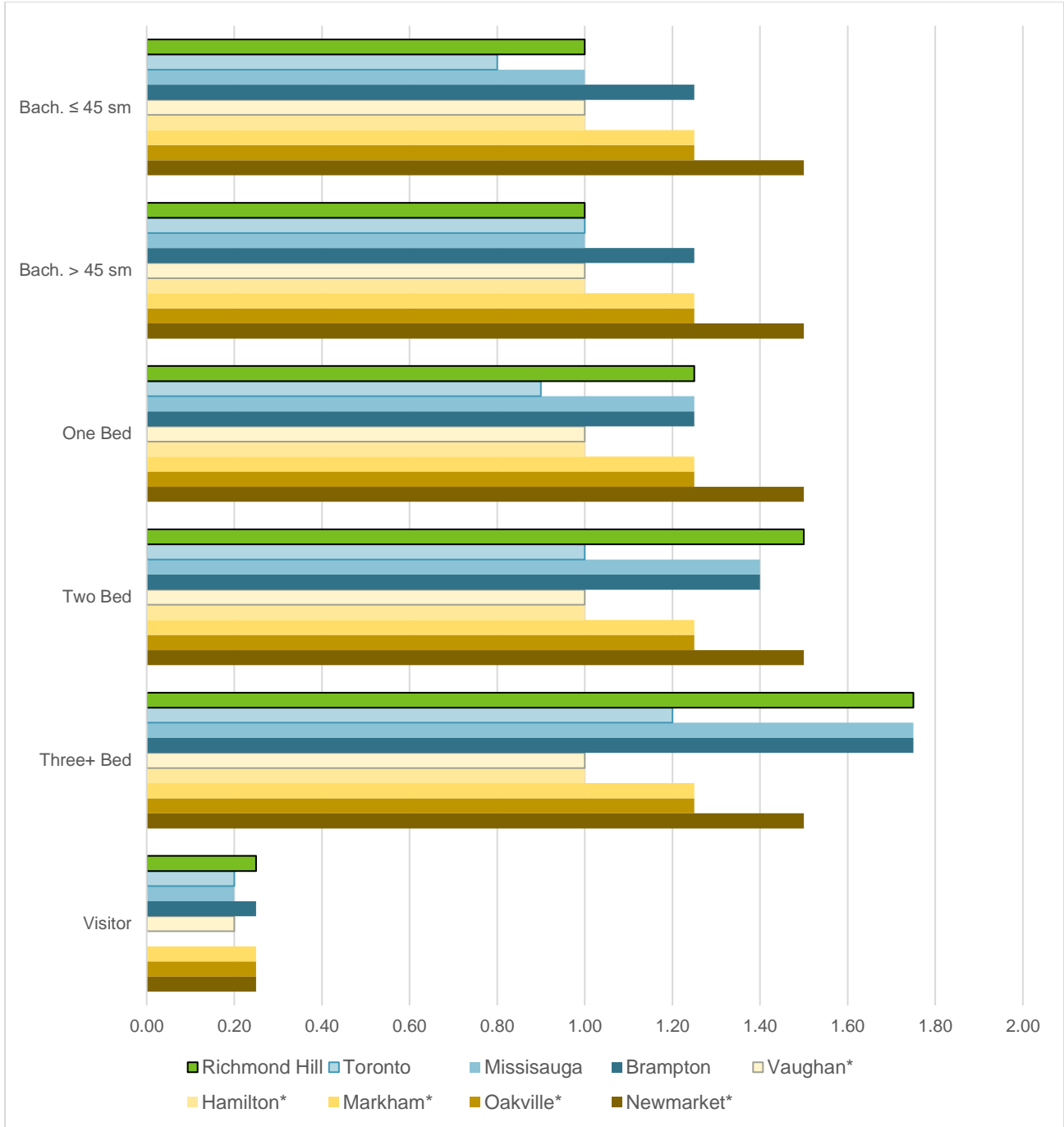
3.1 Minimum Parking Rates

Parking standards typically establish minimum vehicular parking requirements for the various land use types based on gross floor area or number of residential units. A comparison of minimum parking rates for each Parking Strategy Area which were established in the 2010 Parking Strategy versus comparable rates from other municipalities is provided in **Attachment A (Parking Rate Comparisons)** with a more detailed comparison in the following sections based on land use. As mentioned, parking rates for growth areas and transit supported areas, such as KDAs, are lower than those in general areas. The 2010 Parking Strategy rates were compared to identify if there is a need to further reduce or modify the general rates.

Municipalities typically separate minimum parking rates for general areas versus growth or intensification areas envisioned as transit-supportive. Parking rates for growth areas and transit supportive areas such as KDAs are lower than those in general areas. The following sections summarize the findings after comparing the minimum parking rates between municipalities and the 2010 Parking Strategy rates for general areas.

3.1.1 Residential Parking

A summary of the residential parking rates is provided in **Attachment A** and **Exhibit 6**. Condo apartment rates are presented for each municipality except for Richmond Hill which shows the rental apartment rates. Generally, there appears to be some support for reducing Richmond Hill's parking rates for two- and three-bedroom units, even when using the lower rental rates from the 2010 Parking Strategy as the basis for the comparison.



*Municipalities with blended apartment rates

Exhibit 6: Apartment Rates for General Areas (per unit)

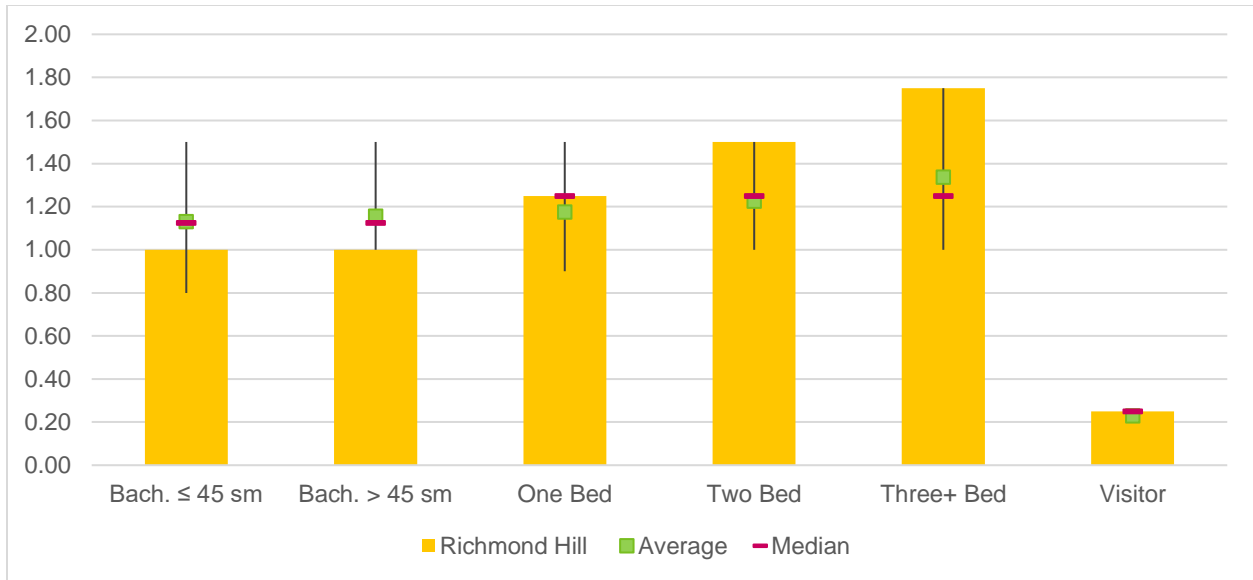


Exhibit 7: Comparison of Apartment Rates from other Municipalities to Richmond Hill

3.1.1.1 RESIDENTIAL VISITOR PARKING

For general areas within the City of Richmond Hill, visitor parking rates of 0.25 spaces per unit are fairly consistent with the By-laws reviewed, which are either 0.20 spaces per unit or 0.25 spaces per unit. Visitor parking rates do not vary by dwelling type for those that require separate visitor parking spaces. The municipalities using a rate of 0.20 include Toronto, Vaughan, and Mississauga; whereas the municipalities that have a visitor parking rate of 0.25 spaces per unit are Markham, Newmarket, and Oakville. This does indicate a high degree of consistency between visitor rates and does not suggest there is any need for changes to visitor parking rates without results from data collection.

3.1.1.2 RESIDENTIAL TENANT PARKING

The residential rates proposed in the City’s Parking strategy are bedroom-based rates. The bedroom-based rate reflects the expectation that a higher number of bedrooms means greater income and number of residents, which may translate to higher auto-ownership rates and greater parking demands. Applying a mixed or average rate may either overstate the parking needs for a building comprised of mostly bachelor and one-bedroom units, or understate the parking needs of a building comprised with a higher number of two and three-plus (3+) bedroom units. It is recommended that a bedroom-based rate be maintained for Richmond Hill as-is.

The residential rates proposed in the City’s Parking Strategy are similar to other municipality rates for dwelling units that use bedroom-based rates. Brampton, Toronto, and Mississauga use bedroom-based rates while Markham, Newmarket, Oakville, Hamilton and Vaughan use blended rates in their general areas. The blended rates per unit range from 0.75 spaces per unit (Oakville), 1.0 spaces per unit (Vaughan, Hamilton), 1.25 spaces per unit (Markham and Oakville), and 1.50 spaces per unit (Newmarket). In Oakville, the higher rate applies to units greater than 75m², independent of unit-type and number of bedrooms.



Table 5 summarizes the comparison of the rates of the other municipalities shown in **Exhibit 6** as it compares to the recommended 2010 Parking Strategy rates. The rates shown for Richmond Hill are based on the rental apartment rates for general areas.

Table 5: Summary of Condominium Rates for General Areas (per unit)

Unit-Type	Min.	Max.	Med.	Avg.	Richmond Hill 2010	Recommended Rate
Bach. ≤ 45 sm	0.80	1.50	1.13	1.13	1.00	1.00
Bach. > 45 sm	1.00	1.50	1.13	1.17	1.00	1.00
One Bed	0.90	1.50	1.25	1.19	1.25	1.25
Two Bed	1.00	1.50	1.33	1.26	1.50	1.30
Three+ Bed	1.00	1.75	1.38	1.41	1.75	1.40
Visitor	0.20	0.25	0.23	0.23	0.25	0.25

Based on these comparisons, there may be an opportunity to reduce the parking rates for two-bedroom and three-bedroom units as shown in **Table 5**, in the right-most column.

The minimum rates proposed by the City’s parking strategy for detached homes and townhouses are comparable to the other municipalities with a minimum rate of 2 spaces per unit. The only municipalities with a different rate are City of Toronto and Hamilton with a minimum requirement of 1 space per unit (Mississauga also only requires 1.25 spaces per unit for Duplex/Triplex; Vaughan’s Draft Comprehensive Zoning By-law recommends only 1 space per unit for stacked/back-to-back townhouses).

Land uses not included in the 2010 Parking Strategy that are present in some municipalities include accessory dwelling unit, bed and breakfast, home occupation, and live-work units. The City can consider including these uses in the Parking By-law.

3.1.1.3 RENTAL APARTMENTS / RENT-GEARED-TO-INCOME / AFFORDABLE HOUSING

The 2010 Parking Strategy recommends reduced parking rates for rental apartments that are approximately 10% less than the owned apartment rates. Brampton and Mississauga are the only other municipalities reviewed that separate parking rates for rental apartments as shown in **Table 6**. The rental rates for Brampton and Mississauga are up to -18% lower than owned apartment units for the bedroom-based rates.

For visitor parking rates, there is no difference in rates between owned and rental apartments for Mississauga and Richmond Hill; but there is a 20% reduction (0.25 to 0.20) for Brampton rental apartments.

Reduced tenant rates reflect the expectation that those who rent tend to not own a vehicle. However, there are many condominium apartments that rent their units and rental apartments do not necessarily equate to less car ownership. The most recent version of the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th edition) and the Parking Generation Manual (5th Edition) both have removed the differentiation between rental and owned units as there were no clear differences in trip making patterns or parking generation between the two housing types. Additionally, it is difficult to control whether a condominium is primarily occupied with renters or owners.

Table 6: Comparison of Apartment Rates (per unit) for Owned and Rental Units

Unit Type	Brampton			Mississauga			Richmond Hill 2010		
	Owned	Rental	Reduction	Owned	Rental	Reduction	Owned	Rental	Reduction
Bachelor	1.25	1.03	-18%	1.00	1.00	0%	1.00	0.90	-10%
One Bed	1.25	1.21	-3%	1.25	1.18	-6%	1.25	1.10	-12%
Two Bed	1.40	1.41	+1%	1.40	1.36	-3%	1.50	1.35	-10%
Three Bed+	1.75	1.53	-13%	1.75	1.50	-14%	1.75	1.50	-14%
Visitor	0.25	0.20	-20%	0.20	0.20	0%	0.25	0.25	0%

Considering the relatively small difference between rental and owned rates, and based on the industry current practices, our experience with data from within the Greater Toronto Area, and the understanding that controlling whether a unit is lived in by the owner or rented out can be difficult to anticipate or enforce, it is recommended that no distinction be made between rental and owned condominium units after receiving input and feedback from internal and external stakeholders, as well as the development community.

Rather than differentiating rental apartments, adding rent-geared-to-income properties (including affordable housing, cooperative housing, and subsidized housing) may be more appropriate and relatable to vehicle ownership rates. This was recommended in Newmarket's Parking Standards Background Study by HDR (50% reduction to minimum and maximum rates, but no reduction to the visitor parking rate), implemented in Toronto with a separate category for assisted housing (25% to 80% reduction in bedroom based rates for general areas as shown in **Table 7**), implemented in Vancouver with reduced rates for low-income/social housing. The Parking Generation Manual 5th Edition also provides a separate land use for these unit types.

Table 7: Comparison of Apartment Rates (per unit) for Owned and Assisted Housing

Unit Type	Toronto			Newmarket
	Owned	Assisted	Reduction	RGI
Bachelor <=45	0.8	0.16	80%	50% ¹
Bachelor >45	1.0	0.5	50%	
One Bed	0.9	0.3	67%	
Two Bed	1.0	0.5	50%	
Three Bed+	1.2	0.9	25%	
Visitor	0.2	0.2	0%	0%

It will be up to the City to determine the criteria to qualify these housing types and to enforce the criteria on management through monitoring.

The following are the definitions used by other municipalities to define assisted housing types:

- **Financially Assisted Dwelling Unit (Newmarket):** Means a dwelling unit in a mixed use building or an apartment building which is operated or owned by a government agency, a registered charitable corporation, or a registered non-profit corporation as a

¹ Newmarket's Urban Centres Zoning By-Law 2019-06 implemented a 30% reduction to the standard minimum and maximum parking space rates

residential accommodation for persons who require financial assistance towards the regular costs of renting or owning such dwelling unit.²

- **Assisted Housing (Toronto):** Means a dwelling unit operated by a non-profit organization or private sector organization in cooperation with the City of Toronto.³
- **Social Housing (Vancouver):** Means dwelling units secured for households with incomes below housing income limits, as set out in the current "Housing Income Limits" table published by the British Columbia Housing Management Commission, or equivalent publication.⁴

A similar definition can be used based on the City's housing programs. It is recommended that the assisted housing rates are a 40% reduction from the condo apartment rates be considered.

3.1.1.4 SENIORS' RESIDENCE / RETIREMENT HOME

Rates for seniors' residences or retirement homes range from 0.33 per unit to 0.50 per unit (0.33 for Oakville, 0.30 for Toronto, 0.50 for Mississauga, 0.50 + 0.25 visitor for Markham and Brampton). Richmond Hill's rate is 0.50 per unit which is within range of other municipalities.

In all of the above examples with the exception of the City of Markham, resident parking is not separated from visitor parking, and in all cases the staff parking requirements are not noted or discussed. It is to the City's discretion if separate allocations should be provided for these components. However the risk is that for some types of Retirement Homes or Seniors Residences there may be different needs where there is a higher proportion of residents who are able to drive or a greater number of support staff on site at any given time which makes determining an allocation difficult. The City may wish to leave the allocation to the discretion of each residence. The City may consider defining separate rates for visitors and/or staff; however, if there are no known issues of insufficient parking at existing residences, then rates should remain blended for all components.

3.1.2 Non-Residential Parking

Parking ratios (minimums) for select non-residential land uses within the 2010 Richmond Hill Parking Strategy were compared to the same or comparable land use parking ratios from the respective By-laws. For non-residential land uses, the 2010 Parking Strategy Rates were taken from the 'All Other Areas of the City' or 'Business Parks' – where a land use is permitted in both areas, the rates are the same.

² <https://www.newmarket.ca/LivingHere/Documents/Planning%20Department/Zoning%20By-law%202010-40%20Consolidated%20November%202018.pdf>

³ https://www.toronto.ca/zoning/bylaw_amendments/ZBL_NewProvision_Chapter200.htm#200.5.10

⁴ <https://bylaws.vancouver.ca/parking/sec02.pdf>

The land uses reviewed include:

- ⇒ Arts and Cultural
- ⇒ Business Office
- ⇒ Medical Office/Clinics
- ⇒ Day Nursery
- ⇒ Financial Institution
- ⇒ Hospital
- ⇒ Hotel/Motel
- ⇒ Industrial
- ⇒ Retail Store/Supermarket
- ⇒ Retail Warehousing
- ⇒ Shopping Centre
- ⇒ Gas Bar or Automotive Service Station
- ⇒ Motor Vehicle Oil/Lubrication Establishment
- ⇒ All Other Institutional Uses
- ⇒ Restaurant
- ⇒ Library
- ⇒ Community Centre
- ⇒ Recreation Centre (Health / Fitness)
- ⇒ Restaurant
- ⇒ Assembly/Banquet Hall and other Places of Assembly
- ⇒ Places of Worship
- ⇒ School, Elementary/Private/Secondary
- ⇒ Theatre
- ⇒ University/College
- ⇒ Veterinary Clinics

A summary of the residential parking rates are provided in **Attachment B**, and some of the typical land uses are shown in **Exhibit 8** and **Exhibit 9**.

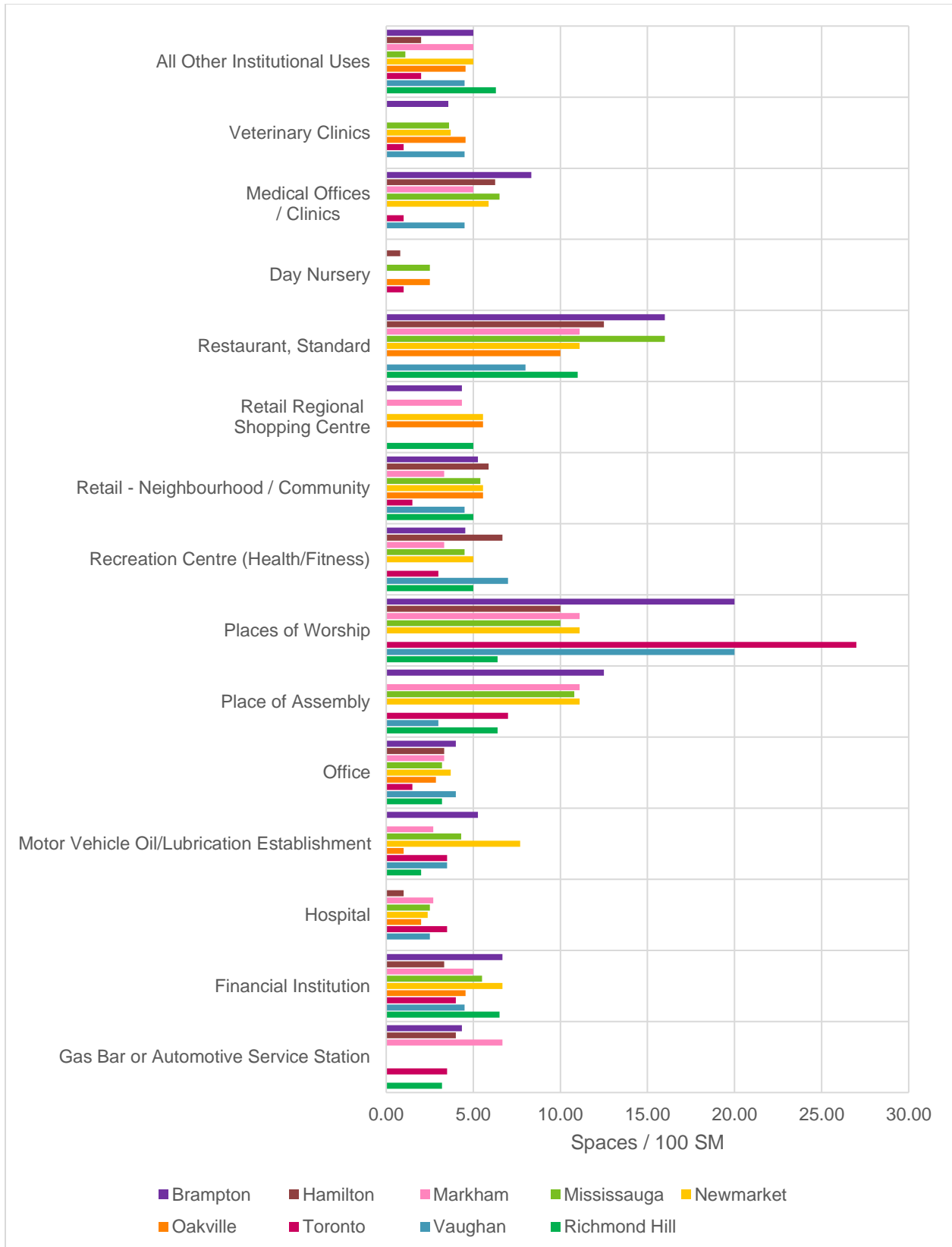
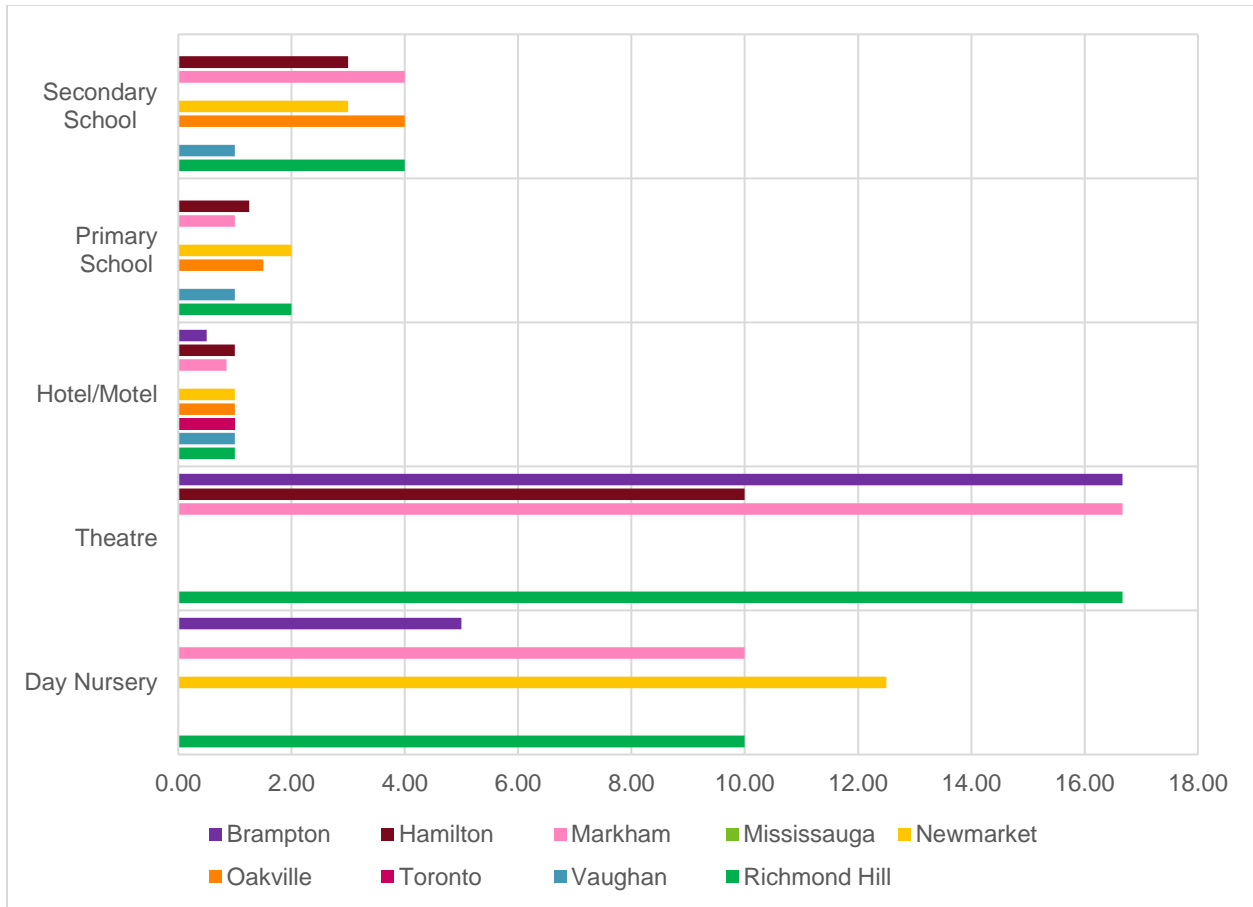


Exhibit 8: Non-Residential Rates for General Areas (GFA based rates; per 100 SM GFA)



*School rates are per classroom, hotel/motel is per guest room, theatre is per 100 seats, and day care is per 50 children.

Exhibit 9: Non-Residential Rates for General Areas (various base-units)

Richmond Hill parking rates were compared against the minimum, average, median, and maximum of the rates from other municipalities in **Exhibit 10** and **Exhibit 11**.

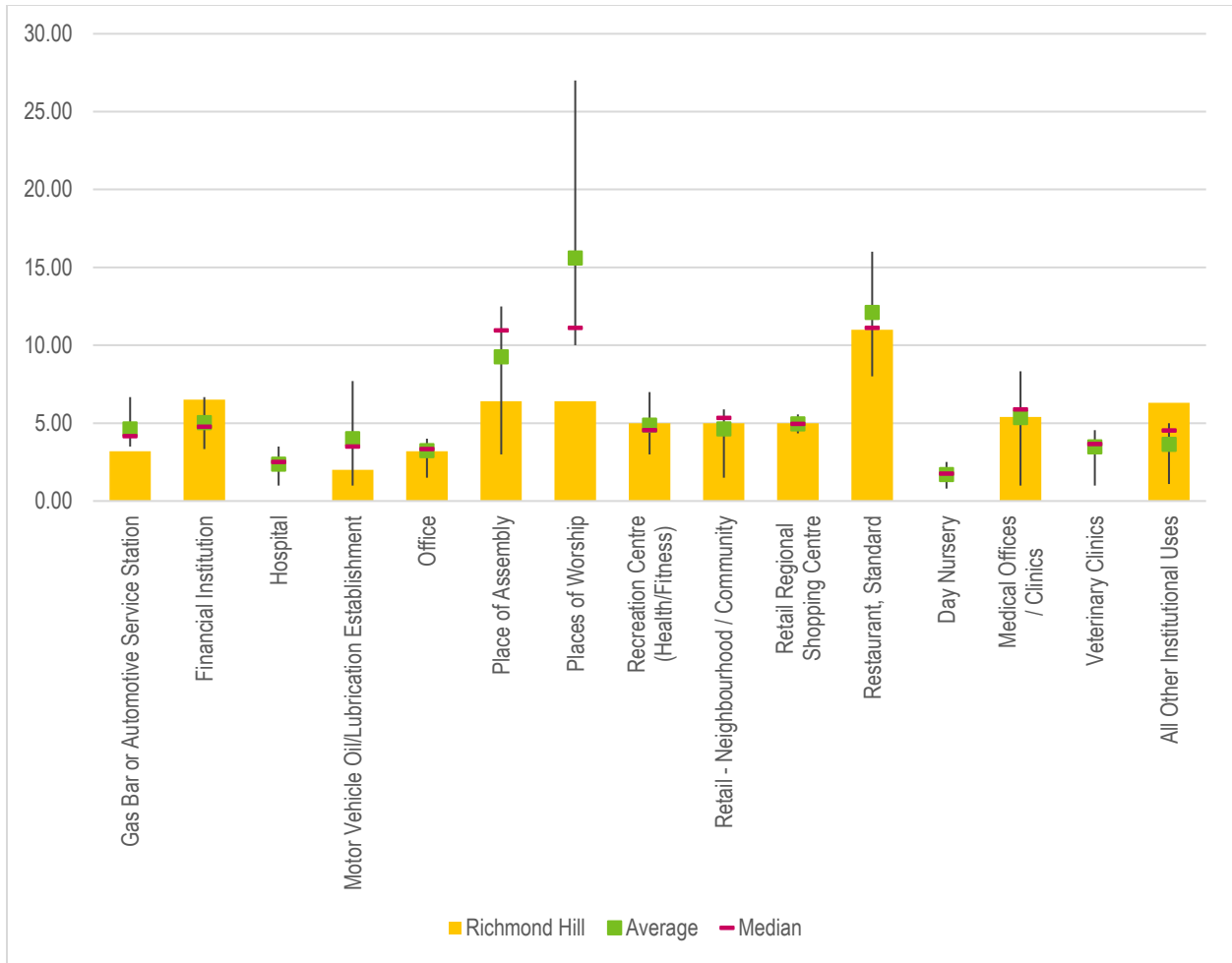
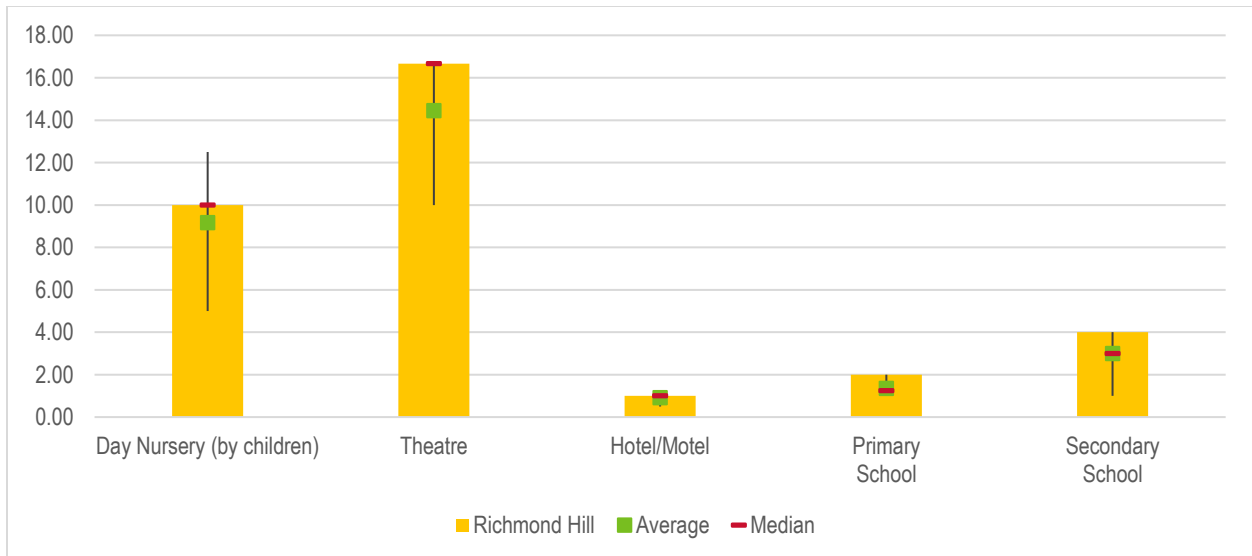


Exhibit 10: Comparison of Non-Residential Rates to Richmond Hill (GFA based rates; per 100 SM GFA)



*School rates are per classroom, hotel/motel is per guest room, theatre is per 100 seats, and day care is per 50 children.

Exhibit 11: Comparison of Non-Residential Rates to Richmond Hill (various base-units)

3.1.2.1 LAND USE TYPES AND BASE UNITS

City of Richmond Hill, Toronto, Vaughan, Brampton, and Mississauga uses gross floor area (GFA); whereas Markham, and Oakville use net floor area (NFA). Newmarket uses GFA for most land uses, but uses NFA for offices (business and medical), and retail. It is recommended that City of Richmond Hill continue to use GFA in order to best compare with other municipalities. It is also recommended that rates be maintained based on per 100m² of GFA similar to other municipalities. Some land uses like retail centres can have commentary to exclude some areas like hallways or mechanical rooms from the gross floor area calculations.

The required parking spaces for non-residential land uses are typically stated per 100m² of GFA (gross floor area). Some exceptions are note below:

- ⇒ **Schools:** Rates are generally based on the number of classrooms with additional requirements for some municipalities (Hamilton adds parking for space dedicated to auditoriums, and Newmarket adds 10% parking for visitors). Toronto uses GFA to define school rates. It is recommended to maintain the per classroom rate for consistency.
- ⇒ **Medical Office and Veterinary Clinic:** It is recommended that rates be based on GFA which is standard for other municipalities rather than basing parking requirements on number of practitioners. The City-wide By-law 100-10 has already adopted floor area-based rates, whereas the 2010 Parking Strategy had practitioner based rates. This will make the application and review of rates easier.
- ⇒ **Day Nursery:** Newmarket and Richmond Hill provide rates based on children / employees. Similar to the above discussion for medical offices and veterinary clinics, the rates could be converted to GFA-based rates similar to Toronto, Markham, Hamilton, and Vaughan. This would allow for more direct comparisons using current practices reviewed. Alternatively, to validate the existing rates, survey data could be preferable.
 - Richmond Hill, Brampton, Markham, and Newmarket provide rates based on children, classrooms, or employees. Similar to the above discussion for medical offices and veterinary clinics, the rates *could* be converted to GFA-based rates. This would allow for more direct comparisons using current practices reviewed. Alternatively, to validate the existing rates, survey data could be used. Hamilton, Mississauga, Oakville, and Toronto use GFA-based rates. Vaughan only requires a minimum of 8 spaces for general areas.
- ⇒ **Hotels/Motels:** Rates are generally based on the number of guest suites with additional requirements for shared uses (banquet halls and similar uses). It is recommended that these units be kept for consistency with other municipalities.

3.1.2.2 RETAIL / SUPERMARKET

Richmond Hill does not have an explicit rate for supermarkets. Generally, when a municipality does have explicit rates for supermarkets, they are either the same or slightly higher than the same municipality's general retail rate, suggesting that it may not need to be differentiated. The exception is that Toronto supermarkets do not require parking when the gross floor area is less than 200m², and Vancouver does not require parking for "neighbourhood" grocery stores.

The 2010 Parking Strategy separates retail classification by type (shopping centre, neighbourhood/community), but within the 'Rest of Richmond Hill' or general areas, the parking

rate is the same for both neighbourhood and community retail (5 spaces / 100 SM GFA). Vaughan has a lower rate of 4.5 spaces / 100 SM; Brampton, Mississauga, Newmarket, and Oakville, have higher rates ranging from 5.26 to 5.56 spaces / 100 SM. Unlike the growth areas, general area rates for Markham and Toronto have varying retail rates. These rates range from 1.50 to 6.00 spaces / 100 SM, based on the size and type of retail (for retail stores in Toronto with less than 200 SM of GFA, the parking minimums are waived). There is justification to differentiate retail parking rates based on size for general areas since capture areas may vary significantly based on the type and size of the development.

The single retail rate recommended in the 2010 Parking Strategy is similar to retail rates by other municipalities; however, with such a large retail range for Markham and Toronto, retail rates differentiated by size of the development may be appropriate. Data collection of various types and sizes of retail can assist in determining the appropriate recommendation for minimum parking rates for retail developments in recommended areas.

3.1.2.3 RESTAURANT

No other municipality differentiates parking rates for fast food restaurants compared to regular restaurants. It is recommended that the parking rate for fast food restaurants be consolidated with regular restaurants and maintained at the current rate. The City may consider applying the parking rate exemption within the KDAs, for uses under a certain size threshold, similar to what is done for supermarkets in the City of Toronto.

The City of Toronto waives the minimum parking requirement for uses less than 200 SM, similar to the approach taken for Retail Stores. It is recommended that the parking rate for fast food restaurants be consolidated with regular restaurants and maintained at the current restaurant rate of 11 spaces per 100 SM GFA, with consideration for exemptions for low GFAs or ancillary uses in intensification areas.

3.1.2.4 LIBRARIES AND COMMUNITY CENTRES

Richmond Hill does not currently identify parking rates for libraries and community centres. These land uses would likely fall under the "All other institutional land uses" category which has a rate of 6.3 spaces per 100 SM GFA in general areas and business parks.

Rates for libraries and community centres are provided for other municipalities (general areas) including Markham, Newmarket, Toronto, Vaughan, Brampton, Mississauga, and Oakville. Rates for libraries range from 1.3 (Toronto) to 10.0 (Newmarket) spaces / 100 SM GFA. Because of this large range, data collection may be best to determine a parking rate for libraries.

Rates for community centres range from 2.5 (Markham) to 12.5 (Brampton) spaces / 100 SM GFA. The demand of community centres may vary based on more than just size, including location, amenities, available seating, or available programs.

The City may consider developing rates based on the provided amenities similar to rates found in the Parking Generation (ITE), or parking rates collected from data collection. This

methodology is similar to Brampton's By-law⁵ where parking rates for various activities are specified including Tennis Court and Swimming Pool etc. Alternatively, proxy surveys of similar developments could be used to determine typical parking demand if consistency is identified in the parking demand across various facilities, independent of the amenities. However, the current rate for institutional uses is within the range of rates from other municipalities for Community Centres and Libraries, but it should be noted that the ranges are quite large, which is an indication that a one size fits all approach may not be appropriate for these land uses.

3.1.2.5 DAY CARE / NURSERIES

The 2010 Parking Strategy recommends a rate that is the greater of 1 space per 5 children or 1 space per employee. Hamilton and Toronto establish rates based on GFA (0.8 / 100 SM GFA for Hamilton, and 1.0 / 100 SM GFA for Toronto). Markham and Newmarket establish rates based on a combination of number of classrooms and number of children. Vaughan requires a minimum of 8 spaces. It is recommended the rates be converted to GFA-based rates similar to the Bernard KDA memo; however, due to the various rates (and units) across the municipalities, data collection may be best to establish an appropriate rate based on GFA.

3.1.2.6 OTHER RATE COMPARISONS

The following land use rates for Richmond Hill KDAs are on the higher end compared to other municipalities, and are recommended to be reduced based on the current practices review or based on data collection to support and reductions, if the City desires. Data collection would be particularly recommended for sensitive land uses such as Medical offices to ensure parking is not underprovided:

- ⇒ Medical Office (consider data collection to support any reductions)
- ⇒ Retail
- ⇒ Financial institution
- ⇒ Restaurant
- ⇒ School
- ⇒ Places of Assembly

Based on a comparison of rates from other municipalities, reviewing the median of the rates used may be recommended, to better reflect rates used in other municipalities. All other rates from the 2010 Parking Strategy are recommended to remain the same.

For any unique development applications, it is recommended that atypical and undefined land uses require proxy site surveys or rely on first principals to determine the appropriate parking supply of a proposed development.

3.1.3 Other Parking Strategy Areas

Most municipalities establish reduced parking rates for one separate urban area. As described in **Section 1.4**, the 2010 Parking Strategy compares the various rates set out for each strategy area. The most comparable rates from other municipalities to review for the Regional Centre

⁵ https://www.brampton.ca/en/Business/planning-development/zoning/COB%20Zoning/CATEGORY/Section_20_Commercial.pdf

and Rapid Transit Corridors would be the urban area rates that were reviewed in the Bernard Current Practices Report.

The most comparable municipality would be Toronto which does have multiple urban areas with varying parking rates. Toronto sets up four policy areas which can be described as the downtown area, high-density and mixed-use area (Yonge-Eglinton), subway corridors, and various high density corridors. These are similar descriptions as the strategy areas outlined in the 2010 Parking Strategy; however, Toronto does provide higher order transit (subways) that further reduces auto dependency. The amount of reductions for the policy areas from the general rates in Toronto are summarized in **Table 8** and **Table 9**, for residential and non-residential land uses, respectively.

Table 8: Percent Reduction in Residential Parking Rates for Policy Areas vs. General Area Rates (Toronto)

Land Use	PA 1	PA 2	PA 3	PA 4
<i>Apartment Building</i>				
Bach. ≤ 45 sm	63%	25%	25%	13%
Bach. > 45 sm	0%	0%	0%	0%
One Bed	44%	22%	22%	11%
Two Bed	20%	10%	10%	10%
Three+ Bed	17%	17%	17%	8%
Visitor	50%	50%	50%	25%
<i>Assisted Housing</i>				
Bach. ≤ 45 sm	25%	13%	13%	13%
Bach. > 45 sm	0%	0%	0%	0%
One Bed	40%	20%	20%	20%
Two Bed	40%	20%	20%	20%
Three+ Bed	44%	17%	17%	17%
Visitor	50%	50%	50%	25%
Minimum	0%	0%	0%	0%
Average	33%	20%	20%	13%
Maximum	63%	50%	50%	25%
Median	40%	18%	18%	13%

Based on the median reductions in residential rates, there is an approximate 40% reduction for PA 1 (downtown), 20% reduction for PA 2 (Yonge-Eglinton) and for PA 3 (subway corridor), and 15% reduction for other high density corridors from the general area rates. These reductions are similar to the rate comparisons in **Section 1.4** for Richmond Hill.

Table 9: Percent Reduction in Non-Residential Parking Rates for Policy Areas vs. General Area Rates (Toronto)

Land Use	PA 1	PA 2	PA 3	PA 4
Office	77%	33%	33%	33%
Clinic, Medical	60%	60%	60%	40%
Medical Office	90%	67%	50%	50%
Financial Institution	50%	50%	50%	50%
Library	62%	62%	62%	62%
Community Centre	83%	83%	83%	83%
Education Use	83%	83%	50%	33%
Private School	90%	67%	67%	33%
Public School	90%	67%	67%	33%
Adult Education School	50%	50%	50%	25%
Post-Secondary School	95%	95%	95%	50%
Place of Assembly	57%	36%	21%	21%
Veterinary Hospital	60%	0%	0%	0%
Day Nursery	60%	60%	60%	60%
Hospital	89%	89%	89%	89%
Recreation Use	83%	83%	83%	83%
Place of Worship (no/variable seating)	59%	33%	19%	19%
Place of Worship (with seating)	61%	35%	22%	22%
Minimum	50%	0%	0%	0%
Average	73%	58%	53%	40%
Maximum	95%	95%	95%	83%
Median	77%	62%	50%	33%

Based on the median reductions in non-residential rates, there is an approximate 75% reduction for PA 1 (downtown), 60% reduction for PA 2 (Yonge-Eglinton), 50% reduction for PA 3 (subway corridor), and 35% reduction for other high density corridors from the general area rates. There is a large range of reductions from the general rates for various non-residential land uses (e.g. PA 2 and PA 3 range from 0% to 95% reduction from the general rate). The variation can be attributed to some uses being more sensitive to transit availability or opportunities to use other modes of travel.

It is recommended that a 40% decrease for the Regional Centre, 30% decrease for the KDAs, and a 20% decrease for the Rapid Transit Corridors be considered; however, variations to these percentages may apply to some uses or for rounding purposes. Business Park rates are recommended to be the same as the general area rates. This is consistent with the differences between the strategy area rates in the 2010 Parking Strategy shown in **Section 1.4**.

3.2 Maximum Parking Rates

Within transit served areas, maximum parking rates are typically established so as to not over-provide parking. Overprovision of parking can encourage driving when transit or other modes of active transportation are a viable option. The 2010 Parking Strategy established maximum parking rates for all land uses within the Strategy Areas, and these rates are also summarized in **Attachment C**.

Many municipalities, including Toronto, Newmarket, and Vaughan, have implemented maximum parking rates for both residential and non-residential land uses for their growth areas (Hamilton

only has a maximum rate for apartment buildings). The municipalities reviewed do not outline any maximum parking rates for general areas (with the exception of Vaughan; which provides a maximum rate for Home Occupation land use which is equal to their minimum requirement).

Based on the current practices review, no municipality establishes maximum parking rates for any land use in general areas; therefore, maximums are not recommended for the 'Rest of Richmond Hill' or in Business Parks. Maximums for other Parking Strategy Areas are discussed in **Section 4.3**.

3.3 Recommendations: General Areas

The general area rates for Mississauga, Brampton, Oakville, Hamilton, Markham, Newmarket, Toronto and Vaughan were compared against Richmond Hill. In general, the rates recommended in the 2010 Parking Strategy for general areas are similar to the municipalities reviewed.

Based on the current practices review which reviewed the type of land uses and their respective rates for each municipality within a growth area, the following changes are recommended for updating the parking rates for general areas:

Recommendations for General Areas or the 'Rest of Richmond Hill'

- Residential visitor parking rates should be maintained as they currently are;
- Bedroom based rates should generally remain the same. However, there may be an opportunity to reduce the two-bedroom and three-bedroom rates;
- Remove differentiation between rental and condominium apartments and consolidate with use of the condominium rates (no reduction to visitor parking rates);
- Consider including accessory dwelling units, bed and breakfast, home occupation, and live-work units;
- Add a differentiation for rent-geared-to-income properties (including affordable housing, cooperative housing, and subsidized housing) with an approximately reduction of 80% (bedroom-based rates) from other residential land uses (no reduction to visitor parking rates);
- Consider distinguishing between visitor/staff and tenant parking for senior's residence or assisted living residence, or long-term care facilities;
- Maintain classroom based rates for schools;
- Convert and veterinary clinic rates to be based by GFA instead of practitioner, if desired by the City;
- Convert day nursery rates to be based by GFA instead of children/employee, if desired by the City;
- Consider adding accessory use requirements for hotels (i.e. conference rooms), while maintaining suite based rates;
- Consider data collection for retail to determine if different rates are justified for regional shopping centres versus neighbourhood/community, and explicitly include supermarkets;
- Remove differentiation for restaurant between fast food and standard and consolidate to use the standard restaurant rates;

- Consider providing parking exemptions for uses that are below a given size threshold (typically 200 m²); this may be applicable to restaurants or retail uses, as well as ancillary uses;
- Consider adding libraries and community centres as separate land uses. These uses currently fall under Institutional Uses. If Community Centre rates are added, consider adding in additional requirements for each specific use (i.e. for different sporting activities). It should be noted that the Institutional Land uses rates are currently within the general range of library and community centre rates used in other municipalities;
- Consider data collection for financial institutions and schools, to investigate possible reductions;
- Reduce minimum parking rates for the following land uses (general areas):
 - Medical Office to 5.0 / 100m² GFA
 - Financial Institution to 4.5 / 100m² GFA (from 6.5 / 100m² GFA)
 - Restaurant to 10.0 / 100m² GFA (from 11.0 / 100m² GFA)
 - School
 - Elementary to 1.5 / classroom (from 2.0 / classroom)
 - Secondary to 3.5 / classroom (from 4.0 / classroom)
- Maintain all other rates proposed in the 2010 Parking Strategy.

These recommendations are subject to change based on data collection and stakeholder input. For land uses with a significant change in minimum rates, or a large range of rates between municipalities (i.e. medical office, financial institution, retail), data collection can be used to confirm an appropriate rate.

4 Vehicle Parking Rates (Key Development Areas)

Municipalities typically separate minimum parking rates for general areas and growth areas which is often proportional to transit accessibility. Growth area rates from other comparable municipalities were compared for this review of KDA rates.

Mississauga, Brampton, and Oakville have limited land uses that differentiate rates between general and growth areas. Additionally, the growth area rates for these three municipalities are typically higher than those proposed in the 2010 Parking Strategy, and the other municipalities. Based on these preliminary findings, the review excludes rates from these three municipalities. The rates from Richmond Hill's By-law 111-17 and the 2010 Parking Strategy were therefore compared against the following municipality growth area rates:

- City of Markham – MC-D1 (By-law 2004-196)
- Town of Newmarket – Urban Centre (Zoning By-law 2010-40)
- City of Toronto – Policy Area 4 (By-law 569-2013)
- City of Hamilton – Downtown Zones (By-law 18-114)
- City of Vaughan – MMU, HMU, CMU, EMU (Draft Comprehensive Zoning By-law)

The areas selected are based on their comparable land uses and transit infrastructure in the area. For example, Policy Areas 1 and 3 from Toronto, and Vaughan Metropolitan Centre (VMC) from Vaughan, were excluded since they are walking distance from highest order transit which is the subway system. However, consideration for these rates should be made for the Richmond Hill Regional Centre Secondary Plan Area given the planned Yonge Subway Extension, unless the TDM Toolbox is robust enough to account for the higher transit accessibility. The following sections summarize the findings after comparing the minimum parking rates between municipalities and the Bernard KDA.

4.1 Residential Minimum Parking Rates

4.1.1 Residential Visitor Parking

For growth areas within the City of Richmond Hill including KDAs, visitor parking rates of 0.15 spaces per unit set out by the parking strategy are fairly consistent with the By-laws reviewed, which range from 0.15 spaces per unit to 0.20 spaces per unit. Visitor parking rates do not vary by dwelling type for those that require visitor parking. This does indicate a high degree of consistency between visitor rates and does not suggest there is any need for changes to visitor parking rates. Within the City of Toronto, visitor parking rates can be as low as 0.10 spaces per unit within special Policy Areas (i.e. downtown or along subway corridors).

4.1.2 Residential Tenant Parking

The residential rates proposed in the City's Parking strategy are similar to other municipality rates for dwelling units that use bedroom-based rates. Toronto and Newmarket use bedroom-based rates while Markham and Vaughan use a blended rate for apartments in their growth areas.



The bedroom-based rate reflects the expectation that a higher number of bedrooms means greater income and number of residents, which may translate to higher auto-ownership rates and greater parking demands. Applying a mixed or average rate may either overstate the parking needs for a building comprised of mostly bachelor and one-bedroom units or understate the parking needs of a building comprised with a higher number of two and three-plus (3+) bedroom units. It is recommended that a bedroom-based rate be maintained for Richmond Hill KDAs as presented in **Bernard KDA Peer Review**, as shown below in **Table 10**.

Table 10: Bernard KDA Peer Review Recommended Residential Parking Rates

Unit Type	Yonge and Bernard Key Development Area Secondary Plan Zoning By-law 111-17	Richmond Hill 2020 Preliminary Recommendations
Bachelor	0.80	0.70
1-Bedroom	0.90	0.80
2-Bedroom	1.00	0.90
3-Bedroom	1.20	1.00
Visitor	0.15	0.15

Land uses not included in the 2010 Parking Strategy that are present in some municipalities include accessory dwelling unit, bed and breakfast, home occupation, and live-work units. The City can consider including these uses in the Parking By-law.

4.1.3 Rental Apartments / Rent-Geared-To-Income / Affordable Housing

The same recommendations for general areas also apply to the KDAs as discussed in **Section 3.1.1.3**. A similar reduction would be recommended for application in the KDA.

4.2 Non-Residential Minimum Parking Rates

Parking ratios (minimums) for select non-residential land uses within the Richmond Hill Parking Strategy and Zoning By-law 111-17 were compared to the same or comparable land use parking ratios from the respective By-laws for those municipalities noted above.

The land uses reviewed include:

- ⇒ Arts and Cultural
- ⇒ Business Office
- ⇒ Medical Office
- ⇒ Day Nursery
- ⇒ Financial Institution
- ⇒ Hotel/Motel
- ⇒ Retail Store/Supermarket
- ⇒ Shopping Centre
- ⇒ Restaurant
- ⇒ Library
- ⇒ Community Centre
- ⇒ Assembly/Banquet Hall and other Places of Assembly
- ⇒ Social Services
- ⇒ School, Elementary/Private/Secondary
- ⇒ University/College
- ⇒ Veterinary Clinics

4.2.1 Land Use Types

In general, the 2010 Parking Strategy outlines similar land uses for KDAs as other municipalities do in their respective growth areas. By-law 111-17 does include “Arts and Cultural Facilities” and “Social Services” that are not generalized in other By-laws, and a comparison is therefore not possible. Other municipalities have rates for libraries and community centres, but these

have not been identified as a permitted land use within KDA's, so those rates were not reviewed. The required parking spaces for non-residential land uses are typically stated per 100m² of GFA (gross floor area). Exceptions were discussed with respect to general areas in **Section 3.1.2.6**.

4.2.2 Retail / Supermarket

As noted in **Section 3.1.2.2**, Richmond Hill does not have an explicit rate for supermarkets. Generally, when a municipality does have explicit rates for supermarkets, they are either the same or slightly higher than the same municipality's retail rate, suggesting that it may not need to be differentiated.

The 2010 Parking Strategy separates retail classification by type (shopping centre, neighbourhood/community), while By-law 111-17 classifies by size (threshold of 10,000m² of GFA). Markham, Toronto, Newmarket and Vaughan do not differentiate rates between different types or sizes of retail. The Richmond Hill rates are also on the higher end compared to other municipalities suggesting that the rates can be reduced, or that it is accommodating supermarkets. It is recommended that the retail rate be reduced and combined to a single rate. Furthermore, removal of the distinction between general retail and supermarket parking demand can be considered, or data collection can confirm if there are differences.

4.2.3 Restaurant

As noted in **Section 3.1.2.3**, no other municipality differentiates parking rates for fast food restaurants compared to regular restaurants. It is recommended that the parking rate for fast food restaurants be consolidated with regular restaurants and maintained at the current rate. The City may consider applying the parking rate exemption within the KDAs, for uses under a certain size threshold, similar to what is done for supermarkets in the City of Toronto.

4.2.4 Other Rate Comparisons

Please refer to **Section 3.1.2.6**. A summary of the rates is shown in **Table 11** with a comparison for KDA rates from By-law 111-17 as well as recommended rates from the **Bernard KDA Peer Review**.

Table 11: Comparison of Non-Residential Minimum Vehicle Parking Requirements for Areas Comparable to KDA's

Land Use	Markham	Newmarket	Toronto	Hamilton	Vaughan	Other Municipalities			Richmond Hill	
	MC-D1	Urban Centre	Policy Area 4	Downtown Zones	MMU, HMU, CMU, EMU	Min	Max	Average	By-law 111-17/ Parking Strategy	Recommended Rates ³
parking space per 100 square metres of Gross Floor Area unless stated otherwise										
Office	2.7	2	1	2	2	1.0	2.7	1.9	2.0	2.80
Medical Office ⁵	2.7	2.86	1.5	2	2	1.5	2.9	2.2	5.4	
Retail	2.7	2.5	1	-	2	1.0	2.7	2.1	3.0 ⁴	
Financial Institution	2.7	2.5	2	2	2	2.0	2.7	2.2	4.6	
Restaurant	2.7	2	0	-	2.7	0.0	2.7	1.9	3.0	
Veterinary Clinics	-	3.7	1	2	2	1.0	3.7	2.2	3.5	
Day Nursery	0	1 / 8 children + 1 / classroom	0.4	0.8	3	0.0	3.0	1.1	1 / 7 children or 0.7 / employee	
Places of Assembly	2.7	-	5.5	-	2	2.0	5.5	3.4	4.8	4.25
Arts and Cultural	-	-	-	-	-	-	-	-	5	4.25
Social Services	-	-	-	2	-	2.0	2.0	2.0	5	4.25
parking space per classroom										
Elementary	1	1.1	- ¹	1.25	1	1.0	1.3	1.1	1.6	1.35
Secondary	4	1.65	- ¹	3	1	1.0	4.0	2.4	3.2	2.70
Post-Secondary	-	0.5 ²	- ¹	5	1	1.0	5.0	3.0	3.2	2.70
parking space per guest room + parking space per 100 square metres of shared space (banquet rooms and similar uses, excluding lobbies, hallways etc.)										
Hotel/Motel	0.8 + 3.33	1.0 + 10	*	0.6	0.5	-	-	-	0.75 per room + 7.5 / 100m ² of shared areas	0.65 per room + 4.25 / 100m ² of shared areas

¹Toronto rates based on GFA

²Based on GFA for instructional and/or academic purposes

³Recommended rates are applicable to Key Development Areas such as Yonge and Bernard or Yonge and 16th Avenue.

The recommended rates were taken from the **Bernard KDA Peer Review**.

⁴For commercial land use with a GFA greater than 10,000m²; a rate of 4.0 spaces per 100m² for GFA less than 10,000m²

⁵The 2010 Parking Strategy had practitioner based rates but By-law 111-17 has adopted floor area based rates. Surveys may be warranted to validate these rates.



4.3 Maximum Parking Rates

Within transit served areas, maximum parking rates are typically establish so as to not over-provide parking. Overprovision of parking can encourage driving when transit or other modes of active transportation are a viable option. The 2010 Parking Strategy established maximum parking rates for all land uses within the KDA, and these rates are also summarized in **Attachment C**.

Many municipalities, including Toronto, Newmarket, and Vaughan, have implemented maximum parking rates for both residential and non-residential land uses for their growth areas (Hamilton only has a maximum rate for apartment buildings).

With the development of draft parking rates for the Bernard KDA in February 2020 as part of the Bernard KDA Peer Review, the comparison of maximum parking rates within the City were based on the Bernard KDA proposed rates. Within Bernard, the maximum parking rates have been set to 125% of the minimum parking rates, for all land uses. Exceptions would include Street and Block Townhouse Dwellings without a parking structure or any other use which does not have shared parking.

Within the Richmond Hill Centre and Rapid Transit Corridors, maximum parking rates were established in the 2010 Parking Strategy. The percentage difference (maximum versus minimum) for all land uses is summarized in **Table 12** and **Table 13**.

Table 12: Percentage of Maximum to Minimum Residential Rates (2010 Parking Strategy)

Land Use	2010 Parking Strategy		Bernard 2020 KDAs
	Regional Centre	Rapid Transit Corridors	
Bachelor	117%	120%	Approximately 125% for all uses.
One Bed	113%	124%	
Two Bed	110%	125%	
Three Bed+	108%	125%	
Visitor	113%	133%	
Single-Detached	200%	200%	
Semi-detached	200%	200%	
Duplex	150%	125%	
Triplex	150%	125%	
Double Duplex	150%	125%	
Street Townhouse	200%	200%	
Condo Townhouse	200%	200%	
Condo Townhouse – Visitor	133%	133%	
Retirement	109%	121%	
Minimum	108%	120%	
Average	147%	147%	
Median	142%	125%	
Maximum	200%	200%	

Table 13: Percentage of Maximum to Minimum Non-Residential Rates (2010 Parking Strategy)

Land Use	2010 Parking Strategy		Bernard 2020 KDAs
	Regional Centre	Rapid Transit Corridors	
Office	110%	125%	Approximately 125% for all uses.
Medical Offices / Clinics	111%	125%	
Retail Regional Shopping Centre	110%	125%	
Retail - Neighbourhood / Community	110%	126%	
Financial Institution	111%	125%	
Restaurant, Standard	110%	125%	
Place of Assembly	110%	125%	
Veterinary Clinics	111%	125%	
Hotel/Motel	113%	125%	
Day Care	114%	125%	
Primary School	107%	125%	
Secondary School	111%	125%	
All Other Institutional Uses	109%	126%	
Minimum	107%	125%	
Average	111%	125%	
Median	110%	125%	
Maximum	114%	126%	

For residential land uses, the 2010 Parking Strategy set maximum rates ranged from 8% to 33% more than the minimum rates for unit-based rates, and from 25% to 100% higher for other uses. For non-residential land uses, the 2010 Parking Strategy set maximum rates at approximately 10% higher than minimum rates for the Regional Centre, and 25% higher for than minimum rates for the Rapid Transit Corridors. It is recommended the maximum rates be kept as a consistent percentage of the minimum parking rates for all land-uses.

Maximum rates can be shown as a separate rate, a percentage increase from the minimum rate, or set to the minimum rate (no variance). Maximum rates are typically applicable in growth areas, but some other municipalities provide maximum parking rates based on transit proximity (e.g. Ottawa establishes maximum parking rates for sites within 600 metres of a rapid transit station).

4.3.1 Residential Parking

4.3.1.1 RESIDENTIAL VISITOR PARKING

Richmond Hill By-law 111-17 establishes a maximum parking rate that is 0.05 spaces per unit higher than the minimum requirements. The only other municipality that has maximum visitor parking rates is the Town of Newmarket which sets a maximum visitor parking rate to its minimum.

Unlike unbundled parking where units can be purchased without a parking space, visitor parking is not typically a deciding factor for homebuyers, but providing too little visitor parking can impact the area surrounding a development. Unless the City has identified issues with the current visitor parking rates, we do not recommend any changes to the maximum visitor parking rates.



4.3.1.2 RESIDENTIAL TENANT PARKING

Richmond Hill is the only municipality in the current practices review that sets a maximum parking rate for single-detached, semi-detached, duplex/triplex, double/duplex, and retirement homes for its growth areas.

Richmond Hill also establishes maximum parking rates for rental apartments. As previously discussed, rather than differentiating rates for rental apartments, it would be more beneficial to differentiate rent-geared-to-income properties. Newmarket applies a 30% reduction to its maximum residential rates for financially assisted dwelling units.

The municipalities that provide maximum parking rates for residential units typically use the same type of rate-based approach as the minimum parking requirements (i.e. bedroom based rates/blended rates for minimum and maximum parking rates). The exception is Hamilton which provides minimum rates based on number of units (e.g. up to 1.00 spaces per unit for buildings with 51 or more units) and a flat residential maximum parking rate of 1.25 spaces per unit.

The maximum parking rates for apartments are similar to those established by Newmarket and Toronto. Vaughan provides a blended rate maximum rate which is higher than the other municipalities, but Vaughan also provides a minimum blended rate that is lower than the other municipalities.

The percentage increase of the maximum parking rate from the minimum parking rate is also similar between the municipalities as shown in **Table 14**. Unless the City has identified issues with developers wishing to provide more parking than is permitted, the maximums should be maintained as-is.

Table 14: Maximum as a Percentage of Minimum Parking Rate – Apartment Buildings

Condo/Apartment Dwelling	Richmond Hill Downtown Local / KDA (Parking Strategy)	Newmarket Urban Centre	Toronto Policy Area 4	Vaughan MMU, HMU, CMU, EMU
Bachelor	125%	121%	143%	200%
One Bed	122%	125%	150%	
Two Bed	125%	120%	144%	
Three+ Bed	125%	117%	145%	
Visitor	133%	100%	-	

4.3.2 Non-Residential Parking

In general, the maximum parking rates are set based on the minimum parking requirements. **Table 15** shows the maximum parking rate as a reference to the minimum parking rate for various non-residential land uses.

Table 15: Maximum as a Percentage of Minimum Parking Rate – Non-Residential Land Uses

Land Use	Richmond Hill Downtown Local / KDA	Newmarket Urban Centre	Toronto Policy Area 4	Vaughan MMU, HMU, CMU, EMU
Office	125%	200%	200%	225%
Medical Offices/Clinics	125%*	200%	400%	225%
Retail	125%	200%	400%	275%
Financial Institution	124%	200%	225%	225%
Restaurant	125%	400%	-	222%
School	125%*	200%	200%	300%

*Parking Strategy rates were used for Richmond Hill except for medical offices/clinics and school rates where By-law 111-17 was used (Zoning By-Law for Yonge and Bernard KDA)

Table 16 shows the comparison of the maximum parking rates between Richmond Hill, Newmarket, Toronto, and Vaughan.

Table 16: Comparison of Non-residential Maximum Vehicle Parking Requirements

Land Use	Newmarket	Toronto	Vaughan	Other Municipalities			Richmond Hill
	Urban Centre	Policy Area 4	MMU, HMU, CMU, EMU	Min	Max	Avg	By-Law 111-17 / 2010 Parking Strategy
parking space per 100 square metres of Gross Floor Area unless stated otherwise							
Office	4	2	4.5	2.0	4.5	3.5	2.0
Medical Office	5.72	6	4.5	4.5	6.0	5.4	6.8
Retail	5	4	5.5	4.0	5.5	4.8	3.8
Financial Institution	5	4.5	4.5	4.5	5.0	4.7	5.7
Restaurant	8	5	6	5.0	8.0	6.3	3.8
Places of Assembly	-	-	-	-	-	-	6.0
Veterinary Clinics	-	0.8	4.5	0.8	4.5	2.7	4.4
Day Nursery	-	0.8	-	0.8	0.8	0.8	1 / 6 children or 0.9 / employee
Arts and Cultural	-	-	-	-	-	-	5
Social Services	-	-	-	-	-	-	5
parking space per classroom							
Elementary	2	2	3	2.0	3.0	2.3	2.0
Secondary	3	*	3	3.0	3.0	3.0	4.0
Post-Secondary	1**	*	3	3.0	3.0	3.0	4.0
parking space per guest room + parking space per 100 square metres of shared space (banquet rooms and similar uses, excluding lobbies, hallways etc.)							
Hotel/Motel	-	*	1.5	-	-	-	0.90 per room + 9.0 / 100 of shared

Richmond Hill maximum rates are on the lower end of the spectrum when comparing the rate as a percentage of the minimum parking rate. Newmarket applies a maximum parking rate that is twice the minimum parking rate (except for restaurants which have a maximum parking rate 4 times larger than the minimum). Toronto maximum rates are 2-3 times larger than the minimum parking rates (office, medical clinic, financial institution, community centre, public school), but

are much higher for land uses such as medical offices, grocery stores, retail stores, and eating establishments.

In general, maximum parking rates for other municipalities range from 2 to 4 times higher than the minimum parking rates whereas the 2010 Parking Strategy suggests maximum parking rates that are 1.25 times higher than the minimum. Reviewing the values of the maximum parking rates, the medical office and financial institution maximum rates are higher while the retail and restaurant maximum rates are lower than the other municipalities. The other maximum parking rates are within range of the other municipalities.

Although some other municipalities have maximum parking rates in the range of 2-4 times higher than the minimums, it is recommended that the maximums be maintained at approximately 125% higher than the minimums as shown in **Table 12** and **Table 13**, to ensure overprovision of parking does not occur but to also give flexibility to developers. This would apply to all parking strategy areas with the exception of 'Rest of Richmond Hill' and Richmond Hill Regional Centre. Rest of Richmond Hill would not have any parking maximums imposed, while Richmond Hill Regional Centre would have maximum rates only 10% higher than the minimums.

4.4 Bernard KDA Parking Standards Review Report (LEA)

The Bernard KDA Parking Standards Review Report (July 2019) by LEA reviewed the Secondary Plan and Zoning By-law 111-17 for the Bernard KDA. The report summarizes applicable policies that refer to intensification, TDM strategies, and reduced parking rates. It also recommends reducing parking rates and including transit supportive parking policy to the existing Zoning By-law 111-17. This section focuses on the rates recommended by the report, the supporting rationale, and whether they are appropriate for the Bernard KDA.

The report provides context of the area (walkable, vivaNext, Bernard bus terminal) and background for the parking rates as it relates to policies. In general, policies support reduced parking rates in intensification areas, area of improved transit, application of TDM measures, and promote shared parking.

4.4.1 Parking Rate Comparison

The recommended rates from the 2019 Parking Standards report are compared against By-law 111-17 and the 2010 Parking Strategy in **Table 17**.

Table 17: Parking Rate Comparisons for Bernard KDA

Land Use	LEA Recommendations	By-law 111-17	2010 Parking Strategy
parking space per unit			
Bachelor	0.5	0.8	0.8
1-bedroom	0.7	0.9	0.9
2-bedroom	0.9	1	1
3-bedroom	1	1.2	1.2
Visitor	0.15	0.15	0.15
parking space per 100 square metres of Gross Floor Area unless stated otherwise			
Office	1.5	2	2.5
Commercial	2	3	3.75 – 5.0
Medical Office/Clinic	1.5	5.4	4.4 for the first practitioner + 2.6 for additional
Place of Assembly	1.5	4.8	6.0
Financial Institution	1.5	4.6	5.7
Veterinary Clinic	1.5	3.5	4.4 for the first practitioner + 1.8 for additional
Arts and Cultural Facilities	1.5	5.0	-
Social Services	1.5	5.0	-

The report justifies these rates by comparing rates with Newmarket, Toronto, Vaughan (1-88), and By-law 49-12 (Yonge / 16th Avenue KDA in Richmond Hill). The residential rates are compared for all By-laws, while the non-residential parking rates are only compared for Newmarket and Vaughan.

With the exception of most of Newmarket’s non-residential rates, it is shown that the By-law 111-17 rates are higher than other municipalities. Based on the higher rates from By-law 111-17 and the transit connections (Bernard Terminal, future VIVA rapid transitway), the report recommends rates that are lower than those summarized for other municipalities.

Both the Newmarket and Yonge / 16th KDA residential rates are 0.1 space / unit lower than the Bernard KDA By-law 111-17. The Yonge and 16th KDA maximum rates are higher than the Bernard KDA.

Exhibit 12 shows the general policy areas for Toronto. Although Policy Area 1 is centered in the downtown core, it shows that Policy Area 3 typically reflects areas along the subway line. This suggests that Policy Area 4 is the most comparable set of parking rates since the Bernard KDA is not located on a transit route with the same level of service as a subway. Policy Area 4 are generally 0.1 spaces / unit lower than Bernard KDA rates.

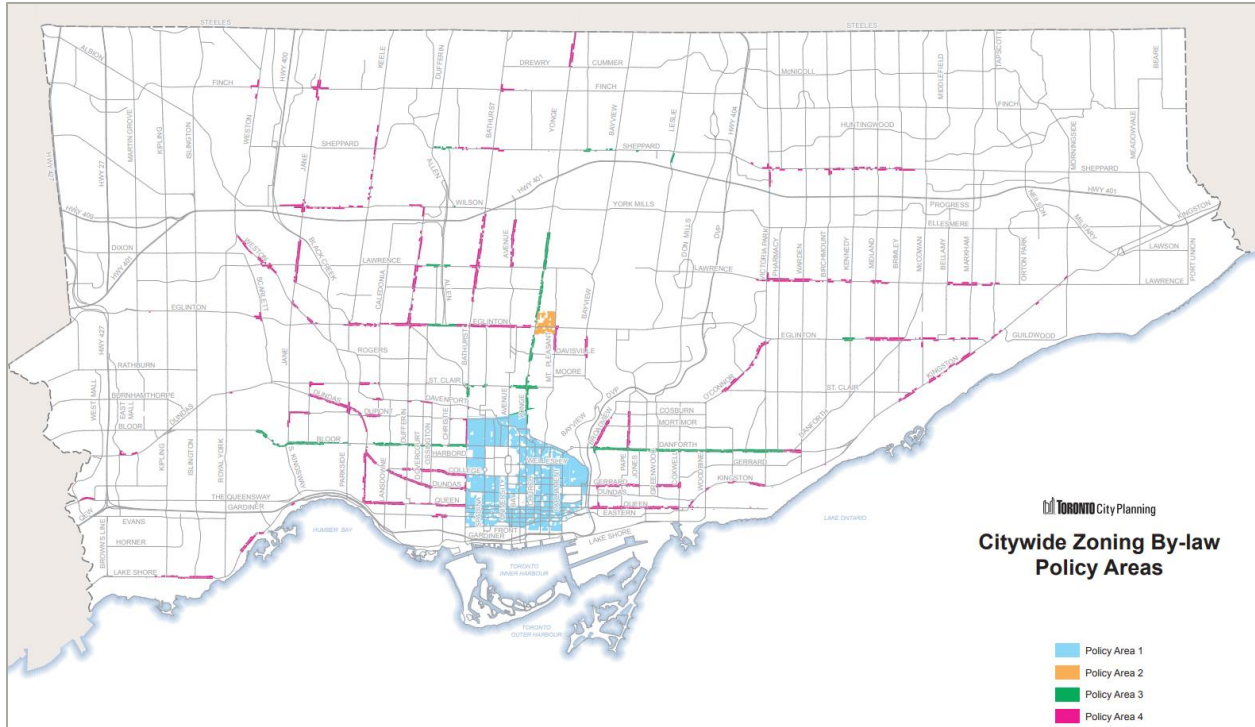


Exhibit 12: City of Toronto Policy Area Map

The Vaughan rates that are used for comparison are for the VMC area where each development will be less than 1 km away from the VMC subway station. The Bernard Terminal is approximately 3.5km from the Richmond Hill GO Terminal, and 6.5km from the Richmond Hill Centre (future terminal for the Yonge subway extension). Although the Yonge-Bernard area has access to VIVA bus routes and the recently on-schedule opening of the Yonge Street VIVA Rapidway (December 2020), the area does not have the same accessibility to higher order transit (subways) as Policy Area 3 in Toronto and VMC in Vaughan. This suggests that the recommended rates that align with these policy areas may be too aggressive when applied to the area without additional supportive measures.

Although, the report only compares non-residential rates with Newmarket and Vaughan VMC, it is recommended that these rates are reduced but not to the extent outlined in the LEA Study. Recommended rates for the Bernard KDA were already outlined as part of the Current Practices Review.

In June 2019, Vaughan brought to council a Draft Comprehensive Zoning By-law which updates the rates for general and growth areas.⁶ Changes include blended rates for apartments and no minimum parking requirements for the non-residential land uses for the VMC. The next identified growth area recommends rates that are closer to the 2019 Parking Review report, but not as low.

⁶ <https://pub-vaughan.escrimemeetings.com/filestream.ashx?DocumentId=18552>

4.4.2 Blended Rates for Apartments

Typically, parking is provided based on rates for each type of apartment, determined by the number of bedrooms within the apartment. While blended rates are more simplistic to implement, the shortfall is that they can underestimate or overestimate parking requirements depending on the unit-mix. The LEA Study recommended bedroom-based rates, but further provides a lower bound parking ratio of 0.65 spaces per unit blended. This is an appropriate failsafe to ensure that parking is not undersupplied, particularly if there is a number of bachelor apartments or studio 1-bedrooms which are being used as two-bedroom units. Establishing the minimum blended rate can be considered an as option, but would be based on precedent, survey data, and City input.

4.4.3 TDM Measures

The LEA Study also recommends TDM measures that should be implemented within the KDA. It is agreed that the Bernard KDA should include provisions for car-sharing, compact parking spaces, shared parking, and electric vehicle parking spaces. Although not all of these measures directly reduce auto dependency, they provide opportunities to improve parking design efficiency and reduce environmental impacts. The report details recommending requiring two car-share spaces be provided on site, minimum of 2 carpool spaces (for non-residential land uses), allow up to 10% of spaces to be compact spaces, and 20-25% of all parking spaces to be built with priority parking spaces for electric vehicle parking.

4.4.4 Conclusion

The rates recommended in the LEA 2019 Parking Review Report range from 10% to 72% lower than the 2010 Parking Strategy / By-law 111-17 (with the exception of visitor parking rates which are the same). The current practices review conducted in the report compares the existing By-law rates to rates used for areas within walking distance of a higher order transit (subways) than those planned for the Bernard KDA (BRT). In our professional opinion this is not an accurate comparison, and these reduced rates are unlikely to be sustainable without a comprehensive plan which improves the range of non-automobile options for the anticipated trip origins and destinations in the area.

These options may include:

- A more comprehensive TDM plan which justifies the parking rate reductions above and beyond Richmond Hill's current zoning by-law
- Improved transit service frequency and priority east-west along Elgin Mills Road
- Improved first-last mile to transit options such as shared e-bikes and e-scooters or on-demand transit shuttles (YRT On-demand Strategy)
- In the longer term, implementation of YRT's On-demand Strategy with automated vehicles in a mobility-as-a-service model

Therefore, the LEA recommendations do not appear to be valid for implementation in the Bernard KDA at this time.

However, the TDM strategies and the opportunity to reduce rates outlined support the City, Region, and Provincial policies for sustainable travel and overall mitigating climate change

impacts. As noted above, significant advancements in transportation mobility options will equate to reduced parking rates in the future.

Interim solutions may include:

- Providing parking today, and over time convert parking to other uses as conditions change. This may be required on-site or via a municipal parking lot.
- Allow parking which is significantly lower than the by-law, but require “free” valet parking be required for specific land uses (such as restaurants) to mitigate any impacts of illegal parking on adjacent residential streets. Valet parking offers the opportunity to tandem park vehicles to increase parking efficiency, or to utilize off-site parking arrangements where the parking facility is further away than people would generally be willing to walk.

4.5 Recommendations: Key Development Areas

The growth area rates for Markham, Newmarket, Toronto and Vaughan were compared against Richmond Hill. Mississauga, Brampton, Oakville, and Hamilton growth areas had limited land uses that differentiated rates with general areas.

There is a trend of municipalities defining areas of growth or areas which are better served by transit, and applying reduced parking requirements compared to general areas. Municipalities are also updating their By-laws to include minimum bicycle parking requirements. There are also signs of completely removing parking requirements in some cases. For example, parking is not required for single-/semi- detached, duplex, townhouses in Hamilton’s downtown zone; and City of Vaughan removes minimum parking requirements for almost all land uses in the VMC.

Based on the current practices review which reviewed the type of land uses and their respective rates for each municipality within a growth area, the following changes are recommended for updating rates for KDAs and By-law 111-17:

Recommended Land Use Types and Units for Rates

- Remove differentiation between rental and condominium apartments and consolidate with use of the condominium rates (no reduction to visitor parking rates);
- Add a differentiation for rent-geared-to-income properties (including affordable housing, cooperative housing, and subsidized housing) with a 25% to 85% reduction (bedroom-based rates) from other residential land uses (no reduction to visitor parking rates);
- Convert medical office centre and veterinary clinic rates to be based by GFA instead of practitioner, if desired by the City;
- Convert day nursery rates to be based by GFA instead of children/employee, if desired by the City;
- Remove differentiation for retail between regional shopping centre and neighbourhood/community, and explicitly include supermarkets;
- Remove differentiation for restaurant between fast food and standard and consolidate to use the standard restaurant rates;
- Consider parking exemptions for ancillary uses within the Strategy Areas; and,

- Consider providing parking exemptions for uses that are below a given size threshold (typically 200 m²); this may be applicable to restaurants and retail uses.

Recommended Rates

- Set the Downtown/KDA rates to be equal to the rates recommended in the Bernard KDA Peer Review (see **Table 11**).
- Maintain all other rates proposed in the 2010 Parking Strategy or By-law 111-17
- Bicycle parking rates are recommended to be separated by short-term and long-term rates
 - Consider adding a greater breakdown of uses beyond “residential” and “non-residential”.
- Set the Regional Centre rates to 15% lower than the rates recommended in the Bernard KDA Peer Review, with some variations for specific uses. This maintains consistency with the 2010 Parking Strategy in terms of the ratio of parking minimums for each Strategy Area.
- Set the Rapid Transit Corridor rates to be 10% higher than the rates recommended in the Bernard KDA Peer Review, with some variations for specific uses. This maintains consistency with the 2010 Parking Strategy in terms of the ratio of parking minimums for each Strategy Area.
- For Rapid Transit Corridors set maximum parking ratios to 25% higher than minimums;
- For Richmond Hill Regional Centre set maximum parking ratios to 10% higher than minimums;
- Maintain the Business Park rates to be equal to the general area rates. Pursue data collection for key land uses to confirm or update current rates;

These recommendations are subject to change based on data collection and City input. For land uses with a significant change in minimum rates (i.e. medical office, financial institution, retail), data collection can be used to confirm an appropriate rate.

5 Parking Rate Preliminary Recommendations

Table 18 and **Table 19** summarize the preliminary minimum parking rate recommendations based on the current practices review.



Table 18: Summary of Preliminary Residential Rates Recommendations and Difference from 2010 Parking Strategy Rates

Land Use	Rest of RH			Rapid Transit (10% higher than KDA)			Downtown Local / KDA			Regional Centre (15% lower than KDA)		
Condominium / Apartment *												
Bachelor	1.00	/unit	-	0.80	/unit	↓ 0.10	0.70	/unit	↓ 0.10	0.60	/unit	↓ 0.20
One Bed	1.25	/unit	-	0.90	/unit	↓ 0.10	0.80	/unit	↓ 0.10	0.70	/unit	↓ 0.20
Two Bed	1.30	/unit	↓ 0.20	1.00	/unit	↓ 0.20	0.90	/unit	↓ 0.10	0.75	/unit	↓ 0.25
Three Bed+	1.40	/unit	↓ 0.35	1.10	/unit	↓ 0.40	1.00	/unit	↓ 0.20	0.85	/unit	↓ 0.35
Visitor	0.25	/unit	-	0.15	/unit	-	0.15	/unit	-	0.15	/unit	-
Affordable Housing (40% reduction from the base rates)												
Bachelor	0.60	/unit	Remove rental rates and introduce affordable housing rates	0.48	/unit	Remove rental rates and introduce affordable housing rates	0.42	/unit	Remove rental rates and introduce affordable housing rates	0.36	/unit	Remove rental rates and introduce affordable housing rates
One Bed	0.75	/unit		0.54	/unit		0.48	/unit		0.42	/unit	
Two Bed	0.78	/unit		0.60	/unit		0.54	/unit		0.48	/unit	
Three Bed+	0.84	/unit		0.66	/unit		0.60	/unit		0.54	/unit	
Visitor	0.25	/unit		0.15	/unit		0.15	/unit		0.15	/unit	
Other Residential Land Uses												
Seniors' Residence	0.50	/unit	-	0.33	/unit	-	0.33	/unit	-	0.33	/unit	-
Single-Detached	2.00	/unit	-	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-
Semi-detached	2.00	/unit	-	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-
Duplex	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-
Triplex	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-
Double Duplex	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-
Street Townhouse	2.00	/unit	-	1.00	/unit	-	1.00	/unit	-	1.00	/unit	-
Block / Condo Townhouse	2.00	/unit res	-	1.00	/unit res	-	1.00	/unit res	-	1.00	/unit res	-
	0.25	/unit vis	-	0.15	/unit vis	-	0.15	/unit vis	-	0.15	/unit vis	-

Note: * The difference from the 2010 Parking Strategy rates is shown with respect to the condominium rates (not the apartment rates) in the 2010 Parking Strategy



Table 19: Summary of Preliminary Non-Residential Rates Recommendations and Difference from 2010 Parking Strategy Rates (spaces per 100 SM GFA)

Land Use	Rest of RH	Rapid Transit (10% higher than KDA)	Downtown Local / KDA	Regional Centre (15% lower than KDA)
Office	3.20 /100m ² -	3.10 /100m ² ↑ 1.10	2.80 /100m ² ↑ 0.80	2.40 /100m ² ↑ 0.40
Medical Office	5.00 /100m ² ↓ 0.40	3.10 /100m ² -	2.80 /100m ² ↓ 2.60	2.40 /100m ² ↓ 3.00
Retail - Regional	5.00 /100m ² -	3.10 /100m ² ↑ 0.10	2.80 /100m ² ↓ 0.20	2.40 /100m ² ↓ 0.60
Retail - Neighbourhood	5.00 /100m ² -	3.10 /100m ² ↓ 1.20	2.80 /100m ² ↓ 1.20	2.40 /100m ² ↓ 1.60
Restaurant	10.00 /100m ² ↓ 1.00	3.10 /100m ² -	2.80 /100m ² ↓ 0.20	2.40 /100m ² ↓ 0.60
Financial institution	4.50 /100m ² ↓ 2.00	3.10 /100m ² ↓ 2.10	2.80 /100m ² ↓ 1.80	2.40 /100m ² ↓ 2.20
Veterinary Clinics	4.00 /100m ² -	3.10 /100m ² -	2.80 /100m ² -	2.40 /100m ² -
Day Care / Day Nursery	4.00 /100m ² -	3.10 /100m ² -	2.80 /100m ² -	2.40 /100m ² -
Places of Assembly	6.40 /100m ² -	4.70 /100m ² ↓ 0.40	4.25 /100m ² ↓ 0.55	3.60 /100m ² ↓ 1.20
Arts & Cultural	6.00 /100m ² -	4.70 /100m ² -	4.25 /100m ² ↓ 0.75	3.60 /100m ² -
Social Services	6.00 /100m ² -	4.70 /100m ² -	4.25 /100m ² ↓ 0.75	3.60 /100m ² -
Elementary School	1.50 /classroom ↓ 0.50	1.50 /classroom ↓ 0.10	1.35 /classroom ↓ 0.25	1.15 /classroom ↓ 0.25
Secondary School	3.50 /classroom ↓ 0.50	3.00 /classroom ↓ 0.20	2.70 /classroom ↓ 0.50	2.30 /classroom ↓ 0.50
Post-Secondary School	3.80 /classroom -	3.00 /classroom -	2.70 /classroom ↓ 0.50	2.30 /classroom -
Hotel/Motel	1 parking spaces per room plus an additional 10 parking spaces per 100 square metres Gross Floor Area for areas dedicated for banquet rooms and similar uses, but excluding lobbies, hallways and similar area -	0.70 parking spaces per room plus an additional 4.70 parking spaces per 100 square metres Gross Floor Area for areas dedicated for banquet rooms and similar uses, but excluding lobbies, hallways and similar area ↓ 0.10 / room and 3.30 / 100 m ² GFA	0.65 parking spaces per room plus an additional 4.25 parking spaces per 100 square metres Gross Floor Area for areas dedicated for banquet rooms and similar uses, but excluding lobbies, hallways and similar area ↓ 0.10 / room and 3.25 / 100 m ² GFA	0.55 parking spaces per room plus an additional 3.60 parking spaces per 100 square metres Gross Floor Area for areas dedicated for banquet rooms and similar uses, but excluding lobbies, hallways and similar area ↓ 0.20 / room and 3.90 / 100 m ² GFA

6 Bicycle Parking Rates

The 2010 Parking Strategy did not formally recommend minimum bicycle parking for developments. A summary of the municipalities that require bicycle parking for general areas is summarized in **Table 20**. A comparison of bicycle parking rates between municipalities is shown in **Attachment E**.

Table 20: Differentiation of Bicycle Parking Rates for General/Growth Areas

General and Growth Area Rates	Municipalities
Different Rates	Markham, Toronto
Same Rates	Newmarket, Vaughan, Vancouver, Oakville*
Rates provided only for Growth Areas	Hamilton
No Bicycle Parking Rates	Mississauga ⁷

However, By-law 111-17 does have bicycle parking requirements, and more municipalities are beginning to require a provision of space dedicated to bicycle parking to encourage and support active sustainable travel choices. This is reflective of the increasing infrastructure being provided to support cycling. A comparison of bicycle parking rates between municipalities is shown in **Attachment D**.

By-law 111-17 (Bernard) separate rates by residential, and non-residential land uses. Other municipalities have a greater breakdown of uses, beyond residential and non-residential. Because the Bernard KDA is limited to certain land uses, this simple differentiation of land uses is more appropriate; however, general areas have a greater variety of land uses and it is recommended that there be separate bicycle rates for general areas.

6.1 Bicycle Parking by Area, Zoning, and Land Use

Bicycle parking rates are typically applied to apartment buildings, and select non-residential uses including office, retail, industrial, restaurant, school, and institutional land uses. When there is a distinction between growth areas and general areas, higher minimum requirements apply to the intensification areas and downtown areas where there is typically a higher cycling modal split supported by better infrastructure, more cycling routes and pathways, and higher transit availability. However, only Markham (draft), Toronto, and Hamilton have varying rates based on area (Hamilton has no requirements for general areas).

Similar to vehicular parking rates, bicycle parking rates for residential units are typically provided based on number of units. Non-residential units are based on GFA (similar to vehicular parking).

6.2 Parking Space Classification

There are typically two types of bicycle parking spaces defined by municipalities: Long-term and short-term. Long-term bicycle parking spaces are typically provided for use by employees or residents of a building and short-term bicycle parking bicycle parking spaces for use by visitors

⁷ http://www5.mississauga.ca/rec&parks/websites/cycling/cycling_master_plan.pdf

to a building. By-law 111-17 has two types of spaces: general (long-term) and visitor (short-term).

Typically, a long-term space must be located within a building and must be accompanied by shower and change facilities, when provided for a non-residential use. Sometimes long-term bicycle parking maybe be outside but requires better weather protection and security whereas short-term bicycle parking are primarily geared towards convenience with security in the form of a well-lit and/or high traffic area providing 'surveillance'. Long-term parking is designed towards those who live in or occupy the building and short-term parking is for visitors or patrons.

The more detailed requirements also go into detail in terms of the location of the bicycle parking (often in terms of distance from a main entrance), as well as lighting and security requirements. At a minimum, it is recommended that the City adopt long-term and short-term bicycle parking requirements. The criteria for each can be more or less detailed based on the City's preference regarding showing facilities, including number of showers, number of lockers etc.

Newmarket, Markham, Vaughan provide vehicle parking rates per classroom, but bicycle parking is provided based on GFA. It is recommended that the bicycle parking requirement rate use the same units as the vehicle parking rates for consistency (i.e. bicycle spaces required per classroom).

6.3 Bicycle Parking Rates

6.3.1 Residential Bicycle Parking Rates

For residential bicycle parking rates, only Toronto and Markham establish general area bicycle parking requirements that are different than the urban area rates. Markham rates for short term parking in urban areas are twice as high for general areas, while long-term parking requirements are the same in all areas; whereas City of Toronto general area rates are 30% lower for short-term parking, and 24% lower for long-term bicycle parking.

Newmarket, Oakville, and Vaughan establish a single minimum bicycle parking rate applicable to both general and urban areas. The City of Newmarket requires a similar rate of 0.10 per unit for short-term parking, and 0.50 per unit for long-term parking. Hamilton only requires bicycle parking for their urban areas.

Parking space classification (long term and short term) and conditions for waiving bicycle parking requirements are summarized in the Bernard Current Practices Report.

An overview of the residential bicycle parking rates for short-term and long-term spaces, by other municipalities, are summarized in **Exhibit 13**.

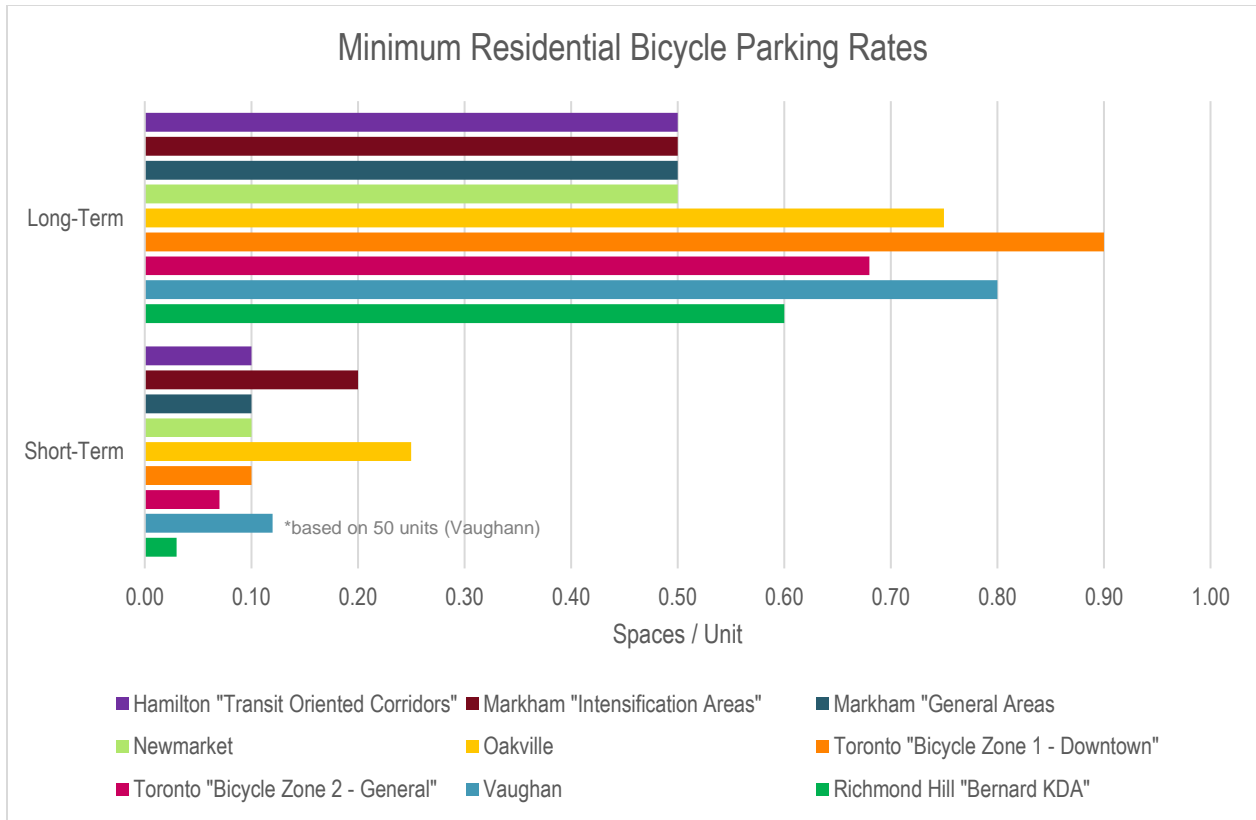


Exhibit 13: Minimum Residential Bicycle Parking Rates

Table 21 compares and summarizes the residential bicycle parking rates of the other municipalities. It is recommended that the City establish bicycle parking rates at 0.03 spaces per unit for short-term, and 0.60 spaces per unit for long-term. These rates are the same as the rates set out in By-law 111-17 (Bernard KDA). Data collection on bicycle parking rates could be conducted to confirm the minimum bicycle parking requirements. The TDM strategy could include provisions for reducing minimum vehicular parking requirements when additional bicycle parking is provided.

Table 21: Summary of Residential Bicycle Parking Rates

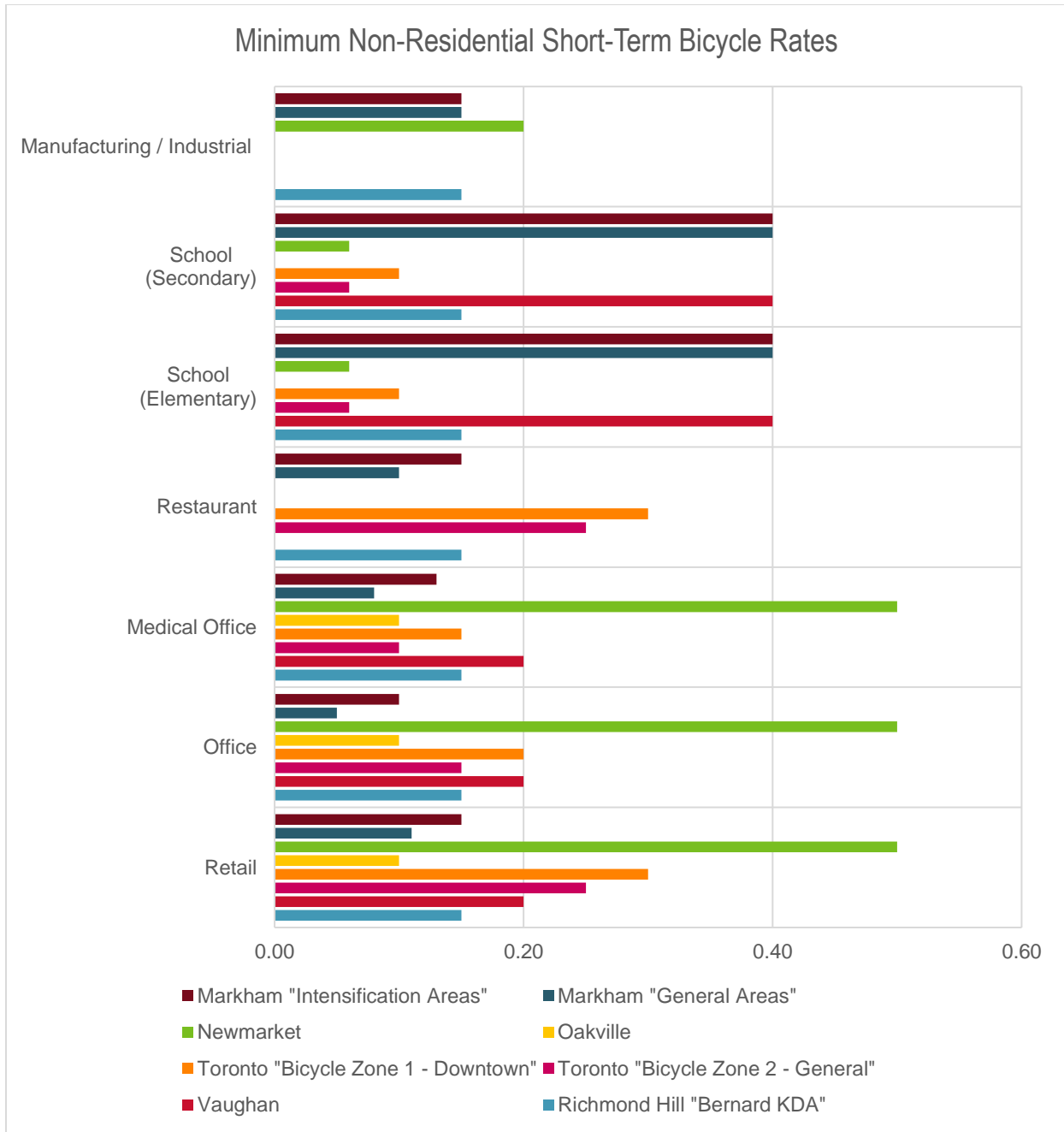
Municipality	Minimum Bicycle Parking Rates - Residential	
	Short-Term	Long-Term
Hamilton "Transit Oriented Corridors"	0.10	0.50
Markham "Intensification Areas"	0.20	0.50
Markham "General Areas"	0.10	0.50
Newmarket	0.10	0.50
Oakville	0.25	0.75
Toronto "Bicycle Zone 1 - Downtown"	0.10	0.90
Toronto "Bicycle Zone 2 - General"	0.07	0.68
Vaughan	0.12	0.80
Richmond Hill "Bernard KDA"	0.03	0.60
Minimum	0.03	0.50
Maximum	0.25	0.90
Median	0.10	0.60
Average	0.12	0.64
Recommended Rates for Richmond Hill	0.03	0.60

6.3.2 Non-Residential Bicycle Parking Rates

Based on the land uses with bicycle parking rates for other municipalities, it is recommended that the following non-residential land uses be considered for requiring bicycle parking rates:

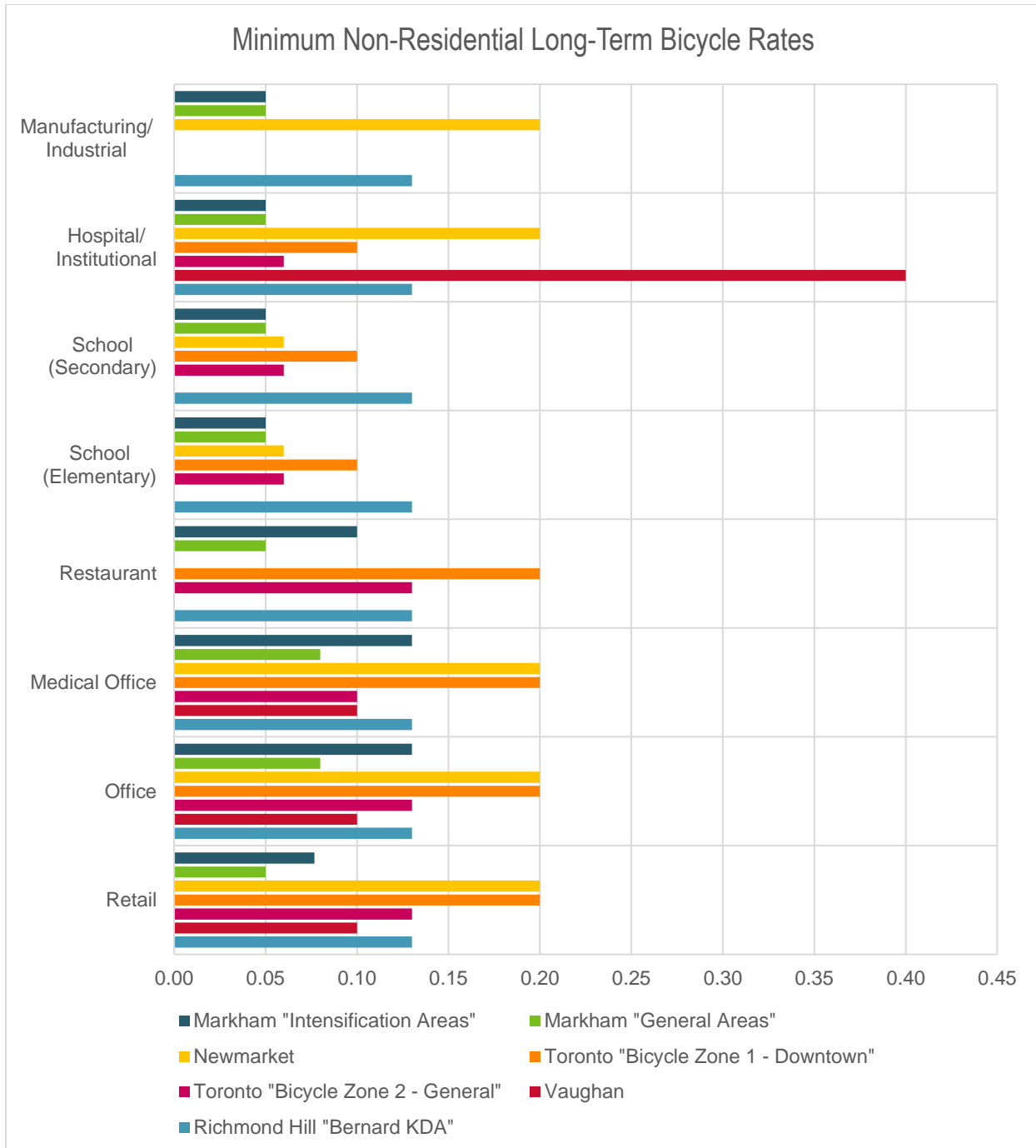
- ⇒ Retail
- ⇒ Business Office
- ⇒ Medical Office
- ⇒ Restaurant
 - Required in Toronto only. Markham refers to retail rate.
- ⇒ Schools (all types)
- ⇒ Hospital
- ⇒ Industrial/Manufacturing
 - Required in Markham, Hamilton, Newmarket, and Vancouver.

The restaurant bicycle rate is only included in the Toronto and Markham by-law (Markham refers to it as a retail rate). Industrial/manufacturing requires bicycle parking for Markham, Newmarket, and Vancouver. The bicycle parking rates for other municipalities is shown in **Attachment E**, and a summary for the rates are shown in **Exhibit 14** and **Exhibit 15**. Only Markham’s draft rates establish varying rates for retail land uses based on the density of the surrounding area. Oakville does not differentiate between short-term, and long-term spaces.



*Markham defines varying rates based on retail density; Only Toronto and Markham's draft bicycle rates differentiate between office and medical office; some rates for education uses are based on number of students (not shown in graph).

Exhibit 14: Minimum Non-Residential Short-Term Bicycle Rates



*Markham defines varying rates based on retail density; Only Toronto and Markham's draft bicycle rates differentiate between office and medical office; Some rates for education uses are based on number of students (not shown in graph).

Exhibit 15: Minimum Non-Residential Long-Term Bicycle Rates

The recommended bicycle parking rates for non-residential land uses is summarized in **Table 22** and **Table 23** based on the rates established in other municipalities. Data collection can assist in establishing appropriate rates for the City. Rates for schools (including post-secondary) can also be increased compared to other land uses, as cycling as a mode of choice is expected to be higher than for other modes.



Table 22: Summary of Non-Residential Short-Term Bicycle Rates (General Areas)

Unit-Type	Toronto	Markham	Newmarket	Vaughan	Oakville	Min.	Max.	Med.	Avg.	Recommended Richmond Hill
Retail (Low Density Equivalent)	0.25	0.08	0.50	0.20	0.10	0.08	0.50	0.20	0.23	0.15
Retail (Medium Density Equivalent)	0.25	0.10	0.50	0.20	0.10	0.10	0.50	0.20	0.23	
Retail (High Density Equivalent)	0.25	0.15	0.50	0.20	0.10	0.10	0.50	0.20	0.24	
Office	0.15	0.05	0.50	0.20	0.10	0.05	0.50	0.15	0.20	
Medical Office	0.10	0.08	0.50	0.20	0.10	0.08	0.50	0.10	0.20	
Restaurant	0.25	0.10	-	-	-	0.10	0.25	0.18	0.18	
School (Elementary)	0.06	0.4	0.06	0.40	<i>Student based</i>	0.06	0.40	0.23	0.23	
School (Secondary)	0.06	0.4	0.06	0.40	<i>Student based</i>	0.06	0.40	0.23	0.23	
School (Post Secondary)	2.00	<i>Student based</i>	0.50	0.40	2.00	0.40	2.00	1.25	1.23	
Hospital / Institutional	0.06	0.05	0.50	0.10	2.00	0.05	2.00	0.10	0.54	
Manufacturing / Industrial	-	0.15	0.20	-	-	0.15	0.20	0.18	0.18	

Table 23: Summary of Non-Residential Long-Term Bicycle Rates (General Areas)

Unit-Type	Toronto	Markham	Newmarket	Vaughan	Min.	Max.	Med.	Avg.	Recommended Richmond Hill
Retail (Low Density Equivalent)	0.13	-	0.20	0.10	0.10	0.20	0.13	0.14	0.13
Retail (Medium Density Equivalent)	0.13	0.05	0.20	0.10	0.05	0.20	0.12	0.12	
Retail (High Density Equivalent)	0.13	0.10	0.20	0.10	0.10	0.20	0.12	0.13	
Office	0.13	0.08	0.20	0.10	0.08	0.20	0.12	0.13	
Medical Office	0.10	0.08	0.20	0.10	0.08	0.20	0.10	0.12	
Restaurant	0.13	0.05	-	-	0.05	0.13	0.09	0.09	
School (Elementary)	0.06	0.05	0.06	-	0.05	0.06	0.06	0.06	
School (Secondary)	0.06	0.05	0.06	-	0.05	0.06	0.06	0.06	
School (Post Secondary)	0.60	<i>Student based</i>	0.20	-	0.20	0.60	0.40	0.40	
Hospital / Institutional	0.06	0.05	0.20	0.40	0.05	0.40	0.13	0.18	
Manufacturing / Industrial	-	0.05	0.20	-	0.05	0.20	0.13	0.13	

6.3.3 Amenities for Bicycle Parking

By-law 111-17 for the Bernard KDA requires that shower and change facilities be provided for each gender at the rate of 1 per 30 long-term bicycle spaces for non-residential uses.

Vancouver specifies the number of water closets, wash basins, and showers based on the number of Class A (long-term) bicycle parking spaces. Hamilton allows a vehicle reduction of 1 vehicle space for every 15 m² of GFA dedicated to locker, change room, or shower facilities accessible to users of the long-term bicycle spaces.

Toronto’s requirements for change and shower facilities are summarized in **Table 24**, and is approximately 1 facility per 60 long-term spaces.

Table 24: Bicycle Parking Amenities Requirement for Toronto

Number of Long-Term Bicycle Parking Spaces Required	Number of Change and Shower Facilities Required for Each Gender
0 to 4	0
5 to 60	1
61 to 120	2
121 to 180	3
180 or more	4

Although most municipalities do not require these amenities, shower and change facilities further support the use of bicycle parking. It is recommended that shower and change facilities be provided similar to By-law 111-17, where a facility is provided for each gender at the rate of 1 per 30 long-term bicycle spaces for non-residential uses.

6.3.4 Conditions for Waiving Bicycle Parking Requirements

The following table shows examples of when bicycle parking requirements are waived. It is recommended that Richmond Hill consider waiving requirements for smaller developments similar to the municipalities noted with the size threshold to be determined with the City’s discretion, or consider cash-in-lieu to help fund a public bike parking program for example.

Table 25: Conditions Waiving Bicycle Parking Requirements

Municipality	Conditions
Hamilton	Waives the short-term space requirement for office, personal services, restaurant, or retail uses less than 450 SM
Toronto	Waives any parking requirement if the total interior floor area is less than 2,000 SM
Vancouver	Waives the short-term parking requirement when there are 20 units or less
Vaughan	Waives the short-term space requirement when the GFA of the building is less than 1,000 SF, and further waives the long-term space requirement when the GFA of the building is less than 2,000 SF
Oakville	Does not allow the minimum of bicycle parking spaces for non-residential to exceed 30

6.4 Recommendations: Bicycle Parking

It is recommended that the City of Richmond Hill continue to utilize incorporate the following features into the bicycle parking requirements:

- Consistent rates can be applied across the City with the TDM Strategy serving as an incentive to provide additional bicycle parking;
- Consider providing a separate set of bicycle parking rates for uses where cycling as a mode choice is expected or demonstrably to be higher such as near cycling infrastructure;
- Define two forms of bicycle parking differentiate as “long-term” and “short-term”. The requirements for each type of space can be outlined separately for each use;
- The number of uses could be increased beyond “residential” and “non-residential” or maintained as-is for simplicity;
- Include bicycle related amenity requirements for buildings that require long-term bicycle parking (including shower facility, bicycle repair stations, and locker requirements);
- Combine rates for business offices and medical offices;
- Base school bicycle parking rates by classrooms rather than floor area; and,
- Allow bicycle parking requirements to be waived for smaller developments.

These recommendations are subject to change based on data collection and City input. For land uses with a significant change in minimum rates (i.e. medical office, financial institution, retail), data collection can be used to confirm an appropriate rate.

7 Other Dedicated Parking Spaces

7.1 Accessible Parking Rates

Municipalities require a minimum rate for providing accessible parking spaces (or barrier-free parking spaces). The 2010 Parking Strategy does not outline minimum rates for accessible parking spaces, but the minimum requirements are outlined in Richmond Hill's Municipal Code 595-1106⁸. Accessible parking rates are required at the same rate for each type of development.

The following describe the land uses that require accessible parking spaces for each municipality reviewed:

- Oakville, and Vaughan: All non-residential land uses and any residential visitor parking;
- Vancouver, Markham and Hamilton: Residential (with some exceptions) and non-residential land uses; and
- Brampton, Newmarket, and Toronto: Do not specify land use types for the parking rate, with the exception that Toronto requires that 10% of parking spaces for Medical Offices and Clinics be accessible.

All municipalities reviewed (except Vancouver) establish a rate based on the number of minimum parking spaces required. Vancouver bases the accessible parking rate based on gross floor area. Vancouver also considers each accessible parking space provided as a count of two parking spaces to satisfy the minimum required number of parking spaces, whereas other municipalities will count accessible parking spaces as one space towards the minimum (or maximum) parking space requirement.

All municipalities reviewed (except Markham) adopt a diminishing rate for accessible parking spaces. Markham requires that 5% of the total spaces be provided as accessible parking spaces. Toronto and Newmarket specify that a minimum of 10% of the required parking spaces for medical offices must be accessible parking spaces. Details of the accessible parking rate requirements for each municipality are provided in **Attachment D**.

Exhibit 16 shows the required accessible parking spaces required for each municipality. In general, most municipalities have a similar rate when the total spaces required is less than 200, and after 200 spaces the number of accessible space required diverges. Richmond Hill requires a higher amount of accessible spaces when the total spaces required is less than 350 compared to other municipalities (except for Markham), and requires the lowest amount of accessible spaces when the total spaces required is greater than 350 spaces.

⁸ <https://www.richmondhill.ca/en/shared-content/resources/documents/595-1106.pdf>

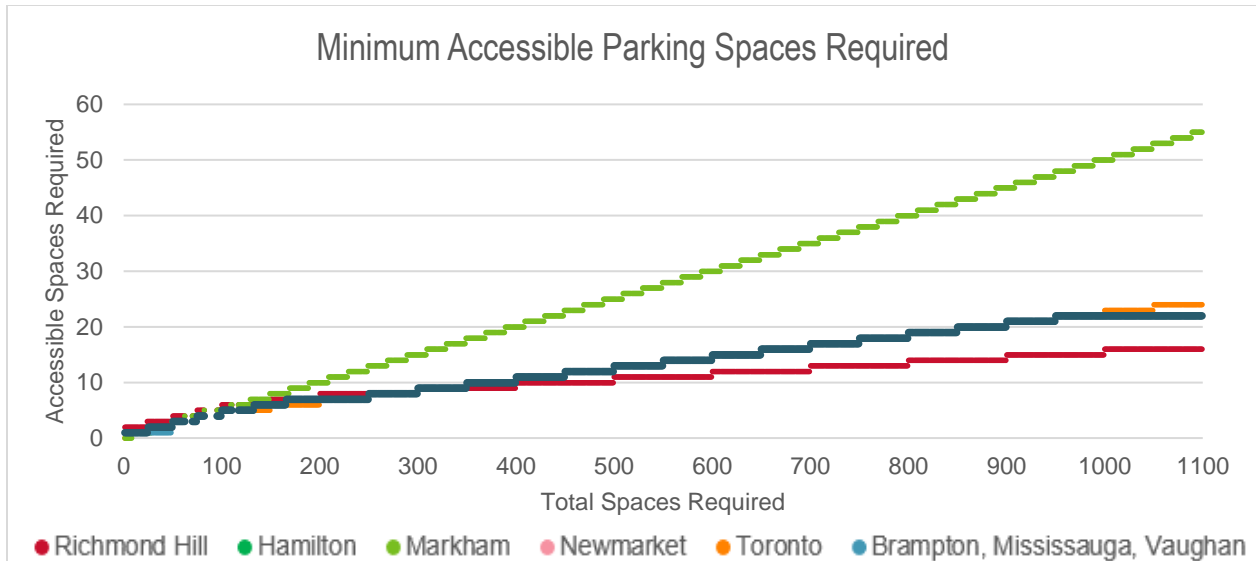


Exhibit 16: Minimum Accessible Parking Spaces Required

It is recommended the rates are updated to be comparable to other municipalities at higher minimum parking space requirements. The establishment of higher accessible parking space requirements for medical offices is also recommended to accommodate the expected higher demand. This rate can be based on data collection, or set to 10% of the minimum parking space requirements similar to Newmarket and Toronto. It should be noted that with this approach, parking strategy areas that require less parking will also require fewer accessible parking spaces, but those requiring accessible parking spaces may not adjust their mode choice as freely.

The recommended accessible parking space rate that is also used by other municipalities is shown in **Table 26** and **Exhibit 17**.

Table 26: Recommended Accessible Parking Space Rates

Minimum Parking Requirement	Minimum Accessible Parking Requirement
5 to 12	1
12 to 100	4%
101 to 200	1, plus 3%
201 to 1,000	2, plus 2%
Over 1,000	11, plus 1%

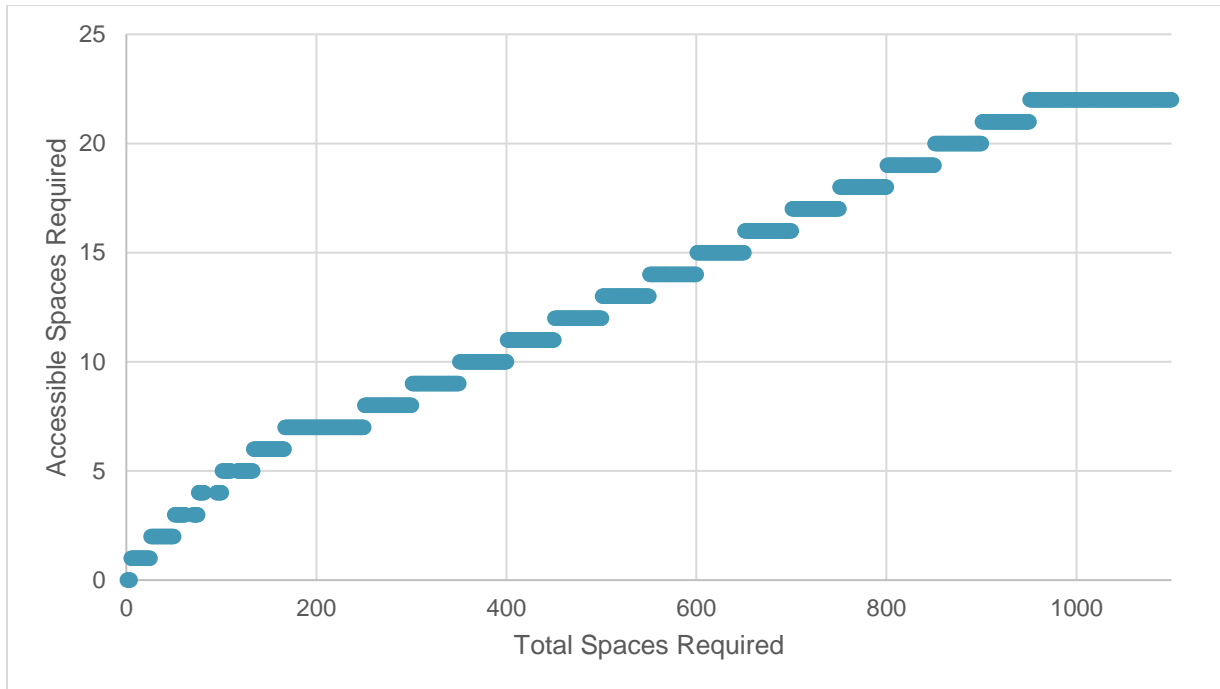


Exhibit 17: Recommended Accessible Parking Space Rates

7.2 Electric Vehicle Parking Rates

Based on a review of the zoning by-laws, Vancouver is the only municipality that requires parking spaces that support charging for electric vehicles.⁹ At least one parking space shall be provided with an energized outlet to the parking space for every 10 parking spaces (or part thereof) provided to a commercial development; and a requirement that 100% of parking spaces be EV-ready in multi-unit residential buildings.¹⁰ This is similar to other municipalities within British Columbia¹¹ including Surrey (all residential parking spaces, 50% of visitor parking spaces, and 20% of commercial parking spaces should be capable of providing electric vehicle charging¹²), and Richmond (all residential parking spaces, excluding visitor parking spaces shall provide electric vehicle charging¹³).

Although not explicit in the Toronto’s Zoning By-law, the Toronto Green Standard¹⁴ (TGS) requires the following for mid to high rise residential and all non-residential development:

- Excess spaces above the minimum parking requirement must be dedicated priority parking spaces for low-emitting vehicles (LEV), carpooling/ridesharing or for publicly

⁹ <https://bylaws.vancouver.ca/parking/Sec04.pdf>

¹⁰ <https://council.vancouver.ca/20180314/documents/cfsc3.pdf>

¹¹ <https://pluginbc.ca/policy/>

¹² https://www.surrey.ca/sites/default/files/media/documents/BYL_Zoning_12000.pdf

¹³ https://www.richmond.ca/_shared/assets/ParkingLoading24226.pdf

¹⁴ <https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/toronto-green-standard-version-3/mid-to-high-rise-residential-all-non-residential-version-3/air-quality-for-mid-to-high-rise-residential-all-non-residential-development/>

accessible spaces dedicated to shared vehicle systems such as carsharing, ridesharing, or micro mobility systems; and

- The building must provide 20% of the parking spaces with electric vehicle supply equipment (EVSE), and that the remaining parking spaces be designed to permit future EVSE installation.

It is recommended that electric vehicle parking be incorporated into new developments. The City may consider a percentage of parking spaces for apartments support charging for electric vehicle parking, and require a lower percentage for non-residential land uses. A provision for facilitating future conversion of regular spaces to support charging of electric vehicles may also be considered by requiring that all spaces be equipped with “roughed in conduits” for future electrification. This can be accomplished by constructing the roughed in conduit during initial construction.

7.3 Carpool Parking Rates

A carpool parking space is a designated parking space for vehicles carrying more than one occupant.

Carpool spaces and car-share spaces are becoming increasingly prevalent in the GTA, but primarily in Toronto. Carpooling has many benefits, and these include reduced / shared costs of car ownership and maintenance, time travel saving through the use of High Occupancy Vehicle (HOV) lanes where provided, reduced traffic demand, and finally reduced parking demand. Carpool parking spaces are typically applied at employment uses which attract multiple passengers destined to the same location, on a consistent basis.

- **Newmarket:** Select non-residential land uses require that the lesser of 5% of the total required parking supply or 2 parking spaces must be carpool spaces. For each required carpool parking space provided, the total parking requirement may be reduced by 2 spaces.
- **Toronto:** As a requirement through the Toronto Green Standard, new developments (mid to high-rise, and non-residential developments) require that any additional parking provided above the minimum parking required under the Zoning By-law must be dedicated priority parking spaces for low-emitting vehicles (LEV), carpooling/ridesharing, or for publicly accessible spaces dedicated to shared vehicle systems such as carsharing, ridesharing or micro mobility systems. For institutional, commercial and retail developments, the number of dedicated priority parking spaces (LEV, car-pool or car share) should be no less than one dedicated space for every 10 parking spaces provided above the minimum Zoning By-law requirement.
- **Vaughan:** The most recent draft zoning by-law proposes that for an employment use in select growth areas, a maximum reduction of three minimum required parking spaces for every dedicated car-pooling parking space shall be provided. For an apartment dwelling in select growth areas, the maximum reduction to the minimum required parking spaces for providing a dedicated carpool parking space shall be the greater of:
 - One parking space; or,

- The total calculated in accordance with the following, rounded down to the nearest whole number:
 - The number of dwelling units shall be divided by sixty; then,
 - Multiplied by four.

The recommended approach involves dedicating a portion of the required parking supply for an employment use towards carpool spaces as opposed to providing reductions to the parking supply. This will ensure that carpool is being provided for all employment uses and will encourage participation in SmartCommute, otherwise the spaces will go unused. Carpool spaces should be located closest to the building entrances, signed, and enforced. Only accessible spaces would be prioritized over carpool spaces in terms of location.

7.4 Compact Car Parking Spaces

Vehicles have generally been getting smaller since the days when parking space sizes were standardized, and typical parking spaces can accommodate the larger of the typical passenger vehicles with only some exceptions for larger pickup trucks or SUVs. In some municipalities, small/compact car parking is being considered when the development is limited in space availability for parking spaces, and particularly in growth areas where larger vehicles are less common. Although small car parking requirements are not normally a requirement, they are typically permitted to be provided up to 10% of the parking supply. This gives developers the opportunity to fit more spaces into a smaller area. All three dimensions are reduced for these compact parking spaces. Within the City of Toronto, the following has been approved for some developments: length of 5.1 metres (reduced from 5.6 metres), width of 2.4 metres (reduced from 2.6 metres), and an overhead clearance of 1.7 metres (reduced from 2.0 metres).

The City can consider permitting up to 10% of the parking supply to be compact car parking for both residential and non-residential developments. The dimensions can be reduced in the range of 10% to 20% from the standard requirements.

7.5 Multi-purpose Dedicated Parking Spaces

Although there may be requirements for dedicated parking spaces such as carpool parking spaces, accessible parking spaces, small car parking spaces, and electric vehicle parking spaces, there is rarely overlap requirements for those spaces. Typically, the accessible parking supply is completely independent from the electric vehicle parking supply at least in terms of the By-law requirements. This could leave some electric vehicle drivers unable to also park in an accessible parking space, or could force carpoolers to park in a less conveniently located electric vehicle parking space if the carpool parking spaces are not also electrified. This could result in the inefficient use, or underutilization of some parking spaces, and could also discourage use of some other dedicated parking spaces that are meant to reduce SOV use and encourage sustainable travel. The City of Toronto's TGS is one example where excess parking spaces beyond the minimum are required to be dedicated *and* electrified spaces (**Section 7.2**).

The City can consider including a requirement that when more than a given number of dedicated parking spaces are required (carpool accessible, small car parking etc.), a percentage (or minimum of 1 parking space) from that subset of parking spaces should also be

electrified. This electrified parking space will continue to count towards the total number of parking spaces for that development. Another option is the City of Toronto TGS approach.

8 Transportation Demand Management (TDM)

Municipalities are recognizing the importance of TDM measures in alleviating congestion and strain on the transportation network to support and encourage intensification and transit-oriented development. Cities are requiring that developments commit to implementing TDM measures prior to approval. **Table 27** shows examples of municipalities that require TDM implementation with parking reductions tied to TDM measures, outside of those listed in the previous section.

Table 27: TDM Requirements for Comparable Municipalities and Agencies

Agency	Standard	Quantified Parking Reductions	Description
Richmond Hill	Sustainability Metrics	No	The Sustainability Metrics are used to filter development applications. A “good” performance level is required for an application to be considered. TDM measures are not mandatory outside of the base requirements, but they provide a way to gain points towards satisfying the minimum requirement. ¹⁵ The City currently uses base requirements for bicycle parking rates presented in the Sustainability metrics as requirements for developments.
Vancouver	TDM Plan	Yes <input checked="" type="checkbox"/>	Point based system where developments must provide a certain level of TDM measures based on development's size, location, and type. Each TDM is assigned points that contribute to the required number of points. Providing additional measures can qualify the development for parking reductions which are capped based on various criteria. Proximity to transit also affords parking reductions depending on the type of transit and the proximity of the use. ¹⁶
Waterloo	TDM Implementation Checklist	Yes <input checked="" type="checkbox"/>	Point based system where developments may provide a certain level of TDM measures to qualify the development for parking reductions. These reductions are capped based on various criteria. Each TDM is assigned points that contribute to the required number of points based on development's location.
York Region	Transportation Mobility Plan Guidelines	No	Transportation Mobility Plan Studies are required for any uses that generate more than 100 person trips. Completion of the TDM Checklist is required as part of a Transportation Mobility Plan Study. The TDM Checklist outlines TDM measures, when they are required or may be considered, and the responsible party (applicant or Region/Municipality). ¹⁷

¹⁵ <https://www.richmondhill.ca/en/find-or-learn-about/sustainability-metrics.aspx>

¹⁶ <https://vancouver.ca/files/cov/transportation-demand-management-schedule-b.pdf>

¹⁷ https://www.york.ca/wps/wcm/connect/yorkpublic/71d2f725-b82e-4c96-b181-132ff43f1fda/16214_Mobility_Plan_Guidelines_Accessible.pdf?MOD=AJPERES



Agency	Standard	Quantified Parking Reductions	Description
Toronto	Toronto Green Standard	No	The Toronto Green Standards are minimum requirements for developers to design sustainably. There are incentives for developers to demonstrate higher levels of sustainable design beyond the required level by providing lenience from development charges. With respect to transportation, minimum requirements relate to reductions in SOVs, and provision of priority parking spaces. ¹⁸
Vaughan	TDM Plan	No	As part of the Traffic Impact Study, a TDM plan is required for an office greater than 2000m ² of GFA, or a residential/mixed-use building has greater than 50 residential units. The TDM measures are to support modal split targets outlined in the City's official plan, but minimum quantifiable requirements are not specified or outlined. ¹⁹

Municipalities typically will require a TDM plan with rezoning and/or development permit application based on the development's size, location, and land use. The plan outlines measures that the developer will provide in order to reduce minimum parking requirements.

As shown in the above table, many municipalities require TDM Plans be developed or, at a minimum, that a development show it follows sustainable practices which are often tied to TDM. However, much of the time the TDM discussion is limited to a generalized level of commitment of the TDM measure which does not include quantified impacts of follow-up and monitoring to ensure the measures were implemented.

Generally, if a developer wants to reduce parking requirements below the By-law minimums, a study is necessary to support the reduction and would be based on data collection (i.e. Transportation Tomorrow Survey results or proxy site surveys), general references to TDM measures, or descriptions of proximity to transit, in support of a Minor Variance. However, these studies can be onerous and costly to the developer, and require additional effort by the reviewing agencies. Quantifying reductions to parking requirements and tying the reductions to a TDM Toolbox within the Zoning By-law can streamline the application process for the developer, as well as the approval process for the City.

With the exception of the parking reductions outlined in the previous section, only the City of Vancouver has a robust TDM Toolbox which ties nearly all of the most common TDM measures

¹⁸ <https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/toronto-green-standard-version-3/mid-to-high-rise-residential-all-non-residential-version-3/air-quality-for-mid-to-high-rise-residential-all-non-residential-development/>

¹⁹ [https://www.vaughan.ca/services/residential/dev_eng/General%20Documents/Vaughan's%20Transportation%20Impact%20Study%20\(TIS\)%20Guidelines%20-%20April%202018.pdf](https://www.vaughan.ca/services/residential/dev_eng/General%20Documents/Vaughan's%20Transportation%20Impact%20Study%20(TIS)%20Guidelines%20-%20April%202018.pdf)

directly to a points system that offers reductions to the minimum parking supplies and this is done in a way that is more comprehensive than those listed in **Section 8.1**.

8.1 Opportunities to Reduce Parking

Some Zoning By-laws and Standards offer the opportunity to reduce parking minimums for a development, beyond the reduced minimums already established for growth areas and some municipalities have taken steps towards establishing explicit reductions. Opportunities to reduce parking minimums based on other factors have been established by and implemented within the City of Toronto, the Town of Newmarket, and the City of Vancouver.

Studies are also evaluating the effect of TDM measure on parking demand. IBI Group's "*Parking Standards Review: Examination of Potential Options and Impacts of Car Share Programs on Parking Standards*" showed that the minimum parking requirement can be reduced by up to 4 parking spaces for each dedicated car share stall.

The study recommends a limit on this parking reduction calculated as the greater of:

- ▶ $4 * (\text{Total number of units} / 60)$, rounded down to the nearest whole number; or
- ▶ 1 space.

A description of municipalities allowing reductions to parking minimums are described below:

▶ **Hamilton:**

- Motor vehicle parking may be reduced by 1 space for every 15 SM GFA of locker, change room or shower facility specifically accessible to all of the secure long-term bicycle parking spaces
- In addition to the above, motor vehicle parking may be reduced by 1 space for every 5 long term bicycle spaces provided and maintained up to a maximum of 10% of the original motor vehicle parking requirement.

▶ **Ottawa:**

- Motor vehicle parking for any non-residential use may be reduced 1 space for every 13 SM GFA provided as shower rooms, change rooms, locker rooms and other similar facilities intended for the use of bicyclists in conjunction with required or provided bicycle parking
- Motor vehicle parking for a shopping centre may be reduced by 25 parking spaces for each dedicated bus loading area on the shopping centre site
- For a drive through facility:
 - where a restaurant use operates in combination with a drive-through facility, the parking required for the restaurant may be reduced by 20 per cent
 - where any use other than a restaurant operates in combination with a drive-through facility, the parking required for that land use may be reduced by 10 per cent.
- Where all parking spaces provided or required for a permitted land use are located below grade in the same building as that land use, the parking required for that land use may be reduced by the lesser of:

- 10 per cent of the required parking spaces; or
- 20 parking spaces. (By-law 2016-249)

► **Toronto:** In Policy Area 1 (PA1) the total minimum number of vehicle parking spaces required on a lot may be reduced at a rate of 1 vehicle parking space for each 5 bicycle parking spaces provided in excess of the minimum number of bicycle parking spaces required by Chapter 230 if the reduction of vehicle parking space is not greater than 20% of the total minimum vehicle parking spaces required.²⁰

► **Newmarket:**

- For select non-residential land uses within the Urban Centre each required carpool parking space provided the total parking requirement may be reduced by 2 spaces.
- Minimum parking space requirement may be reduced by up to 3 parking spaces for each dedicated car share parking space. The limit on the parking space reduction is calculated as the greater of:
 - i) 4 x (total number of units / 60), rounded down to the nearest whole number, or
 - ii) 1.0 parking space.
- A 30% reduction in parking requirements may be applied to both the minimum and maximum calculated parking supplies for residential and non-residential land uses where it is demonstrated that:
 - The proposed development main entrance is within 500m walking distance of either the GO Rail Station or Bus Terminal main entrances; and,
 - Adequate Travel Demand Management infrastructure and programs will be in place to the satisfaction of reviewing agencies, in accordance with Town's Urban Centres Secondary Plan policies and York Region Mobility Plan Guidelines for Development Applications.
- A 30% reduction in parking requirements may be applied to both the minimum and maximum calculated parking supplies for rent-geared-to-income residences.

► **Vancouver, Canada:** A series of TDM measures contribute to point system which allows for reduced minimum motor vehicle parking requirements (Table 4).²¹ Additionally transit accessibility is defined which also allows for minimum parking reductions.

► **Vancouver, United States:** also allows for reductions in the minimum parking supply up to 7% of the total required, for the provision of bicycle parking meeting bicycle parking design standards. Additionally, for sites that are directly adjacent to at least one street lot line that abuts a designated arterial roadway, transit supportive plazas may be substituted for up to 5% of the required vehicle parking. There are several design criteria tied to this requirement including that the plaza must be adjacent to a bus stop.²²

²⁰ https://www.toronto.ca/zoning/bylaw_amendments/ZBL_NewProvision_Chapter200.htm#200.5.10

²¹ <https://vancouver.ca/files/cov/transportation-demand-management-schedule-a.pdf>

²² https://www.cityofvancouver.us/sites/default/files/fileattachments/vmc/titles_chapters/20.945.pdf

The City of Vancouver is by far the most robust and achieves this through the application of TDM measures, which will be explored in greater detail.

8.2 Shared Parking Formula

The shared parking formula is applicable to parking lots that share parking between multiple land uses within the same property. The formula takes advantage of how different land uses have varying parking demands throughout the day. For example, rather than total the individual minimum parking requirements of an office and a theatre, a lower parking supply can be provided since office parking typically peaks during the day while theatre parking peaks during the evening.

The shared parking percentages provided in the 2010 Parking Strategy were compared to those from other comparable Zoning By-laws and parking standards and are provided in **Attachment E**. The percentages presented in the 2010 Parking Strategy are comparable to other municipalities and are recommended for use in the KDAs. Newmarket, Mississauga, and Vaughan provide shared parking formulas for Saturday; however, unless a lot has land uses with occupancy rates less than 100% during the weekday (all periods), in most cases, the weekday calculation will likely be the determining rate.

A shared parking formula for Saturday is not recommended since the weekday calculation is typically more critical in determining shared parking needs.

Other land uses within the KDA that could have shared parking percentages added include institutional / education, places of assembly, and bank / financial.

The methodology for applying the shared parking formula described in the 2010 Parking Strategy is similar to other municipalities. Each land use is provided an occupancy rate for various periods to reduce the parking. The following steps describe how to calculate the minimum parking requirements for a shared parking lot with multiple land uses:

1. For each parking period, calculate the minimum number of spaces for each land use by applying the associated occupancy rate to the minimum parking requirement,
2. Total the minimum number of parking spaces of each land use for each parking period
3. The highest number of parking spaces required between each period is the minimum number of parking spaces required for the lot.

The calculation provided in the 2010 Parking Strategy should be maintained, but simplified for application and adoption into a format appropriate for the By-law.

The Bernard KDA Peer Review recommended a simplified version of the shared parking formula that accounted for only office land uses shared with residential visitor parking. The parking lot must be accessible to both uses 24 hours a day, 7 days a week. This shared parking supply must not separate or distinguish between general office and residential visitor parking in any physical manner.

The shared parking requirement is to be calculated as the maximum of the following:

- ▶ Office Parking Supply * 100% + Residential-Visitor Parking Supply * 20%, rounded up.
- ▶ Office Parking Supply * 10% + Residential-Visitor Parking Supply * 100%, rounded up.

In the above example, the first bullet represents the daytime requirements for each land use on a typical weekday, where the office parking utilization is expected to be 100% and the visitor parking is expected to be quite low but is assumed to be 20% for a conservative estimate. The second bullet represents the evening requirements for each land use on a typical weekday or Saturday evening, when the office parking is expected to be very under-utilized but the residential visitor parking is expected to be highly utilized.

A more generalized shared parking formula would include more time periods and more uses, but can be presented in a more simplified format for introduction into the Comprehensive Zoning By-law.

8.3 On-Street Parking and Public Parking Areas

On-street parking can reduce the off-street parking requirements while utilizing unused road space during off-peak times. For example, parts of Yonge Street in Downtown Richmond Hill allows for street parking in the off-peak direction during certain times of the day, while maintaining all lanes for travel in the prevailing direction (i.e. no stopping on the west side during the AM peak hour, and no stopping on the east side during PM peak hour). Strategies such as paid parking and identifying high turn-over spaces (e.g. maximum 15-minute parking, pick-up/drop-off only) can help manage parking demand.

Regarding drivers that need to park on the street for longer than 3 hours or overnight, the city requires purchase of a Temporary Parking Permit. This is consistent with other cities that prohibit overnight on-street parking; however, municipalities such as Toronto and Vaughan also provide residential on-street parking permits which allow residents to parking their vehicles on the street within a specified area exclusively during permit parking hours (permits can last up to a year). In Toronto, this program is generally used to service residential areas where driveways and/or garages are not common. Unless there are known issues of residential on-street parking overnight, it is recommended that the City keep the current system.

8.4 Removal of Parking Minimums

Parking minimums were originally adopted to ensure that developers provided sufficient amount of parking; however, cities are realizing that, sometimes, parking minimums do not support other priorities such as providing affordable housing, and promoting active and sustainable transportation.

For example, parking minimums increase the construction costs which gets passed on to residents impacting the affordability of housing. By removing minimum requirements, the developer must “right-size” the parking for the development. Edmonton recently implemented Open Option Parking (removing minimums) and Toronto is proposing a review to remove parking minimums, as well.

- ▶ Edmonton City Council voted to enable Open Option Parking city-wide effective July 2, 2020²³. Open Option Parking means that minimum on-site parking requirements have been removed from Edmonton's Zoning Bylaw, allowing developers, homeowners and businesses to decide how much on-site parking to provide on their properties based on their particular operations, activities or lifestyle.
- ▶ Toronto City Planning submitted a report to council proposing a review of parking requirements for new developments on January 5, 2021.²⁴ As part of the review, removal of parking minimums (shifting focus to maximums) should be considered as it aligned with Council priorities including increasing the supply of affordable housing. A combination of removing automobile parking minimums or reducing the number of land uses for which parking rates are specified may simplify the zoning requirements, allowing for easier understanding and application.

Similar to Edmonton and Toronto, the city can consider removing parking minimums for select land uses (such as affordable housing) that is supported by higher-order transit (e.g. within the Regional Centre).

8.5 Recommendations: Transportation Demand Management

It is recommended that the City of Richmond Hill develop a TDM Toolbox and points-based system similar to that which is used in the City of Vancouver, and that also integrates or mirrors the York Region Mobility Plan Guidelines and the Richmond Hill Sustainability Metrics.

9 TDM Strategy & Toolbox Visioning

This section establishes the general framework for the TDM Toolbox including TDM measures which can be applied to achieve parking reductions, the preliminary points-based system tied to that framework, and the potential reductions. This is meant as a high-level recommendation which will require refinement and testing to determine suitability to the City.

Some municipalities provide direct reductions based on specific TDM measures as outlined in **Section 8.1** (e.g. additional bicycle parking in Toronto, provision of car share/carpool spaces in Newmarket etc.). Vancouver uses a point-based system where a variety of TDM measures contribute to the development's "total points". The amount of points will determine a reduction percentage from the minimum parking requirements, up to a maximum reduction. This methodology is more flexible than direct reductions and allows developers to select TDM measures that would best support the development and to "pool" the measures together for a generalized impact, rather than 'putting all their eggs in one basket' and assuming that the measure that is implemented has the intended impact.

9.1 Requirements for a TDM Plan & Minimum Contributions

It is recommended that for KDAs, a City consider a minimum level of TDM provisions be required to support reduced vehicular trips within the area, similar to how the Sustainability

²³ https://www.edmonton.ca/city_government/urban_planning_and_design/comprehensive-parking-review.aspx

²⁴ <https://www.toronto.ca/legdocs/mmis/2021/ph/bgrd/backgroundfile-159784.pdf>

Metrics are used as a high level filtering tool. Provision of additional measures can contribute towards reducing minimum vehicle parking requirement. This is similar the Vancouver's methodology where designated areas require a minimum number of TDM points while other areas can be granted parking reductions for providing TDM.

The City should be consulted to help identify the criteria that will qualify a development for the need to achieve a minimum TDM score, versus the opportunity to reduce parking, or both. Potential criteria can include and not be limited to the following, where each threshold is provided for discussion purpose and consideration only:

- Is the development expected to generate > 100 2-way vehicle trips during the peak?
- Is the project site larger than 1,500m² land area?
- Is the development larger than 45,000m² GFA?
- Office use greater than 2,000m²?
- Residential or mixed-use buildings with greater than 50 residential units?
- Is the project located in Downtown Local Centre/KDA/Richmond Hill Regional Centre/Rapid Transit Corridors/Business Parks?

If the answer is yes to any of the above questions, it is recommended that a minimum level of TDM measures, as determined on a point basis, be required of the development for approval, applicable to both new developments and changes of use. Based on the type, size, and location of the development, a varying minimum level of TDM measures will be required, and a specified reduction to the parking supply may be permitted if the minimum requirement is exceeded.

9.2 Description of TDM Measures

Each TDM measure may include the following information as specified in the Toolbox:

- A description of the measure and the property owner's responsibility regarding the measure
- Applicable land uses for which points may be granted
- Maximum available points awarded
- Compliance Information
 - Development Review
 - Ongoing Monitoring and Reporting
- Supporting Policy & Documents

Developments can also receive points based on other measures not listed allowing innovative solutions to contribute towards parking reductions. As innovative solutions become more prominent and accessible, they can be formally incorporated into the toolbox. Until then, these measures would be reviewed on a case-by-case basis with the City.

9.3 TDM Toolbox

There are a variety of TDM measures that developers can provide, from infrastructure to financial incentives. The table below highlights measures that will be suggested to developers which will be most easily and consistently implemented.

Category	TDM Measure
Financial Incentives	<ul style="list-style-type: none"> ⇒ Car share memberships & subsidization of the service provider to encourage expansion to new areas ⇒ Public transit passes & subsidies
Active Transportation	<ul style="list-style-type: none"> ⇒ Additional Long-Term Bicycle Parking (beyond minimum requirements) ⇒ Improved Access to Long-Term Bicycle Parking (indoor/outdoor) ⇒ Enhanced Short-Term Bicycle Parking ⇒ Improved bicycle parking facilities (i.e. showers and change rooms) ⇒ Secure Public Bicycle Parking (with opportunity for charging stations for e-bikes) ⇒ Bicycle Maintenance Facilities ⇒ Improved End-of-trip Amenities ⇒ Public Bicycle Share Space ⇒ Shared Bicycle Fleet & subsidization of the service provider to encourage expansion to new areas ⇒ Shared Micromobility ⇒ Walking Improvements and pedestrian network connectivity
Alternative Commute Services	<ul style="list-style-type: none"> ⇒ Car Share Spaces ⇒ Car Share Vehicles and Spaces ⇒ Dedicated Pick-Up/Drop-Off Spaces for Private Transportation Companies / Mobility-as-a-Service ⇒ Shuttle Bus Service ⇒ Vanpool/Carpool Service ⇒ Guaranteed Ride Home (SmartCommute)
Support, Promotion, Information	<ul style="list-style-type: none"> ⇒ Transportation Marketing Services ⇒ Real-Time Information ⇒ Multimodal Wayfinding Signage ⇒ Commute Trip Reduction Programs (Smart Commute, Region of Peel) ⇒ Information to resident, employees and visitors about transit, rideshare and taxi services, bicycling facilities, and overflow parking options.
Parking Management	<ul style="list-style-type: none"> ⇒ Parking Pricing / Paid Parking ⇒ Parking Supply ⇒ Unbundle Parking ⇒ Location of off-Street Parking ⇒ Overflow Parking Plan ⇒ Carpool and efficient vehicle parking ⇒ Dedicated spaces to priority uses ⇒ Shared parking agreements between developments & mixed use development
Other	<ul style="list-style-type: none"> ⇒ Innovative Strategies (i.e. “free” valet, off-site parking agreements, rented parking)

The details of the schedule (e.g. length of car share membership etc.) can be adjusted based on City input. The potential measures above have been inspired by the York Region Mobility plan Guidelines, the City of Richmond Hill Sustainability Metrics, and most influentially by the City of Vancouver TDM approach. Associating points to each measure is the next step in the process.

9.4 Accessibility to Low Carbon Travel Options

This section establishes the general framework for reductions based on varying levels of existing and planned accessibility to transit, cycling networks, and pedestrian facilities to achieve parking reductions. Proximity to infrastructure that support transit and active transportation should encourage alternative modes of travel and reduces the demand for vehicles, and a byproduct of that is the potential for reduced parking requirements. Based on the level of accessibility, there may be a level of justified parking reduction for the development.

Newmarket allows up to 30% reduction for developments within 500m walking distance of GO Rail Station / Bus Terminals. Vancouver allows for reductions based on walking distance to transit service. Richmond Hill has defined one parking strategy area as those along Rapid Transit Corridors, however, this is not directly linked to walking distance, accessibility, or level of service and quality of service such as stop amenities.

The York Region Mobility Guidelines defines transit, cycling, and pedestrian level of service. Additionally, the Richmond Hill sustainability metric outlines minimum and aspirational targets for mobility (site permeability, connectivity, distance to public transit, proximity to cycling network, and walkability). Below, we have offered a first step towards incorporating these criteria.

For each of the following tables (**Table 28** to **Table 30**) all criteria under each column must be met for the Quality of Service to be met. If one of the criteria is not met, then the Quality of Service must be downgraded to the lowest common denominator. The developer may offer to provide subsidies to help upgrade the Quality of Service to achieve a higher ranking. For example, the developer may pay for a real time display to be inserted at a nearby stop that already has Level B Access and Service Frequency, but only Level C Amenities.

Table 28: Transit Accessibility Levels

Quality of Service	Level A	Level B	Level C
Service Frequency			
Access to Transit & Service Frequency	Within: - 100m walking distance of an existing or planned bus stop with frequent service (<5 minutes) - 200m walking distance of an existing or planned light rail, bus rapid transit, or subway with frequent service (<5 minutes) - 400m walking distance of an existing or planned commuter rail	Within: - 101m to 200m walking distance of an existing or planned bus stop with frequent service (<5 minutes) - 201m to 400m walking distance of an existing or planned light rail, bus rapid transit, or subway with frequent stops - 401m to 800m walking distance of an existing or planned commuter rail	Greater than: - 200m walking distance of an existing or planned bus stop with frequent service (<5 minutes) - 400m walking distance of an existing or planned light rail, bus rapid transit, or subway with frequent service (<5 minutes) - 800m walking distance of an existing or planned commuter rail
Amenities			
Amenities at Nearest Stop	Heated shelter; enclosed shelter; next vehicle arrival time display	Enclosed shelter; next vehicle arrival time display	Shelter

Table 29: Pedestrian Accessibility Levels

Quality of Service	Level A	Level B	Level C
Segment	≥1.5 m sidewalk with minimum 1.0 m buffer including edge zone; or ≥3.0 m multi-use path	Sidewalk provided	Paved shoulder or no sidewalk provision
Crossing	- ≥1.5 m sidewalk with minimum 1.0 m buffer including edge zone; or ≥3.0 m multi-use path - Pedestrian signal head with sufficient pedestrian clearance time - Clearly delineated cross-walk	- Sidewalk provided - Pedestrian signal head with sufficient pedestrian clearance time - Clearly delineated cross-walk	- Paved shoulder or no sidewalk provision - No pedestrian signal head - No clearly delineated cross-walk
Connection	On 100% of street, continuous sidewalks or equivalent provisions must be provided on both sides of streets. Provide pedestrian amenities to further encourage walkable streets with direct linkages to site internals and entrances.	On 75% of streets, continuous sidewalks or equivalent provisions must be provided on both sides of streets.	On less than 75% of streets, continuous sidewalks or equivalent provisions are provided on both sides of streets.

Note: The above criteria will apply to any roads directly adjacent to the subject development, up to 500 metres away.

Table 30: Cycling Accessibility Levels

Quality of Service	Level A	Level B	Level C
Segment	Separated cycling facilities (e.g. cycle tracks, multi-use path, physically separated bike lane)	>1.5m dedicated cycling facility	≤ 1.5m bicycle lane/shared facilities/no bicycle provision
Crossing	Separated cycling facilities (e.g. separate crosswalk/crossride) Bicycle box or clearly delineated bicycle treatment or bicycle signal head	>1.5m dedicated cycling facility, Bicycle box, clearly delineated bicycle treatment or bicycle signal head	≤ 1.5m bicycle lane/shared facilities/no clearly delineated bicycle treatment/no bicycle provision
Connection	100% of residents/jobs are within 400 meters of existing or approved by council path/network	At minimum, 75% of residents/jobs are within 400 meters of existing or approved by council path/network	< 75% of residents/jobs are within 400 meters of existing or approved by council path/network

Note: The above criteria will apply to any roads directly adjacent to the subject development, up to 500 metres away.

Based on the level of accessibility for each mode (default to lowest level within achieved), developments can reduce their minimum parking requirements by a given percentage. The methodology allows for minimum parking rates to be adjusted based on new infrastructure supporting sustainable travel modes.

Table 31: Parking Requirement Reduction by Land Use and Transit/Cycling/Pedestrian Accessibility

Land Use	Accessibility	Level A	Level B	Level C
Residential - Rental / Social Housing	Transit	20%	10%	0%
	Cycling	10%	5%	0%
	Pedestrian	10%	5%	0%
Residential - Owned Commercial - Office / Retail / Service Other	Transit	10%	5%	0%
	Cycling	5%	0%	0%
	Pedestrian	5%	0%	0%

The resulting reduction would be cumulative, for example, a social housing development that meets Level A for transit, cycling, and pedestrian accessibility can have their minimum parking requirements reduced by 40%.

These reductions can be applied along with reductions from TDM measures. For example, if the maximum reduction from TDM were capped at 20%, and a 40% reduction was approved based on transit, cycling, and pedestrian Quality of Service, then a total reduction to the parking requirements of 60% could be permitted. This would however be very aggressive and based on these preliminary options would not be achievable considering there is currently no higher order transit like subways within the City. This does however offer the potential for scalability under future conditions. Furthermore, these potential reductions are only provided for discussion at this time and are to be refined, along with the points system, and other criteria.

9.4.1 Differentiation of Reductions by Parking Strategy Area

Modifications to the application of the TDM strategy are recommended due to the infrastructure differences between the growth areas, and general areas. For example, cycling infrastructure are not be as prominent in general areas, so the provision of additional bicycle parking above the minimum requirements would not necessarily justify reducing vehicle parking as much; whereas a shuttle service for large developments in general areas or Business Parks could reduce vehicle trips – justifying a parking reduction. For example, Vancouver will require a TDM strategy in any area of the city if it is a large site (based on land area or GFA). Once the TDM strategy and toolbox are established, requirements for application of specific TDM measures can be developed for general areas, or select TDM measures can be excluded due to the effectiveness of the measure in general areas.

9.5 Monitoring and Reporting

The objective of ongoing monitoring and reporting are to:

- Enforce the commitments from the developers in implementing TDM measures;
- Uphold a level of standard to the TDM measures; and,
- Inform future policy based on data collected.

Each TDM strategy should have its own level of ongoing monitoring and reporting specific to the TDM measure. It is recommended that periodic review of the development should include data collection that supports the status of the measure, the quality of amenities, and the effectiveness of the TDM measure (e.g. are there parking deficiencies?). The results of the reporting can provide insight into the effectiveness of the TDM Plan and possible adjustments to the point system. This reporting can be in the form of site inspections, vehicle generation and parking demand counts, resident/tenant/employee travel mode share surveys, and other data collection activities, as needed. As part of the TDM Toolbox for each TDM measure, there should be specific requirements outlined which summarize how and when the City will be granted access to the development to perform the follow-up inspections and monitoring activities.

The TDM Toolbox could also remain open for use by already existing developments, so that additional measures can be implemented at a later date as conditions change or if the developer wants to intensify the site.

9.5.1 TDM Monitoring Fee

The City may consider implementing a TDM Monitoring Fee, similar to Vancouver, that will require that developers provide a contribution towards a City-led TDM monitoring program. As an example, the fee could be collected and implemented as follows with values provided only for consideration and discussion:

- All large sites and developments in growth areas will be required to provide a contribution towards TDM monitoring in an amount equal to \$2 per square meter of new gross floor area.
- City-wide, new development projects will be required to provide a contribution towards TDM monitoring equal to \$280 for each vehicle parking space being relaxed.

These fees would go towards resources in monitoring TDM at other developments.

9.6 Other Measures to Reduce Parking

In addition to the reductions from the minimum parking requirements based on the TDM Plan, there are other opportunities to reduce the amount of land dedicated to parking spaces. The following provisions are recommended:

- **Compact spaces:** Reduced dimensions of a parking space would reduce the land required to meet the minimum vehicular parking space requirements from a design efficiency perspective. Smaller vehicles are typically more efficient.
- **Cash-in-lieu:** Rather than providing parking, a cash-in-lieu policy would require developments to pay for spaces they may not be able to provide (e.g. due to space constraints). The funding is typically used to offset costs of maintaining and operating existing parking inventory or funding shared parking infrastructure. This may also be used for offsetting bicycle parking requirements of small facilities with the funds towards a public bicycle parking program.
- **Structured Parking Lots:** Structured parking – either above ground or underground – is an alternative option to surface parking lots. Structured parking can provide more capacity for vehicles than a surface lot can, and can minimize the amount of land required for parking. Structured parking should be encouraged within the KDA.
- **Conversion of Parking Spaces:** If parking demand is low (possibly from reduced improved infrastructure for other modes or TDM measures), conversion of excess vehicle parking spaces to other uses (e.g. bicycle parking spaces, pedestrian friendly spaces) could be an option. There could also be an opportunity to convert structured parking lots to other land uses once parking is no longer in demand which is one reason why structured parking could be included in the TDM Toolbox as incentive to developers. Developers who have provided structured parking or at-grade parking lots could be permitted the opportunity to revisit the parking requirements for their development if there are major changes to the TDM availability or surrounding transit, cycling and

pedestrian environments, as well as based on parking survey results. If the parking is highly underutilized, then the spaces may be converted into some other use to support intensification.

10 Further Actions and Next Steps

A review of existing parking demand (residential / commercial) within the different Strategy Areas can confirm whether the recommended reduced rates are appropriate. Data collection of existing bicycle parking demand data can help to support established rates. With City input in addition to the Current Practices Review, targeted land uses will be established.

Parking demand surveys for the following can help to establish appropriate rates for general areas of the City:

- Residential tenant and visitor parking;
- Senior residences;
- Differentiating retail rates based on size / type;
- Medical office rates (including accessible parking rates);
- Library and community centre rates;
- Restaurants, financial institutions, and school rates; and
- Bicycle parking rates.

Conversion of units to a GFA based parking rate can be done without data collection if the existing rates are considered appropriate. However, site statistics for existing developments should be used to support the conversion.

Once the TDM strategy and toolbox are established, select TDM measures can be established for application in general areas.

For the TDM strategy, defining the amount of points and the criteria to meet each TDM measure will be required. For example, the timeframe for car share memberships should be specified (in the case of two developments, the City has pushed for 3 years for two developments).

Examples of TDM measures, the associated points, and the criteria can be found in Vancouver's Transportation Demand Management for Developments – Schedule B.²⁵

Once the structure of the TDM Toolbox and Checklist has been further refined with a detailed point system and refined criteria, the City should perform some sample reviews of potential developments under various scenarios to do a “sanity check”/calibration on the resulting permitted parking supply.

²⁵ <https://vancouver.ca/files/cov/transportation-demand-management-schedule-b.pdf>

Attachment A

Residential Rates



Minimum Parking Requirements - Residential Rates																					
Town of Richmond Hill Parking Strategy					City of Hamilton By-law 05-200				City of Markham By-law 28-97			Town of Newmarket By-law 2010-40			City of Toronto By-law 569-2013						
Land Use	Rest of RH	Downtown Local / KDA	Regional Centre	Rapid Transit	Land Use	General Rates	Transit Oriented Corridor	Downtown Zone	Land Use	General Rates	Markham Centre By-law 2004-196	Land Use	General Rates	Urban Centre	Land Use	General Rates	Policy Area 1	Policy Area 2	Policy Area 3	Policy Area 4	
Condo Apartment					Multiple Dwellings				Apartment Dwelling	1.25 /unit res 0.25 /unit vis	1.00 /unit res 0.25 /unit vis	Apartment Building	1.50 /unit res 0.25 /unit vis		Apartment Building						
Bachelor	1.00 /unit	0.80 /unit	0.80 /unit	0.90 /unit	Units < 50 sm GFA	0.30 /unit	0.30 /unit					Bachelor		0.70 /unit	Bach. ≤ 45 sm	0.80 /unit	0.30 /unit	0.60 /unit	0.70 /unit		
One Bed	1.25 /unit	0.90 /unit	0.90 /unit	1.00 /unit	Units > 50sm GFA							One Bed		0.80 /unit	Bach. > 45 sm	1.00 /unit		1.00 /unit	1.00 /unit		
Two Bed	1.50 /unit	1.00 /unit	1.00 /unit	1.20 /unit	1 - 14 units	1.00 /unit	0.70 /unit					Two Bed		1.00 /unit	One Bed	0.90 /unit	0.50 /unit	0.70 /unit	0.80 /unit		
Three Bed+	1.75 /unit	1.20 /unit	1.20 /unit	1.50 /unit	15 - 50 units	1.00 /unit	0.85 /unit					Three Bed		1.20 /unit	Two Bed	1.00 /unit	0.80 /unit	0.90 /unit	0.90 /unit		
Visitor	0.25 /unit	0.15 /unit	0.15 /unit	0.15 /unit	51+ units	1.00 /unit	1.00 /unit					Visitor		0.15 /unit	Three+ Bed	1.20 /unit		1.00 /unit	1.10 /unit		
Rental Apartment												Financially Assisted Dwelling Unit			Assisted Housing						
Bachelor	0.90 /unit	0.75 /unit	0.60 /unit	0.75 /unit												Bach. ≤ 45 sm	0.16 /unit	0.12 /unit	0.14 /unit		
One Bed	1.10 /unit	0.85 /unit	0.75 /unit	0.85 /unit												Bach. > 45 sm	0.50 /unit	0.50 /unit	0.50 /unit		
Two Bed	1.35 /unit	1.00 /unit	1.00 /unit	1.00 /unit												One Bed	0.30 /unit	0.18 /unit	0.24 /unit		
Three Bed+	1.50 /unit	1.20 /unit	1.20 /unit	1.20 /unit												Two Bed	0.50 /unit	0.30 /unit	0.40 /unit		
Visitor	0.25 /unit	0.15 /unit	0.15 /unit	0.15 /unit												Three+ Bed	0.90 /unit	0.50 /unit	0.75 /unit		
									Accessory Dwelling Unit	1 parking space	0 spaces	Accessory Dwelling Unit	2.00 /unit res	1.00 /unit res	Secondary Suite	1.00/unit in excess of one					
									Multiple Dwellings	1.25 /unit res 0.25 /unit vis	1.00 /unit res 0.20 /unit vis				Multiple Dwellings	1.00/unit 0.20/unit vis					
Single- Detached	2.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Single- Detached	1.00 /unit	1.00 /unit	0.00 /unit	Single-detached (if on a private road)	2.00 /unit res 0.25 /unit vis		Detached	2.00 /unit res		Detached House	1.00/unit					
Semi- detached	2.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Semi- detached	1.00 /unit	1.00 /unit	0.00 /unit	Semi-detached (if on a private road)	2.00 /unit res 0.25 /unit vis		Semi-detached	2.00 /unit res		Semi-detached House	1.00/unit					
Duplex	1.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Duplex	1.00 /unit	1.00 /unit	0.00 /unit	Duplex (if on private road)	1.50 /unit res 0.25 /unit vis		Duplex	2.00 /unit res		Duplex	1.00/unit					
Triplex	1.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit											Triplex	1.00/unit					
Double Duplex	1.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit											Fourplex	1.00/unit					
Street Townhouse	2.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Street Townhouse	1.00/unit	1.00/unit	0/unit	Fourplex (if on private road)	1.50 /unit res 0.25 /unit vis		Fourplex/ Quadruplex	1.50 /unit res 0.25 /unit vis		Fourplex	1.00/unit					
Condo Townhouse	2.00 /unit res 0.25 /unit vis	1.00 /unit res 0.15 /unit vis	1.00 /unit res 0.15 /unit vis	1.00 /unit res 0.15 /unit vis											Townhouse on Public Road	2.00 /unit res 0.25 /unit vis	1.00 /unit res 0.15 /unit vis				
															Townhouse on Private Road	1.50 /unit res 0.25 /unit vis	1.00 /unit res 0.15 /unit vis				
															Bed & Breakfast	1.00 /unit vis + dwelling req.					
Retirement	0.50 /unit	0.33 /unit	0.33 /unit	0.33 /unit	Retirement	1.00 / 3 persons			Retirement Home	0.50 /unit res 0.25 /unit vis		Bed & Breakfast			Retirement Home	0.30/unit and bed- sitting room					
															Home Occupation	Occupation area > 24 SM, 1 / 9.00 SM above the 24 SM of the dwelling unit used for the home occupation					



Minimum Parking Requirements - Residential Rates					Town of Richmond Hill Parking Strategy					City of Vaughan Draft Comprehensive Zoning By-Law					City of Brampton By-law 270-2004			City of Mississauga By-law 0225-2007			Town of Oakville By-law 2014-014		
Land Use	Rest of RH	Downtown Local / KDA	Regional Centre	Rapid Transit	Land Use	General Rates	VMC	MMU, HMU, CMU, EMU	LMU, KMS, MMS, WMS	Land Use	General Rates	Land Use	General Rates	CC1-CC4 Zones	Land Use	General Rates	Mixed Use Zones						
Condo Apartment					Apartment	1.00 /unit res 0.20 /unit vis	0.60 /unit res 0.15/unit vis	0.80 /unit res 0.20 /unit vis	1.00 /unit res 0.20 /unit vis	Condo Apartment Building		Condo Apartment		1.00 /unit res 0.15 /unit vis	Apartment Dwelling								
Bachelor	1.00 /unit	0.80 /unit	0.80 /unit	0.90 /unit						Bachelor	1.25 /unit	Studio	1.00/unit		Unit < 75 sm NFA	0.75 /unit	0.80 /unit						
One Bed	1.25 /unit	0.90 /unit	0.90 /unit	1.00 /unit						One Bed	1.25 /unit	One Bed	1.25/unit		All Others	1.25 /unit	1.05 /unit						
Two Bed	1.50 /unit	1.00 /unit	1.00 /unit	1.20 /unit						Two Bed	1.40 /unit	Two Bed	1.40/unit										
Three Bed+	1.75 /unit	1.20 /unit	1.20 /unit	1.50 /unit						Three Bed+	1.75 /unit	Three Bed	1.75/unit										
Visitor	0.25 /unit	0.15 /unit	0.15 /unit	0.15 /unit						Visitor	0.25 /unit	Visitor	0.20/unit		Visitor	0.25 /unit	0.20 /unit						
Rental Apartment					Rental Apartment Building					Rental Apartment Building													
Bachelor	0.90 /unit	0.75 /unit	0.60 /unit	0.75 /unit						Bachelor	1.03 /unit	Studio	1.00/unit										
One Bed	1.10 /unit	0.85 /unit	0.75 /unit	0.85 /unit						One Bed	1.21 /unit	One Bed	1.18/unit										
Two Bed	1.35 /unit	1.00 /unit	1.00 /unit	1.00 /unit						Two Bed	1.41 /unit	Two Bed	1.36/unit										
Three Bed+	1.50 /unit	1.20 /unit	1.20 /unit	1.20 /unit						Three Bed	1.53 /unit	Three Bed	1.50/unit										
Visitor	0.25 /unit	0.15 /unit	0.15 /unit	0.15 /unit						Visitor	0.20 /unit	Visitor	0.20/unit										
Secondary Suite							1 for the suite + dwelling requirements								Accessory Dwelling Unit	1.00 additional space	1.00 additional space						
										All Other > 2 Units					2.00/unit res 0.25/unit vis	Multiple Dwellings	1.25 /unit res 25% of total vis	1.25 /unit res 20% of total visitor					
Single-Detached	2.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Single-Detached	2.0/unit			2.00 /unit	Detached	Min 2 spaces	Detached	2.00/unit		Detached	2.00 /unit	2.00 /unit						
Semi-detached	2.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Semi-detached	2.0/unit				Semi-detached	Min 2 spaces	Semi-detached	2.00/unit		Semi-detached	2.00 /unit	2.00 /unit						
Duplex	1.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit						Duplex	Min 2 spaces	Duplex	1.25/unit		Duplex	2.00/unit							
Triplex	1.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Block Townhouse	2.0/unit res 0.2/unit vis				Triplex	Min 2 spaces	Triplex	1.25/unit										
Double Duplex	1.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Street Townhouse	2.0/unit			2.00 /unit														
Street Townhouse	2.00 /unit	1.00 /unit	1.00 /unit	1.00 /unit	Stacked/ Back-to- back townhouse	1.0/unit res 0.2/unit res	0.60 /unit res 0.15 /unit vis		2.00 /unit res 0.20 /unit vis	Street Townhouse	Min 2 spaces	Street Townhouse	2.00/unit		Townhouse	2.00 /unit res 25% of total vis	1.50 /unit res 20% of total vis						
Condo Townhouse	2.00 /unit res 0.25 /unit vis	1.00 /unit res 0.15 /unit vis	1.00 /unit res 0.15 /unit vis	1.00 /unit res 0.15 /unit vis	Other townhouse		1.00 /unit	1.00 /unit		Condo Townhouse	2.05 /unit res 0.25 /unit vis	Townhouse on Private Road/ Condo Townhouse	2.00/unit 0.25/unit vis		Back-to-back Townhouse	2.00 /unit	1.50 /unit						
Bed & Breakfast									1.00 /unit vis + req. for detached						Bed & Breakfast	1.00 /unit vis + dwelling req.	1.00 /unit vis + dwelling req.						
Retirement	0.50 /unit	0.33 /unit	0.33 /unit	0.33 /unit						Retirement		Retirement	0.50/unit		Retirement Home	0.33 /unit	0.33 /unit						
Home Occupation					1.0/unit +dwelling requirement	No requirement	1.0/unit +dwelling requirement								Home Occupation	No minimum requirement	No minimum requirement						
Live Work Unit						1.00 /unit	1.00 /unit		1.00 /unit res 1.00 /unit vis						Live-work		2.00 /unit res + 1.0 per 40 SM NFA						

Attachment B

Non-Residential Rates



Town of Richmond Hill Parking Strategy & By-law 111-17						City of Hamilton By-law 05-200 (+ By-law 17-240 not final and binding)				City of Markham By-law 28-97 & 2004-196			
Land Use	Rest of RH	Downtown Local / KDA	Region Centre	Rapid Transit Corridors	Business Parks	Land Use	General Rates	Transit Oriented Corridor	Downtown Zone	Land Use	General Rates	All Zones Except MC-D1	MC-D1
Office	3.2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	3.2 / 100 SM GFA	Office	i) 0 where a use is less than 450.0 square metres in gross floor area; and, ii) 1 for each 30.0 square metres of gross floor area which accommodates such use, for that portion of a building that is in excess of 450.0 square metres.	2.00 / 100 SM GFA > 450 SM		Business Office	3.33 / 100 SM NFA	2.70 / 100 SM NFA	
Medical Offices / Clinics	5.0 (1st practitioner) + 3.0 for each additional	3.5 (1st practitioner) + 2.1 for each additional	3.5 (1st practitioner) + 2.1 for each additional	4.0 (1st practitioner) + 2.4 for each additional	5.0 (1st practitioner) + 3.0 for each additional	Medical Office, Medical Clinic	6.25 / 100 SM GFA		2.00 / 100 SM GFA > 450 SM	Medical Office	5.00 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
										Supermarket	5.00 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
Retail - Neighbourhood / Community	5 / 100 SM GFA	4 / 100 SM GFA	4 / 100 SM GFA	4.3 / 100 SM GFA	5 / 100 SM GFA	Retail within a Commercial and Mixed Use Zone	i) 0 where a use is less than 450 SM GFA; ii) 1 for each 17 SM any GFA between 450 SM and 4000 SM; and, iii) 1 for each 50 SM GFA greater than 4000.0 SM			Retail Store	i) GFA < 6,000 SM NFA: 3.33 / 100 SM NFA; ii) GFA > 6,000 SM NFA: 5.00 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
Retail Regional Shopping Centre	5 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA							i) GFA < 2,500 SM LFA: 4.35 / 100 SM LFA + restaurant & basement requirements ii) GFA > 2,500 SM LFA: 5.4 / 100 SM LFA + restaurant & basement requirements		
Retail Warehousing	6 / 100 SM GFA				6 / 100 SM GFA	Shopping Centre	i) 0 for less than 450 SM GFA; ii) 1 for each 17 square metres of gross floor area between 450 SM and 4000 SM; and, iii) 1 for each 50 SM GFA greater than 4000 SM			Shopping Centre			
Financial Institution	6.5 / 100 SM GFA	4.6 / 100 SM GFA	4.6 / 100 SM GFA	5.2 / 100 SM GFA	6.5 / 100 SM GFA	Financial Establishment	3.33 / 100 SM GFA		0 / 100 SM GFA > 450	Financial Institution	5.00 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
										Library	2.50 / 100 SM NFA	No requirement	
										Community Centre	2.50 / 100 SM NFA	No requirement	
Restaurant, Standard	11 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	11 / 100 SM GFA	Restaurant	i) 1.0 / 8 SM GFA; ii) Notwithstanding i), where there are no seats provided for dining purposes a minimum of 3 spaces shall be required. (NOT FINAL AND BINDING) iii) 0 where a use is less than 450.0 square metres in gross floor area; and, iv) 1 for each 50.0 square metres of gross floor area which accommodates such use for that portion of a building that is in excess of 450.0 square metres			Restaurant	11.11 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
Primary School	2.0 / classroom	1.6 / classroom	1.4 / classroom	1.6 / classroom		Elementary School	1.3 / classroom	3.0 / classroom + 1.0 / 7 auditorium seats	1.25 / classroom	School, Elementary	1.0 / classroom	1.0 / classroom	
Secondary School	4.0 / classroom	3.2 / classroom	2.8 / classroom	3.2 / classroom		Secondary School	3.0 / classroom + 1.0 / 7 auditorium seats			School, Private	4.0 / classroom	4.0 / classroom	
All Other Institutional Uses	6.3 / 100 SM GFA		4.4 / 100 SM GFA	5 / 100 SM GFA	6.3 / 100 SM GFA	Commercial School	2.00 / 100 SM GFA > 450 SM			School, Secondary	4.0 / classroom	4.0 / classroom	
Post-Secondary School		3.2 / classroom				University, College	5.0 / classroom + 1.0 / 7 auditorium seats or + 4.35 / 100 SM GFA, whichever is greater	3.0 / classroom + 1.0 / 7 auditorium seats	5.0 / classroom + 1.0 / 7 auditorium seats or + 4.35 / 100 SM GFA, whichever is greater	School, Commercial	5.00 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
Place of Assembly	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA						Assembly/Banquet Hall	11.11 / 100 SM NFA	3.33 / 100 SM NFA	2.70 / 100 SM NFA
Veterinary Clinics	5.00 (1st practitioner) + 2.0 for each additional	3.50 (1st practitioner) + 1.4 for each additional	3.50 (1st practitioner) + 1.4 for each additional	4.00 (1st practitioner) + 1.6 for each additional	5.00 (1st practitioner) + 2.0 for each additional	Veterinary Service			2 / 100 SM GFA > 450 SM				
Hotel/Motel	1.0 / room + 10 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.8 / room + 10 / 100 SM GFA of public areas	1.0 / room + 10 / 100 SM GFA of public areas	Hotel	1.0 / guest room		0.6 / guest room	Hotel	0.85 per suite plus 10 / 100 SM of NFA devoted to assembly hall uses	0.8 per suite plus 3.33 / 100 SM of NFA devoted to assembly hall uses	
Day Care	Greater of 1 space per 5 children or 1 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 6 children or 0.8 space per employee		Day Nursery	0.80 / 100 SM GFA		0.80 / 100 SM GFA	Day Nursery	1.5 per classroom plus 1 per 5 children capacity	No requirement	
Gas Bar or Automotive S	3.2 / 100 SM GFA, minimum 2			2.6 / 100 SM GFA, minimum 2	3.2 / 100 SM GFA, minimum 2	Motor Vehicle Gas Bar	4.00 / 100 SM GFA			Gas Bar	6.7 / 100 SM NFA, minimum 5 spaces		
Hospital	1.25 / bed + 1 / ambulance					Hospital	1.00 / 100 SM GFA			Hospital	1 / 2 beds or 2.7 / 100 SM NFA (whichever is greater)		
Motor Vehicle Oil/Lubric	2 / employee + 1 / service bay									Motor Vehicle Service Station	5 / 100 of NFA or 5 per individual premises		
Recreation Centre (Heat	5 / court + 3.2 / 100 SM GFA		3.5 / court + 2.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	Fitness Club	6.67 / 100 SM GFA			Commercial Fitness Centre	3.33 per NFA or 5 per racquet court	3.33 per NFA or 5 per racquet court	2.70 per NFA or 5 per racquet court
Theatre	1.00 / 6 seats			1.00 / 7.5 seats	1.00 / 6 seats	Performing Arts Theatre	1 per 10 persons			Theatre	1 per 6 seats	1 per 6 seats	1 per 6 seats
Places of Worship	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		Place of Worship	10.00 / 100 SM GFA	6.25 / 100 SM GFA		Place of Worship (greater of)	11.11 / 100 SM NFA	11.11 / 100 SM NFA	11.11 / 100 SM NFA
											1 / 4 persons of the worship area capacity	1 / 4 persons of the worship area capacity	1 / 4 persons of the worship area capacity



Minimum Parking Requirements - Non-Residential Rates						Town of Newmarket By-laws 2010-40 & 2019-06			City of Toronto By-law 568-2013					
Land Use	Rest of RH	Downtown Local / KDA	Region Centre	Rapid Transit Corridors	Business Parks	Land Use	General Rates	Urban Centre	Land Use	General Rates	Policy Area 1	Policy Area 2	Policy Area 3	Policy Area 4
Office	3.2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	3.2 / 100 SM GFA	Office, Accessory Office	3.70 / 100 SM NFA	2.00 / 100 SM NFA	Office	1.50 / 100 SM GFA	0.35 / 100 SM GFA	1.00 / 100 SM GFA		
Medical Offices / Clinics	5.0 (1st practitioner) + 3.0 for each additional	3.5 (1st practitioner) + 2.1 for each additional	3.5 (1st practitioner) + 2.1 for each additional	4.0 (1st practitioner) + 2.4 for each additional	5.0 (1st practitioner) + 3.0 for each additional	Medical Clinic Medical Office Building Medical / Dental Laboratories	5.88 / 100 SM NFA	2.86 / 100 SM NFA	Clinic, Medical	1.00 / 100 SM GFA	0.40 / 100 SM GFA		0.60 / 100 SM GFA	
						Food / Grocery Store / Supermarket	11.11 / 100 SM GFA (min 5)		Grocery Store	(i) GFA < 200 SM: no parking required (ii) 2.50 / 100 SM GFA	(i) GFA < 200 SM: no parking required (ii) 1.00 / 100 SM GFA			
Retail - Neighbourhood / Community	5 / 100 SM GFA	4 / 100 SM GFA	4 / 100 SM GFA	4.3 / 100 SM GFA	5 / 100 SM GFA	Retail - All other retail uses	5.56 / 100 SM NFA	2.50 / 100 SM NFA		(i) GFA > 200 SM: 1.50 / 100 SM GFA (ii) GFA > 10,000 SM: 3.00 / 100 SM GFA	1.00 / 100 SM GFA			
Retail Regional Shopping Centre	5 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA		Convenience Store	5.56 / 100 SM NFA	2.50 / 100 SM NFA	Retail Store	(iii) GFA > 20,000 SM: 6.00 * / 100 SM GFA (iv) GFA < 200 SM: no parking required	1.00 / 100 SM GFA			
Retail Warehousing	6 / 100 SM GFA				6 / 100 SM GFA	Local Shopping Centre	5.56 / 100 SM NFA							
Financial Institution	6.5 / 100 SM GFA	4.6 / 100 SM GFA	4.6 / 100 SM GFA	5.2 / 100 SM GFA	6.5 / 100 SM GFA	Financial Institution	6.67 / 100 SM NFA	2.50 / 100 SM NFA	Financial Institution	4.00 / 100 SM GFA	2.00 / 100 SM GFA			
						Library	10.00 / 100 SM NFA	5.00 / 100 SM NFA	Library	1.30 / 100 SM GFA	0.50 / 100 SM GFA			
						Community Centre	7.14 / 100 SM NFA	3.57 / 100 SM GFA	Community Centre	3.00 / 100 SM GFA	0.50 / 100 SM GFA			
Restaurant, Standard	11 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	11 / 100 SM GFA	Restaurant	11.11 / 100 SM NFA excl. seasonal outdoor areas	2 / 100 SM NFA excl. seasonal outdoor areas	Eating Establishment	(i) GFA < 200 SM: no parking required (ii) GFA > 200 SM: 3.00 / 100 SM GFA (iii) GFA > 500 SM: 5.00 / 100 SM GFA	no parking required			
Primary School	2.0 / classroom	1.6 / classroom	1.4 / classroom	1.6 / classroom		School, Elementary	2.0 / classroom + 10% visitor	1.0 / classroom + 10% visitor	Education Use	3.00 / 100 SM GFA	0.50 / 100 SM GFA		1.50 / 100 SM GFA	2.00 / 100 SM GFA
Secondary School	4.0 / classroom	3.2 / classroom	2.8 / classroom	3.2 / classroom		School, Secondary	3.0 / classroom + 10% visitor	1.5 / classroom + 10% visitor	Private School	1.50 / 100 SM GFA	0.15 / 100 SM GFA	0.50 / 100 SM GFA		1.00 / 100 SM GFA
All Other Institutional Uses	6.3 / 100 SM GFA		4.4 / 100 SM GFA	5 / 100 SM GFA	6.3 / 100 SM GFA	Commercial School	5.00 / 100 SM GFA	2.50 / 100 SM NFA	Adult Education School	2.00 / 100 SM GFA	1.00 / 100 SM GFA			1.50 / 100 SM GFA
Post-Secondary School		3.2 / classroom				School, Post Secondary	1.0 / 100 SM GFA (academic space)	0.5 / 100 SM GFA (academic space)	Post Secondary School	2.00 / 100 SM GFA	0.10 / 100 SM GFA			1.00 / 100 SM GFA
Place of Assembly	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		Banquet Facility	11.11 / 100 SM NFA	11.11 / 100 SM NFA	Place of Assembly	7.00 / 100 SM GFA	3.00 / 100 SM NFA	4.50 / 100 SM NFA	5.50 / 100 SM NFA	
Veterinary Clinics	5.00 (1st practitioner) + 2.0 for each additional	3.50 (1st practitioner) + 1.4 for each additional	3.50 (1st practitioner) + 1.4 for each additional	4.00 (1st practitioner) + 1.6 for each additional	5.00 (1st practitioner) + 2.0 for each additional	Veterinary Clinic	3.70 / 100 SM NFA	3.70 / 100 SM NFA	Veterinary Hospital	1.00 / 100 SM GFA	0.40 / 100 SM GFA	1.00 / 100 SM GFA		
Hotel/Motel	1.0 / room + 10 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.8 / room + 10 / 100 SM GFA of public areas	1.0 / room + 10 / 100 SM GFA of public areas	Hotel	The aggregate of: • 1 space per guest room • 1 space per every 2 guest rooms over 20 • 1 space per 4.5 m2 of gross floor area dedicated to administrative, banquet and meeting facilities	0.5 per suite plus 10 / 100 SM of NFA devoted to assembly hall uses	Hotel	1.0 / guest room	0.20 / 100 SM GFA			
Day Care	Greater of 1 space per 5 children or 1 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 6 children or 0.8 space per employee		Day Nursery	2 parking spaces per classroom plus 1 space for every 4 children licensed capacity	1 per classroom plus 1 per 8 children licensed capacity	Day Nursery	1.00 / 100 SM GFA	0.40 / 100 SM GFA			
Gas Bar or Automotive	3.2 / 100 SM GFA, minimum 2			2.6 / 100 SM GFA, minimum 2	3.2 / 100 SM GFA, minimum 2				Vehicle Repair Shop	3.50 / 100 SM GFA	3.50 / 100 SM GFA	3.50 / 100 SM GFA	3.50 / 100 SM GFA	3.50 / 100 SM GFA
Hospital	1.25 / bed + 1 / ambulance					Hospital	2.38 / 100 SM NFA	2.38 / 100 SM NFA	Hospital	3.50 / 100 SM GFA	0.40 / 100 SM GFA	0.40 / 100 SM GFA	0.40 / 100 SM GFA	0.40 / 100 SM GFA
Motor Vehicle Oil/Lubric	2 / employee + 1 / service bay					Motor Vehicle Service Shop	7.69 / 100 SM NFA	7.69 / 100 SM NFA	Vehicle Service Shop	3.50 / 100 SM GFA	3.50 / 100 SM GFA	3.50 / 100 SM GFA	3.50 / 100 SM GFA	3.50 / 100 SM GFA
Recreation Centre (Health)	5 / court + 3.2 / 100 SM GFA		3.5 / court + 2.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	Commercial Recreation Centre	5.00 / 100 SM NFA	3.57 / 100 SM NFA	Recreation Use	3.00 / 100 SM GFA	0.50 / 100 SM GFA	0.50 / 100 SM GFA	0.50 / 100 SM GFA	0.50 / 100 SM GFA
Theatre	1.00 / 6 seats			1.00 / 7.5 seats										
Places of Worship	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		Place of Worship	11.11 / 100 SM GFA	11.11 / 100 SM NFA	Place of Worship (no/variant)	27.00 / 100 SM GFA	11.00 / 100 SM GFA	18.00 / 100 SM GFA	22.00 / 100 SM GFA	22.00 / 100 SM GFA
									Place of Worship (seating)	23.00 / 100 SM GFA	9.00 / 100 SM GFA	15.00 / 100 SM GFA	18.00 / 100 SM GFA	18.00 / 100 SM GFA



Town of Richmond Hill Parking Strategy & By-law 111-17						City of Vaughan Draft Comprehensive Zoning By-Law (April 2019)					City of Brampton By-law 270-2004		
Land Use	Rest of RH	Downtown Local / KDA	Region Centre	Rapid Transit Corridors	Business Parks	Land Use	General Rates	VMC	MMU, HMU, CMU, EMU	LMU, KMS, MMS, WMS	Land Use	General Rates	Commercial Zones, and Central Area
Office	3.2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	3.2 / 100 SM GFA	Office	4.00 / 100 SM GFA	No requirement	2.00 / 100 SM GFA		Office	4.00 / 100 SM GFA	2.27 / 100 SM GFA
Medical Offices / Clinics	5.0 (1st practitioner) + 3.0 for each additional	3.5 (1st practitioner) + 2.1 for each additional	3.5 (1st practitioner) + 2.1 for each additional	4.0 (1st practitioner) + 2.4 for each additional	5.0 (1st practitioner) + 3.0 for each additional	Clinic	4.50 / 100 SM GFA	No requirement	3.00 / 100 SM GFA	4.50 / 100 SM GFA	Physician, Dentist, Drugless Practitioner	8.33 / 100 SM GFA	8.33 / 100 SM GFA
											Real Estate Office	6.66 / 100 SM GFA	5.00 / 100 SM GFA
											Supermarket	5.88 / 100 SM GFA	
Retail - Neighbourhood / Community	5 / 100 SM GFA	4 / 100 SM GFA	4 / 100 SM GFA	4.3 / 100 SM GFA	5 / 100 SM GFA	Retail, including major retail and convenience retail	4.50 / 100 SM GFA	No requirement	2.00 / 100 SM GFA	2.70 / 100 SM GFA	Retail, not specifically mentioned	5.26 / 100 SM GFA	(i) first 150 SM GFA: no parking required. (ii) after 150 SM: 5.00 / 100 SM GFA
Retail Regional Shopping Centre	5 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	Shopping Centre						(i) GFA < 2,000 SM LFA: 4.35 / 100 SM LFA, if other uses < 10% of GFA (ii) GFA > 2,000 SM LFA: 5.26 / 100 SM LFA	(i) first 150 SM GFA: no parking required. (ii) after 150 SM: 5.00 / 100 SM GFA	
Retail Warehousing	6 / 100 SM GFA				6 / 100 SM GFA								
Financial Institution	6.5 / 100 SM GFA	4.6 / 100 SM GFA	4.6 / 100 SM GFA	5.2 / 100 SM GFA	6.5 / 100 SM GFA	Financial Institution	4.50 / 100 SM GFA	No requirement	2.00 / 100 SM GFA		Financial Institution	6.67 / 100 SM GFA	
						Library	5.00 / 100 SM GFA	No requirement	2.00 / 100 SM GFA		Library		2.27 / 100 SM GFA
											Community Centre	12.50 / 100 SM GFA	
Restaurant, Standard	11 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	11 / 100 SM GFA	Restaurant	8.00 / 100 SM GFA	No requirement	2.70 / 100 SM GFA	2.70 / 100 SM GFA	Restaurant	16.00 / 100 SM GFA	(i) first 200 SM GFA: no parking required. (ii) after 200 SM: 1.0 / 9 SM GFA
Primary School	2.0 / classroom	1.6 / classroom	1.4 / classroom	1.6 / classroom		School	1.0 / classroom or auditorium	No requirement	1.0 / classroom or auditorium	0.5 / classroom or auditorium	School, Elementary	1.0 / 100 SM GFA + 1.0 / portable	
Secondary School	4.0 / classroom	3.2 / classroom	2.8 / classroom	3.2 / classroom	School, Secondary						1.5 / 100 SM GFA + 1.0 / portable		
All Other Institutional Uses	6.3 / 100 SM GFA		4.4 / 100 SM GFA	5 / 100 SM GFA	6.3 / 100 SM GFA						Commercial School	4.50 / 100 SM GFA	No requirement
Post-Secondary School		3.2 / classroom				College/University		No requirement	1.0 / classroom or auditorium				
Place of Assembly	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		All other uses	3.00 / 100 SM GFA	No requirement	2.00 / 100 SM GFA	2.00 / 100 SM GFA	Place of Assembly	12.50 / 100 SM GFA	
Veterinary Clinics	5.00 (1st practitioner) + 2.0 for each additional	3.50 (1st practitioner) + 1.4 for each additional	3.50 (1st practitioner) + 1.4 for each additional	4.00 (1st practitioner) + 1.6 for each additional	5.00 (1st practitioner) + 2.0 for each additional	Veterinary Clinic	4.50 / 100 SM GFA	No requirement	2.00 / 100 SM GFA		Animal Hospital	3.57 / 100 SM GFA	
Hotel/Motel	1.0 / room + 10 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.8 / room + 10 / 100 SM GFA of public areas	1.0 / room + 10 / 100 SM GFA of public areas	Hotel	1.0 / guest room	No requirement	0.5 / guest room	2.00 / 100 SM GFA	Hotel / Motel	Hotel: 1 parking space for each 2 bedrooms plus 1 parking space for each 10 square metres of gross commercial floor area or portion thereof devoted to public use including meeting rooms, conference rooms, recreational facilities, dining, lounge and tavern areas but excluding bedrooms, washrooms, lobbies, hallways, elevators, and stairways Motel: 1 parking space for each 1 bedroom plus the parking requirement for a restaurant	
Day Care	Greater of 1 space per 5 children or 1 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 6 children or 0.8 space per employee		Day Care	8 spaces minimum	No requirement	3.00 / 100 SM GFA	2.00 / 100 SM GFA	Day Nursery	1 parking space for each employee plus 1 parking space for each 10 children capacity	
Gas Bar or Automotive	3.2 / 100 SM GFA, minimum 2			2.6 / 100 SM GFA, minimum 2	3.2 / 100 SM GFA, minimum 2	Gas Station	0.25 / pump	No requirement	0.25 / pump	2.00 / 100 SM GFA	Gas Bar or Motor Vehicle Service Station	4.35 / 100 SM GFA	
Hospital	1.25 / bed + 1 / ambulance					Hospital	2.50 / 100 SM GFA	No requirement	2.00 / 100 SM GFA	2.00 / 100 SM GFA			
Motor Vehicle Oil/Lubric	2 / employee + 1 / service bay					Service / Repair Shop	3.50 / 100 SM GFA	No requirement	2.00 / 100 SM GFA	2.00 / 100 SM GFA	Motor Vehicle Repair Shop	5.26 / 100 SM GFA	
Recreation Centre (Health)	5 / court + 3.2 / 100 SM GFA		3.5 / court + 2.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	Health Club	7.00 / 100 SM GFA	No requirement	2.00 / 100 SM GFA	2.00 / 100 SM GFA	Health Centre or Fitness Centre	4.55 / 100 SM GFA	
Theatre	1.00 / 6 seats			1.00 / 7.5 seats	1.00 / 6 seats	Theatre	8.00 / 100 SM GFA	No requirement	4.00 / 100 SM GFA	4.00 / 100 SM GFA	Theatre	1 / 6 seats	
Places of Worship	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		Place of Worship	20 / 100 SM of Worship Space	No requirement	8 / 100 SM of Worship Space	10 / 100 SM of Worship Space	Place of Worship	20.00 / 100 SM GFA	
											Place of Worship (Seating)	1 / 4 seats	



Minimum Parking Requirements - Non-Residential Rates						City of Mississauga By-law 0225-2007				Town of Oakville By-law 2014-014				
Town of Richmond Hill Parking Strategy & By-law 111-17														
Land Use	Rest of RH	Downtown Local / KDA	Region Centre	Rapid Transit Corridors	Business Parks	Land Use	General Rates	CC1 Zone	CC2-CC4 Zones	C4 Zone	Land Use	General Rates	Growth Areas	
Office	3.2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	2 / 100 SM GFA	3.2 / 100 SM GFA	Business Office	3.20 / 100 SM GFA				Business Office	2.86 / 100 SM NFA	Mixed Rates, By Area Bronze Village, Kerr Village, 1.0 / 40 SM NFA Downtown Oakville, no minimum requirement Palermo Village, Uptown Core: (i) 1.0 / 24 SM NFA (first storey) (ii) 1.0 / 40 SM NFA (above first storey) (iii) Notwithstanding this, where medical offices cumulatively occupy any net floor area on the first storey or greater than 60% of the net floor area of the building, the minimum number of parking spaces shall be 1.0 per 18.0 m ² net floor area occupied by medical offices	
Medical Offices / Clinics	5.0 (1st practitioner) + 3.0 for each additional	3.5 (1st practitioner) + 2.1 for each additional	3.5 (1st practitioner) + 2.1 for each additional	4.0 (1st practitioner) + 2.4 for each additional	5.0 (1st practitioner) + 3.0 for each additional	Medical Office	6.50 / 100 SM GFA				Medical Office	(i) first 60% NFA on lot: 1.0 / 35 SM NFA (ii) where occupies > 60% NFA: 1.0 / 18 SM NFA (entire building)		
Retail - Neighbourhood / Community	5 / 100 SM GFA	4 / 100 SM GFA	4 / 100 SM GFA	4.3 / 100 SM GFA	5 / 100 SM GFA	Retail Store	5.40 / 100 SM GFA		4.3 / 100 SM GFA	4.0 / 100 SM GFA	Retail Store, or any "store" permitted by this By-law	5.56 / 100 SM NFA		
Retail Regional Shopping Centre	5 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA										
Retail Warehousing	6 / 100 SM GFA				6 / 100 SM GFA	Retail Centre	(i) GFA < 2,000 SM: 4.3 / 100 SM GFA (ii) GFA > 2,000 SM: 5.4 / 100 SM GFA	4.57 / 100 SM GFA						
Financial Institution	6.5 / 100 SM GFA	4.6 / 100 SM GFA	4.6 / 100 SM GFA	5.2 / 100 SM GFA	6.5 / 100 SM GFA	Financial Institution	5.50 / 100 SM GFA				Financial Institution	4.55 / 100 SM NFA		
						Library	3.20 / 100 SM GFA				Library	3.57 / 100 SM NFA		
						Community Centre	4.50 / 100 SM GFA				Community Centre	4.55 / 100 SM NFA		
Restaurant, Standard	11 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	3 / 100 SM GFA	11 / 100 SM GFA	Restaurant	16.0 / 100 SM GFA			9.0 / 100 SM GFA	Restaurant	10.00 / 100 SM NFA		
Primary School	2.0 / classroom	1.6 / classroom	1.4 / classroom	1.6 / classroom		School, Elementary	1.0 / 100 SM GFA + 1.0 / portable				Elementary School	1.5 / classroom (excl. portables)		
Secondary School	4.0 / classroom	3.2 / classroom	2.8 / classroom	3.2 / classroom		School, Secondary	1.5 / 100 SM GFA + 1.0 / portable				Secondary School	4.0 / classroom (excl. portables)		
All Other Institutional Uses	6.3 / 100 SM GFA		4.4 / 100 SM GFA	5 / 100 SM GFA	6.3 / 100 SM GFA	Commercial School	5.0 / 100 SM GFA				Commercial School	4.55 / 100 SM NFA		
Post-Secondary School		3.2 / classroom				College, University	1.1 / 100 SM GFA + 0.15 / staff or resident student				School, Post Secondary	no spaces required		
Place of Assembly	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		Banquet Hall	10.8 / 100 SM GFA							
Veterinary Clinics	5.00 (1st practitioner) + 2.0 for each additional	3.50 (1st practitioner) + 1.4 for each additional	3.50 (1st practitioner) + 1.4 for each additional	4.00 (1st practitioner) + 1.6 for each additional	5.00 (1st practitioner) + 2.0 for each additional	Veterinary Clinic	3.60 / 100 SM GFA				Veterinary Clinic	4.55 / 100 SM NFA		
Hotel/Motel	1.0 / room + 10 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.75 / room + 7.5 / 100 SM GFA of public areas	0.8 / room + 10 / 100 SM GFA of public areas	1.0 / room + 10 / 100 SM GFA of public areas						Hotel	a) 1.0 per lodging unit; plus, b) 1.0 per 30.0 m ² net floor area outside of a lodging unit		
Day Care	Greater of 1 space per 5 children or 1 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 7 children or 0.7 space per employee	Greater of 1 space per 8 children or 0.8 space per employee		Day Care	2.50 / 100 SM GFA				Day Care	2.50 / 100 SM NFA		
Gas Bar or Automotive	3.2 / 100 SM GFA, minimum 2			2.6 / 100 SM GFA, minimum 2	3.2 / 100 SM GFA, minimum 2									
Hospital	1.25 / bed + 1 / ambulance					Hospital	2.50 / 100 SM GFA				Hospital	2.00 / 100 SM NFA		
Motor Vehicle Oil/Lubric	2 / employee + 1 / service bay					Motor Vehicle Repair Facility	4.30 / 100 SM GFA				Motor Vehicle Repair Facility	1.00 / 100 SM NFA		
Recreation Centre (Hea)	5 / court + 3.2 / 100 SM GFA		3.5 / court + 2.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	5 / court + 3.2 / 100 SM GFA	Active Recreational Use	4.50 / 100 SM GFA							
Theatre	1.00 / 6 seats			1.00 / 7.5 seats	1.00 / 6 seats									
Places of Worship	6.4 / 100 SM GFA	4.8 / 100 SM GFA	4.8 / 100 SM GFA	5.1 / 100 SM GFA		Place of Religious Assembly	1.0 space per 4.5 seats for permanent fixed seating; plus 27.1 spaces for all non-fixed moveable seating per 100 SM GFA - non-residential, in the worship area or 10.0 spaces per 100 m ² GFA - non-residential, whichever is greater				Places of Worship	a) 1.0 per 5 persons capacity for the place of worship area of worship; plus, b) 1.0 per 22.0 m ² net floor area for any additional accessory assembly area		

Attachment C

Maximum Parking Rates



Maximum Parking Requirements - Residential Rates																			
Town of Richmond Hill Parking Strategy				City of Hamilton By-law 05-200			Town of Newmarket By-law 2010-40		City of Toronto By-law 569-2013				City of Vaughan Draft Comprehensive Zoning By-Law						
Land Use	Downtown Local / KDA	Regional Centre	Rapid Transit	Land Use	Transit Oriented Corridors	Downtown Zone	Land Use	Urban Centre	Land Use	Policy Area 1	Policy Area 2	Policy Area 3	Policy Area 4	Land Use	General Rates	VMC	MMU, HMU, CMU, EMU	LMU, KMS, MMS, WMS	
Condo Apartment				Multiple Dwellings	1.25 /unit		Apartment Building		Apartment Building				Apartment		1.50 /unit res	2.00 /unit res			
Bachelor	1.00 /unit	0.85 /unit	1.10 /unit				Bachelor	0.85 /unit	Bach. ≤ 45 sm	0.40 /unit	0.90/unit	1.00 /unit							
One Bed	1.10 /unit	1.00 /unit	1.25 /unit				One Bed	1.00 /unit	Bach. > 45 sm	1.20 /unit	1.30/unit	1.30 /unit							
Two Bed	1.25 /unit	1.10 /unit	1.50 /unit				Two Bed	1.20 /unit	One Bed	0.70 /unit	1.00/unit	1.20 /unit							
Three Bed+	1.50 /unit	1.30 /unit	1.85 /unit				Three Bed+	1.40 /unit	Two Bed	1.20 /unit	1.30/unit	1.30 /unit							
Visitor	0.20 /unit	0.17 /unit	0.20 /unit				Visitor	0.15 /unit	Three+ Bed	1.50 /unit	1.50/unit	1.60 /unit							
Rental Apartment							Financially Assisted Dwelling Unit												
Bachelor	0.90 /unit	0.70 /unit	0.90 /unit																
One Bed	1.05 /unit	0.85 /unit	1.05 /unit																
Two Bed	1.25 /unit	1.10 /unit	1.25 /unit																
Three Bed+	1.50 /unit	1.30 /unit	1.50 /unit																
Visitor	0.20 /unit	0.17 /unit	0.20 /unit																
Single- Detached	2.00 /unit	2.00 /unit	2.00 /unit																
Semi- detached	2.00 /unit	2.00 /unit	2.00 /unit																
Duplex	1.50 /unit	1.50 /unit	1.25 /unit																
Triplex	1.50 /unit	1.50 /unit	1.25 /unit																
Double Duplex	1.50 /unit	1.50 /unit	1.25 /unit																
Street Townhouse	2.00 /unit	2.00 /unit	2.00 /unit				Townhouse on Public Road	1.20 /unit res 0.15 /unit vis						Stacked/ Back-to- back townhouse		1.50 /unit res N/A			
Condo	2.00 /unit res	2.00 /unit res	2.00 /unit res				Townhouse on Private Road	1.20 /unit res 0.15 /unit vis						Other townhouse		2.00 /unit	2.00 /unit		
Townhouse	0.20 /unit vis	0.20 /unit vis	0.20 /unit vis																
Retirement	0.40 /unit	0.36 /unit	0.40 /unit																
														Home Occupation	1.0/unit +dwelling requirement	1 per home occupation	2.0/unit +dwelling requirement	1.0/unit +dwelling requirement	
														Live Work Unit		2.00 /unit	2.00 /unit	No Requirement	
																		No Requirement	

No maximum rates for
Markham, Mississauga,
Brampton, or Oakville



Maximum Parking Requirements - Non-Residential Rates														
Town of Richmond Hill Parking Strategy				Town of Newmarket By-law 2010-40		City of Toronto By-law 569-2013				City of Vaughan Draft Comprehensive Zoning By-Law (April 2019)				
Land Use	Downtown Local / KDA	Region Centre	Rapid Transit Corridors	Land Use	Urban Centre	Land Use	Policy Area 1	Policy Area 2	Policy Area 3	Policy Area 4	Land Use	VMC	MMU, HMU, CMU, EMU	LMU, KMS, MMS, WMS
Office	2.5 / 100 SM GFA	2.2 / 100 SM GFA	2.5 / 100 SM GFA	Office, Accessory Office	2.0 / 50 SM NFA	Office	0.80 / 100 SM GFA	1.4 / 100 SM GFA	2.0 / 100 SM GFA		Office	2.5 / 100 SM GFA	4.5 / 100 SM GFA	
Medical Offices / Clinics	4.4 (1st practitioner) + 2.6 for each additional	3.9 (1st practitioner) + 2.3 for each additional	5.0 (1st practitioner) + 3.0 for each additional	Medical Clinic Medical Office Building Medical / Dental Laboratories	2.0 / 35 SM NFA	Clinic, Medical	0.8 / 100 SM GFA		1.0 / 100 SM GFA		Clinic			10.0 / 100 SM GFA
				Retail (Food/Grocery Store/ Supermarket)		Grocery Store	4.5 / 100 SM GFA							
				Retail - All other retail uses	2.0 / 40 SM NFA									
Retail Regional Shopping Centre	3.75 / 100 SM GFA	3.3 / 100 SM GFA	3.75 / 100 SM GFA	Convenience Store	2.0 / 40 SM NFA	Retail Store	3.5 / 100 SM GFA	4.0 / 100 SM GFA			Retail, including major retail and convenience retail	3.0 / 100 SM GFA	5.5 / 100 SM GFA	
Retail - Neighbourhood / Community	5 / 100 SM GFA	4.4 / 100 SM GFA	5.4 / 100 SM GFA	Local Shopping Centre										
Financial Institution	5.7 / 100 SM GFA	5.1 / 100 SM GFA	6.5 / 100 SM GFA	Financial Institution	2.0 / 40 SM NFA	Financial Institution	3.5 / 100 SM GFA	4.5 / 100 SM GFA			Financial Institution		4.5 / 100 SM GFA	8.0 / 100 SM GFA
				Library	2.0 / 20 SM NFA	Library					Library			
				Community Centre	2.0 / 28 SM GFA	Community Centre	1.3 / 100 SM GFA							
Restaurant, Standard	3.75 / 100 SM GFA	3.3 / 100 SM GFA	3.75 / 100 SM GFA	Restaurant	4.0 / 50 SM NFA excl. seasonal outdoor areas	Eating Establishment	3.5 / 100 SM GFA	4.0 / 100 SM GFA	5.0 / 100 SM GFA		Restaurant	2.5 / 100 SM GFA	6.0 / 100 SM GFA	10.0 / 100 SM GFA
Primary School		1.5 / classroom	2.0 / classroom	School, Elementary	2x the minimum	Education Use					School	1 / class or auditorium	3 / class or auditorium	
Secondary School		3.1 / classroom	4.0 / classroom	School, Secondary	2x the minimum	Private School	0.3 / 100 SM GFA	1.0 / 100 SM GFA		2.0 / 100 SM GFA				
						Public School	0.3 / 100 SM GFA	1.0 / 100 SM GFA		2.0 / 100 SM GFA				
All Other Institutional Uses		4.8 / 100 SM GFA	6.3 / 100 SM GFA	Commercial School	2.0 / 40 SM NFA						Commercial School		5 per classroom or a	8 per classroom or a
				School, Post Secondary	2.0 / 200 SM (academic purpose space)						College/University	5 per classroom or auditorium		
Place of Assembly	6 / 100 SM GFA	5.3 / 100 SM GFA	6.4 / 100 SM GFA	Banquet Facility	N/A						All other uses	2.5 / 100 SM GFA	4.5 / 100 SM GFA	
Veterinary Clinics	4.4 (1st practitioner) + 1.8 spaces for each additional	3.9 (1st practitioner) + 1.5 for each additional	5.0 (1st practitioner) + 2.0 for each additional			Veterinary Hospital	0.8 / 100 SM GFA				Veterinary Clinic		4.5 / 100 SM GFA	
Hotel/Motel	0.9 space per unit plus 9 per 100 m ² for public areas	0.85 space per unit plus 8.5 per 100 m ² for public areas	1 space per unit plus 10 per 100 m ² for public areas			Hotel	1.0 / 100 SM GFA				Hotel	0.75 per guest room	1.50 per guest room	
Day Care	Greater of 1 space per 6 children or 0.9 space per employee	Greater of 1 space per 6.5 children or 0.8 space per employee	Greater of 1 space per 5 children or 1 space per employee			Day Nursery	0.8 / 100 SM GFA				Day Care	0.6 / 100 SM GFA	No Requirement	N/A

No maximum rates for Markham, Mississauga, Brampton, Oakville, or Hamilton

Attachment D

Accessible Parking Space Rates

Attachment D – Accessible Parking Space Rates

Brampton

Minimum Parking Requirement	Minimum Accessible Parking Requirement
0 to 12	1
12 to 100	4%
101 to 200	1, plus 3%
201 to 1,000	2, plus 2%
Over 1,000	11, plus 1%

Round Up

Hamilton

Minimum Parking Requirement	Minimum Accessible Parking Requirement
1 to 49	1
50 to 100	4%
101 to 200	1, plus 3%
201 to 1,000	2, plus 2%
Over 1,000	11, plus 1%

Round Down

Markham

5.1 Five per cent of the parking spaces required shall be dedicated and used as accessible parking spaces. Where the application of this requirement results in a numeric fraction, a fraction less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

Mississauga

Minimum Parking Requirement	Minimum Accessible Parking Requirement
1 to 12	1
12 to 100	4%
101 to 200	1, plus 3%
201 to 1,000	2, plus 2%
Over 1,000	11, plus 1%

Round Up

Newmarket (By-Law 2010-40; Section 5.3.6)

Minimum Parking Requirement	Minimum Accessible Parking Requirement	Type A (Van)	Type B
1 to 12	1	1	0
13 to 25	1	0	1
26 to 50	2	1	1
51 to 75	3	1	2
76 to 100	4	2	2
101 to 133	5	2	3
134 to 166	6	3	3
167 to 250	7	3	4
251 to 300	8	4	4
301 to 350	9	4	5
351 to 400	10	5	5
401 to 450	11	5	6
451 to 500	12	6	6
501 to 550	13	6	7
551 to 600	14	7	7
601 to 650	15	7	8
651 to 700	16	8	8
701 to 750	17	8	9
751 to 800	18	9	9
801 to 850	19	9	10
851 to 900	20	10	10
901 to 950	21	10	11
951 to 1000	22	11	11
1001 and over	11 spaces plus 1% of the total number of spaces (rounded up to the next whole number), to be divided equally between Types A and B. If an odd number of spaces is required, the extra space may be Type B.		

Note: Where an uneven number of accessible parking spaces are required, the extra Type B space may be changed to a Type A space.

Notwithstanding subsection i) above, the minimum barrier free parking requirement for medical offices, clinics and facilities providing outpatient services shall be the greater of the requirement of subsection i) above or 10% of the total minimum parking requirement for the use, providing at least 40% of the required barrier free spaces of each type of Type A and Type B.

Oakville

Minimum Parking Requirement	Minimum Accessible Parking Requirement
3 to 25	1
26 to 100	4%
101 to 200	1, plus 3%
201 to 1,000	2, plus 2%
Over 1,000	11, plus 1%

Round Up

Richmond Hill

Minimum Parking Requirement	Minimum Accessible Parking Requirement
Less than 25	2
26 to 50	3
51 to 75	4
76 to 100	5
101 to 150	6
151 to 200	7
201 to 300	8
301 to 400	9
Over 400	9 plus one additional space for every 100 parking spaces (or any portion thereof) over 400

Toronto

(1) Parking Rates - Accessible Parking Spaces

Clearly identified off street accessible parking spaces must be provided on the same lot as every building or structure erected or enlarged, if the total parking space requirement is 5 or more, in compliance with the following:

(A) if the number of required parking spaces is 5 to 24, a minimum of 1 parking space must comply with the minimum dimensions for an accessible parking space;

(B) if the number of required parking spaces is 25 to 100, a minimum of 1 parking space for every 25 parking spaces or part thereof must comply with the minimum dimensions for an accessible parking space; and

(C) if the number of required parking spaces is more than 100, a minimum of 4 parking spaces plus 1 parking space for every 50 parking spaces or part thereof in excess of 100 parking spaces, must comply with the minimum dimensions for an accessible parking space.

2) Accessible Parking Space Requirement Medical Office and Clinics

A minimum of 10% of the required parking spaces for a medical office established after May 9, 2013 must comply with the minimum dimensions for an accessible parking space and any accessible parking spaces lawfully existing on the lot must be retained.

Vaughan

Minimum Parking Requirement	Minimum Accessible Parking Requirement
1 to 12	1
12 to 100	4%
101 to 200	1, plus 3%
201 to 1,000	2, plus 2%
Over 1,000	11, plus 1%

Round Up

Vancouver

Calculation of Accessible Parking Spaces

Despite anything to the contrary in this By-law or in any other by-law mentioned herein, each accessible parking space provided to satisfy the minimum required number of such spaces will count as two parking spaces for the purpose of satisfying the minimum required number of parking spaces. Use of this section will not affect any maximum parking permitted calculations

4.8.4 Required Accessible Parking Spaces

For each:

(a) multiple dwelling or live-work use, there must be at least one accessible parking space for each building that contains at least seven residential units and an additional 0.034 space for each additional dwelling unit; and

(b) non-residential uses, there must be at least one accessible parking space for each building that contains at least 500 m² of gross floor area and an additional 0.4 parking space for each 1000 m² of gross floor area; except that, in the case of a relaxation of parking spaces for cultural and recreational uses, churches, chapels, places of worship or similar places of assembly, calculation of the required number of parking spaces is to be in accordance with section 4.2 or 4.3, as the case may be.

Attachment E

Bicycle Rates



Minimum Bicycle Parking Requirements - Residential Rates																						
City of Markham (Standards)			City of Toronto By-law 589-2013			Town of Newmarket By-law 2010-40 & 2019-06		Town of Oakville By-law 2014-014		City of Hamilton By-law 05-200		City of Vaughan Draft By-Law		City of Ottawa 2008-250 Consolidation		City of Richmond Hill By-Law 111-17		City of Vancouver Parking Bylaw 6059				
Land Use	Other Areas	Intensification Areas	Land Use	Zone 2 (general)	Zone 1 (urban)	Land Use	General & Urban Centre Rates	Land Use	General Rates	Land Use	Downtown / Transit Oriented Corridor	Land Use	General Areas	Land Use	General Areas	Land Use	Bernard KDA	Land Use	Dwelling unit < 65 SM	Dwelling unit between 65 SM and 105 SM	Dwelling unit over 105 SM	Three or more dwelling units for seniors citizens housing
Multi-storey dwelling (short-term)	0.10 /unit	0.20 /unit	Apartment building or mixed-use building (short-term)	0.07 /unit	0.10 /unit	Apartment Building (short-term)	0.10 /unit	Apartment Dwelling, Stacked Townhouse (short-term)	0.25 /unit	Multiple Dwelling (short-term)	5 spaces minimum	Apartment Dwelling (short-term)	6 spaces minimum	Apartment Building, Stacked Dwelling	0.50 /unit	Apartment Building (short-term)	0.03 /unit	Multiple Dwellings Class B (short-term)	A minimum of 2 spaces for any development containing at least 20 dwelling units, and one additional space for every additional 20 dwelling units. if > 20 units	A minimum of 2 spaces for any development containing at least 20 dwelling units, and one additional space for every additional 20 dwelling units. if > 20 units	A minimum of 2 spaces for any development containing at least 20 dwelling units, and one additional space for every additional 20 dwelling units. if > 20 units	A minimum of 2 spaces for any development containing at least 20 dwelling units, and one additional space for every additional 20 dwelling units.
Multi-storey dwelling (long-term)	0.50 /unit	0.50 /unit	Apartment building or mixed-use building (long-term)	0.68 /unit	0.90 /unit	Apartment Building (long-term)	0.50 /unit	Apartment Dwelling, Stacked Townhouse (long-term)	0.75 /unit	Multiple Dwelling (long-term)	0.50 /unit	Apartment Dwelling (long-term)	0.80 /unit			Apartment Building (long-term)	0.60 /unit	Multiple Dwellings Class A (long-term)	1.50 /unit	2.50 /unit	3.00 /unit	A minimum of 0.75 spaces for every dwelling unit, except that where designated spaces are provided for the purpose of parking mobility scooters, these designated spaces may form part of the required minimum.



Minimum Bicycle Parking Requirements - Non-Residential Rates												
City of Markham (Draft Standards)			City of Toronto By-law 569-2013			City of Hamilton By-law 05-200			Town of Newmarket By-law 2010-40 & 2019-06		City of Vaughan Draft By-Law	
Land Use	General Rates	Growth Area	Land Use	Zone 2 (general)	Zone 1 (urban)	Land Use	Downtown, Transit Oriented Corridors, Commercial and Mixed Use Zones	Land Use	General & Urban Centre Rates	Land Use	General Rate	
Office (short-term)	0.05 / 100 SM (minimum of 3)	0.10 / 100 SM (minimum of 6)	Office, non-medical (short-term)	0.15 / 100 SM IFA	3 + 0.20 / 100 SM IFA			Office Building (short-term)	0.50 / 100 SM GFA	Office Building (short-term)	Greater of 6 or 0.20 / 100 SM GFA	
			Office, medical (short-term)	3 + 0.10 / 100 SM IFA	3 + 0.15 / 100 SM IFA							
Office (long-term)	0.08 / 100 SM	0.13 / 100 SM	Office, non-medical (long-term)	0.13 / 100 SM IFA	0.20 / 100 SM IFA	Any use in M7, M8, M9, M10, M11 industrial zones (offices are permitted)	5% of the required motor vehicle parking spaces, shall be provided in the form of Long-term Bicycle Parking Spaces	Office Building (long-term)	0.20 / 100 SM GFA	Office Building (long-term)	0.10 / 100 SM GFA	
			Office, medical (long-term)	0.10 / 100 SM IFA	0.15 / 100 SM IFA							
Low density retail (short-term)	0.08 / 100 SM (minimum of 3)	0.10 / 100 SM (minimum of 3)										
Medium density retail (short-term)	0.10 / 100 SM (minimum of 6)	0.15 / 100 SM (minimum of 6)	Retail Store (short-term)	3 + 0.25 / 100 SM IFA	3 + 0.30 / 100 SM IFA	Commercial Uses (short-term)	minimum of 5	Retail (short-term)	0.50 / 100 SM GFA	Commercial (short-term)	Greater of 6 or 0.20 / 100 SM GFA	
High density retail (short-term)	0.15 / 100 SM (minimum of 6)	0.20 / 100 SM (minimum of 6)	Personal Service Shop (short-term)	3 + 0.25 / 100 SM IFA	3 + 0.30 / 100 SM IFA							
Low density retail (long-term)	None	None										
Medium density retail (long-term)	0.05 / 100 SM	0.10 / 100 SM	Retail Store (long-term)	0.13 / 100 SM IFA	0.20 / 100 SM IFA	Commercial Uses (long-term)	2 / unit for uses between 450 SM and 1,000 SM GFA, or 5 / unit for uses between 1,000 SM and 10,000 SM GFA, or 7 / unit for uses over 10,000 SM GFA, or 0 for uses less than 450 SM GFA	Retail (long-term)	0.20 / 100 SM GFA	Commercial (long-term)	0.10 / 100 SM GFA	
High density retail (long-term)	0.10 / 100 SM	0.13 / 100 SM	Personal Service Shop (long-term)	0.13 / 100 SM IFA	0.20 / 100 SM IFA							
Industrial (short-term)	0.15 / 100 SM (or minimum of 2 per entrance)							Manufacturing/ Industrial (short-term)	0.20 / 100 SM GFA			
Industrial (long-term)	0.05 / 100 SM					Any use in M7, M8, M9, M10, M11 industrial zones (multiple uses are permitted)	5% of the required motor vehicle parking spaces, shall be provided in the form of Long-term Bicycle Parking Spaces	Manufacturing/ Industrial (long-term)	0.20 / 100 SM GFA			
Restaurant	See retail		Eating Establishment (short-term)	3 + 0.25 / 100 SM IFA	3 + 0.30 / 100 SM IFA							
			Eating Establishment (long-term)	0.13 / 100 SM IFA	0.20 / 100 SM IFA							
School (short-term)	0.40 / 100 SM		Education Use (short-term)	3 + 0.06 / 100 SM IFA	3 + 0.10 / 100 SM IFA					Elementary School (short-term)	Greater of 6 or 0.40 / 100 SM GFA	
			Public/Private School (short-term)	3 + 0.06 / 100 SM IFA	3 + 0.10 / 100 SM IFA	Educational Establishment (short-term)	2 / classroom	School (short-term)	0.06 / 100 SM GFA	Secondary School (short-term)	Greater of 6 or 0.40 / 100 SM GFA	
College/University (short-term)	1 / 10 students		Post Secondary School (short-term)	3 + 2 / 100 SM IFA						Post-Secondary School (short-term)	Greater of 6 or 0.40 / 100 SM GFA	
School (long-term)	0.05 / 100 SM		Education Use (long-term)	0.06 / 100 SM IFA	0.10 / 100 SM IFA					Elementary School (long-term)	No requirement	
			Public/Private School (long-term)	0.06 / 100 SM IFA	0.10 / 100 SM IFA	Educational Establishment (long-term)	0	School (long-term)	0.06 / 100 SM GFA	Secondary School (long-term)	No requirement	
College/University (long-term)	1 / 10 students		Post Secondary School (long-term)	0.60 / 100 SM IFA	2.00 / 100 SM IFA					Post-Secondary School (long-term)	No requirement	
Worship (short-term)	0.78 / 100 SM					Worship (short-term)	minimum of 5					
Worship (long-term)	0.27 / 100 SM					Worship (long-term)	0	Institutional (short-term)	0.50 / 100 SM GFA			
Municipal (short-term)	1 / 10,000 SF											
Municipal (long-term)	1 / 10 employees											
Hospital (short-term)	0.05 / 100 SM		Hospital (short-term)	3 + 0.06 / 100 SM IFA	3 + 0.10 / 100 SM IFA			Institutional (long-term)	0.20 / 100 SM GFA			
Hospital (long-term)			Hospital (long-term)	0.06 / 100 SM IFA	0.10 / 100 SM IFA							



Minimum Bicycle Parking Requirements - Non-Residential Rates				Standards which do not differentiate between short-term and long-term		
City of Vancouver Parking Bylaw 6059		City of Richmond Hill By-Law 111-17		Town of Oakville* By-law 2014-014		
Land Use	General Rate	Land Use	Bernard KDA	Land Use	General Rates	Notes
Office Building (Class B, short-term)	Min of 6 for development with a minimum of 2000 SM GFA	Non-residential land uses (short-term)	0.15 / 100 SM GFA	Business Office	Greater of 2 or 0.10 / 100 SM NFA	<p>* in no circumstance can the minimum bicycle parking spaces required on a lot be greater than 30.</p> <p>(i) In the Industrial E3 Zone, parking rate for main permitted use shall apply to any floor area occupied by a business office provided the business office occupies an area equal to or less than 25% of the total net floor area on the lot. The business office ratio shall apply for all net floor area used for a business office where the business office occupies greater than 25% of the total net floor area on the lot.</p>
Office Building (Class A, long-term)	0.59 / 100 SM GFA	Non-residential land uses (long-term)	0.13 / 100 SM GFA	Medical Office	Greater of 2 or 0.10 / 100 SM NFA	
Retail (Class B, short-term)	Min of 6 for development with a minimum of 1000 SM GFA			Retail Store	Greater of 2 or 0.10 / 100 SM NFA	
Retail (Class A, long-term)	0.29 / 100 SM GFA			Service Commercial Uses	Greater of 2 or 0.10 / 100 SM NFA	
Manufacturing, Transportation and Storage, Utility and Communication, Wholesale Uses (Class B, short-term)	none					
Manufacturing, Transportation and Storage, Utility and Communication, Wholesale Uses (Class A, long-term)	Greater of 1 / 1000 SM GFA or 1 / 17 employees at max period					
Elementary School (Class B, short-term)	1 / 20 students			Elementary School	0.25 / classroom (excl. portables)	
Secondary School (Class B, short-term)	0.6 / 10 students at max period			Secondary School	0.5 / classroom (excl. portables)	
Post-Secondary School (Class B, short-term)	0.6 / 10 students at max period					
Elementary School (Class A, long-term)	1 / 17 employees			School, Post Secondary	Greater of 3 or 2 / 100 SM NFA	
Secondary School (Class A, long-term)	0.4 / 10 students at max period					
Post-Secondary School (Class A, long-term)	0.4 / 10 students at max period					
Worship (Class B, short-term)	Min of 6 spaces			Institutional	Greater of 2 or 2 / 500 SM NFA	
Worship (Class A, long-term)	none					
Hospital (Class B, short-term)	Min of 6 / public entrance					
Hospital (Class A, long-term)	1 / 17 employees at max period					

Attachment F

Shared Parking Formula



WEEKDAY Shared Parking (Percentage of Peak Parking Demand)															
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2008-250	AVERAGE	MIN	MAX
<i>MORNING Occupancy Rate</i>															
Business Office	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-
Medical Office	100%			100%	100%	100%	100%	100%		100%		100%	100%	-	-
Retail Store	80%	50%		80%	20%	80%	80%	65%	65%	65%	65%	75%	66%	20%	80%
Restaurant / Eating Establishment	30%			20%	100%	20%	20%	20%	20%	20%	20%	30%	30%	20%	100%
Overnight Accommodation / Hotel		80%		70%	80%	70%				70%			74%	70%	80%
Residential - Resident				90%	100%	90%	80%	80%			100%		90%	80%	100%
Residential - Visitor	20%			20%	10%	20%	80%	80%	80%	80%	100%	50%	54%	10%	100%
Library					25%		30%						28%	25%	30%
Entertainment	0%												0%	-	-
Theatre / Cinema		0%			25%		0%		10%	10%		40%	14%	0%	40%
Assembly Hall		10%			25%				70%				35%	10%	70%
Banquet Hall		20%			25%				70%				38%	20%	70%
Commercial Fitness Centre		25%			25%								25%	-	-
Industrial Use		100%			100%								100%	-	-
Recreational Establishment		25%			25%								25%	-	-
Bank / Financial					20%				65%			80%	55%	20%	80%
Institutional / Education					100%				100%	100%			100%	-	-

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



WEEKDAY Shared Parking (Percentage of Peak Parking Demand)															
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2008-250	AVERAGE	MIN	MAX
<i>NOON Occupancy Rate</i>															
Business Office	90%			90%		90%		90%	90%	90%	90%	90%	90%	-	-
Medical Office	90%			90%		90%		90%		90%		90%	90%	-	-
Retail Store	95%			90%		90%		90%	90%	90%	90%	80%	89%	80%	95%
Restaurant / Eating Establishment	100%			100%		100%		100%	100%	100%	100%	90%	99%	90%	100%
Overnight Accommodation / Hotel				70%		70%				70%			70%	-	-
Residential - Resident				65%		65%		55%			100%		71%	55%	100%
Residential - Visitor	20%			20%		20%		55%	55%	55%	55%	50%	41%	20%	55%
Library													-	-	-
Entertainment	20%												20%	-	-
Theatre / Cinema									40%	40%		40%	40%	-	-
Assembly Hall									70%				70%	-	-
Banquet Hall									70%				70%	-	-
Commercial Fitness Centre													-	-	-
Industrial Use													-	-	-
Recreational Establishment													-	-	-
Bank / Financial									90%			100%	95%	90%	100%
Institutional / Education									100%	100%			100%	-	-

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



WEEKDAY Shared Parking (Percentage of Peak Parking Demand)															
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2008-250	AVERAGE	MIN	MAX
<i>AFTERNOON Occupancy Rate</i>															
Business Office	100%	95%		95%	60%	95%	95%	95%	95%	95%	95%	100%	93%	60%	100%
Medical Office	100%			95%	100%	95%	95%	95%		95%		100%	97%	95%	100%
Retail Store	90%	100%		90%	100%	90%	100%	80%	80%	80%	80%	85%	89%	80%	100%
Restaurant / Eating Establishment	50%			30%	100%	30%	60%	30%	30%	30%	30%	60%	45%	30%	100%
Overnight Accommodation / Hotel		75%		70%	75%	70%				70%			72%	70%	75%
Residential - Resident				90%	100%	90%	80%	80%			100%		90%	80%	100%
Residential - Visitor	60%			60%	35%	60%	80%	80%	80%	80%	80%	75%	69%	35%	80%
Library					100%		30%						65%	30%	100%
Entertainment	60%												60%	-	-
Theatre / Cinema		50%			50%		0%		40%	40%		60%	40%	0%	60%
Assembly Hall		25%			50%				70%				48%	25%	70%
Banquet Hall		50%			50%				70%				57%	50%	70%
Commercial Fitness Centre		80%			100%								90%	80%	100%
Industrial Use		95%			100%								98%	95%	100%
Recreational Establishment		80%			100%								90%	80%	100%
Bank / Financial					100%				80%			100%	93%	80%	100%
Institutional / Education					100%				100%	100%			100%	-	-

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



WEEKDAY Shared Parking (Percentage of Peak Parking Demand)															
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2008-250	AVERAGE	MIN	MAX
<i>EVENING Occupancy Rate</i>															
Business Office	10%	10%		10%	0%	10%	15%	10%	10%	10%	10%	15%	10%	0%	15%
Medical Office	10%			10%	50%	10%	15%	10%		10%		15%	16%	10%	50%
Retail Store	90%	100%		90%	100%	90%	50%	100%	100%	100%	100%	75%	90%	50%	100%
Restaurant / Eating Establishment	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-
Overnight Accommodation / Hotel		100%		100%	100%	100%				100%			100%	-	-
Residential - Resident				100%	100%	100%	100%	100%			100%		100%	-	-
Residential - Visitor	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-
Library					100%		100%						100%	-	-
Entertainment	100%												100%	-	-
Theatre / Cinema		100%			100%		100%		80%	80%		85%	91%	80%	100%
Assembly Hall		100%			100%				100%				100%	-	-
Banquet Hall		100%			100%				100%				100%	-	-
Commercial Fitness Centre		100%			100%								100%	-	-
Industrial Use		10%			0%								5%	0%	10%
Recreational Establishment		100%			100%								100%	-	-
Bank / Financial					50%				100%			10%	53%	10%	100%
Institutional / Education					50%				20%	20%			30%	20%	50%

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



SATURDAY Shared Parking (Percentage of Peak Parking Demand)														AVERAGE	MIN	MAX
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2006-250				
<i>MORNING Occupancy Rate</i>																
Business Office				10%		10%		10%	10%	10%	10%	20%	11%	10%	20%	
Medical Office				10%		10%		10%		10%		20%	12%	10%	20%	
Retail Store				80%		80%		80%	80%	80%	80%	60%	77%	60%	80%	
Restaurant / Eating Establishment				20%		20%		20%	20%	20%	20%	30%	21%	20%	30%	
Overnight Accommodation / Hotel				70%		70%				70%			70%	-	-	
Residential - Resident				90%		90%		100%			100%		95%	90%	100%	
Residential - Visitor				20%		20%		100%	100%	100%	100%	100%	77%	20%	100%	
Library													-	-	-	
Entertainment													-	-	-	
Theatre / Cinema									10%	10%		40%	20%	10%	40%	
Assembly Hall									70%				70%	-	-	
Banquet Hall									70%				70%	-	-	
Commercial Fitness Centre													-	-	-	
Industrial Use													-	-	-	
Recreational Establishment													-	-	-	
Bank / Financial									80%			80%	80%	-	-	
Institutional / Education									10%	10%			10%	-	-	

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



SATURDAY Shared Parking (Percentage of Peak Parking Demand)															
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2006-250	AVERAGE	MIN	MAX
<i>NOON Occupancy Rate</i>															
Business Office				10%		10%		10%	10%	10%	10%	20%	11%	10%	20%
Medical Office				10%		10%		10%		10%		20%	12%	10%	20%
Retail Store				100%		100%		85%	85%	85%	85%	90%	90%	85%	100%
Restaurant / Eating Establishment				100%		100%		100%	100%	100%	100%	80%	97%	80%	100%
Overnight Accommodation / Hotel				70%		70%				70%			70%	-	-
Residential - Resident				65%		65%		100%			100%		83%	65%	100%
Residential - Visitor				20%		20%		100%	100%	100%	100%	100%	77%	20%	100%
Library													-	-	-
Entertainment													-	-	-
Theatre / Cinema									50%	50%		70%	57%	50%	70%
Assembly Hall									70%				70%	-	-
Banquet Hall									70%				70%	-	-
Commercial Fitness Centre													-	-	-
Industrial Use													-	-	-
Recreational Establishment													-	-	-
Bank / Financial									85%			100%	93%	85%	100%
Institutional / Education									10%	10%			10%	-	-

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



SATURDAY Shared Parking (Percentage of Peak Parking Demand)															
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2006-250	AVERAGE	MIN	MAX
<i>AFTERNOON Occupancy Rate</i>															
Business Office				10%		10%		10%	10%	10%	10%	10%	10%	-	-
Medical Office				10%		10%		10%		10%		10%	10%	-	-
Retail Store				100%		100%		100%	100%	100%	100%	100%	100%	-	-
Restaurant / Eating Establishment				50%		50%		50%	50%	50%	50%	50%	50%	-	-
Overnight Accommodation / Hotel				70%		70%				70%			70%	-	-
Residential - Resident				90%		90%		100%			100%		95%	90%	100%
Residential - Visitor				60%		60%		100%	100%	100%	100%	100%	89%	60%	100%
Library													-	-	-
Entertainment													-	-	-
Theatre / Cinema									80%	80%		80%	80%	-	-
Assembly Hall									70%				70%	-	-
Banquet Hall									70%				70%	-	-
Commercial Fitness Centre													-	-	-
Industrial Use													-	-	-
Recreational Establishment													-	-	-
Bank / Financial									100%			60%	80%	60%	100%
Institutional / Education									10%	10%			10%	-	-

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



SATURDAY Shared Parking (Percentage of Peak Parking Demand)														AVERAGE	MIN	MAX
Land Use	Town of Richmond Hill Parking Strategy	City of Markham By-law 28-97	Markham Centre By-law 2004-196	City of Newmarket By-law 2010-40	City of Toronto By-law 569-2013	City of Mississauga By-law 0225-2007	City of Brampton By-law 270-2004	City of Vaughan By-law 1-88 Corporate Centre Zone	City of Vaughan By-law 1-88	City of Vaughan Draft Review of Parking Standards	City of Vaughan Draft By-Law	City of Ottawa By-law 2008-250				
<i>EVENING Occupancy Rate</i>																
Business Office				10%		10%		10%	10%	10%	10%	5%	9%	5%	10%	
Medical Office				10%		10%		10%		10%		5%	9%	5%	10%	
Retail Store				70%		70%		40%	40%	40%	40%	50%	50%	40%	70%	
Restaurant / Eating Establishment				100%		100%		100%	100%	100%	100%	100%	100%	-	-	
Overnight Accommodation / Hotel				100%		100%				100%			100%	-	-	
Residential - Resident				100%		100%		100%			100%		100%	-	-	
Residential - Visitor				100%		100%		100%	100%	100%	100%	100%	100%	-	-	
Library													-	-	-	
Entertainment													-	-	-	
Theatre / Cinema									80%	100%		100%	93%	80%	100%	
Assembly Hall									100%				100%	-	-	
Banquet Hall									100%				100%	-	-	
Commercial Fitness Centre													-	-	-	
Industrial Use													-	-	-	
Recreational Establishment													-	-	-	
Bank / Financial									40%			10%	25%	10%	40%	
Institutional / Education									10%	10%			10%	-	-	

LEGEND			
Higher %	Mid Range %	Lower %	No Difference



Appendix B

Design Criteria Review Report



Design Criteria Review

Richmond Hill Parking and TDM Strategy for
New Developments

City of Richmond Hill, Ontario
October 30, 2022

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1 Introduction

This report outlines the review of current design criteria and standards for parking spaces, access to parking spaces, loading facilities, and driveway requirements, from other municipalities. This report is one of three major components that will form the Implementation Plan and Final Recommendations. The other two components include the Current Practices Review, as well as a Data Collection Component. This Design Criteria review is tangential and independent to those other components and will form the design criteria recommendations where there is deviation from current in-force By-laws or standard practices within the city.

As previously mentioned, the overall Parking and TDM Strategy is comprised of the following tasks, with input from key stakeholders throughout the process:

1. **Current Practices Review** – comparing current parking rates contained within the 2010 Parking Strategy with those of comparable municipalities with more modern requirements, parking design requirements, and identifying and addressing gaps in the current approach through the introduction of emerging land uses or parking rates for non-standard vehicles (i.e. electric vehicle parking spaces, preferential parking spaces such as carpool parking or carshare parking etc.). Introducing a TDM Strategy tied to parking requirements;
2. **Data Collection** – conducting parking surveys to understand the existing parking demands for various land uses, targeting land uses identified as outliers in the current practices review; and
3. **Recommendations & Implementation** – summarizing the final recommendations of parking rates, TDM strategy, and implementation plan based on the current practices and data collection.

The recommendations presented in this report should be treated as preliminary recommendations for consideration as they are based primarily on the current practices review. Input from the remainder of the study, including stakeholder input, will be factored into the final recommendations. A final report will be created which summarizes the recommendations based on all supporting aspects of the study.

For the City of Richmond Hill, the current standard practices were taken as the design requirements contained within the two in-force By-laws:

- 1) Yonge and Bernard Key Development Area Secondary Plan Zoning By-law
(By-law 111-17)
- 2) Yonge and Carville/16th Key Development Area Secondary Plan Zoning By-law
(By-law 30-18)
- 3) Accessible Parking By-law
(By-law No. 305-90)

The current practices review has focused on the following municipalities, mostly concentrated in the Greater Toronto Area:

- ▶ City of Brampton (By-law 270-2004)
- ▶ City of Hamilton (By-law 05-200, 17-240)
- ▶ City of Markham (By-law 28-97)
- ▶ City of Mississauga (By-law 0225-2007)
- ▶ Town of Newmarket (By-law 2010-40)
- ▶ Town of Oakville (By-law 2014-014)
- ▶ City of Toronto (By-law 569-2013)
- ▶ City of Vaughan (Draft Comprehensive Zoning By-law – September 2020)
- ▶ City of Vancouver (By-law 6059)

It should be noted that this is a current practices review, and does not necessarily reflect more recent developments or considerations regarding parking design. Therefore, discussions with stakeholders from public and private agencies has helped provide guidance on future directions.

This report reviews the following items:

- ▶ Vehicle Parking Spaces
 - Perpendicular/Parallel/Angled Parking Spaces
 - Tandem Parking Spaces
 - Compact Car Space
 - Electrical Parking Spaces
 - Accessible (or Barrier-Free) Parking Space
 - Stacking (or Queueing) Spaces
- ▶ Parking Area Design
 - Aisles (one-way vs. two-way)
 - Access Requirements (ramps, grades, curves)
 - Hammerheads/Turnarounds
 - Driveways & Landscaping/Hardscaping (for low density development)
 - Passenger Pick-up/Drop-off Facilities
- ▶ Loading Spaces
 - Space Dimensions
 - Access Requirements (ramps, grades, curves)
- ▶ Bicycle Parking Spaces
 - Short-term and Long-term
- ▶ Cash-in-lieu

2 Vehicle Parking Spaces

Parking space sizes vary depending on the municipality as well as the type of parking space in terms of the vehicle-types that it is expected to accommodate. Within each space type, there can be further variations on the designs according to the aisle and access arrangement as well as the angle of the parking spaces. The most common type of parking space is the perpendicular parking space which is found in most above-, below- or at-grade parking areas or structures, and is generally considered the most efficient parking space in terms of maximizing the number of spaces in a given area. The second most common parking space is the parallel

parking space which is typically found on-street or in confined areas where it is not possible to accommodate a perpendicular parking space. Angled parking spaces are typically used in one-way arrangements, facilitate the inbound (or outbound) movements, and can allow for reducing the aisle widths. There is generally a relation between the parking space height or width, or the aisle width, and the angle of the parking space.

The general design criteria governing regular parking spaces typically applies to other dedicated parking spaces including larger and smaller spaces, such as accessible or barrier-free parking compared to compact car parking.

2.1 Perpendicular and Parallel Parking Spaces

Perpendicular parking spaces are spaces which orient the vehicle 90 degrees (or perpendicular) to the access aisle when the vehicle is in the parked position. These parking spaces can be accessed through forward- or reverse- entry. They are typically provided in rows and are back to back to another row of perpendicular parking spaces which have a separate access aisle, or back to a curb.

Parallel parking spaces are spaces which orient the vehicle in-line (or parallel) with the roadway or aisle from which it is accessed. Parallel parking spaces can be accessed through forward- or reverse- entry. In terms of the efficiency of design, the parallel parking spaces provide fewer parking spaces for a given length of aisle compared to perpendicular spaces.

Images of perpendicular and parallel parking space configurations are shown in **Table 1**. Minimum dimensions for perpendicular and parallel parking spaces from other municipalities are summarized in **Table 2**.

Table 1: Perpendicular and Parallel Parking Space Design (Source: Mississauga Zoning By-Law 0225-2007)

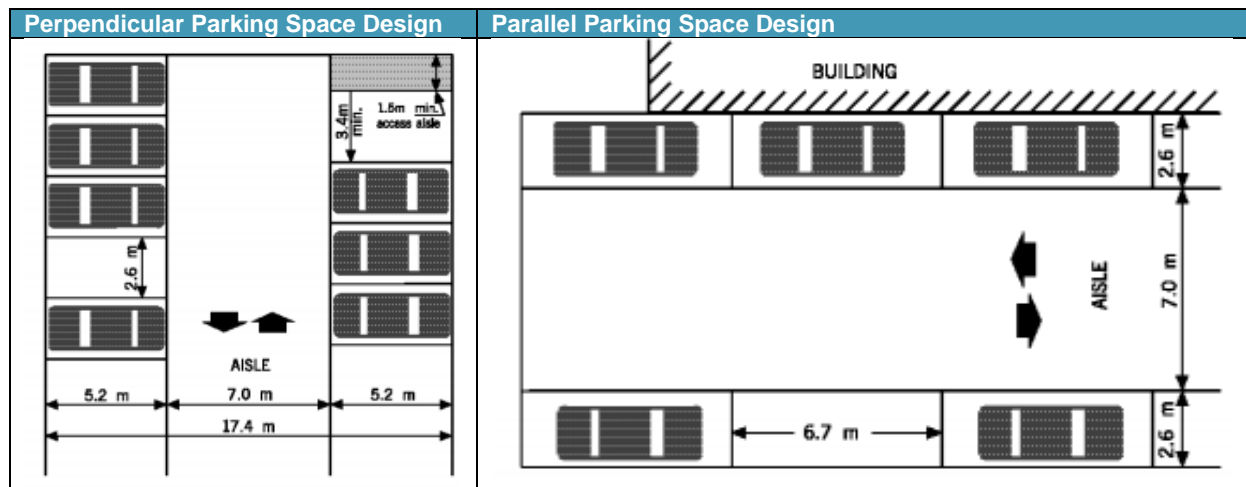


Table 2: Summary of Parking Space Dimensions

Municipality	Perpendicular Parking Space Minimum Dimensions			Parallel Parking Space Minimum Dimensions		
	Length (m)	Width (m)	Vertical Clearance (m)	Length (m)	Width (m)	Vertical Clearance (m)
Richmond Hill	5.8	2.75	-	6.7	2.4	-
Brampton	5.4	2.7	-	6.5	2.75	-
Hamilton	5.8	2.8	-	6.7	2.4	-
Markham	5.8	2.75	-	6.7	2.5	-
Mississauga ¹	5.2	2.6	-	6.7	2.6	-
Newmarket ²	5.5	2.7	-	6.7	2.6	-
Oakville	5.7	2.7	-	7.0	2.7	-
Toronto ³	5.6	2.6	2.0	6.7	2.6	2.0
Vaughan	5.7	2.7	2.0	6.7	2.7	2.0
Vancouver	5.5	2.5	2.0	6.4	2.5	-
Minimum	5.2	2.5	2.0	6.4	2.4	2.0
Median	5.7	2.7	2.0	6.7	2.6	2.0
Average	5.6	2.7	2.0	6.7	2.6	2.0
Maximum	5.8	2.8	2.0	7.0	2.75	2.0

Notes:

- 1) Mississauga defines parallel parking spaces as spaces with a parking angle not exceeding 15 degrees. The dimensions for perpendicular parking apply to all spaces with a parking angle exceeding 15 degrees.
- 2) Newmarket allows a reduction to 2.6 x 5.0 metres perpendicular spaces if fewer than 5 spaces are required.
- 3) Toronto requires that the minimum width increases to 2.9 metres from 2.6 metres for parking spaces with a drive aisle width less than 6.0 metres, which is permitted when the spaces are angled.

From the municipalities reviewed, only Toronto defines a maximum parking dimension. The maximum is set as 6.0 metres x 3.2 metres compared to the 5.6 metres x 2.6 metres for perpendicular parking spaces. Due to the high cost of establishing parking, most developers will keep parking spaces to a minimum. All other municipalities have not established a maximum parking space size which implies that there are no significant issue of developers creating larger parking spaces. **The City can consider defining a maximum parking space size if there are known issues with developers providing larger parking spaces; however, there doesn't appear to be a need based on the lack of by-laws defining maximum parking space dimensions.**

There is a high degree of consistency between the base (minimum) parking stall dimensions across all of the municipalities reviewed. The City of Richmond Hill has the longest perpendicular parking space length requirement at 5.8 metres (compared to the average/median length of 5.7/5.6 metres), but is equal to two other municipalities (Hamilton and Markham). Richmond Hill also has one of the widest perpendicular parking space width requirement at 2.75 metres (compared to the average/median length of 2.7 metres) but is equal to Markham, and second only to Hamilton which has a width requirement of 2.8 metres. Only three of the municipalities reviewed define minimum vertical clearances (each set at 2.0 metres).

Richmond Hill requires 6.7-metre long parallel parking spaces which is consistent with other municipalities. The width of the parallel parking spaces in Richmond Hill are slightly narrower

than the other municipalities with a minimum width of 2.4 metres compared to the average of 2.6 metres.

The City should include a 2.0 metre minimum clearance requirement for all private/public spaces and can consider modifying the parking space dimension requirements if there have been any concerns or the design of parking areas has resulted in inefficient design or use of the parking area. **Preliminary dimensional recommendations for parallel and perpendicular parking spaces are shown in Table 3.**

Table 3: Preliminary Recommendations for Minimum Parking Space Dimensions

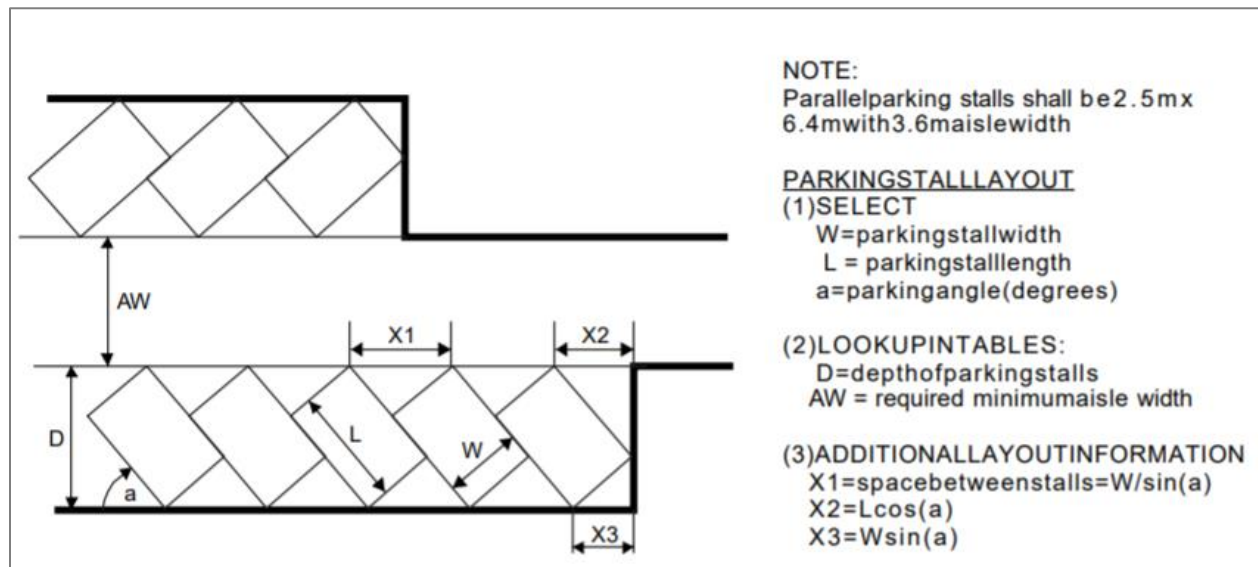
Municipality	Perpendicular Parking Space (change from existing by-law)			Parallel Parking Space (change from existing by-law)		
	Length (m)	Width (m)	Vertical Clearance (m)	Length (m)	Width (m)	Vertical Clearance (m)
Richmond Hill	5.6 (-0.2)	2.7 (-0.05)	2.0 (+2.0)	6.7 (-)	2.6 (+0.2)	2.0 (+2.0)

*Numbers in (brackets) represent change in minimum dimensions from the existing City's by-law.

2.2 Angled Parking Spaces

Parking space orientation can be defined by the angle created between the length of the space and the curb or drive aisle. For example, parallel spaces describe spaces where the length of the parking space (front to back of the car) is aligned with the curb (0 degrees). The previous section described space requirements for parallel and perpendicular spaces (0 degrees and 90 degrees); however, municipalities also allow for other angles for parking spaces or define different criteria depending on a range. A sample image provided in Vancouver's by-law which defines the various measurements related to angled parking is provided in **Figure 1**.

Figure 1: Angled Parking Measurements (Source: Vancouver By-Law 6059)



Angled parking spaces reduces the depth of the parking space which can aid in fitting parking spaces within a thinner parking lot area like parallel parking. Generally, angling parking also allows for smaller drive aisles when they are reduced to a one-way configuration. Based on the available land, an angled parking configuration may accommodate a higher number of parking spaces compared to the typical parallel or perpendicular parking space configurations, or make more efficient use of the available space. By angling the parking spaces, it can also restrict the drive aisle to a one-way. Examples of angled parking to accommodate longer vehicles or smaller lots in Richmond Hill are shown in **Figure 2**.

Figure 2: Angled Parking in Richmond Hill



The typical specifications within the by-laws for defining angled vehicle parking include:

- ▶ Parking space dimensions based on the parking angle and
- ▶ Minimum drive aisle width based on the parking angle.

2.2.1 Angled Parking Space Dimensions

As shown in **Figure 1**, the angling of spaces adjusts will increase the length of the space, but reduce the depth required to accommodate parking spaces. The current Richmond Hill by-law states that “A parking space that is not perpendicular or parallel to a driveway shall have an

area comprised of a rectangle with a minimum width of 2.75 metres and a minimum length of 5.8 metres.” These dimensions are the same as the minimum perpendicular space dimension since the extra length is not needed to maneuver into the space.

The following summarizes the minimum parking space dimensions for angled parking detailed by other municipalities:

- ▶ Richmond Hill defines the width of the access aisle according to the angle of the parking space, and only provides two options of 60 degrees (5.5 metres) or 45 degrees (3.7 metres). The dimensions of the angled parking spaces are the same as perpendicular spaces and do not change according to the angle.
- ▶ Mississauga defines minimum rectangular area with a minimum width and length for two cases:
 - Angles of less than 15 degrees (defined as parallel parking spaces) have longer length requirements of 6.7 metres, and
 - Angles exceeding 15 degrees (including perpendicular parking spaces) have shorter length requirements of 5.2 metres.
 - Access aisle widths are independent of the angle, except in the specific case when the aisle is one-way and the spaces do not exceed an angle of 60 degrees, in which case the aisle can be reduced to 5.5 metres (from 7.0 metres).
- ▶ Toronto’s by-law requires that the parking stall width be increased from 2.6 metres to 2.9 metres when the drive aisle width is less than 6.0 metres (whether it is a one-way or two-way aisle). Therefore, if spaces are angled and the drive aisle is maintained at the standard 6.0 metres, then the spaces don’t need to be widened.
- ▶ Vaughan increases the minimum length from 5.7 metres for perpendicular parking to 6.0 metres for 45-degree angled parking.
- ▶ Vancouver defines a minimum depth for parking stalls ranging from 4.23 metres to 6.13 metres based on various parking angles as shown in **Figure 3**.

Figure 3: Minimum Depth of Parking Stall for Angled Parking (Source: Excerpt from Vancouver By-Law 6059)

ANGLE PARKING TABLE (all dimensions in metres)					
PARKING ANGLE (degrees)	DEPTH OF STALL (D)				REQ'D AISLE WIDTH
	SMALL CARS (W=...)		NORMAL CARS (W=...)		
	2.30	2.60*	2.50	2.70*	
PARALLEL	-	-	**SEE NOTE**		3.6
20	3.73	4.02	4.23	4.42	3.6
25	4.03	4.30	4.59	4.77	3.6
30	4.29	4.55	4.92	5.09	3.6
35	4.52	4.77	5.20	5.37	3.6
40	4.72	4.95	5.45	5.60	3.6
45	4.88	5.09	5.66	5.80	3.6
50	5.00	5.20	5.82	5.95	3.9
55	5.09	5.26	5.94	6.05	4.2
60	5.13	5.28	6.01	6.11	4.5
65	5.14	5.27	6.04	6.13	4.8
70	5.11	5.21	6.02	6.09	5.1
75	5.04	5.12	5.96	6.01	5.4
80	4.93	4.98	5.85	5.89	5.8
85	4.78	4.81	5.70	5.71	6.2
90	4.60	4.60	5.50	5.50	6.6

Note: Increased widths may be required based on other conditions

Except for Hamilton’s by-law which includes a table that specifies “one-way and two-way aisle width”, the zoning by-laws do not explicitly state the angled parking must be one-way; however, the width of the aisle may already restrict it to one-way vehicle flow. Additionally, a one-way aisle will allow for easier and more predictable access and egress from an angled parking spot. **The city should consider restricting angled parking to one-way drive aisles when the parking angle is 45 degrees or less, and the aisle width is less than 4.0 metres. The City can determine if they want to have criteria that defines if the spaces are forward-in or reverse-in.**

Based on a review of the by-laws from other municipalities, only Toronto (wider space for smaller drive aisles), Vaughan (longer space for 45-degree parking), and Vancouver (explicit depth of stall for given angles at 5-degree increments) explicitly define a larger dimension for angled parking. **For simplicity of review, the city can keep the existing definition for defining angled parking space dimensions such that the minimum angled parking space dimension is the same as the minimum perpendicular space dimensions which is consistent with the majority of municipalities reviewed (where no varied dimension is presented).**

2.2.2 Angled Parking Space Drive Aisle Widths

The City of Richmond Hill currently defines minimum drive aisle widths (herein referred to as aisle width) for parking angled at 45, 60, and 90 degrees. This is similar to other municipalities including Hamilton, Newmarket, and Vancouver which provide a table of minimum aisle widths given the parking degree angle but with greater disaggregation and predefined choices.

Brampton, Mississauga, Oakville, and Toronto define minimum aisle width for a range of angles. The minimum aisle width requirements based on parking angle for the municipalities are summarized in **Table 4. To allow flexibility in design and improve the interpretation of the required minimum widths given any angle, the city can consider defining a minimum drive aisle width for range of parking rather than just the 45, 60, and 90-degree angles.**

Table 4: Summary of Minimum Aisle Width Requirements Based on Parking Angle

Municipality	Parking Angle (degrees)	One-Way / Two-Way Aisle Minimum Width (m)
Richmond Hill	45	3.7
	60	5.5
	90	6.0
Brampton	< 50	4.0
	50 to < 70	5.75
	70 to 90	6.6
Hamilton	0	3.7
	15	3.7
	30	3.7
	45	4.5
	60	5.5
	75	6.0
	90	6.0

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Municipality	Parking Angle (degrees)	One-Way / Two-Way Aisle Minimum Width (m)
Markham	-	-
Mississauga	≤ 60	5.5
	Otherwise	7.0
Newmarket	45	4.5
	90	6.0
Oakville	< 60	4.0
	≥ 60	5.5
	90	6.0
Toronto	< 50	4.0
	50 to < 70	5.5
	70 to 90	6.0
Vaughan	≤ 44	4.0
	45 to 59	5.0
	60 to 90	6.0
Vancouver	Parallel	3.6
	20	3.6
	25	3.6
	30	3.6
	35	3.6
	40	3.6
	45	3.6
	50	3.9
	55	4.2
	60	4.5
	65	4.8
	70	5.1
	75	5.4
	80	5.8
85	6.2	
90	6.6	

As previously noted, the city defines minimum aisle widths for 45, 60, and 90-degree parking configurations as 3.7 metres, 5.5 metres and 6.0 metres, respectively. A comparison of minimum aisle widths as they compare with Richmond Hill's dimensions are summarized in **Table 5**.

The minimum aisle widths are within range of the other municipality requirements and the city's width show a high degree of consistency for each defined angle; however, the city's minimum aisle width for 45-degree angled parking (3.7 metres) is the lowest amongst the municipalities reviewed in Ontario with only Vancouver having a smaller width by -0.1 metres. Excluding the existing Richmond Hill and Vancouver requirements, the smallest aisle width is 4.0 metres with an average (and median) aisle width of 4.5 metres. **The city can consider increasing the minimum aisle width for a 45-degree angled parking configuration to 4.0 metres to increase consistency with the other Ontario municipalities. Additionally, the angled**

parking shown in Figure 2 measure an aisle width of at least 4.0 metres when measured from Google Earth.

Table 5: Comparison of Minimum Aisle Widths to Richmond Hill Minimum Aisle Widths

Municipality	Minimum Aisle Width (m)		
	Parking Angle - 45°	Parking Angle - 60°	Parking Angle - 90°
Richmond Hill	3.7	5.5	6.0
Brampton	4.0	5.75	6.6
Hamilton	4.5	5.5	6.0
Markham	-	-	-
Mississauga	5.5	5.5	7.0
Newmarket	4.5	6.0	6.0
Oakville	4.0	5.5	6.0
Toronto	4.0	5.5	6.0
Vaughan	5.0	6.0	6.0
Vancouver	3.6	4.5	6.6
Minimum	3.6	4.5	6.0
Median	4.0	5.5	6.0
Average	4.3	5.5	6.2
Maximum	5.5	6.0	7.0

In summary, the city can consider defining minimum aisle widths for a range of parking angles or a greater number of angles similar to other municipalities rather than just the three (3) specified angles (45, 60, and 90 degrees), restricting angled parking (less than 60 degrees) to one-way drive aisles, and/or increasing the minimum aisle width from 3.7 metres to 4.0 metres for angled parking up to 45 degrees since it's the lowest amongst the Ontario municipalities reviewed. A summary of the preliminary recommendations for angled parking is summarized in Table 6.

Table 6: Preliminary Recommendations for Minimum Aisle Widths

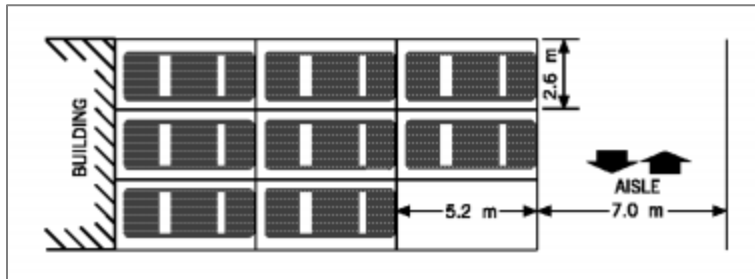
Municipality	Parking Angle (degrees)	One-Way / Two-Way Aisle Minimum Width (m)
Richmond Hill	Up to 45	4.0 (+0.3); one-way only
	Greater than 45 to, and less than 60	5.5 (-)
	60 to 90	6.0 (-)

Note: Numbers in (brackets) represent change in minimum dimensions from the existing City's by-law

2.3 Tandem Parking Spaces

Tandem parking obstructs a vehicle from having direct access to the drive aisle or street due to another parked vehicle. Tandem parking spaces are common among private garages where two or more vehicles can park behind one another on a single driveway, or where valet parking can be provided. An excerpt from the Mississauga showing a tandem parking configuration is shown in Figure 4.

Figure 4: Tandem Parking (Source: Mississauga Zoning By-Law 0225-2007)



The typical specifications within the by-laws for tandem vehicle parking include:

- ▶ Dimension of parking space and
- ▶ Permitted land uses.

As part of the 2010 Parking Strategy, the report notes that where tandem parking spaces are provided on a residential site, only one of the two tandem parking spaces should count toward the minimum parking requirement unless it can be demonstrated that both tandem parking spaces will be permanently designated to one single residential unit owner or tenant. Where tandem parking spaces are provided on a non-residential site, only one of the two tandem parking spaces should count toward the minimum parking requirement.

Existing by-laws for the Richmond Hill Key Development Areas (30-18 and 111-17) note that tandem parking spaces shall not be permitted in a parking structure or parking area.

Brampton, Newmarket and Vancouver do not mention tandem parking in their zoning by-law; Hamilton, Markham, and Mississauga do not define dimensions for tandem parking spaces; and Oakville, Toronto, and Vaughan define dimensions for tandem parking spaces.

The tandem parking space dimensions and description of land uses where tandem parking is applicable is summarized in **Table 7** and **Table 8**.

Toronto's tandem space dimension is the same as the perpendicular space requirement while Oakville and Vaughan are slightly longer. Note that Oakville defines the length based on the combined length of two tandem parking spaces. The two tandem parking spaces may have the same width as perpendicular spaces, but the combined length must be 11.70 metres, which is longer than the length of two separate perpendicular spaces (11.40 metres).

The City of Hamilton permits the use of tandem spaces for duplex dwellings as well as for commercial parking facilities/hotels provided there is a parking attendant or valet service. Markham specifies that tandem parking spaces may not be used for visitor parking, and are only permitted on lots with buildings containing no more than 4 dwelling units, and for condominium townhouse dwellings with parking provided at grade and accessed via a private road. The Town of Oakville permits tandem spaces to be used with any type of dwelling. Within the City of Toronto, tandem parking spaces may only be used to support secondary suites, at group homes, or at duplexes.

Table 7: Summary of Tandem Parking Space Dimensions

Municipality	Length (m)	Width (m)	Vertical Clearance (m)	Comparison with Standard Space Dimensions
Oakville	11.7	2.7	-	5.7 metres x 2.7 metres
Toronto	5.6	2.6	2.0	5.6 metres x 2.6 metres (2.0 metres vertical clearance)
Vaughan	6.0	2.7	-	5.5 metres x 2.5 metres

Note: Oakville defines the minimum length based on two parking spaces provided in tandem. Dividing the length in half would mean 5.85 metres per space.

Table 8: Summary of Tandem Parking Space Details

Municipality	
Richmond Hill	2010 Parking Strategy: Where tandem parking spaces are provided on a residential site, only one of the two tandem parking spaces should count toward the minimum parking requirement unless it can be demonstrated that both tandem parking spaces will be permanently designated to one single residential unit owner or tenant. Where tandem parking spaces are provided on a non-residential site, only one of the two tandem parking spaces should count toward the minimum parking requirement. By-laws 111-17 and 30-18: Tandem parking spaces shall not be permitted in a parking structure or parking area.
Brampton	N/A
Hamilton	In the case of a duplex dwelling, the required parking may be arranged in tandem. For commercial parking facilities and hotels, parking spaces may be designed to include the use of tandem or stacked parking where a parking attendant is on site or a valet service is provided.
Markham	For residential land uses, visitor parking shall not be located in tandem. Tandem Parking Spaces are only permitted on lots with buildings containing no more than 4 dwelling units, and for condominium townhouse dwellings with parking provided at grade and accessed via a private road.
Mississauga	Specifies land uses that can have tandem spaces include: Resident Physician, Dentist, Drugless Practitioner or Health Professional (5.0 spaces for office and detached dwelling, 4.0 of which may be tandem); and Motor Vehicle Body Repair Facility (4.3 spaces per 100 m ² GFA - non-residential, of which 50% of the required spaces may be tandem parking spaces)
Newmarket	N/A
Oakville	Tandem and stacked parking spaces are permitted for any dwelling. Where tandem parking spaces are provided, 3.0 metres in width per parking space for a private garage, otherwise, the minimum width is 2.7 metres.
Toronto	A required parking space may not be a tandem parking space, except when it is required for a secondary suite, group home or duplex building.
Vaughan	Tandem parking shall be permitted provided that a tandem parking space is not located on a required parking space.
Vancouver	N/A

Although not prominent in Ontario, it can be noted that other cities, such as Los Angeles, will have paid valet parking in order to provide tandem parking which can accommodate a higher number of spaces for various land uses including plazas and restaurants while using less space and at no inconvenience to the customers. Generally, the municipalities reviewed only allow parking for small/low-density residential developments.

In general, Richmond Hill's approach to tandem parking is consistent with most municipalities; however, the city can consider allowing tandem parking where valet parking will be provided (and may choose to specify land uses such as commercial parking facilities and hotels). For residential land uses, the City can consider maintaining the current requirement or expanding to allow tandem parking in parking structures or areas for specific other uses such as condominium townhouses or buildings containing fewer than a given number of units (Markham uses 4 units as the threshold).

2.4 Compact Parking Spaces

Compact parking spaces (also known as small car or small vehicle spaces) are smaller parking spaces that can be preferentially located and accommodate smaller sized vehicles. This encourages more sustainable travel but also helps make more efficient use of the available area. Since the proportion of large vehicles to smaller vehicles is not easy to control, the number of compact car spaces that are allowed needs to be limited and cannot be over represented in the supply.

The typical specifications within the by-laws for compact vehicle parking include:

- ▶ Dimension of space,
- ▶ Minimum number of spaces required to allow provision of compact car spaces,
- ▶ Allowable limit of compact car parking spaces, and
- ▶ Demarcation that the space is reserved for small cars.

It should be noted that municipalities do not define what vehicles can be considered small cars. This would leave interpretation to the driver to see if their car can park in these spaces and if they can get in and out of their vehicles comfortably.

Currently, Richmond Hill does not define dimensions or rates for compact parking spaces. The municipalities that do allow for the provision of spaces reduced in size typically limit the number of spaces that may be reduced (Hamilton and Vaughan set a maximum of 10% of the total required parking spaces are permitted for the purpose of compact motor vehicle parking; whereas Vancouver's limit is generally 25% with a limit of 40% if the parking spaces are primarily reserved and clearly designated for employee parking in association with office, industrial, or similar uses). By-laws will also denote that any such parking space must be clearly identified as being reserved for the parking of small cars only.

A summary of the compact motor vehicle parking space dimensions for each municipality is presented in **Table 9**.

Table 9: Summary of Compact Parking Space Dimensions and Allowable Percentage

Municipality	Compact Car Parking Space			
	Length (m)	Width (m)	Vertical Clearance (m)	Allowable Percentage
Richmond Hill	-	-	-	-
Brampton	-	-	-	-
Hamilton	5.5	2.6	-	10% ¹
Markham	-	-	-	-
Mississauga	-	-	-	-
Newmarket	-	-	-	-
Oakville	-	-	-	-
Toronto	-	-	-	-
Vaughan	4.8	2.4	-	10%.
Vancouver	4.6	2.3	2.0	25% (40%) ²
Ottawa	4.6	2.4	-	40% ³

Notes:

- 1) Where 10 or more parking spaces are required on a lot
- 2) Allowable percentage increases to 40% if a lot is primarily reserved and clearly designated for employee parking in association with office, industrial, or similar uses. Additionally, if a particular use requires only two or three parking spaces, one of them may be a small car space.
- 3) Where 20 or more parking spaces are required for the lot.

It can be noted that Vancouver and Ottawa’s minimum length for a standard parking spaces is 5.5 metres and 5.2 metres, respectively, which is shorter than Richmond Hill’s existing 5.8 metres (and recommended 5.6 metres for consideration); therefore, a longer compact car space compared to Vancouver and Ottawa’s may be more appropriate. **The city can consider allowing up to 10% of parking spaces (rounded down) that can be designed as a compact parking space with minimum dimensions of 4.8 metres and 2.4 metres with a minimum vertical clearance of 2.0 metres (compared to the 5.6 metres by 2.7 metres recommended typical parking space dimension). Additionally, it is recommended that the by-law include demarcation requirements that reserve the space for small cars in the form of pavement markings and signage.**

2.5 Electrified Parking Spaces

If electric vehicles will eventually emerge into mainstream popularity and become the predominant type of vehicle, provisions need to be established for electric vehicle (EV) charging stations at both non-residential developments and multi-unit residential buildings. Few municipalities currently have requirements for EV charging stations, as the requirements are being introduced they typically are introduced and tied to residential parking requirements first. With electric vehicles, there are three types of charging stations that currently exist and are described in **Table 10** and they are differentiated primarily by the rate at which they charge.

Table 10: Types of Electric Vehicle Charging Stations

Type	Characteristics
Level 1	<ul style="list-style-type: none"> - Typical wall socket - Slowest charging time - Supports both fully electric and hybrid electric vehicles
Level 2	<ul style="list-style-type: none"> - Typical charging station - Full charge in 8 to 10 hours - Supports both fully electric and hybrid electric vehicles
Level 3	<ul style="list-style-type: none"> - Not widely available - Full charge in 30 to 45 minutes - Supports only fully electric vehicles

The City of Richmond Hill hosts Level 2 charging stations available for public use, free of charge, 24 hours/day and operate on a first-come, first-served basis at the Municipal (2 stations) and Operations (1 station) offices. Existing electric vehicle charging station infrastructure can be found different ways including the MTO website¹ and PlugShare.com. A fee is typically charged by the minute at these stations. There are several EV charging station networks in North America².

The City of Vancouver made provisions to its by-laws to accommodate EV charging stations including requirements that the electrical room must have sufficient space to accommodate the installation of equipment to provide charging for all residents of the building. Vancouver’s by-law also requires that Level 2 charging or higher is provided³.

The Toronto Green Standard outlines the following requirements for mid to high-rise residential and all non-residential development:

1. Design the building to provide 20% of the parking spaces with electric vehicle supply equipment (EVSE).
2. EVSE, or energized outlets or receptacles, are acceptable to meet the requirement. All electrical circuits shall be 208-240 VAC single phase with a minimum circuit rating of 32Amps (40 Amp branch breaker). Electric vehicle supply equipment (EVSE) is defined by the Ontario Electrical Safety Code as: the complete assembly consisting of cables, connectors, devices, apparatus, and fittings, installed for the purpose of power transfer and information exchange between the branch circuit and the electric vehicle.
3. Parking spaces are defined as inside the building, excluding outdoor parking lots. Provide Level 2 charging capability to the required % of enclosed dedicated parking spaces or by using an electric vehicle energy management system (EV EMS).
4. Rough-in provisions include empty raceways starting in a junction box in the electrical room and terminating in a junction box central to each parking floor. Raceways will be empty to accommodate future wiring.

¹ <http://www.mto.gov.on.ca/english/vehicles/electric/electric-vehicle-chargers-ontario.shtml>

² <https://chargehub.com/en/electric-car-charging-guide.html#chargingnetworks>

³ <https://vancouver.ca/files/cov/2019-006-electric-vehicle-charging-for-buildings.pdf>

5. Section 86 of the Ontario Electrical Safety Code includes provisions for and permits the use of electric vehicle energy management systems (EV EMS) to monitor electrical loads and to control electric vehicle supply equipment loads.
6. EV EMS refers to a variety of technologies used to monitor and control electrical loads associated with charging EVs, also referred to as load sharing, load management, panel or circuit sharing or smart charging. EV EMS prevents circuit loads from exceeding the ampere rating of the circuit. Rough-in the remaining parking spaces for future EVSE.
7. The system must be capable of supplying a minimum performance level of 16 kWh average per EVSE, over an 8-hour period, assuming that all parking spaces are in use by a charging EV:
8. 16kwh/8hrs translates to a 2000W circuit per parking space minimum. For example: 2000W/208V @ 9.6A per outlet or 2000W/240V @ 8.33A per outlet.
9. Energized outlets or EVSE parking spaces shall be labelled for the intended use for electric vehicle charging.

Requiring that EV charging stations be provided at new developments can be first explored by requiring that the electrical rooms and infrastructure is set up for conversation or expansion in the future, through the by-law as well as subdivision agreements, without specifying the actual number of spaces. This applies to both residential and non-residential uses, but the residential uses would logically be the first to adopt this requirement since this is most likely where charging will typically take place.

The amount of electrical vehicle parking to be provided is difficult to establish without detailed studies and a cost-benefit analysis, but ensuring the infrastructure is available will allow for the conversion when EV becomes more prevalent. The Ontario Building Code previously required EV charging stations in specific scenarios as illustrated in **Figure 5**; however, in May 2019, there was a removal of the technical requirements related to electric vehicle charging infrastructure in houses and non-residential large buildings.⁴

⁴ <https://www.ontario.ca/page/building-code-updates>

Figure 5: Excerpt from Ontario Building Code (removed in 2019)

<p>3.1.21. Electric Vehicle Charging</p> <p>3.1.21.1. Electric Vehicle Charging Systems</p> <p>(1) Except as provided in Sentences (2.1) and (3), where vehicle parking spaces are located in a <i>building</i>, other than an apartment <i>building</i>, not less than 20% of the parking spaces shall be provided with <i>electric vehicle supply equipment</i> installed in accordance with Section 86 of the Electrical Safety Code adopted under Ontario Regulation 164/99 (Electrical Safety Code) made under the <i>Electricity Act, 1998</i>.</p> <p>(2) The remaining parking spaces located in a <i>building</i> described in Sentence (1) shall be designed to permit the future installation of <i>electric vehicle supply equipment</i> that conforms to Section 86 of the Electrical Safety Code.</p> <p>(2.1) Parking spaces located in a <i>building</i> need not comply with Sentence (1) where,</p> <p>(a) before January 1, 2018,</p> <p>(i) an agreement was entered into between the owner of the land on which the <i>building</i> is to be constructed and a distributor, as defined in subsection 2 (1) of the <i>Electricity Act, 1998</i>, that sets out the conditions for the connection of the <i>building</i> to a distribution system, as defined in subsection 2 (1) of that Act, or</p> <p>(ii) a plan for the land on which the <i>building</i> is to be constructed respecting the siting and sizing of lines, transformers or other equipment used for conveying electricity was approved by a distributor, as defined in subsection 2 (1) of the <i>Electricity Act, 1998</i>, and</p> <p>(b) an application for a permit to <i>construct</i> the <i>building</i> was made before January 1, 2020.</p> <p>(3) Except as provided in Sentences (6) and (7), where a <i>house</i> is served by a garage, carport or driveway, the following shall be installed to permit the future installation of <i>electric vehicle supply equipment</i> that conforms to Section 86 of the Electrical Safety Code:</p> <p>(a) a minimum 200 amp panelboard,</p> <p>(b) a conduit that is not less than 27 mm trade size and is equipped with a means to allow cables to be pulled into the conduit, and</p> <p>(c) a square 4-11/16 in. trade size electrical outlet box.</p> <p>(4) The electrical outlet box described in Clause (3)(c) shall be installed in the garage or carport or adjacent to the driveway.</p> <p>(5) The conduit and electrical outlet box described in Clauses (3)(b) and (c) shall provide an effective barrier against the passage of gas and exhaust fumes.</p>
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Richmond Hill can consider including a requirement that 20% of all condominium resident parking spaces be equipped with electrification, and that all spaces be provided with conduits or raceways. The City could also introduce a lower minimum requirement for non-residential land uses or use it as an incentive tied to the TDM Strategy, even though EV is not in itself a TDM measure. The city can also define the requirement for Level 2 charging or higher. Consideration of electric bike charging spaces can also be provided in the form of a Level 1 charging station (wall socket), or higher, based on the standards for charging electric bikes.

2.6 Accessible/Barrier-Free Parking Spaces

An accessible (or barrier-free) parking spaces are spaces for people living with a disability as defined in the *Accessibility for Ontarians with Disabilities Act (AODA, 2005)*⁵. Accessible parking spaces require the space to be wider to allow for loading and offloading at the side of the vehicle either through a larger individual space, or requiring a no-parking buffer beside the parking space. The latter approach allows for more efficient design of parking areas, especially when there are

⁵ <https://www.ontario.ca/laws/regulation/110191#BK132>

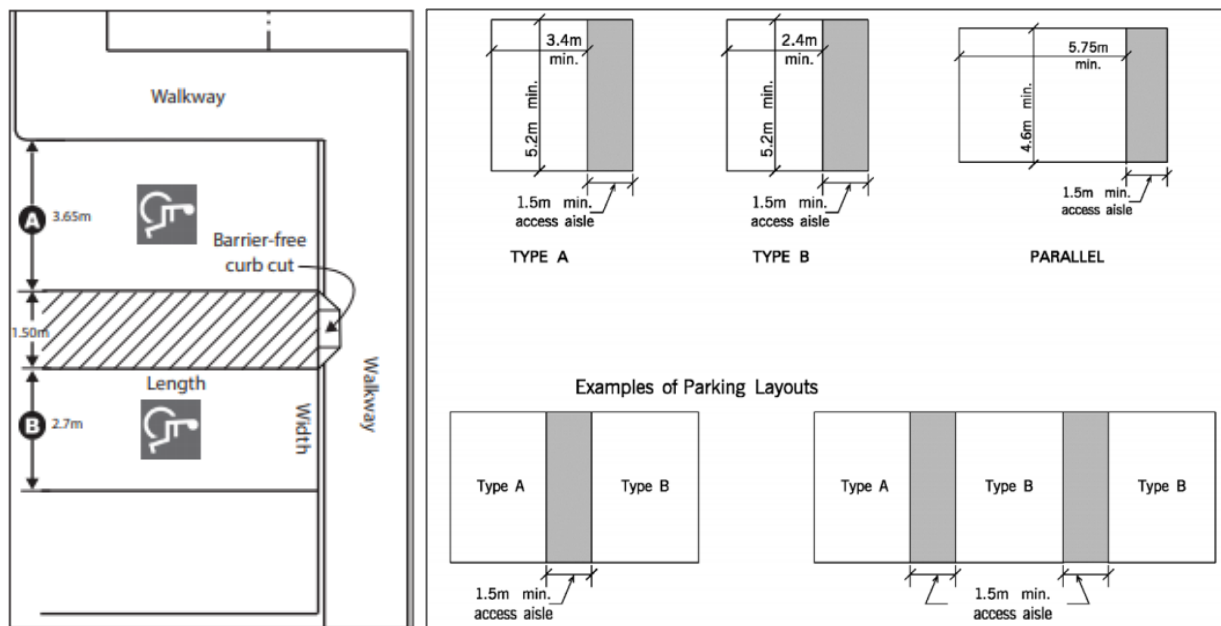
a higher number of accessible parking spaces required and located in the same row since the buffer area can be shared between two spaces.

The typical specifications within the by-laws for defining accessible parking include:

- ▶ Parking space dimensions,
- ▶ Access aisle dimensions, and
- ▶ Demarcation that the space is reserved for people living with a disability.

Images of accessible parking space designs with the access aisle are shown in **Figure 6**.

Figure 6: Accessible Parking Space Design (Zoning By-Law from Oakville [left] and Mississauga [right])



Richmond Hill currently defines a minimum width for accessible parking within By-law 305-90⁶ as 3.7 metres with no defined access aisle. Generally, there are two approaches to barrier-free or accessible parking in terms of the minimum dimensions. The first approach is defining two types of accessible parking spaces based on the minimum widths defined in the AODA: Type A (at least 3.4 metres wide) and Type B (at least 2.4 metres wide). The second approach is to define a single space that meets the requirements of the larger accessible parking space with/without the access aisle (Type A) – this is the case for Richmond Hill. The exceptions include Markham (undergoing by-law update), Hamilton (does not define a shared buffer access aisle), and Vancouver (outside of Ontario).

The AODA defines Type A and Type B spaces as follows:

- ▶ Type A – 3.4 metres minimum width with signage that identifies the space as van accessible.

⁶ <https://www.richmondhill.ca/en/shared-content/resources/documents/595-1106.pdf>

- ▶ Type B – 2.4 metres minimum width.

Where the length of an accessible parking space is defined in the zoning by-law, the minimum length is equal to the minimum length of a typical perpendicular parking space – except for Vaughan which denotes that the minimum barrier-free adjacent access aisle length is 5.8 metres (0.1 metres longer than the 5.7-metre minimum length of the accessible parking space), but the rationale for this is not clear.

Each municipality by-law also defines an “access aisle” with the following characteristics:

- ▶ Minimum width of 1.5 metres,
- ▶ Must extend the full length of the parking space,
- ▶ Must be marked with high tonal contrast diagonal lines, which discourages parking in them, and
- ▶ May be shared between two accessible parking spaces.

The minimum dimensions for the accessible parking spaces as defined within the by-law are summarized in **Table 11**.

Table 11: Summary of Accessible Parking Space Dimensions

Municipality	Accessible Parking Space			Accessible Parking Space (Type A)			Accessible Parking Space (Type B)			Access Aisle
	L	W	VC	L	W	VC	L	W	VC	
Richmond Hill	-	3.7	-	N/A			N/A			-
Brampton		N/A		-	3.4	-	-	2.4	-	1.5
Hamilton	5.8	4.4	-	N/A			N/A			-
Markham	5.8	2.6	-	N/A			N/A			1.5
Mississauga		N/A		5.2	3.4	-	5.2	2.4	-	1.5
Newmarket		N/A		5.5	3.4	-	5.5	2.6	-	1.5
Oakville		N/A		5.7	3.65	-	5.7	2.7	-	1.5
Toronto	5.6	3.9	2.1	N/A			N/A			1.5
Vaughan		N/A		5.7	3.4	2.0	5.7	2.4	2.0	1.5
Vancouver	5.5	4	2.3	N/A			N/A			-
AODA		N/A		-	3.4	-	-	2.4	-	1.5
Minimum	5.5	2.6	2.1	5.2	3.4	2.0	5.2	2.4	2.0	1.5
Median	5.7	3.9	2.2	5.6	3.4	2.0	5.6	2.4	2.0	1.5
Average	5.7	3.7	2.2	5.5	3.4	2.0	5.5	2.5	2.0	1.5
Maximum	5.8	4.4	2.3	5.7	3.65	2.0	5.7	2.7	2.0	1.5

Notes: L = Length; W = Width; VC = Vertical Clearance

Toronto denotes the location of accessible parking spaces by requiring in the by-law that the accessible parking spaces must be the parking spaces closest to a barrier free:

- (a) Entrance to a building;
- (b) Passenger elevator that provides access to the first storey of the building; and
- (c) And shortest route from the required entrances in (a) and (b) (Under appeal)

Toronto also establishes minimum dimensions of an accessible parallel parking spaces (7.1 metres by 2.6 metres with 2.1 metres vertical clearance). Mississauga establishes a minimum

dimension for an accessible parallel parking space of 5.75 metres by 4.6 metres with a 1.5-metre wide access aisle perpendicular to the drive aisle.

Where municipalities differentiate accessible parking spaces by Type A and Type B, the by-law states that where an odd number of accessible parking spaces are required, the extra space is assigned as a Type B (smaller) space (except where only one space is required, a type A space shall be provided). In Newmarket, the by-law explicitly notes that the odd Type B space may be changed to a Type A (Newmarket). Oakville does not note that where one space is required, it must be a Type A. The Type A and Type B rate descriptions are summarized in **Table 12**.

Table 12: Summary of Additional Accessible Parking Details

Accessible Parking Details	Brampton	Mississauga	Newmarket	Oakville	Vaughan	AODA
Where 1 space is required, Type A shall be provided	✓	✓	✓*			✓
Where an even number of accessible parking spaces are required, an equal number of Type A and Type B barrier-free parking spaces shall be provided	✓	✓	✓	✓	✓	✓
Where an odd number of accessible parking spaces are required, the number of barrier free parking spaces must be divided equally between a Type A and a Type B accessible space, with the remaining space provided as a Type B accessible parking space	✓	✓	✓	✓	✓	
Where an uneven number of accessible parking spaces are required, the extra space may be Type B						✓
Where an uneven number of accessible parking spaces are required, the extra Type B space may be changed to a Type A			✓			
In all cases, the minimum requirement for a Type B accessible parking space may be satisfied by a Type A accessible parking space					✓	

Newmarket requires 1 Type A space where 1 to 12 spaces are required and 1 Type B space where 13 to 25 spaces are required. Vancouver allows each required accessible space can count as two standard parking spaces toward meeting minimum total required parking.

Other design considerations related to accessible parking spaces include signage, pavement markings, and curb cuts.

The City can consider establishing Type A and Type B parking spaces with the minimum length equal to the standard space minimum length, and minimum width of 3.4 metres and 2.4 metres respectively. Additional requirements would include an access aisle of 1.5 metres, signage, pavement markings and curb cuts. The dimensions for accessible parking spaces are summarized in **Table 13**. Alternatively, **for simplicity, Richmond Hill can consider a single dimension for accessible parking spaces with a width equal to 3.4 metres (satisfying both Type A and Type B minimum requirements) while introducing the 1.5m access aisle (which can be shared between two accessible parking spaces). Allowing for Type B parking spaces would allow for more space saving when there are a higher number of**

accessible parking spaces being provided. Additional considerations include denoting location of accessible parking spaces to be the closest parking spaces to a barrier-free entrance (similar to Toronto). The City can also consider including provisions for parallel accessible parking spaces, however, requiring access aisles and greater depths can make integrating parallel accessible parking spaces into a parking area design difficult or inefficient, and may therefore be rarely used.

Table 13: Preliminary Recommendations for Minimum Parking Space Dimensions

Municipality	Accessible Parking Space Dimensions (m) Type A			Accessible Parking Space Dimensions (m) Type B			Access Aisle (m)
	Length	Width	Vertical Clearance	Length	Width	Vertical Clearance	
Richmond Hill	5.6 (-0.2)	3.4 (-0.3)	2.0 (+2.0)	5.6 (-0.2)	2.4 (-1.3)	2.0 (+2.0)	1.5 (+1.5)

2.7 Stacking (Queuing) Spaces

Stacking (or queuing) spaces allow vehicles wait and access a drive through facility. Richmond Hill currently does not define stacking or queuing spaces similar to other municipalities including Brampton, Mississauga, Markham, and Vancouver. Definitions of stacking (or queuing) spaces/lanes are summarized in **Table 14** and minimum dimensions for each stacking space are summarized in **Table 15**.

Table 14: Definitions for Stacking (or Queueing) Lanes/Spaces

Municipality	Definitions
Hamilton	<i>Stacking space</i> shall mean an area devoted to the waiting or queuing of motor vehicles accessing a drive through facility, separate from any aisle providing access to and from any parking area.
Newmarket	<i>Queuing lane</i> means a portion of a parking area or a parking lot, other than a parking aisle or a parking space which provides standing room for vehicles in a queue while awaiting service from a drive-thru facility. For the purposes of this definition, a queuing lane shall be measured by the length of a queuing space times the number of spaces required. <i>Queuing spaces</i> means an area occupied by a motor vehicle within a queuing lane while awaiting service from a drive-thru facility.
Oakville	<i>Stacking lane</i> means a continuous on-site queuing lane that includes stacking tandem spaces for motorized vehicles which is separated from other vehicular traffic and pedestrian circulation by barriers, markings or signs.
Toronto	<i>Stacked parking space</i> means a parking space that is positioned above or below another parking space and is accessed only by means of an elevating device. <i>Stacking aisle</i> means an onsite queuing area for motor vehicles that is separated from other vehicle traffic and pedestrian circulation by barriers, markings or signs.

Vaughan	<p><i>Stacking Lane</i> means a vehicular accessway designed to keep motor vehicles in a linear queue while patrons order, receive or await service while remaining in their motor vehicle.</p> <p><i>Stacking Space</i> means an area within a stacking lane devoted to a single motor vehicle.</p>
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Table 15: Summary of Minimum Stacking Space Dimensions

Municipality	Stacking Space			Stacking Lane Required for Land Uses
	Length (m)	Width (m)	Vertical Clearance (m)	
Richmond Hill	-	-	-	-
Brampton	-	-	-	-
Hamilton	6.0 (+0.2)	2.6 (-0.2)	-	Commercial Parking Facilities and Hotels
Markham	-	-	-	-
Mississauga	-	-	-	Convenience restaurants, convenience retail and service kiosks
Newmarket	5.5 (-)	2.6 (-0.1)	-	-
Oakville	6.0 (+0.3)	2.7 (-)	-	Financial Institution, Motor vehicle washing facility, restaurant, retail store, school (private), school (public), service commercial establishment
Toronto	6.5 (+0.9)	3.0 (+0.4)	-	Drive Through Facility; vehicle washing
Vaughan	6.0 (+0.5)	2.7 (+0.2)	2.0 (-)	Car wash, drive-through associated with a financial institution/restaurant/any other retail use
Vancouver	-	-	-	-

Numbers in (brackets) refer to the change in dimension from the typical perpendicular minimum space requirements to the stacking space requirements.

In general, the length of the stacking space is larger than the typical parking space; however, the width of the space differs between municipalities compared to the municipality’s typical parking space dimension. Municipalities will also define the land uses (typically those that use a drive-through) in which the stacking spaces are used. **The City can consider defining a stacking space dimension.**

2.8 Obstructions

Generally, municipalities define a parking space as an unobstructed space designed for the temporary parking of a motor vehicle. Therefore, the definition itself states that there is no obstruction within the space confined within the dimensions outlined in the preceding sections. By-laws appear to assume that part of the space must be unobstructed to allow passengers to open vehicle doors to enter/exit the vehicle. Therefore, if a space is located directly adjacent to the outer wall of a structure (an obstruction), the space should be increased in width to ensure doors can be opened and closed. This may also assist with maneuvering into the space if the space itself is constrained. Increasing the width of a space adjacent to a wall is one approach to dealing with dead ends in parking structures or parking areas where the last spaces are difficult

to access and where a hammerhead is not provided (discussed in further detail in the following sections).

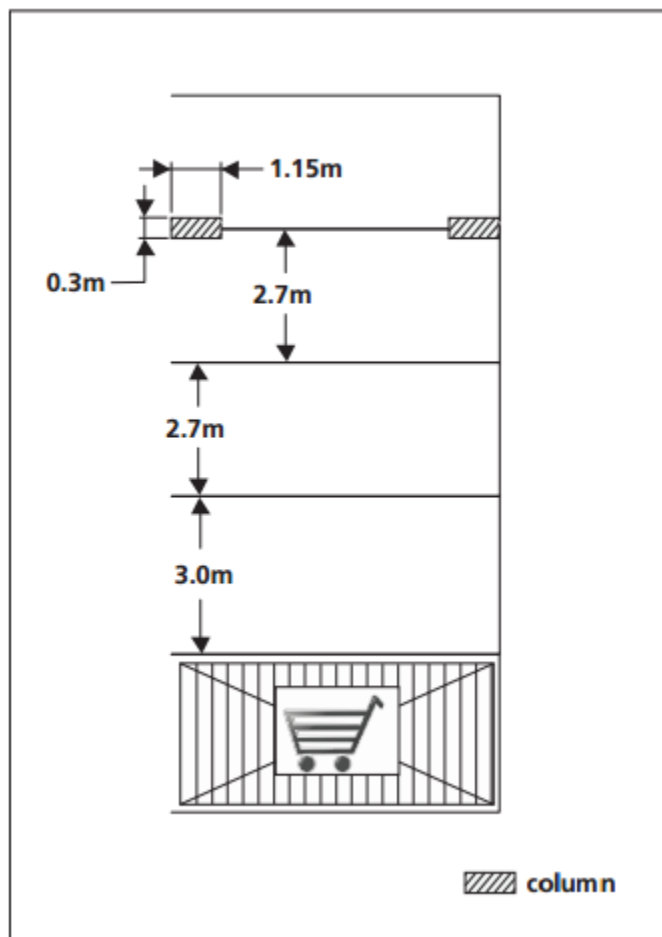
In many cases, columns or other obstructions are permitted within the spaces, but must be confined to the corner areas of the space. The purpose of this is to ensure that doors can be opened. A column that is located on the side of the space, but in the middle of the length of the parking space, is likely to obstruct the front, rear, or both of the vehicles doorways on that side of the car. For this reason, there are typically limits that define when a column or other obstruction is acceptable or not.

The typical specifications within the by-laws for parking obstructions include:

- ▶ Type of obstruction (wall, column, etc.),
- ▶ Proximity to parking space, or proximity from the front/rear of the parking space, and
- ▶ Increase in minimum parking space dimension to account for the obstruction.

Richmond Hill's by-law currently does not define an increase required to the parking space dimensions when there are obstructions near or within the space. An image describing obstructions adjacent to parking spaces from Oakville's by-law is shown in **Figure 7**.

Figure 7: Parking Space Obstruction Image (Oakville Zoning By-law)



Hamilton, Newmarket, Oakville, Toronto, and Vaughan generally describe a minimum increase to the minimum parking space dimension of 0.3 metres when an obstruction is located within 0.3 metres of the parking space and more than 1.0 metre from the front or rear of the parking space. The length of the wall/column for it to be considered an obstruction ranges 1.0 metres (Newmarket, Toronto, Vaughan) to 1.15 metres (Oakville, Hamilton) from the front or rear of the space. This may account for the difference in the standard length of a space which ranges from 5.5 metres to 5.7 metres for Newmarket, Toronto, and Vaughan, whereas it is slightly longer for Oakville and Hamilton (5.70 metres and 5.8 metres). Hamilton’s by-law also specifies that light standards/poles located at the intersection of four (4) parking spaces are not considered an obstruction, but other by-laws would not need to specify this since the light pole would not be more than 1.0 metre from the front or rear of the space.

The by-law text that relates to parking space obstructions for each municipality is summarized in **Table 16**.

Table 16: By-Laws related to Parking Space Obstructions

Municipality	By-Law related to Parking Space Obstructions
Richmond Hill	-
Brampton	-
Hamilton	<p>Where a wall, column, or any other obstruction is located abutting or within any parking space within an above ground or underground parking structure, the minimum width of a parking space shall be increased by 0.3 metres; Notwithstanding the above, an additional 0.3 metres shall not be required provided:</p> <ol style="list-style-type: none"> 1. the maximum length of the wall, column or any other obstruction shall not exceed 1.15 metres; 2. the wall, column or any other obstruction is located at the front, rear, or both ends of the parking space; and, 3. the wall, column or any other obstruction does not project more than 0.15 metres into the width of the parking space. <p>Light standards, including the base, located at the intersection of 4 parking spaces shall not be considered as an obstruction.</p>
Markham	-
Mississauga	-
Newmarket	<p>The side of a parking space is obstructed if any part of a fixed object such as a wall, column, bollard, fence, or pipe is situated within 0.3 metres of a side of the Parking Space, measured at right angles, and more than 1.0 metre from the front or rear of the Parking Space.</p>
Oakville	<p>Where a wall, column, or other obstruction is located abutting or within any parking space, the minimum width of the parking space shall be increased by 0.3 metres for each side that is obstructed. Obstructions within 1.15 metres of either stall end do not require an increase in parking space width, provided the obstruction projects no more than 0.15 metres into the parking space.</p>
Toronto	<p>The minimum width must be increased by 0.3 metres for each side of the parking space that is obstructed. The side of a parking space is obstructed if any part of a fixed object such as a wall, column, bollard, fence or pipe is situated:</p> <ol style="list-style-type: none"> 1. within 0.3 metres of the side of the parking space, measured at right angles, <u>and</u> 2. more than 1.0 metre from the front or rear of the parking space.

Vaughan	<p>The side of a parking space shall be deemed obstructed if any part of a fixed object such as a utility box, column, wall, pipe, fence or other similar object is located:</p> <ol style="list-style-type: none"> 1. Within 0.3 metres of the side of a parking space, measured at right angles; <u>and</u>, 2. More than 1.0 metres from the front or rear of the parking space. <p>Where a parking space is obstructed on one or both sides in accordance with this By-law, the width of the parking space must be increased by 0.3 metres.</p> <p>An obstruction located in the front of a parking space shall only be permitted where the parking space is for the exclusive use of a compact motor vehicle and where the obstruction shall have a maximum projection of 0.3 metres into the parking space and a maximum width of 1.2 metres.</p>
Vancouver	<p>All off-street parking spaces shall be a minimum of 5.5 metres in length and 2.5 metres in width and shall have a minimum vertical clearance of 2.0 m, except that:</p> <ol style="list-style-type: none"> (a) where one side of any space abuts any portion of a fence or structure, the minimum width shall be 2.7 m; (b) where both sides of any space abut any portion of a fence or structure, the minimum width shall be 2.9 m;

Richmond Hill should consider some variation of the examples from other municipalities and add a provision within the by-law such that the minimum width must be increased by 0.3 metres for each side of the parking space that is obstructed. The side of a parking space is obstructed if any part of a fixed object such as a wall, column, bollard, fence or pipe is situated within 0.3 metres of the side of the parking space, measured at right angles, and more than 1.0 metre from the front or rear of the parking space. The city can also consider adding a provision that light standards located at the intersection of four (4) parking spaces are not considered an obstruction, or include a provision similar to Oakville which states that obstructions within 1.0 metre of either stall end do not require an increase in parking space width, provided the obstruction projects no more than 0.15 metres into the parking space. This will allow for more efficient parking designs.

It should be noted that architects do not always know the final locations of columns when they begin designing underground or structured parking areas. For this reason, they will occasionally design the parking area under the assumption there are obstructions, just in case the final design results in obstructions and the design cannot be revisited at the later stage. Therefore, allowing obstructions to enter a space slightly, may allow for more efficient and flexible design during the earlier stages.

3 Loading Spaces

Means an unobstructed area of land which is provided and maintained upon the same lot or lots upon which the principal use is located, and which:

- a) is provided for the temporary parking of one or more commercial motor vehicles while merchandise or materials are being loaded or unloaded from such vehicles;
- b) is suitable for the temporary parking of one commercial motor vehicle; and
- c) shall not be used for the purpose of sale or display.

A review and comparison of loading standards for various municipalities included the following criteria:

- ▶ Loading requirements for multi-unit residential buildings,
- ▶ Standard loading space dimensions,
- ▶ Minimum driveway widths and maximum allowable gradients,
- ▶ Thresholds for exempting loading requirements for small lots and buildings, and
- ▶ Identifying the need for a breakdown of non-residential land uses.

The typical process to determine loading space requirements is similar to typical parking space requirements and is described as follows:

1. The reviewer will determine which set of loading requirements applies to a given land use. This may be based on:
 - a. the Zone that the land use is contained within (less common);
 - b. the specific land use; or,
 - c. the general loading requirements which apply to all land uses (most common).
2. The reviewer will determine the floor area applicable to the specific land use or development (typically gross floor areas are used).
3. The reviewer will determine the number of spaces according to the above floor area.
 - a. For the municipalities that contain more than one type of loading space, the reviewer will determine how many of each type of spaces are required according to the floor area. Typically, as more spaces are required, the size of the required spaces also increases.

Richmond Hill defines two sizes of loading spaces; however, the smaller loading space is only applicable for a second loading space requirement of residential buildings. All other loading spaces must be at the size of the larger. Additionally, residential buildings have a maximum minimum requirement of 2 loading spaces which applies to any building with more than 400 units.

At a minimum, each municipality outlines one loading space size which is applicable to all uses and these spaces are referred to herein as “standard” loading spaces. However, some municipalities have provided further breakdowns of types of loading spaces depending on the needs of different land uses or based on the sizes of each use. Toronto has the greatest

number of loading space types (4) with Vaughan proposing the same breakdown in the draft by-law update, as summarized in **Table 17**. The terms “small”, “standard”, “extended”, and “large” are only used to characterize the spaces for comparison between the municipalities. Hamilton is also noted to have four (4) different types of loading spaces; however, this primarily shows various by-law definitions of zone specific loading spaces. When there is one standard loading space size defined, it is normally intended to also accommodate refuse collection which requires greater vertical clearances.

Table 17: Summary of Loading Space Types

Municipality	“Small”	“Standard”	“Extended”	“Large”
Range of Lengths	< 8.0m	8.0m – 12.5m	12.5m – 16.0m	16.0m – 18.0m
Richmond Hill		✓	✓	
Brampton		✓		
Hamilton	✓	✓	✓	✓
Markham		✓		
Mississauga		✓		
Newmarket		✓		
Oakville		✓	✓	
Toronto	✓	✓	✓	✓
Vaughan	✓	✓	✓	✓
Vancouver	✓	✓		✓

Hamilton, Oakville, Toronto, Vaughan, and Vancouver have two or more sizes of loading space dimensions which are discussed in the following sections.

Toronto, Vaughan, and Vancouver are the municipalities reviewed that have more than two types of loading spaces, and this is tied to the fact that these municipalities also have the most highly defined requirements for specific land uses rather than having only general requirements that apply to all non-residential uses. This is because it is difficult to assign specific types of spaces to a given land use if that land use is only addressed in the by-law under “general requirements”. The Vaughan’s draft zoning by-law appears to adopt the exact same breakdown of sizing as Toronto.

Generally, the width and vertical clearance of loading spaces are similar between municipalities and between types of loading spaces. Variations on the types of spaces is largely a result of the varying length although there are variations on the vertical clearance as well. The naming of space types – “small”, “standard”, “extended”, and “large” – is only used in the context of this document and is not necessarily adopted from any of the standards which were reviewed. Loading space dimensions for the various municipalities are summarized in **Table 18**.

Table 18: Summary of Loading Space Dimensions

Municipality	“Small” < 8.0m			“Standard” 8.0m – 12.5m			“Extended” 12.5m – 16.0m			“Large” 16.0m – 18.0m		
	L	W	VC	L	W	VC	L	W	VC	L	W	VC
Richmond Hill	-	-	-	9.0	3.7	4.3	13.0	3.5	6.1	-	-	-
Brampton ¹	-	-	-	9.0	3.5	4.25	-	-	-	-	-	-
Hamilton	7.5	3.0	4.3	9.0	3.7	4.3	15.2	3.6	4.3	18.0	3.7	4.3
Markham	-	-	-	10.0	3.5	4.2	-	-	-	-	-	-
Mississauga	-	-	-	9.0	3.5	-	-	-	-	-	-	-
Newmarket	-	-	-	9.0	3.6	4.2	13.7	3.6	4.2	-	-	-
Oakville ²	-	-	-	12.0	3.5	4.2	-	-	-	-	-	-
Toronto	6.0	3.5	3.0	11.0	3.5	4.0	13.0	4.0	6.1	17.0	3.5	4.4
Vaughan	6.0	3.5	3.0	11.0	3.5	4.0	13.0	4.0	6.1	17.0	3.5	4.4
Vancouver	5.5	2.7	2.3	8.5	3.0	3.8	-	-	-	17.0	3.5	4.3
Minimum	5.5	2.7	2.3	8.5	3.0	3.8	13.0	3.5	4.2	17.0	3.5	4.3
Median	6.0	3.3	3.0	9.0	3.5	4.2	13.0	3.6	6.1	17.0	3.5	4.4
Average	6.3	3.2	3.2	9.8	3.5	4.1	13.6	3.7	5.4	17.3	3.6	4.4
Maximum	7.5	3.5	4.3	12.0	3.7	4.3	15.2	4.0	6.1	18.0	3.7	4.4

Notes: L = Length; W = Width; VC = Vertical Clearance

- 1) Brampton’s loading space minimum width increases to 4.25 metres for industrial land uses.
- 2) Oakville does not require a minimum number of loading spaces as per Zoning By-law 2014- 014. Should loading spaces be provided, the following regulations apply to set appropriate dimensions and locations. A minimum requirement does apply in North Oakville (which speaks to loading docks for industrial uses noted in table above). Loading docks must have a minimum length of 9 metres.

Generally, the loading space dimensions defined by Richmond Hill is consistent with the other municipalities; however, it should be noted that the typical loading space for Richmond Hill has a minimum length of 13.0 metres which is longer than the standard spaces of municipalities with only a single loading space defined (ranging from 9.0 to 12.0 metres and an average of approximately 10.0 metres). The standard Richmond Hill loading space is comparable to the City of Toronto Type ‘G’ space which is the space required for refuse collection at multi-unit buildings and doubles as a delivery loading space when it is not being used for refuse collection. This space is characterized as an “extended” space only for the comparisons above.

3.1 Types of Loading Spaces

3.1.1 “Small” Loading Space Dimensions

These “small” loading spaces are typically longer than the standard perpendicular parking space by 0.3 to 1.7 metres, and wider than the typical parking space by 0.2 to 1 metres.

- ▶ Lengths range from 5.5 metres to 7.5 metres.
- ▶ Widths range from 2.7 metres to 3.5 metres.
- ▶ Vertical clearances range from 2.3 metres to 4.3 metres.

Vancouver’s smallest loading space dimension (5.5 x 2.7 x 2.3) is only slightly wider than the standard perpendicular parking space (5.5 x 2.5 x 2.0). It is also the smallest dimension of all

loading spaces defined by these municipalities with the smallest minimum length, width, and vertical clearance.

3.1.2 “Standard” Loading Space Dimensions

Most municipalities have developed minimum loading space dimensions for one single size of loading space. A “standard” loading size was selected based on whichever loading space type was most comparable to the standard space size for municipalities that only have one standard space size. The City of Mississauga was the only municipality that does not specify a minimum vertical clearance. Typically, a vertical clearance is required to accommodate vehicles such as trucks and front-end loading garbage trucks.

- ▶ Lengths range from 8.5 metres to 12.0 metres.
- ▶ Widths range from 3.0 metres to 3.7 metres.
- ▶ Vertical clearances range from 3.8 metres to 4.3 metres.

3.1.3 “Extended” Loading Space Dimensions

The loading space dimensions for the extended spaces are fairly consistent; however, it is worth noting that Richmond Hill’s typical loading spaces (13.0-metre length) is consistent the larger (“extended”) loading space of other municipalities.

The extended space for Toronto is typically used to support residential multiple dwelling unit buildings, specifically the refuse collection trucks which are front-end loaders and require additional maneuvering room. The equivalent space for the Town of Newmarket applies to employment zones, so although they are comparable in terms of size (length), they are not comparable in terms of purpose and function. A final note is to say that for Toronto, Type “G” spaces have lower maximum gradients which is also reflective of the fact that front end loaders would have difficulties with steeper grades since a heavy bin could pose a risk to tipping the refuse truck, or the geometry of the trucks “arms” would make lifting the bins difficult or potentially dangerous.

- ▶ Lengths range from 13.0 metres to 15.2 metres.(maximum of 13.7 metres when excluding Vancouver).
- ▶ Widths range from 3.5 metres to 4.0 metres.
- ▶ Vertical clearances range from 4.2 metres to 6.1 metres.

3.1.4 “Large” Loading Space Dimensions

The minimum dimensions for large spaces are fairly consistent and should be enough to accommodate a typical tractor trailer, with the cab slightly extending beyond the length of the space itself (typically tractor trailers are less than 18.0 metres in length). Without the cab, the trailer could be left at the loading space without blocking the access lane or driveway.

- ▶ Lengths range from 17.0 metres to 18.0 metres.
- ▶ Widths range from 3.5 metres to 3.7 metres.
- ▶ Vertical clearances range from 4.3 metres to 4.4 metres.

3.1.5 When are Different Types (Sizes) of Loading Spaces Needed?

Richmond Hill defines two loading space dimensions (fit into the standard and extended loading space categories when compared to other municipalities); however, the smaller of the two spaces is only used as an option for larger residential developments where two loading spaces are required (i.e. the second loading space may be smaller). All other requirements require the larger loading space.

Similarly, Toronto requires the smallest loading space (Type “C”) be provided as a supplementary loading space for multi-unit dwellings with more than 400 units. Some other non-residential land uses also require the smaller Type “C” space be provided and this may be required as the base (default) loading space for a small sized use, or may be required for larger sized uses, and this is dependent on the land use.

Larger loading spaces are typically required as a default to accommodate the largest vehicles expected to serve the land use; however, as the development gets larger (and start requiring more loading spaces), depending on the land uses, rather than requiring more larger spaces, the municipality may still increase the number of loading spaces, but only require the addition of smaller loading spaces as supplementary to the default requirement. In the City of Toronto, for multi-unit buildings the default requirement is a Type “G” space which can accommodate refuse collection, and then any other additional spaces (required Type “C” space) is supplementary to the Type “G” space, and the requirement can be fulfilled by the larger Type “G” space.

With respect to non-residential uses, the correlation between longer spaces and more GFA is logical because larger uses will likely move more goods or merchandise at a time, and thus will receive larger trucks. In some cases, there may be a mixture of loading space types required to satisfy the requirements. In the City of Toronto, for warehouse and Manufacturing uses, the default requirement is a Type “C” space (the smallest of the loading space), and for larger uses the loading space requirement increases to Type “B”, and finally to Type “A” as the floor area increase. After 15,000 SM GFA, the requirement maxes out at a minimum of 3 Type “A” (large) loading spaces.

None of the municipalities reviewed have a maximum loading space requirement.

3.2 Land Uses Requiring Loading Spaces

Richmond Hill currently specifies loading space rates for dwelling units, and a general rate for non-residential units. This is similar to Markham (except no residential rate), Mississauga (exclusive ‘office’ and ‘medical office’ loading rate, and other non-residential land uses grouped together, with a separate requirement for apartment or retirement buildings), and Toronto (additional specific rates for non-residential land use groupings outside of ‘buildings containing dwelling units’).

Other municipalities including Brampton, Hamilton, Newmarket, Toronto, Vaughan, and Vancouver specify rates for select land uses. These land uses typically include the following:

- ▶ retail (or commercial),
- ▶ office,

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- ▶ industrial/manufacturing,
- ▶ hotel,
- ▶ supermarket,
- ▶ community care facility, and
- ▶ employment.

Specified land uses that require loading spaces for the various municipalities are summarized in **Table 19**.

Table 19: Summary of Land Uses Requiring Loading Spaces

Municipality	Dwelling Units	Retail / Commercial	Office	Industrial	Manufacturing	Hotel	Supermarket/ Grocery Store	Community Care Facilities	Employment	Other non-residential uses ¹
Richmond Hill	✓	*	*	*	*	*	*	*	*	✓
Brampton		✓	✓	✓						
Hamilton	✓	✓	✓							
Markham		*	*	*	*	*	*	*	*	✓
Mississauga ²	✓	*	✓	*	*	*				✓
Newmarket	✓	✓	*	*					✓	
Oakville ³				✓						
Toronto	✓	✓	✓	*	✓	✓	✓	*	*	✓
Vaughan	✓	✓				✓	✓			
Vancouver	✓			✓		✓		✓		

Notes:

- 1) *Land use rate covered by an “other land uses” category
- 2) Mississauga’s land uses that require loading spaces are explicit to retail store, retail centre, office, medical office, overnight accommodation, restaurant, convenience restaurant, manufacturing facility, warehouse/distribution facility, and wholesaling facility
- 3) Oakville There is no minimum number of loading spaces required by Zoning By-law 2014- 014. Should loading spaces be provided, the following regulations apply to set appropriate dimensions and locations. A minimum requirement does apply in North Oakville (which speaks to loading docks for industrial uses noted in table above). Loading dock minimum length of 9 metres.

The city’s current practice of having a general rate for residential and non-residential land uses is comparable to other municipalities. It is noted that since other municipalities specify a rate for specific land uses (e.g. retail, office, industrial/manufacturing etc.), the City can consider identifying specific rates as well; however, if the rates are similar to the general non-residential land use, then a general rate may be simpler and more appropriate. Specific rates for the various land uses are explored in the following sections.

3.2.1 Residential Loading Space Rates

The minimum residential loading space rates for each municipality is summarized in **Table 20**.

Table 20: Summary of Residential Loading Space Rates

Residential Units						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill ¹	31 - 399	1	-	-	1	-
	400+	2	-	1	1	-
Brampton	-	-	-	-	-	-
Hamilton ²	5 - 30	1	-	1	-	-
	30 - 100	1	-	-	-	1
	100+	2	-	1	-	1
Markham	-	-	-	-	-	-
Mississauga	30+	1	-	1	-	-
Newmarket	20+	1	-	1	-	-
Oakville	-	-	-	-	-	-
Toronto ³	31 - 399	1	-	-	1	-
	400+	2	1	-	1	-
Vaughan	31 - 399	1	-	-	1	-
	400+	2	1	-	1	-
Vancouver	100 - 299	1	-	1	-	-
	300 - 499	2	-	2	-	-

Notes:

- 1) For Richmond Hill, of the two required loading spaces for a land use with 400 dwelling units or more, one space (of the minimum two required) may have a width of not less than 3.7 metres and a length of not less than 9.0 metres with a minimum of 4.3 metres overhead clearance. This space shall not be used for refuse loading.
- 2) Hamilton Where a building or structure is comprised of a joint residential use and a commercial use, the number of the required loading spaces for the commercial uses may be reduced by 50% of the required number of loading spaces for the residential uses.
- 3) Toronto apartments with 400 or more units may satisfy the requirement for a "small" loading space (type C) by providing instead any larger type of loading space (type A, type B, or a second type G).

Richmond Hill requires one (1) loading space for buildings with at least 31 dwelling units, and an additional loading space for buildings with over 400 dwelling units. This is consistent with the majority of municipalities that define loading space requirements for residential land uses. The zoning by-laws for Brampton, Markham, and Oakville do not define a minimum supply rate for loading spaces for residential units. Of the municipalities that do require loading spaces, there is a high degree of consistency with Richmond Hill such that the threshold below which no loading spaces are required is typically 31 units – the exceptions are Hamilton (less than 5 units), Newmarket (less than 20 units), and Vancouver (less than 100). **With the consistency with other municipalities, it is recommended that the City keep the loading space requirement thresholds and minimum number of spaces required for each threshold.**

In terms of the type of loading space, the loading space size required for residential parking falls within the "extended" loading space for the first space, and the "standard" size for the second loading space. Mississauga, Newmarket, and Vancouver only require a smaller "standard" space type for residential units; however, it should be noted that Richmond Hill's Standards and Specifications Manual, the loading space required for waste collection is defined as the

“extended” space dimension; therefore, unless the waste collection units can be accommodated by a smaller space, **the current “extended” space requirement should remain unchanged.**

Generally, the type of loading spaces required for Richmond Hill is consistent with Hamilton, Toronto, and Vaughan (larger space for first requirement, and smaller space over another unit number threshold). As previously noted, as the development gets larger (and start requiring more loading spaces), rather than requiring more spaces of the same type, the municipality will still increase the number of loading spaces, but will only require the addition of smaller loading spaces. Toronto and Vaughan’s second loading spaces are categorized as “small” suggesting that the second loading space for Richmond Hill could be smaller (6.0 metres long rather than 9.0 metres long). **The City can consider a smaller second loading space for buildings containing dwelling units, similar to Toronto and Vaughan; however, the current size for the second space is similar to Hamilton and Vancouver.**

3.2.2 Non-Residential Loading Space Units vs. Zones

All the municipalities use non-residential rates based on gross floor area (GFA), with the exceptions of Hamilton where the type of floor area is unspecified, Markham which bases the rates on net floor area, and Vancouver which bases loading space rates on number of units for Hotels, but uses GFA for other non-residential land uses – all other municipalities have non-residential land uses are based on GFA.

Summaries of the loading space requirements for different non-residential land uses are summarized in **Table 21** to **Table 27**. The development sizes are based on square metres of GFA except for Hamilton, Markham, and hotel rates for Vancouver (as previously noted). These tables summarize the total loading spaces required based on the development size, as well as the breakdown of types (sizes) of loading spaces required. Richmond Hill has a general non-residential loading space rate which has been copied to each table to compare with specific land-use by-laws.

The Town of Newmarket has rates defined for commercial and urban centre zones, and employment zones, and therefore differs from the other municipalities since zones are used to determine loading requirements rather than land uses; however, the requirements have been categorized within the commercial/office land use where appropriate.

The other non-residential land use rates for Mississauga and Toronto list explicit land uses that the rates apply to.

3.2.3 Non-Residential Loading Space Rates

As noted, Richmond Hill has a general rate for loading spaces required by non-residential land uses. Markham, Mississauga, and Toronto also have a general rate for non-residential uses applied to other non-residential uses without specified rates. Mississauga defines a list of land uses where these ‘other’ rates apply; Toronto has another generalized grouping that explicitly includes passenger terminals and hospitals “or any other use similarly involving shipping, loading or unloading of persons, animals or goods, wares or merchandise” and the number of loading spaces are defined, but not the type and size; whereas Markham applies the rate for all non-residential land uses similar to Richmond Hill.

The general loading space rates for (other) non-residential land uses are summarized in **Table 21**. The thresholds for additional loading spaces in Richmond Hill are 465 square metres (approximately 5,000 square feet), 2323 square metres (approximately 25,000 square feet), and 9290 square metres (approximately 100,000 square feet). **The city can consider updating the thresholds to the nearest 100 square metres such that the thresholds are 500, 2500, and 10000 square metres for review purposes unless the preferences is to review in square feet.**

The number of spaces required by Richmond Hill is fairly consistent with the other municipalities across all development sizes. It can be noted that Toronto does establish a maximum of five loading spaces/thresholds. Since the general rates are fairly consistent, no changes are recommended; however, **the city can consider listing the specific non-residential land uses that would require loading spaces rather than a rate used for all non-residential land uses, particularly if there are common request for exemptions from loading requirements experienced by the City through some development applications.**

Table 21: Loading Space Rates for Other Non-Residential Uses

Other Non-Residential Uses						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1	-	-	1	-
Brampton	-	-	-	-	-	-
Hamilton	-	-	-	-	-	-
Markham ¹	300 -1,860	1	-	1	-	-
	1,860+	2	-	2	-	-
Mississauga	250 - 2,350	1	-	1	-	-
	2,350 - 7,500	2	-	2	-	-
	7,500 - 14,000	3	-	3	-	-
	Each additional 2,300 or part thereof over 14,000	1+	-	1+	-	-
Newmarket	-	-	-	-	-	-
Oakville	-	-	-	-	-	-
Toronto ²	500 - 2,300	1	-	1	-	-
	2,300 - 7,500	2	-	2	-	-
	7,500 - 14,000	3	-	3	-	-
	14,000 - 22,000	4	-	4	-	-
	22,000 - 30,000	5	-	5	-	-
Vaughan	-	-	-	-	-	-
Vancouver	-	-	-	-	-	-

Notes:

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- 1) Markham – Day nurseries, places of worship and public and private schools are not required to provide loading spaces.
- 2) Toronto – Rates apply to a passenger terminal, hospital, or any other use similarly involving shipping, loading or unloading of persons, animals or goods, wares, or merchandise.

The following sections outline the rates provided for specific non-residential land uses as outlined in other municipalities, and compares the rates with the Richmond Hill general non-residential loading space requirements. The common land uses include:

- ▶ Retail / Commercial,
- ▶ Office,
- ▶ Industrial / Manufacturing,
- ▶ Hotel,
- ▶ Supermarket / Grocery Store, and
- ▶ Community Care Facilities.

The loading space rates for retail/commercial land uses are summarized in **Table 22**. Richmond Hill’s general rate is fairly consistent with the specific retail/commercial rates of the other municipalities.

There is a maximum of five loading spaces for Toronto and Vaughan; however, this is set at a large threshold of a retail size greater than 20,000 square metres. It can be noted that the Toronto and Vaughan require “large” loading spaces for retail land uses larger than 10,000 square metres. These spaces have a length of 17.0 metres compared the Richmond Hill’s 13.0 metres and are likely intended to accommodate tractor trailers. **The city can consider implementing a specific rate for some land uses (like retail, grocery or industrial/warehousing) in order to introduce a requirement for providing larger loading spaces; however, this does add complexity to the by-law and should only be considered if there have been issues with insufficient loading at large retail developments.**

Table 22: Loading Space Rates for Retail / Commercial Land Uses

Retail / Commercial						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1+	-	-	1+	-
Brampton	< 2350	1	-	1	-	-
	2,350 - 7,450	2	-	2	-	-
	7,450 - 14,000	3	-	3	-	-
	Each additional 9,300 or part thereof over 14,000	1+	-	1	-	-
Hamilton	450 - 900	1	-	1	-	-

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Retail / Commercial						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
	900 - 1,850	1	-	-	-	1
	1,850 - 7,400	2	-	-	-	2
	7,400 - 13,000	3	-	-	-	3
	Each additional 7,400 or part thereof over 13,000	1+	-	-	-	1+
Markham	300 -1,860	1	-	1	-	-
	1,860+	2	-	2	-	-
Mississauga	250 - 2,350	1	-	1	-	-
	2,350 - 7,500	2	-	2	-	-
	7,500 - 14,000	3	-	3	-	-
	Each additional 2,300 or part thereof over 14,000+	1+	-	1+	-	-
Newmarket	140.1 - 280	1	-	1	-	-
	280.1 - 2,323	2	-	2	-	-
	2,323.1 – 7,432	3	-	3	-	-
	Each additional 7432 or part thereof over 7432.1	1+	-	1+	-	-
Oakville	-	-	-	-	-	-
Toronto ¹	500 - 1,999	1	-	1	-	-
	2,000 - 4,999	2	-	2	-	-
	5,000 - 9,999	3	-	3	-	-
	10,000 - 19,000	4	-	3	-	1
	20,000+	5	1	3	-	1
Vaughan ²	500 - 1,999	1	-	1	-	-
	2,000 - 4,999	2	-	2	-	-
	5,000 – 9,999	3	-	3	-	-
	10,000 - 19,000	4	-	3	-	1
	20,000+	5	1	3	-	1
Vancouver	100 - 465	1	-	1	-	-
	Each additional 1,860 or part thereof over 2,325	2	-	1+	-	-
	2000 - 5000	2+	-	-	-	1
	5000+	-	-	-	-	2

Notes:

- 1) Newmarket rates are based on rates defined for commercial and urban centre zones.
- 2) Toronto's rate applies to retail stores, eating establishments, and personal service shops.
- 3) Vaughan's rate excludes supermarkets, restaurants, and personal services.

The loading space rates for offices are summarized in **Table 23**. Richmond Hill’s general rate is consistent at lower sizes and is generally one less space required at larger development sizes when compared to Toronto.

It can be noted that the loading spaces required at Toronto are categorized as “small” and “standard” indicating there is opportunity for the provision of smaller loading spaces for larger developments. **The city can consider allowing a smaller loading space where more than two loading spaces are required to offset the higher number of loading spaces required at larger non-residential development sizes; however, this does add complexity to the by-law and should only be considered if there have been historic issues with providing larger loading spaces at large offices or requests for fewer spaces from developers.**

Table 23: Loading Space Rates for Office Land Uses

Office						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1+	-	-	1	-
Brampton	2,350 – 11,600	1	-	1	-	-
	Each additional 9,300 or part thereof over 11,600	1+	-	1	-	-
Hamilton	450 - 1,850	1	-	1	-	-
	1,850 - 7,400	2	-	2	-	-
	7,400 - 13,000	3	-	3	-	-
	Each additional 7,400 or part thereof over 13,000	1+	-	1	-	-
Markham	300 - 1,860	1	-	1	-	-
	1,860+	2	-	2	-	-
Mississauga	2,350 - 11,600	1	-	1	-	-
	Each additional 9,300 or part thereof over 11,600+	1+	-	1+	-	-
Newmarket	225.1 - 550	1	-	-	1	-
	550.1 - 2,323	2	-	-	2	-
	2,323.1 - 7,432	3	-	-	3	-
	Each additional 7,432 or part thereof over 7,432.1	1+	-	-	-	-
Oakville	-	-	-	-	-	-

Office						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Toronto	500 - 999	1	-	1	-	-
	1,000 - 1,999	2	1	1	-	-
	2,000 - 3,999	3	2	1	-	-
	4,000 - 27,999	4	2	2	-	-
	28,000+	5	3	2	-	-
Vaughan	-	-	-	-	-	-
Vancouver	1,000 - 7,500	1	1			
	7,500 - 15,000	2	2			
	15,000 - 20,000	3	3			
	20,000 - 28,000	4	4			
	Each additional 7,500 or part thereof over 28,000+	1+	1+			
	500 - 5,000	1		1		
	5,000 - 10,000	2		2		
	10,000 - 28,000	3		3		
	Each additional 15,000 or part thereof over 28,000+	1+		1+		
1,000 - 7,500	1	1				

Note: Newmarket rate is based on rates used for land uses in employment zones.

The loading space rates for industrial/manufacturing land uses are summarized in **Table 24**. Richmond Hill’s general rate is consistent with the rates at other municipalities. Aside from Toronto and Vancouver, Richmond Hill does have a higher threshold for requiring three (3) loading spaces – Brampton, Mississauga, and Newmarket require three spaces between 2,321 to 7,500 square metres; Richmond Hill requires 3 loading spaces over 9,290 square metres and that number goes up with size; and both Toronto requires 3 spaces over 10,000 square metres, and Vancouver requires. **With the variability in thresholds, there is no strong case to adjust the thresholds for increasing the loading spaces in Richmond Hill.**

There is a maximum of three loading spaces for Toronto for developments greater than 10,000 square metres. For comparison, an industrial development size of 18,580 square metres in Richmond Hill will require four (4) loading spaces. It can be noted that Toronto requires “large” loading spaces for developments larger than 1,000 square metres. These spaces have a length of 17.0 metres compared the Richmond Hill’s 13.0 metres. **The city can consider implementing a specific rate for industrial/manufacturing land uses in order to introduce a requirement for providing larger loading spaces; however, this does add complexity to the by-law and should only be considered if there have been historic issues with insufficient loading at industrial/manufacturing developments.**

Table 24: Loading Space Rates for Industrial / Manufacturing Land Uses

Industrial / Manufacturing						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1	-	-	1	-
Brampton	< 280	1	-	1	-	-
	280 – 7,450	2	-	2	-	-
	7,450 – 14,000	3	-	3	-	-
	Each additional 9,300 or part thereof over 14,000	1+	-	1	-	-
Hamilton	-	-	-	-	-	-
Markham	300 -1,860	1	-	1	-	-
	1,860+	2	-	2	-	-
Mississauga	250 – 2,350	1	-	1	-	-
	2,350 – 7,500	2	-	2	-	-
	7,500 – 14,000	3	-	3	-	-
	Each additional 2,300 or part thereof over 14,000	1+	-	1	-	-
Newmarket	225.1 - 550	1	-	-	1	-
	550.1 - 2,323	2	-	-	2	-
	2,323.1 – 7,432	3	-	-	3	-
	Each additional 7,432 or part thereof over 7,432.1	1+	-	-	1+	-
Oakville	1,000 – 2,300	1	-	1	-	-
	2,300+	1+	-	1	-	-
Toronto	100 - 499	1	1	-	-	-
	500 - 999	1	-	1	-	-
	1,000 - 4,999	1	-	-	-	1
	5,000 - 9,999	2	-	-	-	2
	10,000+	3	-	-	-	3
Vaughan	-	-	-	-	-	-
Vancouver	100 - 465	1	-	1	-	-
	Each additional 1,860 or part thereof over 2,325	2	-	1+	-	-
	2000 - 5000	2+	-	-	-	1
	5000+	-	-	-	-	2

**Richmond Hill Parking and TDM Strategy
Design Criteria Memorandum**

Notes:

- 1) Brampton loading space width increases to 4.25 metres from 3.5 metres for industrial zones.
- 2) Newmarket rate is based on rates used for land uses in employment zones.

The loading space rates for hotels are summarized in **Table 25**. Richmond Hill’s general rate is consistent at lower sizes but begins to supply more loading spaces at larger development sizes when compared to Toronto and Vaughan’s hotel rates. Vancouver’s rates are based on units and so a direct comparison cannot be made without estimating a GFA based on number of units; however, **it is recommended that the rates remain based on GFA for consistency and simplicity.**

There is a maximum of four loading spaces for Toronto and Vaughan; however, this is set at a large threshold of a hotels greater than 50,000 square metres. It can be noted that the loading spaces required at Toronto and Vaughan are categorized as “small” and “standard” indicating there is opportunity for the provision of smaller loading spaces for larger developments. Toronto and Vaughan also require “large” loading spaces for hotels larger than 50,000 square metres. These spaces have a length of 17.0 metres compared the Richmond Hill’s 13.0 metres. **The city can consider allowing a smaller loading space where more than two loading spaces are required to offset the higher number of loading spaces required at larger development sizes; however, this does add complexity to the by-law and should only be considered if there have been historic issues with providing larger loading spaces at large hotels.**

Table 25: Loading Space Rates for Hotel Land Uses

Hotel						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1+	-	-	1	-
Toronto	0 - 4,999	1	-	1	-	-
	5,000 - 9,999	2	1	1	-	-
	10,000 - 19,999	3	1	2	-	-
	20,000 - 49,999	4	2	2	-	-
	50,000+	4	2	1	-	1
Vaughan	0 - 4,999	1	-	1	-	-
	5,000 - 9,999	2	1	1	-	-
	10,000 - 19,999	3	1	2	-	-
	20,000 - 49,999	4	2	2	-	-
	50,000+	4	2	1	-	1
Vancouver (size based on units)	150 - 249	1	1	-	-	-
	250 - 499	2	2	-	-	-
	500 - 699	3	3	-	-	-
	< 75	1	-	1	-	-

Hotel						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
	75 - 399	2	-	2	-	-
	400 - 599	3	-	3	-	-

The loading space rates for supermarkets are summarized in **Table 26**. Richmond Hill’s general rate is consistent at lower sizes and is generally one less space required at larger development sizes when compared to Toronto and Vaughan’s supermarket rates.

There is a maximum of five loading spaces for Toronto and Vaughan; however, this is set at a large threshold of a supermarket size greater than 20,000 square metres. It can be noted that the Toronto and Vaughan require “large” loading spaces for supermarkets larger than 1,000 square metres. These spaces have a length of 17.0 metres compared the Richmond Hill’s 13.0 metres. **The city can consider implementing a specific rate for supermarkets in order to introduce a requirement for providing larger loading spaces; however, this does add complexity to the by-law and should only be considered if there have been historic issues with loading at large supermarkets.**

Table 26: Loading Space Rates for Supermarket / Grocery Store Uses

Supermarket / Grocery Store						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1+	-	-	1	-
Toronto	500 - 999	1	-	1	-	-
	1,000 - 1,999	1	-	-	-	1
	2,000 - 4,999	2	-	1	-	1
	5,000 - 9,999	3	-	2	-	1
	10,000 - 19,999	4	-	2	-	2
	20,000+	5	-	3	-	2
Vaughan	50 - 999	1	-	1	-	-
	1,000 - 1,999	1	-	-	-	1
	2,000 - 4,999	2	-	1	-	1
	5,000 - 9,999	3	-	2	-	1
	10,000 - 19,999	4	-	2	-	2
	20,000+	5	-	3	-	2

The loading space rates for community care facility/hospital are summarized in **Table 27**. Richmond Hill’s general rate is consistent when compared to Toronto and Vancouver’s care facility rates; however, it can be noted that there is a maximum of five loading spaces for

Toronto and two loading spaces for Vancouver. The size of loading spaces required in Richmond Hill for these land uses is larger than Toronto's, and smaller than Vancouver's loading spaces. Only two municipalities have specified rates for these land uses, and Richmond Hill's general rate is fairly similar to the other municipalities; therefore, **no changes are recommended.**

Table 27: Loading Space Rates for Community Care Facility Land Uses

Community Care Facility / Hospitals						
Municipality	Size of Development	Total Loading Spaces	Required Loading Spaces (by Size)			
			Small	Standard	Extended	Large
Richmond Hill	465 - 2,323	1	-	-	1	-
	2,323 - 9,290	2	-	-	2	-
	Each additional 9,290 or part thereof over 9,290	1+	-	-	1	-
Toronto	500 - 2,300	1	-	1	-	-
	2,300 - 7,500	2	-	2	-	-
	7,500 - 14,000	3	-	3	-	-
	14,000 - 22,000	4	-	4	-	-
	22,000 - 30,000	5	-	5	-	-
Vaughan	-	-	-	-	-	-
Vancouver	per 2800	1	-	1	-	-
	2000 - 5000 for hospital or similar use	1	-	-	-	1
	5000+	2	-	-	-	2
Newmarket	300 - 999	1	-	-	1	-
	1,000 - 2,299	2	-	-	2	-
	2,300 - 7,299	3	-	-	3	-
	7,300+	1+	-	-	1+	-

Notes:

- 1) Newmarket rates are for Mixed Use and Institutional Zones from the Urban Centres Zoning By-law 2019-06.
- 2) Toronto rate is based on "other select uses" including passenger terminal, hospital, or any other use similarly involving shipping, loading, or unloading.
- 3) Although Vaughan's draft by-law typically carried over Toronto's loading space rates, it did not show the same rate here.
- 4) Vancouver's Community Care Facility (Class B) includes land uses such as hospitals, place of worship, schools, community centres, libraries, museums, theaters, stadiums / spectator facilities, fitness centres, etc.
- 5) Vancouver requires no Class B spaces for less than 100 square metres of gross floor area.

Generally, the other municipalities require loading spaces within the "standard" size category whereas Richmond Hill requires loading spaces within the "extended" category. Since the "extended" size is larger than the "standard" size, there is an opportunity to reduce the loading space length for the non-residential land uses. This would be consistent with the other municipalities; however, it is noted that the existing larger space meets the minimum requirements compared to the other municipalities. Additionally, the loading space defined in Richmond Hill's *Standards and Specifications Manual* is consistent with the "extended" loading space which suggests that the dimensions should not be reduced.

Most municipalities only have loading standards developed for select land uses. Most do not have a catch-all land use category to capture any land use not explicitly mentioned, so that the land uses that are included are all intentional. GFA thresholds where loading spaces are not required range from 250 to 1,000 square meter (SM) GFA. The upper limit where one loading space is required ranges from 230 to 2,800 SM GFA. For two and three loading spaces, the GFA ranges from 2,320 to 10,000 SM and 7,232 to 20,000 SM, respectively. Only Hotels required loading areas for very small sizes within Toronto and Vaughan, whereas all other municipalities and land uses waive the requirement for small uses.

This indicates that the floor area thresholds vary widely. For this reason, the City can keep thresholds for increasing the number of loading spaces required as is unless there are examples of when there were too few spaces provided. If there are also trends of developers providing more than the required number of spaces for select land uses, the by-law should be adjusted according to these cases. Additionally, if there are trends of developers providing oversized loading spaces, the City can consider defining a “large” loading space requirement similar to Hamilton, Toronto, Vaughan, and Vancouver (used for supermarkets, industrial/manufacturing, large hotels, and large retail/commercial land uses).

3.2.4 Loading Space Sharing

Within the city of Toronto here are established minimum number of loading spaces for shared loading spaces in buildings within Policy Area 1 (Downtown Core) and Policy Area 2 (Midtown) that consists of more than 2 of either office, retail, eating establishment, personal service shop, and hotels. For these buildings, the minimum number of “standard” (Type B) and “small (Type C) loading spaces is the largest number of “standard” and “small” spaces required for any one of the mentioned listed uses (office, retail, eating establishment, personal service shop, hotel), in addition to all Type “B” and Type “C” of all non-residential uses not listed. **The city can consider implementing a shared loading space calculation where multiple land uses will share the same building and loading spaces. This will only be applicable if separate rates are explicitly developed for multiple non-residential land uses.**

3.2.5 Preliminary Recommendations for Loading Space Dimensions and Rates

In general, unless the City is aware of issues with lack of loading space, or developers consistently providing oversupplying loading spaces in some cases, the existing loading space design and rates are consistent with other municipalities. Although the typical loading space is larger than most of the other municipalities, it is sized such that it can accommodate the waste collect vehicles as outlined in the City’s *Standards and Specifications Manual*. **It is recommended that the loading space dimensions and rates remain unchanged. The city can consider increasing the minimum width of its standard space to 4.0 metres since it is currently smaller than the width of its smaller loading space and is the smallest amongst other municipality loading spaces of the same length.** Preliminary recommendations for loading space dimensions and rates are summarized in **Table 28** and **Table 29**.

As an alternative to specifying all land uses which require loading spaces rather than having a general catch-all grouping, the city can also consider providing an exclusion list of land uses that do not expect large deliveries from requiring loading spaces such as

day nurseries, places of worship, and/or schools. This is similar to all other municipalities with the exception of Markham which currently also only has general residential and non-residential loading space supply requirements, and Vancouver which defines rates for these uses under “community care facility”.

Table 28: Preliminary Recommendation for Minimum Loading Space Dimensions

Parking Space	Length (m)	Width (m)	Vertical Clearance (m)
Loading Space - A	13.0 (-)	4.0 (+0.5)	6.1 (-)
Loading Space - B	9.0 (-)	3.7 (-)	4.3 (-)

Table 29: Preliminary Recommendation for Minimum Loading Space Supply Rates

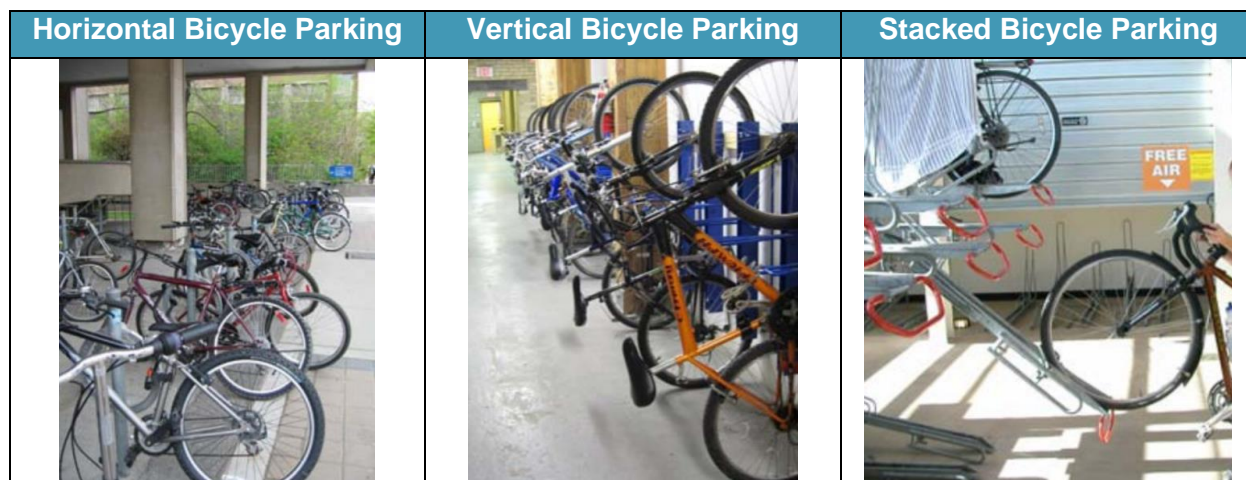
Land Use	Size of Development	Small (N/A)	Standard (Type B)	Extended (Type A)	Large (N/A)
Residential	0 to 30 dwelling units	-	-	0	-
	31 to 399 dwelling units	-	-	1	-
	400 dwelling units or more	-	1	1	-
Non-residential	Less than 465 sq. m.	-	-	0	-
	Equal to 465 sq. m. up to 2,323 sq. m.	-	-	1	-
	Equal to 2,323 sq. m. up to 9,920 sq. m.	-	-	2	-
	Additional for every additional 9,920 sq. m. or part thereof greater than 9,920 sq. m.	-	-	1 +	-

4 Bicycle Parking Spaces

Municipalities that define bicycle parking requirements establish rates and dimensions for long-term (or ‘Class A’) and short-term (or ‘Class B’) bicycle parking spaces. Description of long-term and short-term spaces and the recommended rates are presented in the previously submitted report.

In terms of the bicycle parking space design, there are three physical design types of bicycle parking that are mentioned within the various municipalities: horizontal, vertical, and stacked bicycle parking. The City of Toronto describes a “stacked bicycle parking space” as a horizontal bicycle parking space that is positioned above or below another bicycle parking space and equipped with a mechanical device providing floor level access to both bicycle parking spaces. Example photos of each of these types is shown in **Table 30**.

Table 30: Examples of Horizontal, Vertical, and Stacked Bicycle Parking



Source: Guidelines for the Design and Management of Bicycle Parking Facilities (City of Toronto)

The specifications within the by-laws related to the design of bicycle parking typically only include the dimension of space (horizontal, vertical, and stacked); however, it can be noted that Vancouver does have the most comprehensive design requirements in its by-law which also include defining a limit to vertical parking spaces provisions, and detailed specifications for end-of-use facilities (such as doorway widths, lighting, and bicycle rack design) that are not required under any other municipality by-laws noted. The general minimum dimensions for bicycle parking spaces defined by each municipality are summarized in **Table 31**.

Table 31: Dimensions of Bicycle Parking Spaces

Municipality	Horizontal Bicycle Parking Space Dimensions (m)			Vertical Bicycle Parking Space Dimensions (m)			Stacked Parking – Vertical Clearance (m)
	Length	Width	Vertical Clearance	Length	Width	Horizontal Clearance	
Richmond Hill	1.8	0.6	-	-	-	-	-
Brampton	1.8	0.6	-	1.5	0.5	-	-
Hamilton	-	-	-	-	-	-	-
Markham	-	-	-	-	-	-	-
Mississauga	-	-	-	-	-	-	-
Newmarket	1.8	0.6	1.9	1.9	0.6	1.2	-
Oakville	-	-	-	-	-	-	-
Toronto	1.8	0.6	1.9	1.9	0.6	1.2	1.2
Vaughan	1.8	0.6	1.9	1.9	0.6	1.2	1.2
Vancouver	1.8	0.6	1.9	1.9	0.6	1.0	-

Note: Height for horizontal bicycle parking refers to vertical clearance from the ground; Length for vertical bicycle parking refers to horizontal clearance from the wall. Vertical clearance for stacked spaces is for each bicycle.

Richmond Hill currently requires a minimum length and width of a bicycle parking spaces of 1.8 metres and 0.6 metres, respectively. Hamilton, Markham, Mississauga, and Oakville do not

have defined dimensions in the by-law. The other municipalities that have minimum requirements for bicycle space dimension all have the same minimum length and width as Richmond Hill for horizontal bicycle parking space. **The city can consider adding a minimum vertical clearance of 1.9 metres, minimum dimension requirements for vertical bicycle parking spaces, and minimum vertical clearance for stacked parking spaces.**

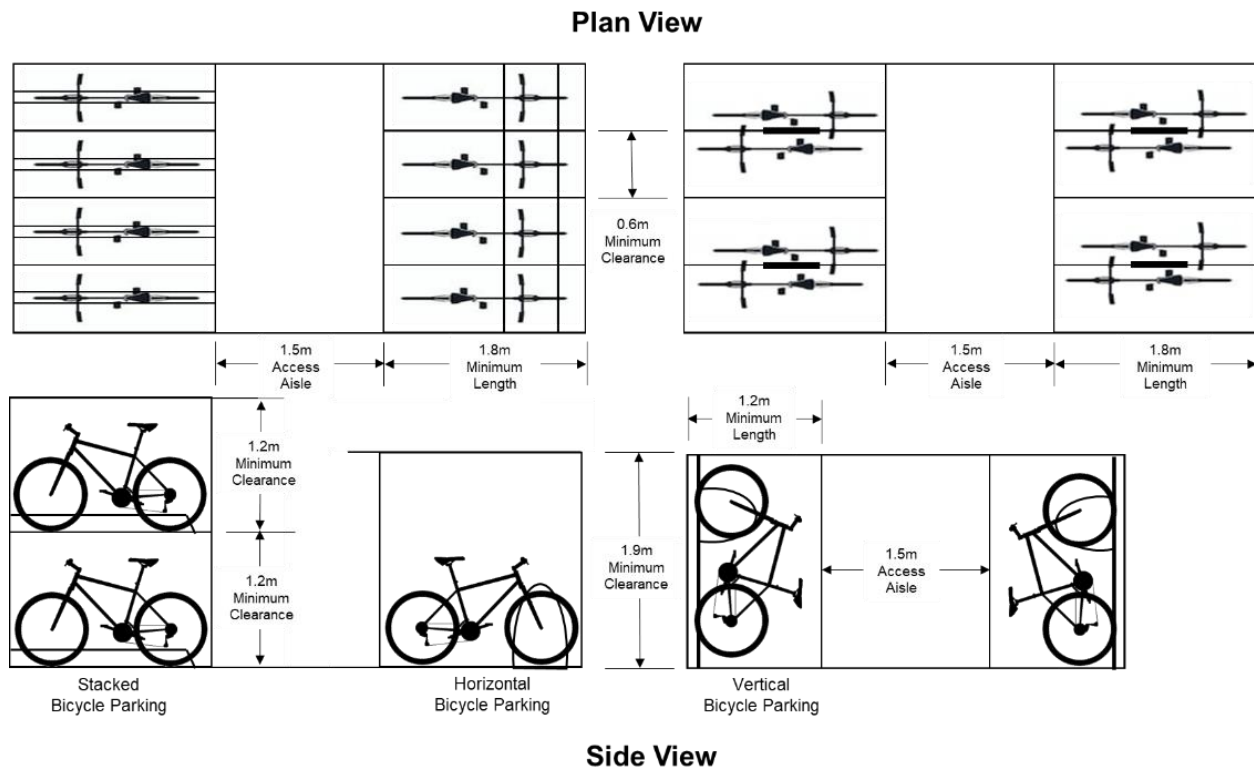
Both Vaughan and Vancouver define a minimum aisle width between rows of bicycle parking as 1.5 metres. **The city can consider adding a minimum aisle width of 1.5 metres between bicycle parking.**

In general, there is a high degree of consistency across the municipalities in defining minimum bicycle parking space dimensions. **The preliminary recommendations for bicycle parking space dimensions are summarized in Table 32 – the dimensions are also pictured in Figure 8.**

Table 32: Preliminary Recommendations for Bicycle Parking Space Dimensions

Municipality	Horizontal Bicycle Parking Space Dimensions (m)			Vertical Bicycle Parking Space Dimensions (m)			Stacked Parking – Vertical Clearance (m)
	Length	Width	Vertical Clearance	Length	Width	Horizontal Clearance	
Richmond Hill	1.8	0.6	1.9	1.9	0.6	1.2	1.2

Figure 8: Sample Figure for Minimum Bicycle Parking Space and Access Aisle Dimensions



As previously noted, Vancouver's by-law has the most comprehensive design requirements for bicycle parking compared to all of the other municipalities reviewed. Some unique by-law provisions include requiring a minimum of 5% of spaces to be oversized spaces of 2.4 metres in length and 0.9 metres in width, and may not be vertical or stacked spaces. These spaces can be used by larger cargo-holder style bicycles. Vancouver's By-law also specifies details such as Bicycle Room Doors, Size, Lighting, Bicycle Rack Design, etc. and requires that an electrical outlet must be provided for every two Class A (Long-term) bicycle spaces. **The city can consider adding requirements for details noted in Vancouver's by-law; however, the city may benefit from the simpler by-law until cycling becomes more prominent.**

5 Cash-in-Lieu

Cash-in-lieu (or payment-in-lieu) refers to the municipalities accepting payment of money in lieu of parking spaces for sites that are unable to fulfill the required minimum parking, as per the by-law. Cash-in-lieu can also be open to developers who can provide the required parking, but would like to reduce the parking compared to the By-law, based on their market research. This may be influenced by the fact that the surrounding area already has a parking management authority and established public parking, thus negating the need for on-site parking. The contribution from developers are paid into a separate account that the City uses to fund or support public parking infrastructure construction or parking management (or related programs such as TDM measures, and TDM infrastructure), and the development is then expected to be able to rely on the public infrastructure, as required.

As part of the ongoing Comprehensive Zoning By-law Review, the City of Vaughan has also investigated cash-in-lieu programs⁷.

“Cash-in-lieu systems aims to achieve numerous goals including establishing a fund to aid in the creation of a centralized, publicly available, more strategically located facilities, which provide more public parking overall which is flexible to accommodate change of use, create a more pedestrian friendly environment, use the available parking supply more efficiently, and promote the use of transit. In exchange for the exemption in the parking by-law rates, the formula requires applicants to pay for 50% (or another percentage) of the total cost of the parking being exempted.”

There Vaughan Study⁷ further indicated several key factors that contribute to effectiveness of cash-in-lieu, which are summarized briefly below:

- ▶ **Rapid growth:** Areas undergoing rapid growth can benefit more from cash-in-lieu, partly due to the rate of incoming funds and partly due to the availability of constructable land. This can mean that the parking supply lags behind the demand, but in a faster growing area, the lag-time is reduced.

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[https://www.vaughan.ca/projects/policy_planning_projects/city_wide_parking_standards_review/General%20Documents/FINAL%20DRAFT%20TTR_2010-04-15%20Web%20Version%20\(2\).pdf](https://www.vaughan.ca/projects/policy_planning_projects/city_wide_parking_standards_review/General%20Documents/FINAL%20DRAFT%20TTR_2010-04-15%20Web%20Version%20(2).pdf)

- ▶ **Designated areas:** The funds should ideally be taken from and used within a designated area, to ensure that the funds taken from a developer can actually provide a tangible benefit to that development, so there is a direct connection between the funds being provided and the parking management for that development. However, the Vaughan study further noted that when a designated area no longer requires parking infrastructure expansion or additional TDM measures, there can be a mechanism which allows the funds to be used in other areas of the City.
- ▶ **Well utilized parking supply:** Cash-in-lieu can only be leveraged when there is unmet parking demand or an interest in reducing parking demand.
- ▶ **Avoidance of Contradictory Parking Policies:** The City needs to balance parking requirements with the opportunity to leverage cash-in-lieu so that the developers genuinely see the option as worthy of consideration.
- ▶ **Cost per Stall:** The City must cater the cash-in-lieu calculation to the City or Designated Area where the cash-in-lieu policy will be leveraged. The equation itself is developed to account for these variations.

The same study⁷ also notes that the typical discounted rate for a cash-in-lieu payment is discounted at 50% of the actual cost of providing parking to encourage developers to participate, and recognize that the contributor does not obtain ownership in the parking facility and that there will be a delay between contribution and parking provision. The key considerations, generalized for consideration in Richmond Hill are:

- ▶ **Designated Areas**
 - ↳ Where are funds taken from? What areas will be permitted to leverage cash-in-lieu?
- ▶ **Allocation of Funds**
 - ↳ Where and how are the funds used (infrastructure construction or maintenance,
- ▶ **Cost**
 - ↳ What is the cost for different types of parking spaces? What is the cash-in-lieu discount percentage (typically 50%)?
- ▶ **Limit on Participation**
 - ↳ Limit the amount of participation by individual developers in areas that are less transit-supportive and which are experiencing less growth. For example, for areas that are not transit-supportive or transit oriented, cash-in-lieu can only result in the greater of 10% reduction or 15 space reduction in the required parking supply, whichever is greater. This will allow smaller developers to achieve zero parking, while larger developments would be capped.

Generally, by-laws will reference Section 40 of the Planning Act which describes the agreement exempting an owner from providing the required parking by the municipality. The excerpt of Section 40 of the Planning Act⁸ is shown in **Figure 9**.

⁸ <https://www.ontario.ca/laws/statute/90p13#BK64>

Figure 9: Excerpt of Section 40 of the Planning Act

<p>Agreement exempting owner from requirement to provide parking 40 (1) Where an owner or occupant of a building is required under a by-law of a local municipality to provide and maintain parking facilities on land that is not part of a highway, the council of the municipality and such owner or occupant may enter into an agreement exempting the owner or occupant, to the extent specified in the agreement, from the requirement of providing or maintaining the parking facilities. R.S.O. 1990, c. P.13, s. 40 (1).</p> <p>Payment of money (2) An agreement entered into under subsection (1) shall provide for the making of one or more payments of money to the municipality as consideration for the granting of the exemption and shall set forth the basis upon which such payment is calculated. R.S.O. 1990, c. P.13, s. 40 (2).</p> <p>Special account (3) All money received by a municipality under an agreement entered into under this section shall be paid into a special account and,</p> <ul style="list-style-type: none">(a) the money in that account shall be applied for the same purposes as a reserve fund established under the <i>Municipal Act, 2001</i> or the <i>City of Toronto Act, 2006</i>, as the case may be;(b) the money in that account may be invested in securities in which the municipality is permitted to invest under the <i>Municipal Act, 2001</i> or the <i>City of Toronto Act, 2006</i>, as the case may be;(c) earnings derived from the investment of the money in the special account shall be paid into that account; and(d) the auditor of the municipality, in the auditor's annual report, shall report on the activities and position of the account. 2002, c. 17, Sched. B, s. 13 (1); 2006, c. 32, Sched. C, s. 47 (6). <p>Registration of agreement (4) An agreement entered into under this section may be registered in the proper land registry office against the land to which it applies and, when so registered, any money payable to the municipality under the agreement that has become due for payment shall have priority lien status as described in section 1 of the <i>Municipal Act, 2001</i> or section 3 of the <i>City of Toronto Act, 2006</i>, as the case may be. 2002, c. 17, Sched. B, s. 13 (2); 2006, c. 32, Sched. C, s. 47 (7).</p> <p>Certificate (5) When all money payable to the municipality under an agreement registered under subsection (4) has been paid, or such agreement has been terminated, the clerk of the municipality shall, at the request of the owner of the land, provide a certificate in a form registrable in the proper land registry office, certifying that the money has been paid or that the agreement has been terminated. R.S.O. 1990, c. P.13, s. 40 (5).</p>
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5.1 Calculating Cash-in-Lieu Contributions

Generally, cash-in-lieu policies are calculated based on the individual case due to differences in land costs for different areas (e.g. providing parking in a rural area will typically have significantly less land costs than constructing parking in an urban area). Richmond Hill has had payment -in-lieu agreements before, in accordance with By-law 3-94⁹.

Of the municipalities that outline a cash-in-lieu system:

- ▶ Richmond Hill, Mississauga, and Vaughan have a similar formula for calculating the contribution,
- ▶ Toronto has a simplified method for calculating the contributions, and
- ▶ Vancouver estimates the cost of construction and incorporates the net present value of the revenue and maintenance cost for the parking spot.

⁹ <https://pub-richmondhill.escribemeetings.com/filestream.ashx?DocumentId=19457>
<https://pub-richmondhill.escribemeetings.com/filestream.ashx?DocumentId=19453>

In general, the formulas for Richmond Hill, Mississauga, and Vaughan

Contribution: $[C + (L \times A)] * Q * N;$ **where,**

- C is the estimated cost of constructing a parking space
- L is the estimated land cost of the parking space
- A is the area associated with each parking space (including maneuvering, circulation, and accessible parking spaces)
- Q is the proponents share of the total costs
- N is the number of spaces for which cash-in-lieu is sought by the developer/proponent

The cost of constructing the parking space (C) will be based on factors including, but not limited to, location of space (surface, underground, multi-level structure), high water table, and existing grading. The proponents share can range based on the municipality or location. The following summarizes the established share the proponents must pay for each municipality:

- ▶ Mississauga will set this value as 12.5%, 25%, or 50% based on the size of the change in land use¹⁰:
 - 12.5% where GFA is equal to or is less than 50 square metres;
 - 25% where GFA exceeds 50 square metres but equals or is less than 200 square metres; and
 - 50% where GFA exceeds 200 square metres, or if it is a new development.
- ▶ Richmond Hill's by-law 3-94 sets this value as 50%.
- ▶ Hamilton and Vaughan also set this value as 50%.

Generally, the cost is split since both the City and the applicant will mutually benefit from the application of cash-in-lieu parking policies.

Toronto has a simplified methodology fee schedule summarized in **Table 33**.¹¹

Table 33: Toronto's Payment-in-Lieu of Parking Formula

Category	Payment-in-Lieu Contribution
For new construction, renovations, alterations, or changes in use equal to or less than 200 sq. m.	\$2,500 per parking space
For new construction, renovations, alterations, or changes in use greater than 200 sq. m. ground floor area, but equal to or less than 400 sq. m. GFA	\$5,000 per parking space
For new construction, renovations, alterations, or changes in use greater than 400 sq. m. GFA	[\$5,000 + \$(5 x L)] per parking space ¹

¹where \$5,000 is the current estimated construction cost of a surface parking space and 'L' is the current estimated land value (\$ per square metre) in the area

Vancouver takes into consideration revenues and cost from a public parking space and adds a 20% contingency to account for risk related to construction cost uncertainty and fluctuations, and potential unforeseen maintenance expenses. A sample calculation showed that the by-law

¹⁰ http://www6.mississauga.ca/onlinemaps/planbldg/Miscell-P&B/PIL_07-09-01.pdf

¹¹ <https://www.toronto.ca/311/knowledgebase/kb/docs/articles/transportation-services/transportation-infrastructure-management/operational-planning-and-policy/calculating-the-fee-for-payment-in-lieu-of-parking-formula.html>

assumes a \$115 per square foot for construction, with 350 square foot per parking space (including maneuvering and circulation space) resulting in an estimated cost of \$40,250 per space reduces to a contribution by the owner of \$24,400 per space after the noted considerations¹².

In general, Richmond Hill’s methodology for payment-in-lieu of parking is consistent with other municipalities. **Richmond Hill should continue using the same equation for determining the contribution for exemption of required parking spaces; however, there is an opportunity to consider a contingency cost, maintenance cost, and/or a revenue for the parking space. Additionally, similar to Mississauga and Toronto, the City can consider a small rate (contribution amount) for smaller change of use developments compared to the existing 50%.**

5.2 Cost of Parking Space

Based on the programs outlined in the previous session, sample council reports outlining cash-in-lieu for parking spaces show the range in contributions per parking space as summarized in **Table 34**. These estimates provide a range in which the cost of parking space can be compared.

Table 34: Sample Cost of Calculated Parking Spaces

Municipality	Contribution from Owner Cost of Parking Space
Hamilton ¹³	\$8,000
Vaughan ¹⁴	\$21,100 for surface parking; \$54,000 per structured space
Vancouver ¹⁵	\$24,700
Richmond Hill ⁹	\$26,639

Notes:

- 1) Hamilton 50% of the estimated total cost of construction. The construction cost is estimated as \$16,000 per space.
- 2) Vaughan values are based in the Kleinburg area and the contribution is set at 50% the estimated cost. The construction cost is estimated as \$22,200 (surface) and \$108,000 (structured) per space.
- 3) Vancouver result of including revenues and adding 20% contingency. The construction cost is estimated as \$40,250 per space.

The Draft Parking Standards Report for Vaughan (2010)¹⁶ noted that capital costs for parking facilities can range from \$8,000 per space for a suburban surface parking lot to \$60,000 per space for an underground parking facility. These are only sample contribution amounts for cash-in-lieu of parking for select locations; however, it does show the range of cost estimates in determining the cost of the parking space. As previously discussed, factors such as the estimated land cost within the area will impact the individual cost of a loading space. The construction costs of the loading space will also differ based on the type (structured, surface, or underground). **It is recommended that there is a consistent approach to determining the cost (and contribution) per parking space within the city.**

¹² <https://council.vancouver.ca/20180117/documents/pspc4.pdf>

¹³ <http://www2.hamilton.ca/NR/rdonlyres/AA7CC022-7D79-47C2-8573-653B09BF25C6/0/Sep05PED06353.pdf>

¹⁴ <https://pub-vaughan.escribemeetings.com/filestream.ashx?DocumentId=49118>

¹⁵ <https://council.vancouver.ca/20180117/documents/pspc4.pdf>

¹⁶ [https://www.vaughan.ca/projects/policy_planning_projects/city_wide_parking_standards_review/General%20Documents/FINAL%20DRAFT%20TTR_2010-04-15%20Web%20Version%20\(2\).pdf](https://www.vaughan.ca/projects/policy_planning_projects/city_wide_parking_standards_review/General%20Documents/FINAL%20DRAFT%20TTR_2010-04-15%20Web%20Version%20(2).pdf)

6 Design Considerations

Design criteria included for reference include parking garage access ramp designs (width, grade, curvature), driveway design for low density residential (percentage of landscaping, driveway widths, and treatment with adjacent walkways), and design of difficult to access parking spaces (including end of aisle, hammerhead designs etc.). General guidelines for pedestrian, cyclist, and vehicle circulation including pick-up and drop-off area designs are also discussed.

6.1 Access Ramp Design

For underground garage driveway ramps, Richmond Hill sets a maximum 10% grade (unheated) and a maximum 15% grade (heated) as stated in the *Standards and Specifications Manual*. For comparison, Toronto's by-law states the access ramp to an underground parking garage and the internal ramps within the garage must not exceed a maximum slope of 15% and incorporate a transition area at the top and bottom (maximum slope of 7.5% over a minimum distance of 3.0 metres), but this is taken from a site specific .¹⁷

Other municipalities do not appear to specify a gradient within their by-laws or design specifications; however, Richmond Hill specifications are noted to be consistent with Toronto's requirements. The City can consider establishing a transition area at the top and bottom of the ramp with a maximum slope of 7.5% over a minimum distance of 3.0 metres similar to Toronto's by-law.

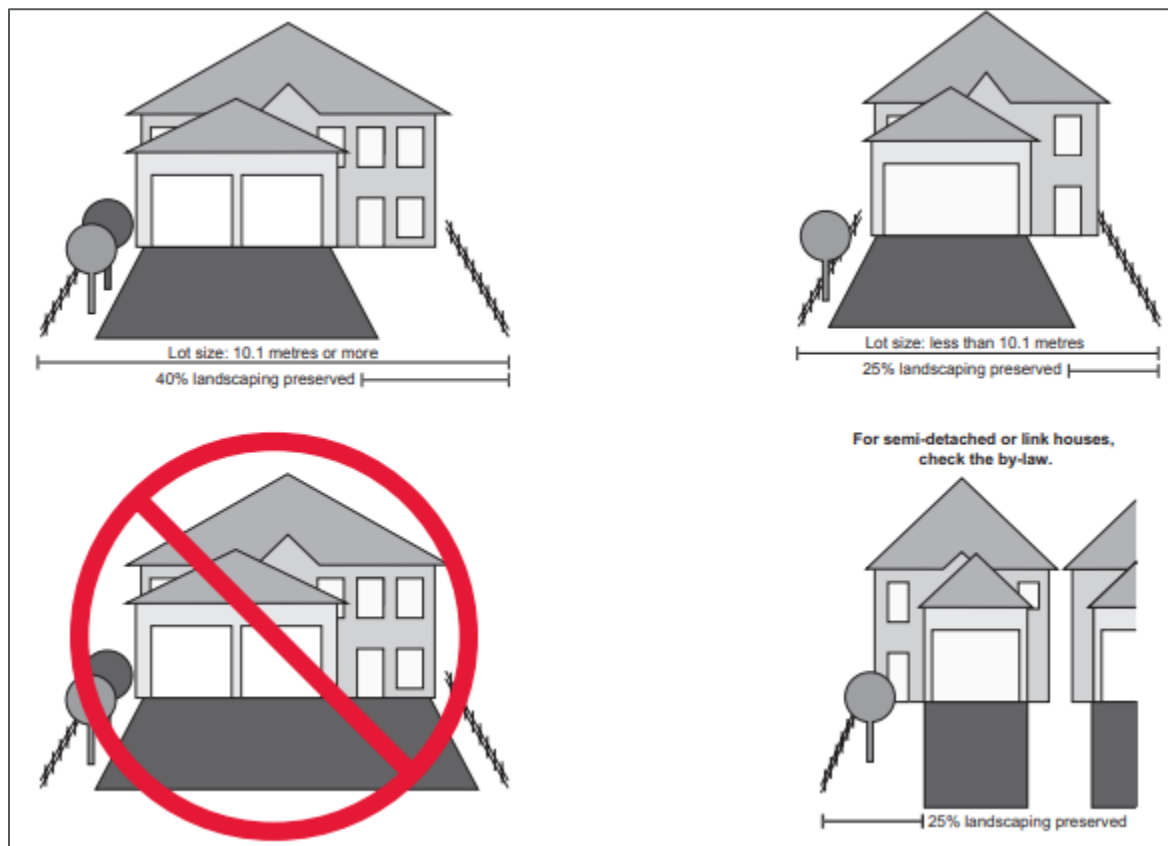
6.2 Driveway Design for Low Density Residential

6.2.1 Driveway Widths and Landscaping

Municipalities will typically define a minimum and maximum driveway width based on the width of the lot frontage, or the specific land use. Additionally, the by-law will define a minimum percentage that the yard must be dedicated to landscaping. A sample figure showing the measurements is illustrated in **Figure 10**. The minimum/maximum driveway widths along with the minimum landscaping percentages for each municipality are summarized in **Table 35**.

¹⁷ Exception CR 158 (L) – https://www.toronto.ca/zoning/bylaw_amendments/ZBL_NewProvision_Chapter900_11.htm#900.11.1

Figure 10: Minimum Landscaping Requirements with Lot Size Reference (Markham Brochure)



Source: <https://www.markham.ca/wps/portal/home/about/city-hall/bylaws/files/driveway-extension-brochure>

Based on the width of the lot, Richmond Hill currently has a maximum driveway width for residential properties of 3 metres (lot widths less than 9 metres), 6 metres (lot widths that are 9 metres or up to 18 metres), and 9 metres (lot widths that are 18 metres or up to 30 metres). Richmond Hill's minimum driveway width is within range and comparable with the other municipalities. Hamilton, Mississauga, Toronto, and Vaughan have a smaller minimum driveway width ranging from 2.0 metres to 2.7 metres compared to Richmond Hill's 3.0 metres.

Richmond Hill can consider a smaller minimum driveway width in the range of 2.0 metres to 2.7 metres.

Richmond Hill currently requires that a minimum 45% of the front yard of a residential property must be landscaped. Landscaping may include any combination of vegetation (e.g. trees, shrubs, or flowers) or surfacing materials (such as unit pavers, patio stones, concrete or interlock). Markham, Mississauga, and Vaughan also define minimum landscaping as a percentage of the front yard; whereas Hamilton and Toronto define the percentage of the yard that is not occupied by the driveway. Municipalities such as Toronto and Vaughan also define a percentage of the landscaping that is required to be soft landscaping. In general, the 45% minimum for Richmond Hill is within range of the other comparable municipalities. **No changes are recommended for the minimum landscaping based on comparison with the other municipalities. Richmond Hill can consider specifying a general landscaping and a separate soft landscaping percentage, similar to Toronto and Vaughan.**

Table 35: Summary of Minimum and Maximum Driveway Widths with Minimum Landscaping Percentages

Municipality	Lot Width / Land Use	Maximum Driveway Width	Minimum Front Yard Landscaping	Minimum Driveway Width
Richmond Hill ¹⁸	Less than 9 metres	3.0 metres	45% ¹	4.0 metres
	9 to 18 metres	6.0 metres		
	18 to 30 metres	9.0 metres		
Brampton	Less than 8.23 metres	4.9 metres	-	3.0 metres
	8.23 to 9.14 metres	5.2 metres		
	9.14 to 15.24 metres	6.71 metres		
	15.24 to 18.3 metres	7.32 metres ²		
	Greater than 18.3 metres	9.14 metres ²		
Hamilton	Detached, Semi-detached, Duplex (without attached garage)	Lesser of 50% of lot, or 8.0 metres	100% ³	2.7 metres
	Street Townhouse	Lesser of 65% of lot, or 6.0 metres		
Markham	Less than 10.1 metres	garage door width plus 2.0 metres	25% ⁴	Garage door width
	Greater than 10.1 metres	garage door width plus 2.0 metres	40% ⁴	
	Where there is no private garage	3.7 metres ⁵	-	
Mississauga	Greater than 18 metres	10.5 metres ⁶	50%	2.6 metres
	Otherwise	garage door width plus 2.0 metres ⁸	40%	
	If no garage doors	6.0 metres	40%	
Newmarket ⁹	Single-detached	6.0 metres	-	3.0 metres
	Semi-detached	5.2 metres		
	Townhouse	3.0 metres		
Oakville	Low Density Residential:	-	-	3.0 metres
	Single	3.5 metres		
	Double	6.5 metres		
	Triple	9.0 metres		
Toronto ¹⁰	Less than 6 metres	2.6 metres	100% ¹¹	2.0 metres
	6 to 15 metres	6.0 metres	50% ¹¹	
	15 to 23 metres	9.0 metres	60% ¹¹	
	Greater than 23 metres	9.0 metres	60% ¹¹	
Vaughan	Less than 6 metres	2.9 metres	-	2.6 metres
	6 - 6.99 metres	3.5 metres	33% ¹²	
	7 - 8.99 metres	3.75 metres	33% ¹²	
	9 to 11.99 metres	6.0 metres	33% ¹²	
	Greater than 12 metres	9.0 metres	50% ¹²	
Vancouver	-	Lesser of 18.5 m or 15% of lane frontage and flankage	-	3.7 metres

Notes:

- 1) Richmond Hill – Percentage of front yard for landscaping.
- 2) Brampton – Or width of the garage (whichever is greater).
- 3) Hamilton – Where the driveway is provided in the front yard, all other portions of the front yard shall be a landscaped area.
- 4) Markham – Percentage of front or exterior side yard in which the driveway is located to provide soft landscaping.

¹⁸ <https://www.richmondhill.ca/en/shared-content/resources/documents/Community-Standards-By-laws/84-03---Front-Yard-Parking.pdf>

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- 5) Markham – Maximum driveway can be up to 6.1 metres, provided a minimum 40% soft landscaping is provided in the front of exterior side yard in which the driveway is located.
- 6) Mississauga – For that portion of the driveway that is within 6.0 metres of the garage face and which is providing direct vehicular access to the garage. The driveway width for that portion of the driveway that is beyond 6.0 m from the garage face is a maximum width of 8.5 metres.
- 7) Mississauga – Percentage of yard containing driveway for soft landscaping.
- 8) Mississauga – Up to a maximum of 8.5 metres.
- 9) Newmarket – The zoning by-law sets out specific limits on the size, width, and location of driveways. These limits vary property to property. General maximums provided.
- 10) Toronto – Maximum width of 2.6 metres if all parking spaces are in the rear yard.
- 11) Toronto – Percentage of the front yard area not covered by a permitted driveway for landscaping, of this, at least 75% must be in the form of soft landscaping. If a lot does not have a permitted driveway in the front yard, a minimum of 75% of the front yard must be soft landscaping.
- 12) Vaughan – Percentage of the lot frontage for landscaped open space, of this, 60% shall be soft landscaping.

6.2.2 Treatment of Adjacent Walkways from Driveways

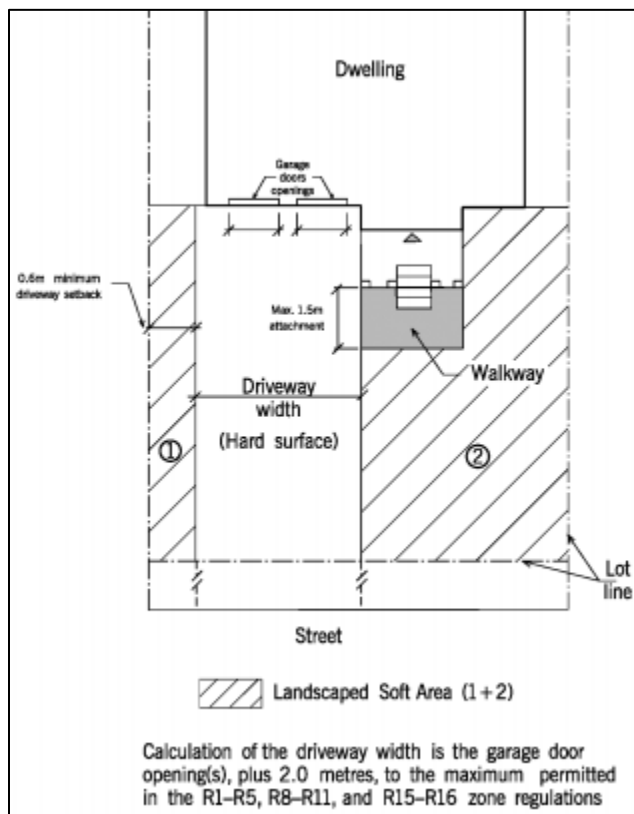
Treatment of adjacent walkways (typically from driveway to the entrance of the dwelling unit) can be described as landscaping in the by-law. The by-law may also define a maximum width for the walkway. The landscaping definitions and adjacent walkway references for the municipalities are summarized in **Table 36**.

Table 36: Landscaping Definitions / Adjacent Walkway References

Municipality	Landscaping Definitions / Adjacent Walkway References
Richmond Hill	Landscaping is defined as any combination of trees, shrubs, flowers, grass or other horticultural elements, decorative stonework, paving, screening, or other architectural elements, all of which is designed to enhance the visual amenity of a property and shall not include amenity space, parking areas, driveways or ramps.
Brampton	Landscaped open space is defined as an unoccupied area of land which is used for the growth, maintenance and conservation of grass, flowers, trees and shrubs and other vegetation, and may include a surfaced walk, patio, screening, pool or similar visual amenity, but shall exclude any driveway, ramp, car parking or loading area, curb, retaining wall, or any covered space beneath or within any building or structure.
Hamilton	Landscaping is defined as outdoor space for use, enjoyment and recreation and shall include natural vegetation areas and constructed areas such as patios, decks, playgrounds, pathways, outdoor recreational amenities, fencing, decorative architectural features and retaining walls.
Markham	Landscaping is defined as trees, shrubs, flowers, grass or other horticultural elements, decorative stonework, screening or other architectural elements, all of which are designed to enhance the visual amenity of a property and shall not include parking areas, driveways or ramps and shall not be used for the parking of motor vehicles and may include walkways, driveways and ramps that provide access onto the lot from the street.
Mississauga	Any hard surface area used or accessible for the purpose of parking a motor vehicle shall be included in the driveway width calculation except one walkway attached to a driveway with a maximum attachment of 1.5 metres shall be permitted on each side of a driveway.
Newmarket	A residential walkway is defined as a hard surface path leading from the front or exterior wall of a dwelling unit to a curb or sidewalk, no wider than 1.2 metres and, if adjacent to a driveway shall be of a different material from the driveway. A walkway may not be used for vehicular parking. A "landing" can project 1.8 metres into the required front yard, but cannot come within 1.2 metres of the front property line.
Oakville	One walkway access material may be connected to the side of a driveway. The maximum width of the walkway access at the point of attachment shall be 1.8 metres. The walkway shall terminate at the municipal sidewalk (private side) or property line if there is no sidewalk. No additional curb cut will be allowed for a walkway.
Toronto	Landscaping is defined as an area used for trees, plants, decorative stonework, retaining walls, walkways or other landscape or architectural elements. Hard-surfaced areas such as walkways are not considered soft landscaping.
Vaughan	An area comprised of hard landscaping and abutting a private driveway shall be permitted to be used for the parking of a motor vehicle and/or a pedestrian walkway.
Vancouver	-

Richmond Hill treats hard landscaping (decorative stonework, paving) as part of the definition for landscaping which means the walkways contribute to the minimum landscaping percentage with no reference to dimensions for the walkway. This is similar to Brampton, Hamilton, and Vaughan. Mississauga allows a maximum attachment of 1.5 metres for the purposes of a walkway as shown in **Figure 11**, whereas Oakville sets a maximum of 1.8 metres. Newmarket sets a maximum width of 1.2 metres for the walkway and a landing that can project 1.8 metres. Toronto includes paving for walkway as landscaping; however, it does not contribute to the soft landscaping requirement. **As previously noted, Richmond Hill can define a minimum soft landscaping percentage such that walkways (or hard landscaping) is limited while still contributing to the landscaping requirement.**

Figure 11: Driveway, Landscaping, and Walkway Requirements (Mississauga By-Law)



6.3 Hammerhead Design

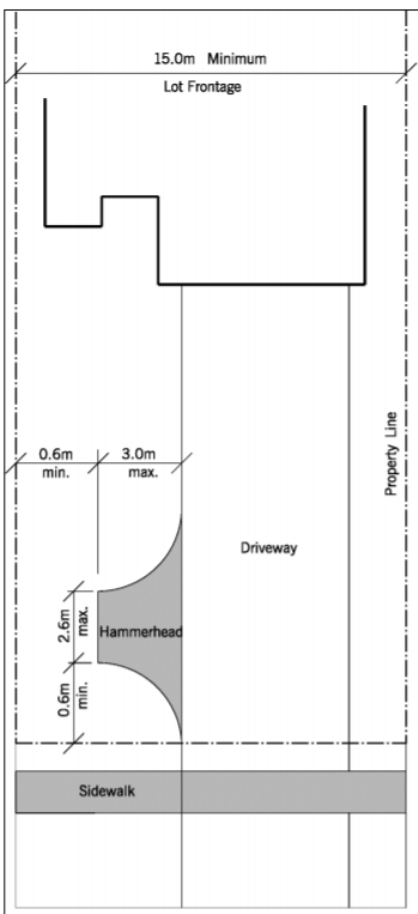
6.3.1 Residential Driveways

Hammerhead design includes standards for the provision of turnaround space or hammerheads on residential lots. Of all the by-laws reviewed, only Mississauga and Toronto include provisions related to vehicle turnaround facilities or “hammerheads” as they are commonly known.

When referring to a hammerhead driveway, the term only references the part of the driveway that extends off of the main driveway and is used for the purposes of turning a vehicle around.

Mississauga provides an illustration for clarity with the hammerhead shaded as shown in **Figure 12**.

Figure 12: Hammerhead Illustration (Mississauga By-law 0225-2007)



It appears that while hammerheads would reduce the amount of soft landscaping provided and would therefore still impact driveway conformity, the hammerhead portion of a driveway would not be influenced by other limiting factors applied to the main driveway, such as the width.

In Toronto, hammerheads are only permitted on a lot with a residential building, other than an apartment building and with 25 or more dwelling units. The lot frontage must also be greater than 18 metres and the minimum right-of-way of the street from which vehicle access is provided must be 27 metres. In the City of Mississauga, hammerheads are only permitted on lots with frontage greater than or equal to 15 metres.

Hammerhead turnaround must have the following dimensions as outlined in **Table 37**.

Table 37: Residential Driveway Hammerhead Dimensions

Municipality	Minimum Lot Frontage	Hammerhead Design		
		Width (max)	Length (max)	Setback (min)
Toronto	18 metres	3.0 metres	4.5 metres	3.0 metres ¹
Mississauga	15 metres	2.6 metres	3.0 metres	0.6 metres ²

Notes:

- 1) "Extend no more than 3.0 metres from each opposite edge of the driveway."
- 2) From any lot line.

In both cases the maximum length of the hammerhead is less than the standard length of a vehicle. The reason for this is likely to discourage parking within the hammerhead itself (parallel parking) since the vehicle would extend into the driveway thus not increasing the capacity to store vehicles. The widths are fairly consistent between 2.6 and 3.0 metres which is generally the required width of a parking space and enough to accommodate a typical vehicle width. The radius of the curve between the main driveway and the hammerhead is not directly specified.

The Town of Oakville does not specify standards for hammerheads, but simply states that a hammerhead legally existing on a lot shall be permitted as it existed on the effective date of the By-law. The definition of a hammerhead has recently been deleted from the By-law.

The City should consider adopting similar standards as Toronto and Mississauga by defining the Hammerhead a separate component from a Driveway and providing similar size requirements, but with a caveat that the hammerhead is counted as hard landscaping.

6.3.2 Parking Areas

The preferred design of a parking area allows for continuous flow from entrance to exit (circular flow) to avoid dead end driveways and turn around spaces where possible. Some municipalities have guidelines developed to account for dead end parking aisles. These usually consist of a backup space, which functions similar to a hammerhead design as shown in **Figure 13**. In general, these designs are not explicit within the by-laws, but are described in site design guidelines.

Richmond Hill's *Standards and Specifications Manual* notes that dead end access roads are not preferred, and should be designed with a hammerhead turnaround with a minimum hammerhead width of 17.0 metres, roadway width of 5.0 metres, and a 12.0-metre centreline turning radius.

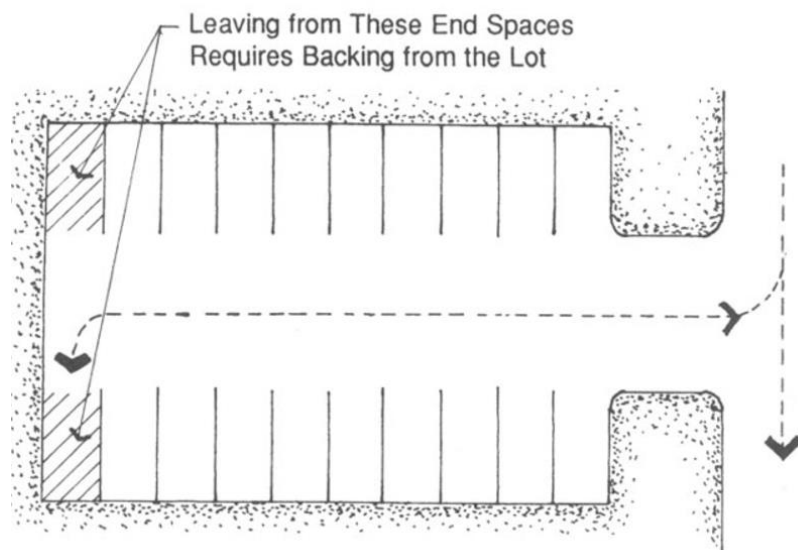
The City of Waterloo requires a parking space with minimum dimensions of 2.8 metres by 5.5 metres with 1.2-metre hammerhead for surface parking areas.¹⁹ The City of Brantford requires either a back-up space at the end of the row, with depths ranging from 1.2 metres to 2.4 metres, which allows a turn-around space, or in the absence of a turnaround spot, the end spaces must be wider than standard spaces (3.3 metres).²⁰ This latter approach, which requires that end

¹⁹ <https://www.waterloo.ca/en/government/resources/Documents/Development-charges-and-guidelines/Urban-Design-Guidelines-Part-4.pdf>

²⁰ <https://www.brantford.ca/en/business-and-development/resources/Documents/Site-Plan-Manual.pdf>

spaces be wider than standard spaces, is similar to requiring wider spaces due to obstruction, as previously discussed.

Figure 13: Hammerhead (or "Dead-end aisle") in surface parking areas, excerpted from the University of Idaho – Landscape Architecture (LARC 301)



The hammerhead should also be demarcated and/or “No Parking” signs should be included to deter motorcycles, bicycles, and other smaller vehicles from occupying these areas.

The City should keep the hammerhead discussion in the *Standards and Specifications Manual*. The simplest approach would be to address this scenario through treatment of obstructions; however, the additional width to account for an obstruction (see **Section 2.8**) would not provide as much maneuvering space as an additional space or dedicated dead-end hammerhead.

6.4 Pedestrian/Cyclist/Vehicle Circulation

Municipalities will typically document parking design (or urban design) guidelines which describe desirable parking features. This includes guidelines for pedestrian, cyclist, and vehicle circulation design preferences. These are not required

A few references are listed below:

- ▶ Richmond Hill’s Urban Design Guidelines²¹
- ▶ Brampton’s Landscape Development Guidelines²²
- ▶ Hamilton’s Urban Design Guidelines (Strathcona Secondary Plan)²³

²¹ <https://www.richmondhill.ca/en/shared-content/resources/documents/685-urban-design-guidelines-processed.pdf>

²² https://www.brampton.ca/EN/Business/planning-development/guidelines-manuals/Documents/Landscape_Development_Guidelines_FINAL.pdf

²³ <http://www2.hamilton.ca/NR/rdonlyres/BAF9506C-6CDE-4D2A-AB84-955FEA6210A3/0/StaffReportPED13143PW13053AppB.pdf>

- ▶ Mississauga’s Green Development Standards²⁴
- ▶ Newmarket’s Urban Design Guidelines²⁵ (under development)
- ▶ Oakville’s Urban Design Manual²⁶
- ▶ Toronto’s Greening Surface Parking Lots²⁷
- ▶ Vaughan’s Parking Design Guidelines²⁸

Richmond Hill’s Urban Design Guidelines includes a section for Site Circulation and Parking which includes subsections:

- ▶ Pedestrian Connections
- ▶ Vehicular Access
- ▶ Pedestrian Drop Off Areas
- ▶ Parking (surface, above-grade, and underground)

Vehicle, pedestrian, and cycling circulation guidelines copied from Toronto and Vaughan’s dedicated parking guidelines are presented in **Table 38**.

Table 38: Excerpts from the Toronto and Vaughan Parking Guidelines relating to Circulation

Circulation	Guidelines
Vehicle Circulation	<p>Toronto’s Greening Surface Parking Lots</p> <ul style="list-style-type: none"> • Limit the number and width of curb cuts for street access driveways to minimize interruption to the public sidewalk, streetscape and perimeter landscaping. • Provide access to surface parking lots from secondary streets or laneways whenever possible • Share driveway access between adjacent sites where feasible • Define street access driveways and internal vehicle routes with curbed landscaped areas, tree planting and lighting. Explore opportunities to include public art. • Size vehicle circulation routes according to use. Avoid using over-sized driveways, drive aisles and turning radii. • Where circulation routes require wider driveways and turning radii (i.e. fire lanes, service areas), coordinate the location of these routes with major drive aisles. • Provide continuous circulation throughout the site. Avoid dead end driveways and turn around spaces. • Ensure unobstructed motorist and pedestrian sight distance and provide clearly marked crossings at all intersections between vehicle routes and pedestrian pathways. <p>Vaughan’s Parking Design Guidelines</p> <ul style="list-style-type: none"> • Combine circulation routes requiring wider widths (i.e. fire lanes, service areas) and turning radii with major drive aisles. • Parking areas should be screened and integrated into the streetscape and architectural fabric of the City • Enhance street access driveways, internal vehicle routes and pedestrian passages with curbed landscape planting areas, shade tree planting, street furniture and lighting. • Main internal driveways or circulation routes are to be designed and treated as streets in anticipation of future infill development.

²⁴ <https://www.mississauga.ca/wp-content/uploads/2020/07/16135257/Green-Standards-Development-Standards-2012.pdf>

²⁵ <https://www.newmarket.ca/urbandesinguidelines>

²⁶ <https://www.oakville.ca/assets/2011%20planning/Livable-by-design-manual-part-c.pdf> / <https://www.oakville.ca/assets/2011%20planning/LivDesignManual-v2-1.pdf>

²⁷ <https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/design-guidelines/greening-surface-parking-lots/> (https://www.uni-groupusa.org/PDF/greening_parking_lots_dg_update_16nov07.pdf)

²⁸ https://www.vaughan.ca/projects/policy_planning_projects/city_wide_parking_standards_review/General%20Documents/Draft%20Web%20Version%20Parking%20Design%20Guidelines%20Oct%202021.pdf

Circulation	Guidelines
	<ul style="list-style-type: none"> • The length of parking rows should be limited to 60 m (20-23 contiguous spaces) to create breaks for landscaping, including shade trees. • Provide continuous circulation throughout the site. Avoid dead end driveways and turn around spaces where possible • Ensure unobstructed vehicular and pedestrian sight lines and provide clearly marked crossings at all intersections between vehicle routes and pedestrian pathways. Intersection points should be distinctly paved with a different pedestrian-scaled material and raised for traffic calming effect at major nodes, where possible.
Pedestrian Circulation	<p>Toronto’s Greening Surface Parking Lots</p> <ul style="list-style-type: none"> • Establish a direct and continuous pedestrian network within and adjacent to parking lots to connect building entrances, parking spaces, public sidewalks, transit stops and other pedestrian destinations • Provide at least one pedestrian route between the main building entrance and the public sidewalk that is uninterrupted by surface parking and driveways. • In larger parking lots or where parking lots serve more than one building or destination, provide designated pedestrian pathways for safe travel through the parking lot. • The width, number and orientation of pedestrian routes should match the anticipated flow of pedestrian traffic through the site. Consider the space requirements for equipment related to parking lot use, such as shopping carts, strollers and mobility aids, when planning the width and location of pedestrian routes. • All pedestrian routes within a parking lot should include: <ul style="list-style-type: none"> ○ a barrier-free pathway, with a minimum clear width of 1.7m (wider pathways are encouraged and may be required depending on parking lot use) ○ shade trees (or a shade structure) along one or both sides of the pathway ○ pedestrian-scale lighting to illuminate and define the route; and ○ a clear division from vehicular areas, with a change in grade, soft landscaping and a change in surface material • Consider installing “tables” (rolled curbs bordering slightly elevated crossings) at major internal intersections to serve as a traffic calming feature and provide pedestrian priority. • Provide enhanced pedestrian pathways along street access driveways. • Where pedestrian routes cross street access driveways and other major drive aisles, clearly mark crossings and provide unobstructed sight distance for both pedestrians and vehicles. <p>Vaughan’s Parking Design Guidelines</p> <ul style="list-style-type: none"> • Provide a safe, interconnected pedestrian network within and adjacent to parking lots to connect building entrances, parking spaces, public sidewalks, transit stops and other pedestrian destinations. • Provide at least one direct pedestrian route between the public sidewalk and every main building entrance that is uninterrupted by surface parking and driveways • Pathways should be distinctly paved and barrier-free, well-lit with pedestrian-scaled lighting and include benches, bike rings, and trash receptacles at nodal points, as determined at site plan design stage • Main pedestrian routes should be reinforced with landscaping, low walls, fences and entry features, where appropriate • The width and configuration of pedestrian routes should consider anticipated pedestrian traffic flow and the spatial requirements for accessories such as shopping carts, strollers, bicycles and mobility aids • Where pedestrian routes cross street access driveways and other major drive aisles, crossings are to be distinctly paved and marked with unobstructed sight lines for both pedestrians and vehicles • Main internal pedestrian routes should be enhanced with 3.0 metres wide landscape areas on one or both sides, where feasible. Deciduous tree canopy should be complimented with low understory plantings ensure an eye-level window to promote safety through natural surveillance. • Orient car parking spaces to minimize the number of traffic aisles that pedestrians must cross. Generally, parking aisles should be perpendicular to major destinations

Circulation	Guidelines
	<ul style="list-style-type: none"> • Select trees, shrubs and other vegetation abutting pedestrian areas free of thorns, tolerant of urban conditions and drought. The Urban Design Section should be consulted for appropriate selections. • Shade trees or shade structures should be provided along one or both sides of a pedestrian pathway. • Provide elevated crossings with rolled curbs, chicanes and bump outs at major internal intersections to calm vehicular traffic and promote pedestrian safety. Crosswalks should be elevated to the level of the connecting pedestrian walkway • Weather protection should be provided at main building entrances, close to transit stops and in places of pedestrian amenities. • Ensure bicycle storage areas do not conflict with pedestrian circulation.
Cyclist Circulation	<p>Vaughan's Parking Design Guidelines</p> <ul style="list-style-type: none"> • Provide sheltered bicycle parking in visible, clearly illuminated locations near building entrances and pedestrian walkways where the principle of natural surveillance can be employed consistent with the City of Vaughan's Crime Prevention Through Environmental Design (CPTED) policy. • Bicycle storage locations should be sited in such a way as to minimize conflicts with pedestrians. • Bicycle pathways should be distinctly paved in asphalt to differentiate them from pedestrian walkways. • Install curb cut ramp adjacent to any bicycle parking area. • Bicycle racks should be made out of a durable and strong material and be permanently anchored to the ground. • Incorporate way-finding signage as appropriate. • Provide at least 1m clearance between parked bicycles and adjacent walls, poles, landscaping, street furniture, drive aisles and pedestrian clear ways and at least 1.5 m clearance from vehicle parking spaces.

Note: Points in **bold** are not included in Richmond Hill's Urban Design Guidelines

In general, the City's Urban Design Guidelines specify the circulation, layout, and landscaping design preferences presented in the other guidelines; however, **the City can consider adding a few highlighted points not present in the existing guideline (highlighted in Table 38) and create a separate document specifying design guidelines for parking (similar to Toronto and Vaughan).**

6.5 Additional Design and Cost Considerations

Additional considerations related to parking design include, but not limited to, available parking space lot dimensions and configurations to allow for adequate maneuvering, grading changes, landscaping, drainage, pavement thickness, water-table (groundwater), structural requirements (e.g. weight to be supported along access route and loading space if it's over a supported structure such as an underground parking garage etc.), location of loading spaces (e.g. proximity to building intake, residential units etc.), illumination, signs, pavement markings, snow storage, and safety/security.

7 Preliminary Recommendations

The preliminary recommendations for the minimum dimensions of the various types of parking spaces are summarized in **Table 39**, and the preliminary recommendations for minimum aisle widths based on angles are summarized in **Table 40**. Additional considerations for recommended updates based on the current practices review are summarized in **Table 41**.

Table 39: Preliminary Recommendations for Minimum Dimensions of Various Types of Parking Spaces

Parking Space	Length (m)	Width (m)	Vertical Clearance (m)
Perpendicular Parking Space	5.6 (-0.2)	2.7 (-0.05)	2.0 (new)
Parallel Parking Space	6.7 (-)	2.6 (+0.2)	2.0 (new)
Tandem Parking Space	5.6 (new)	2.7 (new)	2.0 (new)
Compact Parking Space	4.8 (new)	2.4 (new)	2.0 (new)
Accessible Parking Space (Type A) ^{1,2}	5.6 (new)	3.4 (new)	2.0 (new)
Accessible Parking Space (Type B) ¹	5.6 (new)	2.4 (new)	2.0 (new)
Stacking Space	6.0 (new)	2.7 (new)	2.0 (new)
Loading Space - A	13.0 (-)	4.0 (+0.5)	6.1 (-)
Loading Space - B	9.0 (-)	3.7 (-)	4.3 (-)
Bicycle Parking Space (Horizontal)	1.8 (-)	0.6 (-)	1.9 (new)
Bicycle Parking Space (Vertical)	1.9 (new)	0.6 (new)	1.2 (new) ³
Bicycle Parking Space (Stacked)	1.8 (new)	0.6 (new)	1.2 (new) ⁴

Note:

- 1) Minimum 1.5 metres wide access aisle adjacent to parking space
 - 2) City may consider only defining a single accessible parking space based on Type A.
 - 3) This value refers to horizontal clearance distance.
 - 4) Vertical clearance applies to both stacked spaces.
- Numbers in (brackets) represent change in minimum dimensions from the existing City's by-law.

Table 40: Preliminary Recommendation of Minimum Aisle Widths

Municipality	Parking Angle (degrees)	One-Way / Two-Way Aisle Minimum Width (m)
Richmond Hill	Up to 45	4.0 (+0.3); one-way only
	Greater than 45 to, and including, 60	5.5 (-); one-way only
	Greater than 90 to, and including, 90	6.0 (-)

*Numbers in (brackets) represent change in minimum dimensions from the existing City's by-law

Table 41: Preliminary Recommendations Aside from Parking Space Dimensions

Section	Preliminary Recommendations for Consideration
Obstruction (Section 2.8)	Define obstructions to parking and establishing an increase in the minimum parking dimension when the side of a parking space is considered obstructed. An example would be: The side of a parking space is obstructed if any part of a fixed object such as a wall, column, bollard, fence or pipe is situated within 0.3 metres of the side of the parking space, measured at right angles, and more than 1.0 metre from the front or rear of the parking space. Light standards located at the intersection of four (4) parking spaces are not considered an obstruction.
Loading Space – Residential (Section 3.2.1)	Define a smaller loading space size to use as a second loading space for larger residential developments (similar to Toronto and Vaughan).

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Section	Preliminary Recommendations for Consideration
Loading Space – Thresholds (Section 3.2.3)	Update the thresholds to the nearest 100 square metres such that the thresholds are 500, 2500, and 10000 square metres for review purposes unless the preferences is to review in square feet.
Loading Space – Non-residential (Section 3.2.3)	List specific non-residential land uses that would require loading spaces rather than a rate used for all non-residential land uses, particularly if there are common request for exemptions from loading requirements experienced by the City through some development applications.
Loading Space – Larger Loading Space Size (Section 3.2.3)	Define a larger loading space type for retail, industrial, and/or supermarket loading space requirements.
Loading Space – Shared Rate (Section 3.2.4)	Implement a shared loading space calculation where multiple land uses will share the same building and loading spaces. This will only be applicable if separate rates are explicitly developed for multiple non-residential land uses.
Loading Space – Size (Section 3.2.5 and Table 18)	Increase the minimum width of its standard space to 4.0 metres since it is currently smaller than the width of its smaller loading space and is the smallest amongst other municipality loading spaces of the same length.
Bicycle Parking – Dimensions (Section 4)	Add a requirement for minimum vertical clearance of 1.9 metres, minimum dimension requirements for vertical bicycle parking spaces, minimum vertical clearance for stacked parking spaces, and minimum aisle width of 1.5 metres between bicycle parking.
Bicycle Parking – End of Use Facilities Dimensions (Section 4)	Add requirements for end-of-use facility design details noted in Vancouver’s by-law (minimum door widths, oversized spaces etc.); however, the city may benefit from the simpler by-law until cycling becomes more prominent.
Cash-in-Lieu (Section 5)	Add a contingency cost, maintenance cost, and/or a revenue into the contribution calculation for cash-in-lieu of parking spaces. Define a smaller rate (contribution amount) for smaller change of use developments compared to the existing 50% similar to Mississauga and Toronto.
Access Ramp Design - Slope (Section 6.16.2.1)	Require a transition area at the top and bottom of the ramp with a maximum slope of 7.5% over a minimum distance of 3.0 metres similar to Toronto’s by-law.
Residential Driveway – Widths (Section 6.2.1)	Define a smaller minimum driveway width in the range of 2.0 metres to 2.7 metres (currently set at 3.0 metres).
Residential Driveway Widths – Landscaping (Section 6.2.1)	Define a minimum percentage for general landscaping and a soft landscaping percentage. A defined minimum soft landscaping percentage can ensure that hard landscaping (such as walkways) are limited while still contributing to the general landscaping requirement.
Hammerhead – Residential Driveways (Section 6.3.1)	Adopt similar standards as Toronto and Mississauga by defining the hammerhead as a separate component from a driveway and providing similar size requirements, but with a caveat that the hammerhead is counted as hard landscaping.
Hammerhead – Parking Areas (Section 6.3.2)	Keep the hammerhead discussion in the <i>Standards and Specifications Manual</i> . It is noted that the simplest approach would be to address the dead-end scenario through treatment of obstructions.
Pedestrian/Cyclist/Vehicle Circulation – Parking Design Guidelines (Section 6.4)	Create a separate document specifying design guidelines for parking (similar to Toronto and Vaughan).



Appendix C

TDM and Parking Efficiencies Memorandum



TDM and Parking Efficiencies

Richmond Hill Parking and TDM Strategy for
New Developments

Richmond Hill, ON
October 30, 2022

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1 Introduction / Background

This report documents the recommended approach to determining requirements for Transportation Demand Management (TDM) measures within the City's Zoning By-law, as well as integrating TDM with the parking requirements across the City. Finally, this report makes recommendations towards the implementation of TDM within the City's development application process.

This report builds on the draft "Parking and TDM Strategy – Current Practices Report (March 2021)", herein referred to as Current Practices Report, which presented recommended minimum and maximum vehicle parking rates and bicycle parking rates. The Current Practices Report also reviewed and made recommendations regarding defining requirements for various dedicated parking spaces, varying parking rates throughout the City, and identifying a 'toolbox' of appropriate TDM strategies, which was informed by a current practices review from other Canadian municipalities. This report extends the current practices review of TDM strategies and outlines a methodology for requiring and incentivizing TDM within the City of Richmond Hill.

1.1 Review of Precedents (Vancouver & Waterloo)

The City of Richmond Hill currently has two documents which are referred to during the development application process: the **Sustainability Performance Metrics** and the **York Region Mobility Plan Guidelines**. Both documents outline baseline requirements for developments.

As described in the Current Practices Report, a "good" performance level is required for an application to be accepted for consideration according to the point-based system contained within the City's Sustainability Metrics. TDM measures are not mandatory outside of the base requirements, but they provide a way to gain points towards satisfying the minimum requirement¹. The City currently uses base requirements for bicycle parking rates presented in the Sustainability metrics as requirements for developments. Additionally, the Regional Municipality of York requires a Transportation Mobility Plan Studies for any uses that generate more than 100 person trips. Completion of the TDM Checklist is required as part of a Transportation Mobility Plan Study. The TDM Checklist outlines TDM measures, when they are required or may be considered, and the responsible party (applicant or Region/Municipality).² The Mobility Plan Guidelines apply to any developments that require Regional review, but are sometimes used for non-Regional jurisdiction applications.

Generally, if a developer wants to reduce parking requirements below the By-law minimums, a study is necessary to support the reduction and would be based on data collection (i.e. Transportation Tomorrow Survey results or proxy site surveys), general references to TDM measures, or descriptions of proximity to transit. This study would support Minor Variances or Zoning By-law Amendments. However, these studies can be onerous and costly to the developer, and require additional effort by the reviewing agencies. Quantifying reductions to

¹ <https://www.richmondhill.ca/en/find-or-learn-about/sustainability-metrics.aspx>

² https://www.york.ca/wps/wcm/connect/yorkpublic/71d2f725-b82e-4c96-b181-132ff43f1fda/16214_Mobility_Plan_Guidelines_Accessible.pdf?MOD=AJPERES

parking requirements and tying the reductions to a TDM Toolbox within the Zoning By-law can streamline the application process for the developer, as well as the approval process for the City.

The framework proposed for the City of Richmond Hill is based on both the City of Vancouver and the Region of Waterloo approaches to TDM and parking requirements, which are outlined below:

- **Vancouver** – Point based system where developments must provide a certain level of TDM measures based on development's size, location, and type. Each TDM is assigned points that contribute to the required number of points. Providing additional measures can qualify the development for parking reductions which are capped based on various criteria. Proximity to transit also affords parking reductions depending on the type of transit and the proximity of the use³.
- **Waterloo** – Point based system where developments may provide a certain level of TDM measures to qualify the development for parking reductions. These reductions are capped based on various criteria. Each TDM measure is assigned points that contribute to the required number of points based on development's location. A minimum point value is also required as a baseline to gain approval but any points beyond that minimum may be used to support reductions in the minimum parking requirement⁴.

Based on these frameworks, a set of TDM measures and quantified reductions were devised for the City to consider in developing a TDM Strategy.

³ <https://vancouver.ca/files/cov/transportation-demand-management-schedule-b.pdf>

⁴ <https://www.regionofwaterloo.ca/en/doing-business/Construction-Design-Standards-and-Guidelines.aspx#impact-study-guidelines>

2 Parking & TDM Framework Recommendations

2.1 Parking Strategy Areas

The 2010 Parking Strategy established five *Parking Strategy Areas* for which different minimum and maximum parking rates would apply, as shown in **Exhibit 1**. These parking strategy areas include:

1. Richmond Hill Regional Centre (RHC)
2. Downtown Local Centre and Key Development Areas (KDA)
3. Rapid Transit Corridors (RTC)
4. Business Parks
5. 'Rest of Richmond Hill'

Currently, there is no recommended change to the pre-established Strategy Areas, however we note that in the future the City may wish to expand the KDA policies to include all Major Transit Station Areas which are currently being identified as part of York Region's Municipal Comprehensive Review, with note that this would include GO Station areas and vivaNext station-stop areas. However, through the development of the TDM Strategy, recommendations will also include opportunities to reduce parking requirements for some Strategy Areas due to transit proximity, quality of service, and other site-specific factors which may make the need for additional Strategy Areas unnecessary. This review assumes the same Strategy Area definitions continue to apply and uses the recommendations prepared in the 2010 Parking Strategy as the basis for the current practice comparison.



Exhibit 1: Richmond Hill Parking Strategy Area

As such, the concept of parking strategy areas has been extended to the TDM strategy.

2.2 Minimum Requirements vs. Optional TDM (Incentives)

TDM measures can either be required through the Zoning By-Law (e.g. bicycle parking requirements), or incentivized by reducing the minimum vehicle parking requirements for the provision of TDM. Currently, minimum bicycle parking requirements are outlined in by-laws for the Bernard KDA and within the City's Sustainability Metrics.

As noted in the Current Practices Report, it is recommended that for KDAs, that the City consider a minimum level of TDM provisions be required to support reduced vehicular trips within the area, similar to how the Sustainability Metrics are used as a high level filtering tool. Provision of additional measures can contribute towards reducing minimum vehicle parking requirements.

The minimum TDM requirements, amount of vehicle parking reductions, and limits to reductions can vary based on factors such as the strategy area and land use. This is because some TDM measures alone will not be as impactful in reducing the parking requirements without the associated supporting infrastructure in place. For example, additional bicycle parking in an area without bicycle infrastructure / a cycling network, is unlikely to reduce the demand for vehicle parking. The other end of the spectrum holds true, where a combination of measures can have a multiplicity factor in reducing the vehicle parking demand; for example, a strong transportation network with frequent service or nearby regional transit service coupled with financial transit incentives could be enough for people to choose not to own a car (or not to buy a second car). Areas such as the Richmond Hill City Centre and Key Development Areas have lower minimum parking requirements due to, in part, mixed use development and proximity to transit. By implementing TDM measures, developments can further reduce the vehicle parking demand for both the development, and the area.

The reductions permitted are calculated and capped according to the development size as well as based on the Parking Strategy Area. Soft measures often are rewarded with a minor reduction to the parking requirement since these soft measures are more difficult to enforce and monitor the impacts of. For reductions associated with hard TDM measures, a higher percentage reduction in vehicle parking requirements can be applied compared to the percentage reductions for soft TDM measures. These hard measures can also result in ranges of reductions calculated according to the degree or magnitude of TDM provided.

As previously noted, the City should consider extending the concept of strategy areas for minimum parking requirements to be extended to the application of TDM measures.

2.3 TDM Toolbox: TDM Measures, Strategies & Policies

The “Current Practices Report” outlined the general framework for the TDM Toolbox at a very high level, and established the concept of requiring minimums and permitting reductions using direct reductions or a point-based system. The current practices report included a list of various TDM measures from which the most appropriate would be selected. The hard measures are typically those which can be verified on the site plan, such as the number of parking spaces, or number of shower and change facilities, while soft measures are typically policies or services provided by the operator or management of the development. The permitted TDM measures which have been integrated into the TDM Strategy are a combination of hard and soft measures, which have been discussed with the City and are considered not only assessable during the site plan application process, but also enforceable after construction.

The proposed TDM Strategy framework does not use a point-based system like Waterloo, but does preserve the concepts of minimum requirements as well as permitted reductions. Similar

to the Vancouver method, the proposed framework will permit reduced parking due to proximity to transit. Unlike the Waterloo and Vancouver approaches, this framework permits direct reductions for each TDM measure, rather than calculating the reduction using pooled points. Additionally, the minimum requirements will be integrated into the parking requirements directly (bicycle parking, shower and change facilities, and varying rates by Parking Strategy Area).

Since the vehicle parking rates are incrementally increased for each Parking Strategy Area beginning in Richmond Hill Centre (lowest rates) and ending in Rest of Richmond Hill (highest rates), the potential cumulative reduction for a development which may be awarded if all TDM measures are implemented, has been capped. The cap has been developed so that the parking requirements can be reduced to below the baseline parking rates for the next Parking Strategy Area. For example, Downtown Local Centre/KDA base rates can be effectively reduced such that they are below the Richmond Hill Centre base rates if all TDM measures are utilized. The limit to this range can be adjusted using individual TDM measures, or by adjusting the arbitrary cap to the reductions.

This next sections details the TDM measures which can reduce minimum vehicle parking requirements. There are two types of reductions permitted:

- 1) Ranged reductions – reductions vary depending on the amount of TDM provided.
- 2) Toggle reductions – a fixed reduction is awarded.

The reduction details would be described further within the spreadsheet tool.

2.3.1 Hard Measures

Table 1 lists and describes the permitted 'hard' TDM measures.

Table 1: Description of Hard TDM Measures

Measure	Description	Land Use Applicability	Fixed/Range Reductions
Active Transportation			
Additional Long-Term Bicycle Parking	Provide additional long-term bicycle parking spaces (beyond minimum requirements).	Residential Uses / Offices / Other Non-Residential	Range
Enhanced Long-Term Bicycle Parking Access	Provide improved access to long-term bicycle parkin (indoor/outdoor) by fully separating the bicycle access ramp from the vehicle and/or minimum amount of long-term parking at-grade.	Residential Uses / Offices / Other Non-Residential	Fixed
Additional Short-Term Bicycle Parking	Provide additional short-term bicycle parking spaces (beyond minimum requirements).	Residential Uses / Offices / Other Non-Residential	Range
Enhanced ST Bicycle Parking	Provide secure short-term bicycle parking that is weather protected.	Residential Uses / Offices / Other Non-Residential	Fixed

Measure	Description	Land Use Applicability	Fixed/Range Reductions
Secure Public Bicycle Parking	Provide additional secure public bicycle parking (with charging stations for e-bikes) available to the public (i.e. users not associated with the building). This may require a membership.	Residential Uses / Offices / Other Non-Residential	Range
Additional Bicycle Facilities	Provide additional bicycle parking facilities (i.e. showers and change rooms).	Offices / Other Non-Residential	Range
Bicycle Maintenance Facilities	Provide publicly accessible bicycle maintenance facilities.	Residential Uses / Offices / Other Non-Residential	Fixed
Publicly Available Micromobility	Provide dedicated space for accommodating a public microbilty/bike share program. Size and site requirements as determined by the City.	Residential Uses / Offices / Other Non-Residential	Fixed
Private Shared Micromobility	Provide a fleet of micromobility options (bicycles, scooters, ebikes) for residents, employees, and/or guests to use.	Residential Uses / Offices / Other Non-Residential	Fixed
Alternative Commute Services			
Car Share Spaces	Provide publicly accessible two-way car share vehicle(s) and space(s) on-site.	Residential Uses / Offices / Other Non-Residential	Range
Parking Management			
Priority Parking Spaces	Establish dedicated parking spaces closest to the main building entrance (except for accessible parking spaces) for either of the following: carpool, car share, efficient vehicle, dedicated pick-up/drop-off spaces (private transportation companies/mobility-as-a-service/maximum 30-minute parking).	Residential Uses / Offices / Other Non-Residential	Fixed
Shared Parking	Provide a shared parking agreement between developments & mixed use development.	Residential Uses / Offices / Other Non-Residential	Range

2.3.2 Soft Measures

Table 2 lists and describes the permitted 'soft' TDM measures.

Table 2: Description of Soft TDM Measures

Measure	Description	Land Use Applicability	Fixed/Range Reductions
Financial Incentives			
Car Share Memberships	Provide two-way car share memberships to residents.	Residential Uses / Offices / Other Non-Residential	Range
Transit Passes	Offer monthly public transit passes and/or subsidies to residents / employees.	Residential Uses / Offices / Other Non-Residential	Fixed
Alternative Commute Services			
Shuttle Bus Service	Provide free local shuttle bus service between the development site and regional transit hubs, commercial centres, and residential areas for customers, employees, and visitors.	Residential Uses / Offices / Other Non-Residential	Fixed
Commuter Reduction Programs Vanpool/Carpool Service	Provide a comprehensive commuter trip reduction program. The property owner shall implement an employer or building manager-sponsored commuter reduction program.	Offices / Other Non-Residential	Fixed
Guaranteed Ride Home	Provide a guaranteed/emergency ride home program provided to employees.	Offices / Other Non-Residential	Fixed
Support, Promotion, Information			
Transportation Marketing Services	Provide individualized, tailored marketing and communication campaigns based on the location of the development, including incentives to encourage the use of sustainable transportation modes.	Residential Uses / Offices / Other Non-Residential	Fixed
Real-Time Information	Provide real-time sustainable transportation information on displays in prominent locations on the project site.	Residential Uses / Offices / Other Non-Residential	Fixed
Parking Management			
Public Parking	Provide public parking which is easily accessible within the development. The public parking supply must be paid and the revenue will be collected by the City. Public parking spaces may be counted towards the visitor parking requirements for multi-family dwellings with shared parking areas.	Offices / Other Non-Residential	Range
Unbundled Parking	Parking spaces are not bundled with unit sales.	Residential Uses	Fixed

2.3.3 Shared Parking

The concept of shared parking is discussed in Current Practices Report; however, it is worth highlighting that shared parking is a form of parking demand management. Shared parking concept reduces the number of minimum vehicle parking spaces required by accounting for various peak demands of different land uses, to maximize the efficiency of the parking area. For example, parking spaces for offices in the morning could be used by a theatre in the evening. Although it does not directly influence travel demands, it provides an opportunity to reduce the required parking spaces.

As discussed in the “Current Practices Report”, the City is considering assigning land uses that have the potential to share parking into two sets:

- 1) Land uses with peak parking demand during the day (e.g. offices)
- 2) Land uses with peak parking demand in the evening (e.g. residential visitor parking)

For example, the shared parking requirement is to be calculated as the maximum of the following:

- ▶ Office Parking Supply * 100% + Residential-Visitor Parking Supply * 20%, rounded up.
- ▶ Office Parking Supply * 10% + Residential-Visitor Parking Supply * 100%, rounded up.

In the above example, the first bullet represents the daytime requirements for each land use on a typical weekday, where the office parking utilization is expected to be 100% and the visitor parking is expected to be quite low but is assumed to be 20% for a conservative estimate. The second bullet represents the evening requirements for each land use on a typical weekday or Saturday evening, when the office parking is expected to be very under-utilized but the residential visitor parking is expected to be highly utilized.

The above reductions would be calculated after calculating and applying the permitted vehicle parking requirement reductions awarded for soft and hard measures.

2.4 Implementation

2.4.1 Applicability and Approval Process

By-law No. 137-09, as amended, requires development proposals to be approved through the City's Site Plan or Site Plan Amendment application process.⁵ As part of the approval process, the site plan must satisfy the minimum parking requirements based on the strategy area requirements, provide justification in the form of a parking study that supports a lower parking supply, or pay into a cash-in-lieu system for parking that cannot be provided.

Where the City currently has allowed developments to supply less than the minimum parking requirements, either a minor variance is granted, or a site-specific zoning by-law is approved. The City's Committee of Adjustment is authorized by the Ontario Planning Act to grant minor

⁵ <https://www.richmondhill.ca/en/register-apply-or-pay/Site-Plan-Amendments.aspx>

variances from provisions of the Zoning By-Law, whereas site specific by-laws would require council approval.⁶

Currently, developments requesting parking reductions based on the provision of TDM measures would require a transportation/parking study to justify the proposed reduction. The application would then follow either the application for minor variance or site-specific by-law in order to have the reduction approved.

To streamline this process, a toolbox / calculator tool in spreadsheet format was developed which will be publicly available to applicants and is also intended to be used by the City during the development review process. The calculator would not be explicitly included within the Zoning By-law. The Zoning By-law itself would identify the minimum or maximum parking requirements as well as any shared parking reductions that may be permitted according to those land use groups. However, further parking reductions permitted as part of the calculator could be integrated with the Zoning By-law directly or less directly through the development application process. Even if the calculator is not directly part of the By-law, it can still expedite the reviewing process when determining if reductions should be permitted. This will also save the applicant time and money, since a parking study with proxy data, rationale, and justification for the reductions would not be required.

2.4.2 Approval Process

The variety of TDM strategies proposed for allowing vehicle parking reductions are either hard TDM measures that can be easily confirmed at the site application stage (e.g. designated area for additional bicycle parking), or soft TDM measures that are more difficult to confirm at the site application stage (e.g. the promise to provide financial subsidies to future residents). Based on these two categories of TDM strategies, the City should consider inserting the set of hard TDM measures into the Zoning By-Law, and leaving the soft TDM measures for a separate review (or, if applicable, assigning a range of reductions subject to City approval). The City can also consider an additional TDM monitoring fee/deposit for monitoring the more difficult to enforce TDM measures.

The separation between hard and soft TDM measures is described in **Section 2.3**, but is reiterated in this section to highlight the approval process. The City should consider adding reductions from providing the following TDM strategies into the Site Plan Approval process (Zoning By-Law):

- Additional long-term/short-term bicycle parking
- Enhanced long-term bicycle parking access
- Enhanced short-term bicycle parking (weather protected)
- Secure public bicycle parking
- Additional bicycle facilities (showers and change rooms)
- Bicycle maintenance facilities
- Publicly available micromobility services
- Private shared micromobility services

⁶ <https://www.richmondhill.ca/en/find-or-learn-about/committee-of-adjustment.aspx>

- Car share vehicles provided on-site
- Priority parking spaces
- Off-site parking agreement/shared parking

Proof for the above measures may include site plan drawings and/or contracts with car-share providers, etc. which can be inspected upon completed construction. The City may need to use collected fees to perform the monitoring and follow-up required. These fees may be taken from the public parking revenue or cash-in-lieu payments.

The City should consider the following TDM strategies to support vehicle parking reductions; however, since these measures are soft measures, they are included in the calculator spreadsheet only and are not recommended for inclusion in the Zoning By-law.

- Subsidies provided for car share memberships/transit passes
- Shuttle bus service
- Commute reduction programs
- Guaranteed/emergency ride home program
- Transportation marketing services
- Real-time sustainable transportation information
- Multimodal wayfinding signage
- Public parking
- Unbundled parking

Since many of the above measures are more difficult and costly to enforce and monitor than the hard TDM measures, the City should consider limiting the parking reductions for these measures until resources are available to properly enforce these measures. These measures are also more difficult to define within a zoning by-law. The City should consider evaluating these measures on a case-by-case basis, rather than a direct Zoning By-Law adjustment for these measures.

2.4.3 Parking & TDM Calculator / Spreadsheet Tool

Based on the Current Practices Report which proposes minimum parking requirements and outlines current practices for reductions to vehicle parking, a draft TDM Calculator (spreadsheet tool) was created to determine the minimum parking requirements for a development after applying reductions based on proposed TDM. The measures described in **Section 2.3** are outlined in the spreadsheet tool and assigned to the specific land uses.

By inputting the development statistics and the strategy area, the spreadsheet calculates the required parking spaces for the development. Based on the input for planned TDM strategies, the spreadsheet tool calculates the parking requirement and permitted reductions.

Based on the preliminary draft reductions, a development within any strategy area has the potential to reduce minimum parking requirements by up to 40% if the developer were to maximize on all the TDM strategies. In general, providing TDM measures can reduce minimum parking requirements to below another strategy area's lower minimum parking requirements. Consideration of capping the reductions to a maximum percentage can also be considered.

Currently, the permitted reductions are consistent across all Parking Strategy Areas, and the spreadsheet is calibrated primarily for Key Development Areas. However, the reductions can be modified to be greater or less depending on the Strategy Area. For example, there is a reduction of one (1) vehicle parking space for every five (5) additional long-term bicycle parking spaces above the minimum requirement (similar to the City of Toronto). The provision of additional long-term bicycle parking has the potential to reduce vehicle parking demands in areas where the cycling network is more prominent and can be used as a viable means for everyday commuting (e.g. urban centre/KDA); however, until a cycling network is developed in areas outside the urban centres of the City, it is unlikely that additional bicycle parking alone will reduce the vehicle parking demand. The reduction established in the City of Toronto only applies to developments within the downtown area. Although reductions due to TDM are not being proposed for the 'rest of Richmond Hill', consideration towards adjusting the reductions based on specific strategy area can be considered.

As developers begin implementing TDM measures and parking reductions, the City should monitor the impacts of these changes (and/or require follow-up reports from the developers), to evaluate the effectiveness of these measures. Based on these findings, the reductions due to TDM can be recalibrated. As TDM measures become more prominent in the general area, and not just within a single development, the impact on vehicle travel demands within the area could be stronger (i.e. presence of bicycle parking at a higher number of destinations in combination of cycling infrastructure may warrant residents for reduced car ownership). The City should consider monitoring the impacts of the proposed minimum vehicle parking requirement reductions based on proposed TDM measures.



Appendix D

Data Collection Summary Report



Parking and TDM Strategy – Data Collection Summary Report

Richmond Hill Parking and TDM Strategy for New
Developments

City of Richmond Hill, Ontario
October 30, 2022



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1 Introduction

This report summarizes the data collection and data analysis supporting the development of recommendations within the Parking and Transportation Demand Management Strategy. Data collection occurred subsequent to the development of the Best Practices report, and was intended to validate the findings of the Best Practices Report.

Originally the intention was to develop a best practices report which would review parking rates and current practices from other comparable municipalities, compare the findings with the recommendations from the 2010 Parking Strategy Report, and make recommendations for data collection to update or validate rates where Richmond Hill was identified as an outlier compared to other municipalities or where a high degree of variation was observed in the rates across various municipalities being referenced. Additionally, the intent was to collect data for new emerging uses not included in the 2010 Parking Strategy or subsequent zoning by-laws where there may not have been many references from other municipalities.

Initially, the intent of the Best Practices report was to address the needs of all areas of the City (all of the Parking Strategy Areas outlined in the 2010 Parking Strategy). However, as a result of the progress of the Bernard Key Development Area Local Planning Appeal Tribunal (LPAT) progression, the best practices review was first undertaken with a focus on Transportation Demand Management (TDM) and parking requirements for growth areas comparable to the Bernard Key Development Area (KDA). Therefore, the best practices review was undertaken in three separate stages, resulting in two interim reports, and one final consolidated report:

1. **Bernard KDA Parking and TDM Strategy (Draft December 2019)** – reviewed parking requirements and transportation demand management for growth areas comparable to Key Development Areas (KDAs).
2. **Best Practices Review (Draft April 2020)** – reviewed parking requirements for general areas.
3. **Parking and TDM Strategy – Best Practices (Draft March 2021)** – consolidated the findings of the previous reports (general areas and key development areas).

The impacts of Covid-19 lockdowns also affected the ability for new data collection to be undertaken to verify the findings of these reports. Based on the best practices review, it was found that adjustments to the rates recommended in the 2010 Parking Strategy could be directed by the best practices review, and that data collection would only be supplementary. It was ultimately decided that to avoid further delays to the study, the data collection efforts would be reallocated to online surveys focusing on residential parking requirements and public perceptions on parking and TDM in Richmond Hill, developer community input on parking and TDM, and developer input on electric vehicle adoption.

The public surveys were advertised by the City on the City website, the first survey had a prize draw which was not offered for the second public survey. The first and second public surveys were distributed 6 months apart. The intended audience for the public survey was generally

residents within the GTA, although responses from those within Richmond Hill were the primary target. However, the surveys were not controlled for respondent location.

The developer survey was directed towards members of the BILD community (Building Industry and Land Development Association). The BILD community website describes itself as "*the voice of the home building, residential and non-residential land development and professional renovation industries in the Greater Toronto Area.*" Both of the developer surveys were distributed following a formal presentation by the City and HDR to the developer industry, which included three related topics: the Parking and TDM Strategy for New Developments (this study), the Centre and Corridor Building Typology Study, and the Official Plan Update Emerging Key Directions. These studies were peripheral to, and feed into the ongoing Comprehensive Zoning By-law Study.

In addition to reallocating efforts to the online surveys, a detailed review of minor variance and site-specific zoning by-law approvals within the City occurred to determine the industry direction and desires, and ultimately the approvals granted by the City.

The following tasks replaced the in-field parking survey data collection efforts:

1. **Parking/Landscaping/Commercial and Recreational Vehicle/Transportation Demand Management Public Survey Round #1** (ran through March 2021)
2. **Parking/EV/Transportation Demand Management Study Public Survey Round #2** (ran through September 2021)
3. **Parking and Transportation Demand Management Study Developer Survey 1: High-Level Directions** (ran through October 2021)
4. **Parking and Transportation Demand Management Study Developer Survey 2: Electric Vehicles** (ran through October 2021)
5. **Minor Variance and Site Specific Zoning By-law Approvals Review**

The initial public survey which ran through March 2021 included a draw for prizes to incentivize responses. The second round of the public survey did not include a prize draw and ran through September 2021.

The developer surveys were active following the **Land Developers and Building Industry Consultation** presentation which covered three major topics (Topic #1: Official Plan Update Emerging Key Directions, Topic #2: Comprehensive Zoning By-law Update – Centres and Corridors Building Typology Study, and Topic #3: Comprehensive Zoning By-law Update – Parking and TDM Strategy for New Developments), held on October 1st, 2021, where HDR presented the third and final topic.

This report summarizes the data collection (public, and developer community surveys) and review of the minor variance/site-specific zoning by-law approvals, as well as parking

justification reports and associated Committee of Adjustment reports, which were provided by the City.

2 Summary of Online Survey Findings

2.1 Online Survey Summary – Public Survey #1

2.1.1 Survey Description and Purpose

The public survey, which was live during March of 2021, asked respondents questions relating to the parking conditions at their place of residence, questions relating to their interest in continuing to live in or moving to Richmond Hill, questions relating to their interest in continuing to work in Richmond Hill as well as interest in future work in Richmond Hill. All the questions were in the context of parking and travel decision-making. The survey also asked questions of current employers within Richmond Hill, and asked questions relating to the front yard landscaping requirements, and recreational parking requirements and restrictions within front yards. The survey included logic to provide respondents only with the questions that were relevant to their circumstances. It should also be noted that the survey was open to all residents within the Greater Toronto Area, which allowed the surveys to ask questions about future work or residency within the City of Richmond Hill.

2.1.2 Summary of Responses

There was a total of 844 respondents to the first online public survey, with 345 (41%) being people reporting themselves as living in Richmond Hill, and the majority living in the Greater Toronto Area.

The breakdown of respondent locations was 755 within the GTA (89%) and 89 outside of the GTA, with the GTA external responses comprised of:

- 11 responses from Vancouver
- 2 responses from Alberta
- 68 In St Johns
- 3 in Newfoundland
- 1 in Nova Scotia
- 3 in Quebec/Montreal
- 1 in North Bay

Many of the responses from St Johns were likely a result of respondents using the default/example postal code instead of providing their own. The distribution of respondents by postal code (as reported) is shown below in **Figure 1**. The large circle in eastern Canada represents the default postal code (68 responses). A more centralized heatmap of postal codes within the GTA is shown in **Figure 2**.



Figure 1: Public Survey #1 Responses by Postal Code

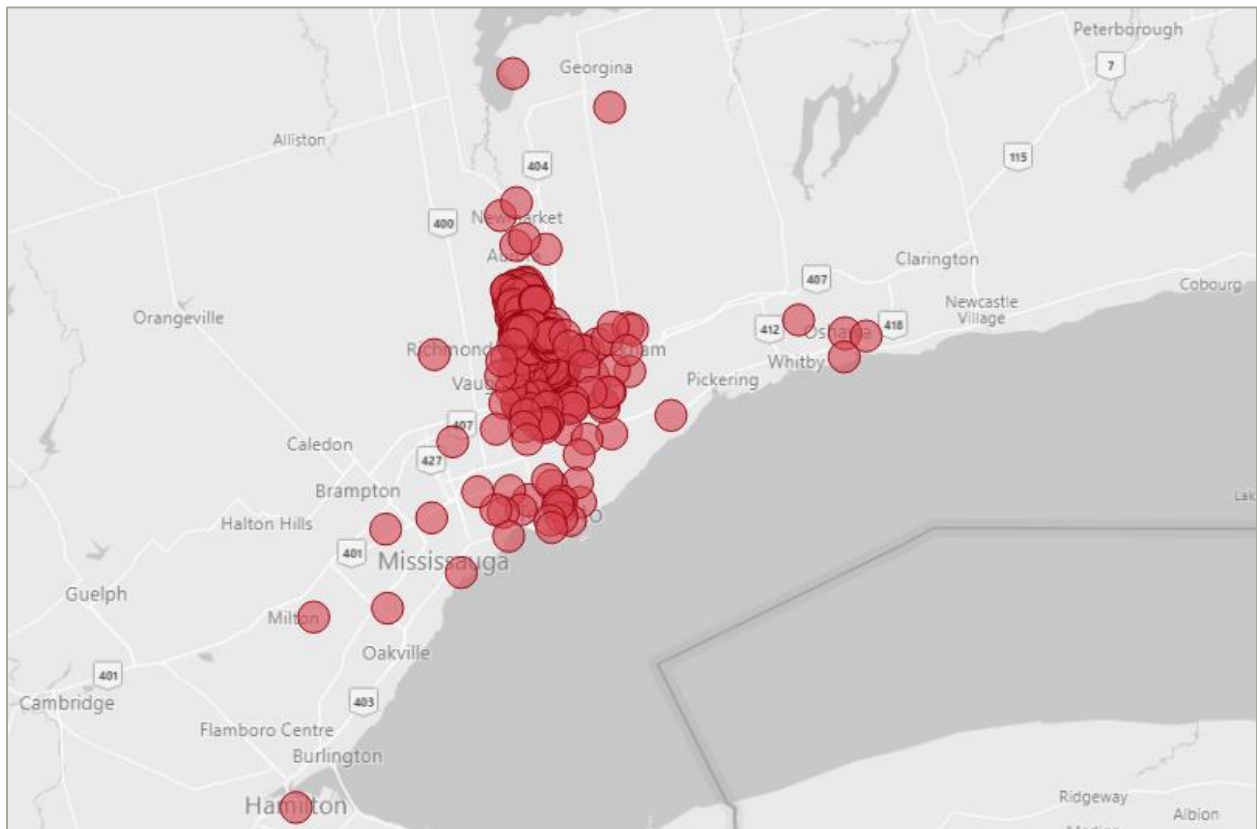


Figure 2: Public Survey #1 Responses by Postal Code (Greater Toronto Area)



Public survey #1 was generally structured as follows:

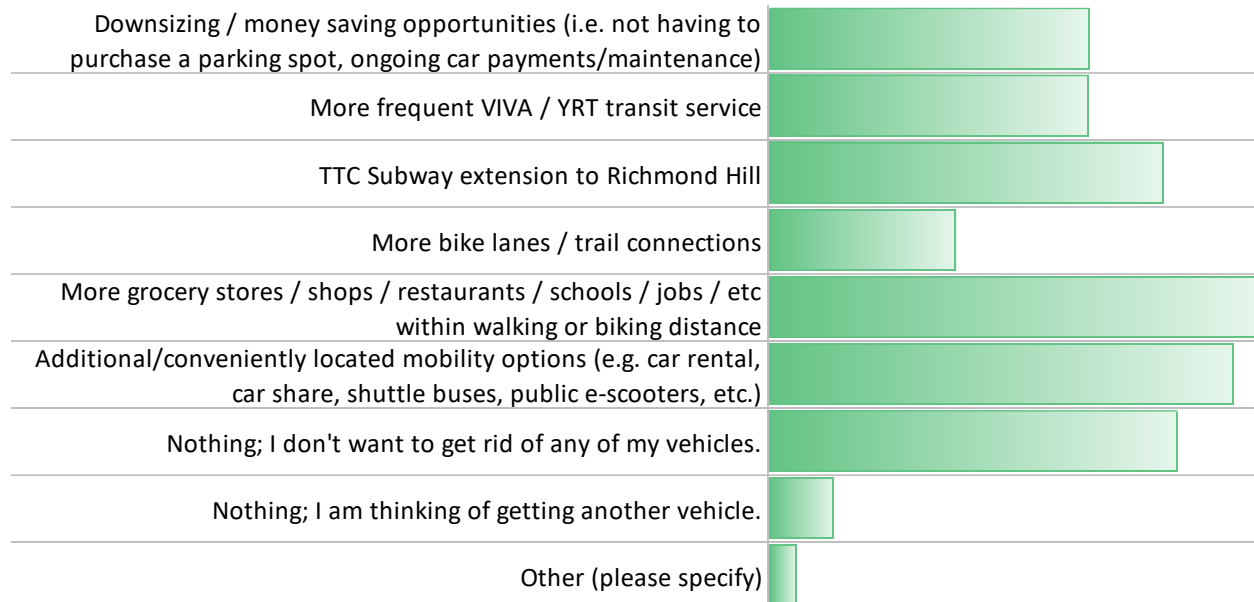
- Demographics
- Dwelling type and questions relating to parking (number of bedrooms, available parking spaces, vehicles per household etc.)
- Place of residency and employment
- Reasons for living/working, or continuing to live/work in Richmond Hill
- Lot frontage and driveway/landscaping requirements (Richmond Hill residents only)
- Recreational and commercial vehicle parking requirements (Richmond Hill residents only)
- Primary mode of travel (work-based trips)

The following sections summarize the findings relevant to parking and TDM. The responses and graphs for each question, aside from the required and optional detailed responses that are not plottable on a graph, are provided in **Appendix A**.

2.1.3 Summary of Findings

This section summarizes the questions and responses specific to parking and TDM.

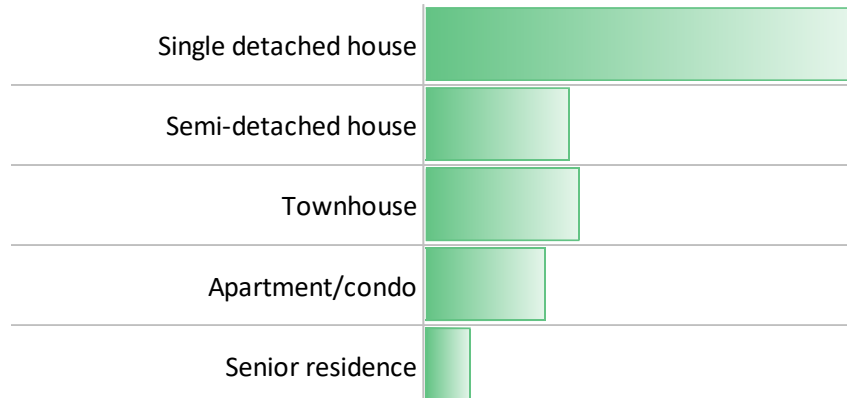
Question 11: Which of the following would allow you to live, or continue to live without a vehicle in Richmond Hill? (multiple responses can be selected)



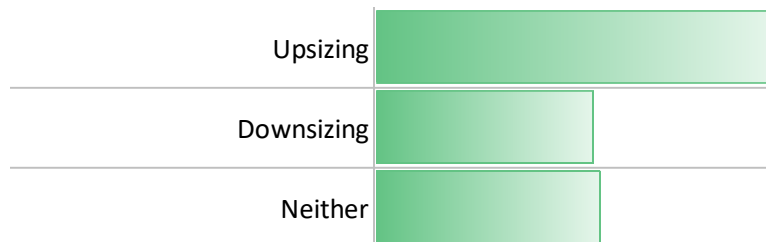
Based on the responses to question 11, most residents believed that more nearby shops and amenities would allow them to live in Richmond Hill without a vehicle. The second most common response was additional mobility options (excluding transit), and the third and fourth was improved transit services. A further 27% indicated that money saving and downsizing would be an incentive to living without a vehicle. A substantial number of respondents (34%) noted that they did not want to get rid of any of their vehicles. The number of responses added up to 222% since multiple responses could be selected.

Question 11 generally confirms that respondents currently believe that the City is not conducive to not owning a vehicle, but that many residents are open to living without a vehicle if the non-vehicle transportation infrastructure was improved, and land use distribution and access to amenities was more equitable.

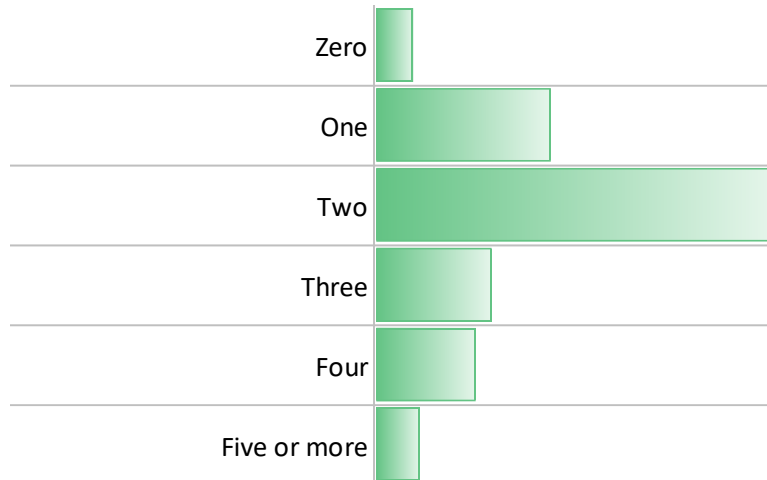
Question 22/23/24: Describe the type of dwelling you would move into within the City of Richmond Hill?



The responses to question 22 were directed at those who currently do not reside within Richmond Hill. The majority of respondents indicated that they would move into a semi-detached home if they moved to Richmond Hill and that they would be upsizing (47%) based on Question 23 (below).

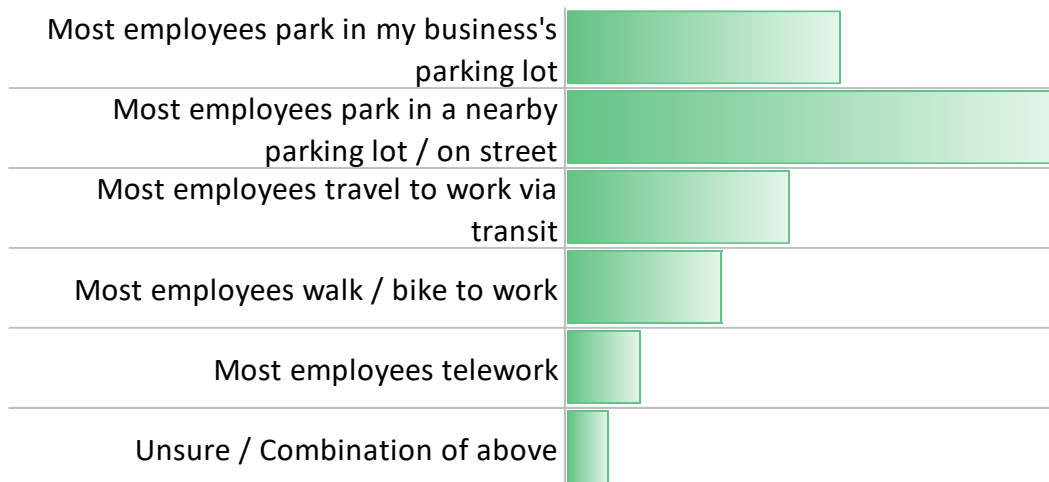


Finally, respondents were asked how many parking spaces they would likely require if they moved to Richmond Hill. Most respondents indicated they would require 2 parking spaces (46%), which is consistent with the desire to live in a single-detached home.



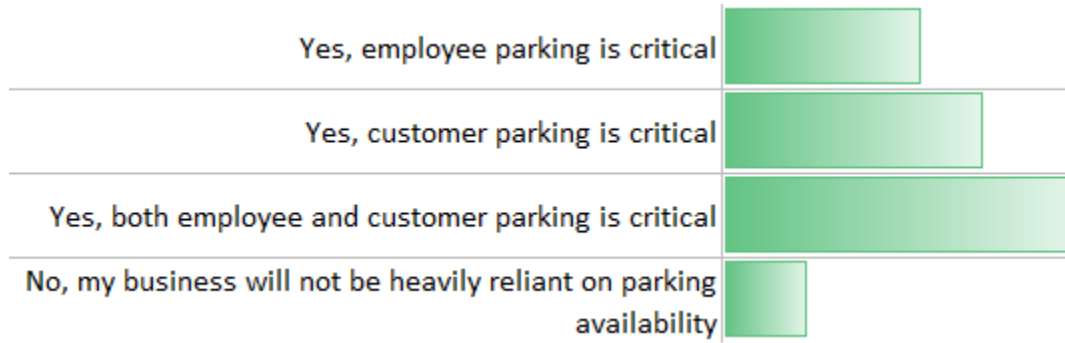
Questions 27/28: These questions asked respondents if they are business owners in Richmond Hill, and the current parking needs of their business.

Under typical conditions, how do most of your employees typically get to work?



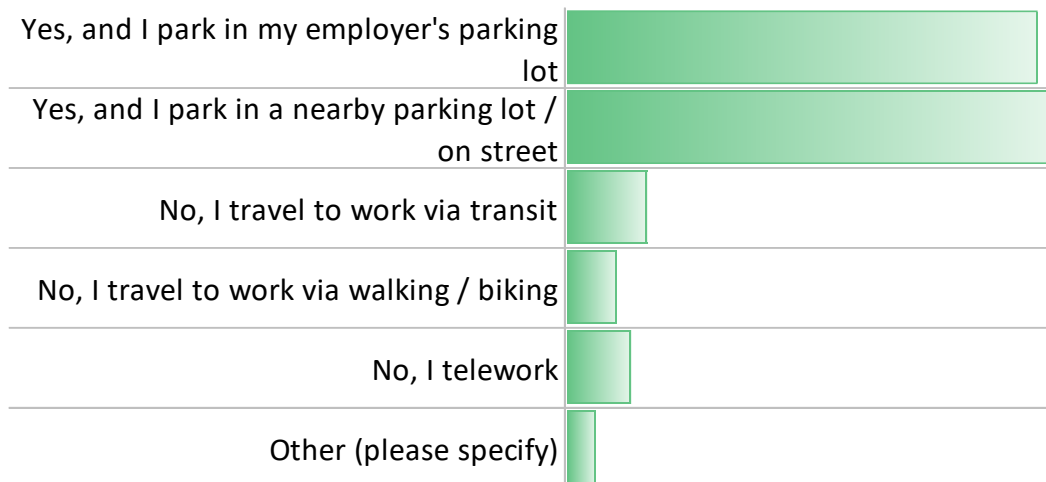
Most employers (61%) reported that their employees drive to work, with the majority parking in nearby parking lots or on street. Only 22% of employees are parking in the spaces dedicated to their place of employment. The remaining 36% arrived by other non-vehicle modes. A total of 33% of the employers were office related, with goods and services/retail representing 34% of the employers, and manufacturing representing 21%.

Questions 29/30/31: These questions asked people if they would consider opening a business in Richmond Hill and the circumstances regarding parking needs. The distribution of business types was comparable to the previous responses regarding current business owners.

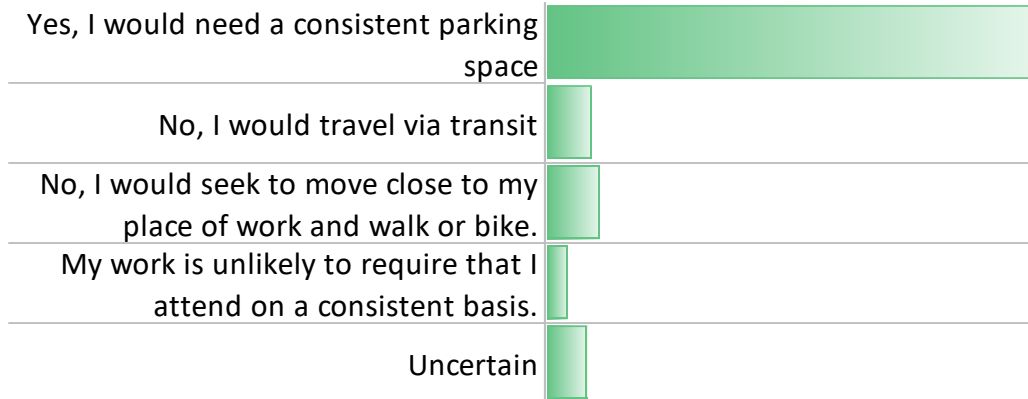


Out of all potential future business owners, 91% indicated that parking would be critical to either employee, customers, or both, where 40% of respondents indicate specifically that parking would be critical to both. Only 22% indicated employee parking would be critical, which suggests that parking may be more limiting to acquiring patrons, whereas employees would have less options regardless of parking availability.

Questions 32/33/34/35/36/37: These questions asked respondents if they currently work in Richmond Hill and if they would consider working in Richmond Hill in the future. Respondents were also asked to report on their parking needs.



The majority of respondents (81%) indicated they drive to work and park. The number who parked in a dedicated parking space for the employer was approximately equal to the number of people who parked in nearby parking lots or on street. The remaining 19% of respondents indicated that they do not rely on personal vehicles to get to work, and overall, 94% of respondents indicated that this is their preferred way to travel (mostly by vehicle). Finally, respondents were asked if future jobs were in Richmond Hill, how they would get to work.



The majority of respondents (76%) indicated that they would require a parking space if they worked in Richmond Hill in the future, while 9% indicated they would not go to work on a consistent basis or they were uncertain. Only 7% indicated that they would take transit, and 8% indicated that they would seek to move closer to work so that they could walk or bike.

2.1.4 Parking Needs by Dwelling Type

Parking needs can be extracted for apartments and condominiums using the responses regarding the dwelling types, number of bedrooms, and number of household vehicles. The information can also be disaggregated by responses for those who live in Richmond Hill and those who live outside of Richmond Hill based on the postal codes provided.

The data from the online surveys provides an opportunity to determine parking rates for apartments/condos according to the number of bedrooms, which is not something that can be done using traditional parking surveys due to the parking demand being very difficult to associate with a specific unit. The results of the survey are presented in **Table 1** for all dwelling types, comprised of 345 total responses.

Table 1: Parking Rates by Dwelling Type

Dwelling Type	% Responses	Average Parking Rate
Apartment (Bachelor and 1-bed)	5%	1.06 spaces per unit
Apartment (2-bed)	7%	1.20 spaces per unit
Apartment (3-bed)	1%	1.80 spaces per unit
Apartment (4-bed)	0%	-
Apartment (5-bed)	0%	-
Single Detached	64%	2.16 spaces per unit
Semi-Detached	5%	2.17 spaces per unit
Townhouse	16%	1.82 spaces per unit
Senior Residence	1%	2.00 spaces per unit

Of the 48 apartment/condominium respondents, only 5 reported not having any household vehicles, and 4 of those 5 were bachelors or one-bedroom apartments. This does demonstrate that there is a correlation between number of bedrooms within apartments/condominiums, and number of household vehicles. Single-detached, semi-detached, and seniors residences all had

parking rates greater than 2 spaces per unit (disregarding number of bedrooms), while townhouses had the lowest parking rate with an average of 1.80 spaces per unit.

2.2 Online Survey Summary – Public Survey #2

2.2.1 Survey Description and Purpose

The second public survey which was live through October 2021 asked respondents questions related to parking and transportation demand management similar to survey 1 with additional questions about plug-in hybrid or fully-electric vehicle and chargers, including if participants currently own plug-in EVs or if they would in the future and why they would or would not. In addition to including new questions regarding electric vehicles, the second public survey removed questions relating to front yard landscaping and commercial/recreational vehicle parking requirements.

The survey included logic to provide respondents only with the questions that were relevant to their circumstances. It should also be noted that the survey was open to all residents within the Greater Toronto Area, which allowed the surveys to ask questions about future work or residency within the City of Richmond Hill. There were over 700 fewer respondents in survey 2 than survey 1, which is likely a result of not including draw prizes as incentive for survey 2.

2.2.2 Summary of Responses

There was a total of 103 respondents to the second online public survey, with 69 (67%) of people reporting themselves as living in Richmond Hill. Out of the 103 respondents, 101 (98%) lived within the GTA, and 2 reported the default postal code associated with the City of St Johns. The distribution of respondents by postal code (as reported) is shown below in **Figure 3**, excluding the 2 responses in St Johns.

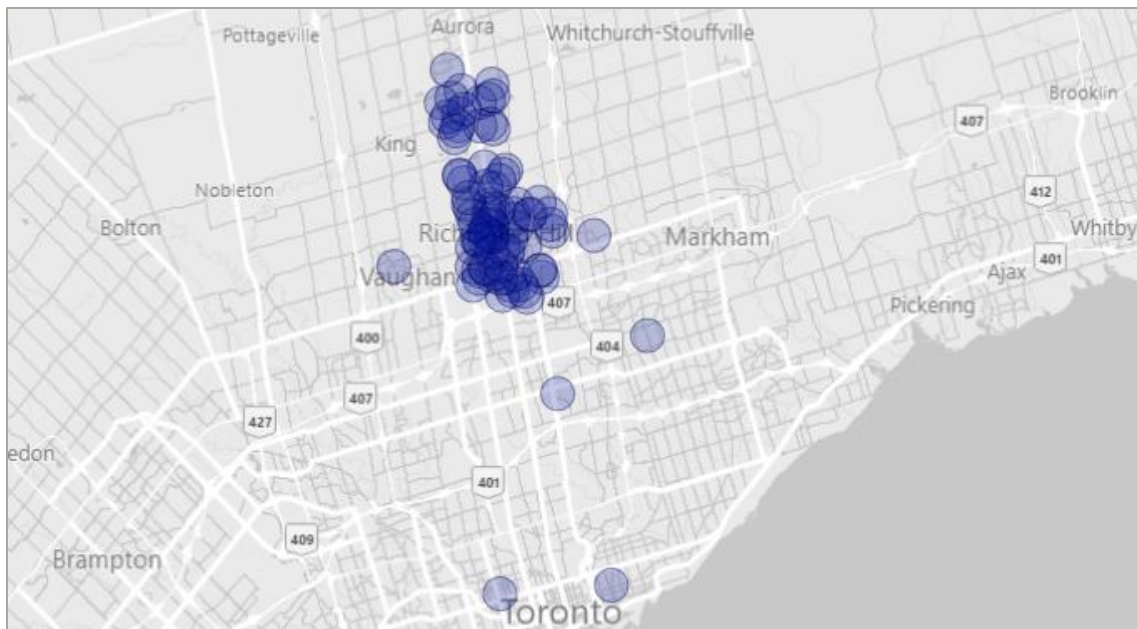


Figure 3: Public Survey #2 Responses by Postal Code (Excluding Eastern Canada)



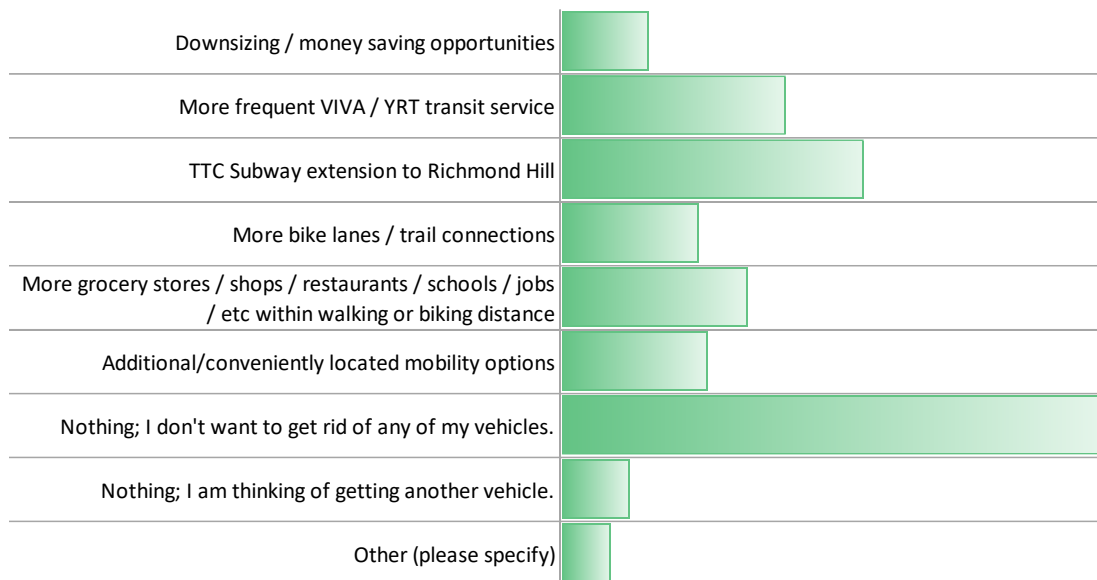
The survey was generally structured as follows:

- Demographics
- Dwelling type and questions relating to parking (number of bedrooms, available parking spaces, vehicles per household etc.)
- Place of residency and employment
- Reasons for living/working, or continuing to live/work in Richmond Hill
- Ownership of plug-in EVs and availability of charge stations
- Primary mode of travel (work-based trips)

The following sections summarize the findings relevant to parking, TDM and electric vehicle adoption. The responses and graphs for each question, aside from the required and optional detailed responses that are not plottable on a graph, are provided in **Appendix B**.

This section summarizes the questions and responses specific to parking and TDM.

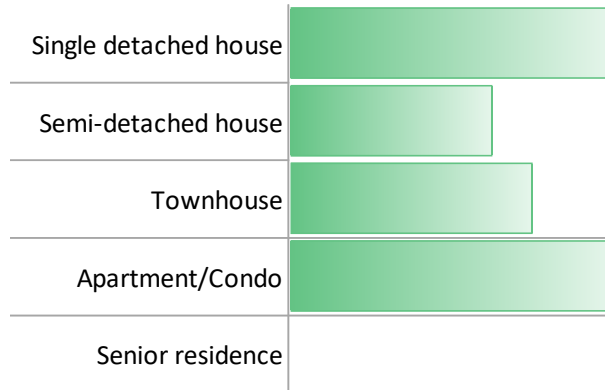
Question 11: Which of the following would allow you to live, or continue to live without a vehicle in Richmond Hill? (multiple responses may be selected)



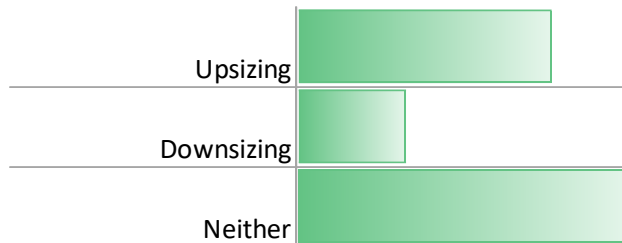
Based on the responses to question 11, most respondents (31%) said they do not want to get rid of any vehicles. The second most common answer was that people would live without a vehicle if there were improved transit services, or third was more nearby shops and amenities within walking or biking distance.

Similar to the answers in Survey 1, question 11 generally confirms that respondents currently believe that the City is not conducive to not owning a vehicle, but that some residents are open to living without a vehicle if the non-vehicle transportation infrastructure was improved, and land use distribution was more equitable.

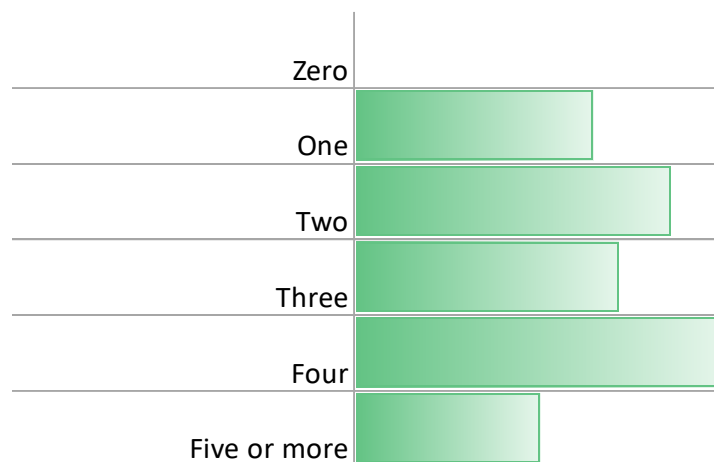
Question 14/15/16: Describe the type of dwelling you would move into within the City of Richmond Hill?



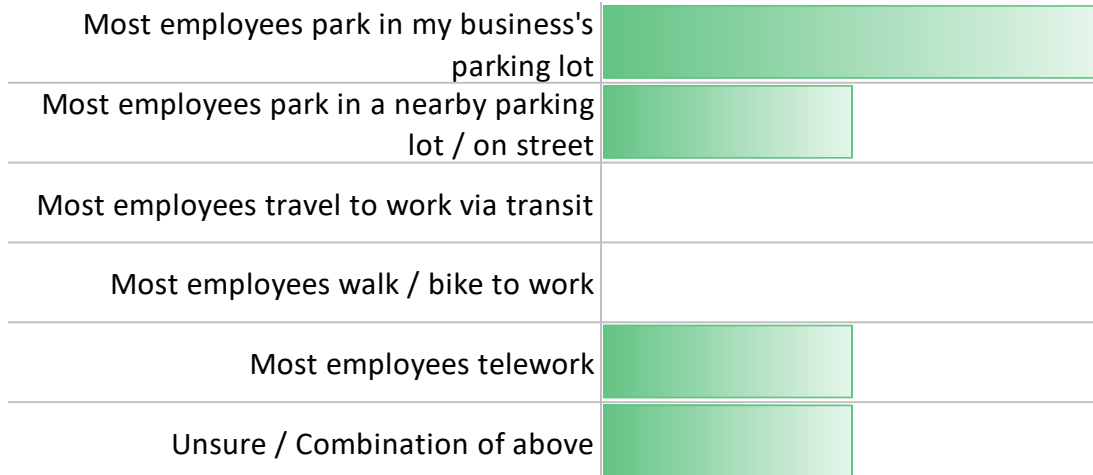
The responses to question 14 were directed at those who currently do not reside within Richmond Hill. The majority of respondents indicated that they would move into a single detached home (63%) if they moved to Richmond Hill and that they would neither be upsizing nor downsizing (48%) based on Question 15 (below).



Finally, respondents were asked how many parking spaces they would likely require if they moved to Richmond Hill. Most respondents indicated they would require 4 parking spaces (27%) but 2 parking spaces was close behind at 23%.

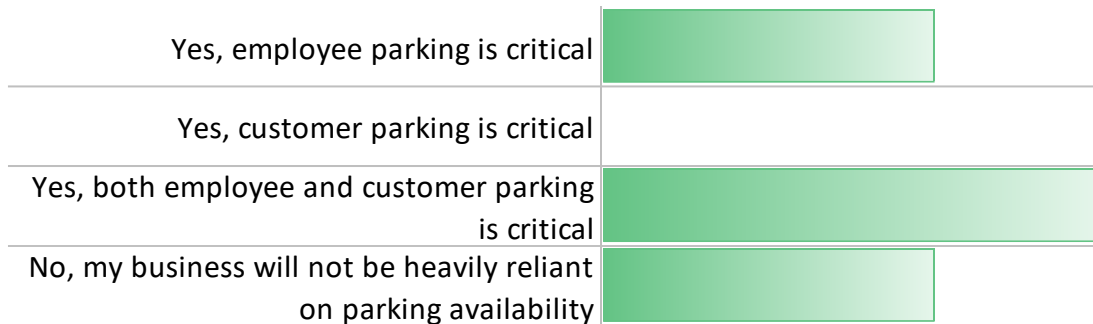


Questions 19/20: These questions asked respondents if they are business owners in Richmond Hill, and the current parking needs of their business. Under typical conditions, how do most of your employees typically get to work?



Out of 10 respondents, most employers (60%) reported that their employees drive to work, with the majority parking in nearby parking lots or on street. 40% of employees are parking in the spaces dedicated to their place of employment. The remaining 40% either telework or the employers are unsure how their employees get to work. A total of 50% of the employers were office related, with goods and services/retail representing 10% of the employers, manufacturing representing 10%, and other at 30%.

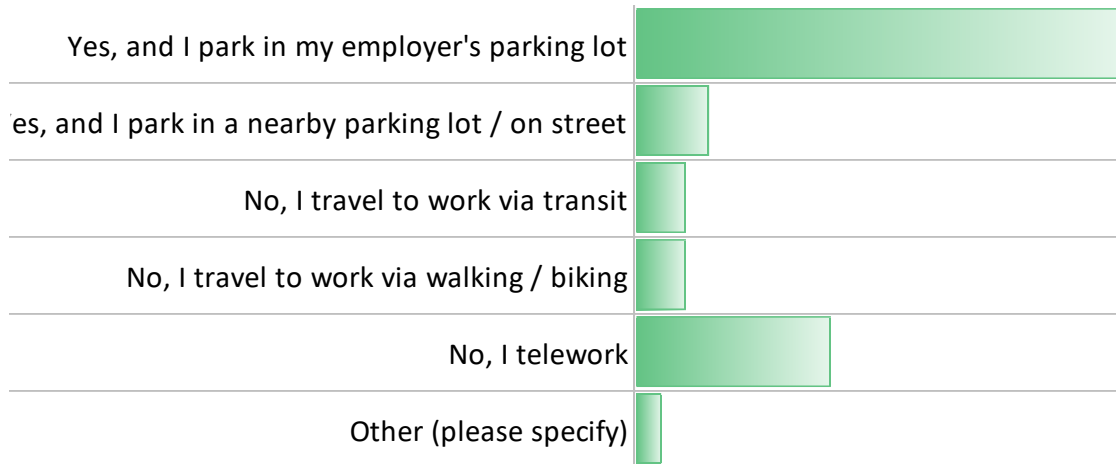
Questions 21/22/23: These questions asked people if they would consider opening a business in Richmond Hill and the circumstances regarding parking needs. The distribution of business types was comparable to the previous responses regarding current business owners.



Out of all potential future business owners, 71% indicated that parking would be critical to either employee, customers, or both, where 43% of respondents indicate specifically that parking would be critical to both. 29% indicated employee parking would be critical and 0% chose customer parking only as a critical component of the business.

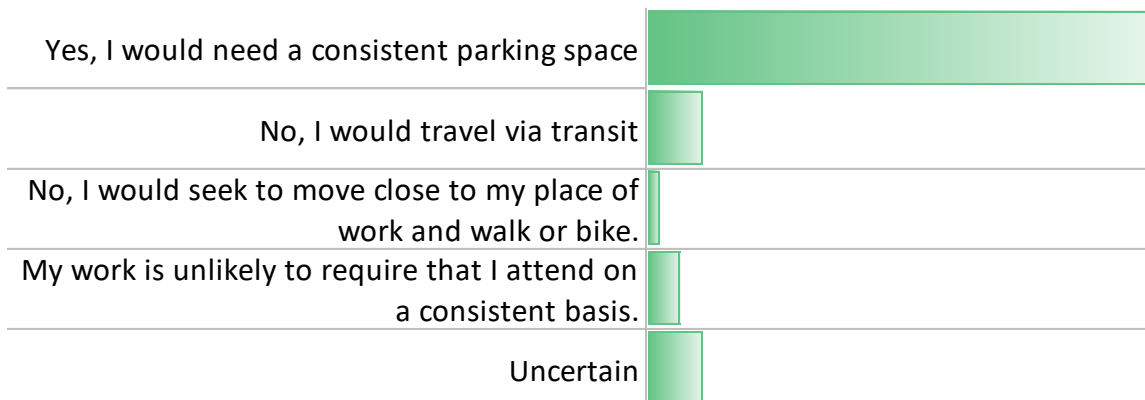


Questions 24/25/26/27/28/29: These questions asked respondents if they currently work in Richmond Hill and if they would consider working in Richmond Hill in the future. Respondents were also asked to report on their parking needs.



Over half of respondents (64%) indicated they drive to work and park. Most of these respondents (87%) parked in a dedicated parking space for the employer and 13% parked in nearby parking lots or on street. The remaining 36% of respondents indicated that they do not rely on personal vehicles to get to work, with most of these respondents (62%) stating that they telework, while others travel to work by transit or walking and biking.

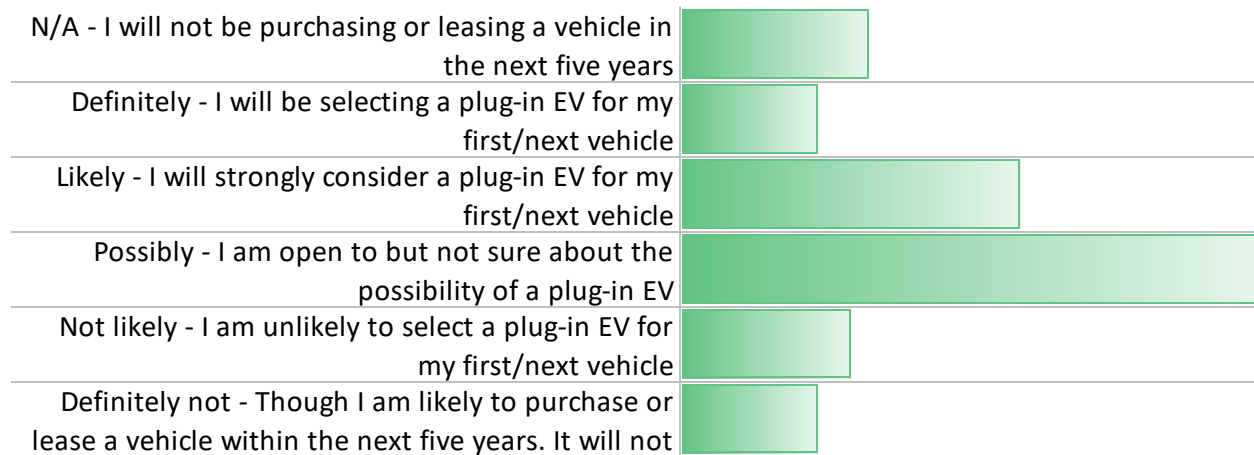
Finally, respondents were asked if future jobs were in Richmond Hill, how they would get to work.



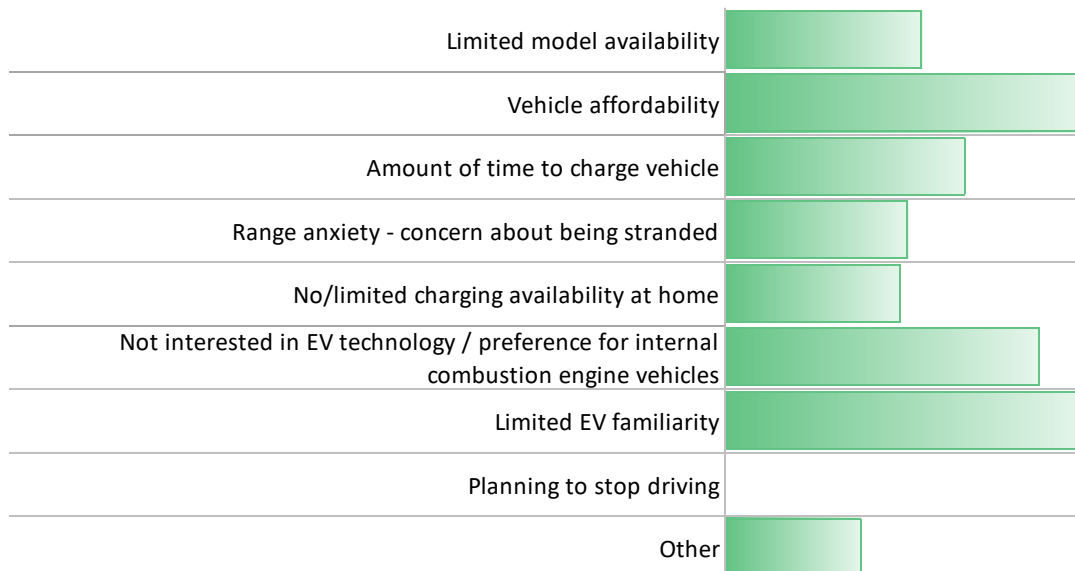
Similar to public survey 1, the majority of respondents (77%) indicated that they would require a parking space if they worked in Richmond Hill in the future, while 8% indicated they would not go to work on a consistent basis or they were uncertain. Only 8% indicated that they would take transit, and 2% indicated that they would seek to move closer to work so that they could walk or bike.

Questions 30/31/32/33/34/35: These questions asked if people have an electric vehicle and where they charge their vehicles. There were also questions about the likelihood of people selecting a plug-in hybrid or fully-electric vehicle in the next five years and their reasoning.

5% of respondents currently have a plug-in electric vehicle that they easily charge at their home. 60% of the respondents noted that they have a difficult time finding charge stations away from home as there are no or few Level 2 charge stations at the destinations they frequent within the City. The rest had other explanations, with one stating they have access to a Level 3 charger in York region whereas another respondent said they do not have a plug-in vehicle.



All respondents were asked how likely they are to select a plug-in hybrid or fully-electric vehicle (EV) if they plan to purchase or lease their first/next vehicle within the next five years. Out of the respondents who said they would be purchasing a vehicle, the majority (78%) of respondents were at least open to the possibility and only 22% were not likely or definitely not purchasing. The most answers (42%) said they are open to purchasing plug-in EVs but are unsure about the possibility. The next question asked respondents why they would not consider an EV.





The reasons for the answers were mostly vehicle affordability (65%), range anxiety (63%), and amount of time it takes to charge vehicles (43%). A number of participants also noted limited model availability (32%) and no/limited charging availability at home (31%) as factors. 79% of participants believe that Richmond Hill should be a city where someone can always charge an EV, with most of these participants stating that charging should be available at and away from home. This desire for charging within the city could be connected to the range anxiety felt by many of the respondents.

2.2.3 Parking Needs by Dwelling Type

Parking needs can be extrapolated for apartments and condominiums using the responses regarding the dwelling types, number of bedrooms, and number of household vehicles. The information can also be disaggregated by responses for those who live in Richmond Hill and those who live outside of Richmond Hill based on the postal codes provided.

The data from the online surveys provides an opportunity to determine parking rates for apartments/condos according to the number of bedrooms, which is not something that can be done using traditional parking surveys due to the parking demand being very difficult to correlate with a specific unit. The results of the survey are presented in **Table 1** for all dwelling types, comprised of 69 total responses.

Table 2: Parking Rates by Dwelling Type

Dwelling Type	% Responses	Average Parking Rate
Apartment (Bachelor and 1-bed)	6%	1.00 spaces per unit
Apartment (2-bed)	7%	1.60 spaces per unit
Apartment (3-bed)	0%	-
Apartment (4-bed)	1%	2.00 spaces per unit
Apartment (5-bed)	0%	-
Single Detached	67%	2.44 spaces per unit
Semi-Detached	4%	2.33 spaces per unit
Townhouse	14%	2.00 spaces per unit
Senior Residence	0%	-

Of the 19 apartment/condominium respondents, only 1 reported not having any household vehicles and that one was in a bachelor apartment. Although there's less data than survey 1, it continues to demonstrate that there is a correlation between number of bedrooms within apartments/condominiums, and number of household vehicles. Single-detached, semi-detached, 4-bedroom apartments and townhouses all had parking rates greater than 2 spaces per unit (disregarding number of bedrooms).



2.3 Online Survey Summary – Developer Community Survey #1 – High Level Directions

2.3.1 Survey Description and Purpose

The developer survey which was live during October of 2021 asked respondents questions relating to parking and transportation demand management, including importance of parking changes in different areas of the city, impact of parking requirements on affordable housing, impact of transportation demand management measures on developments and parking requirements, and if and how cash-in-lieu should be collected for parking. It should also be noted that the survey was open to all developers within the Greater Toronto Area, which allowed the surveys to ask questions about future work or residency within the City of Richmond Hill.

The survey was generally structured as follows:

- Parking requirements for different areas of the city
- Preferred approach to addressing parking needs for affordable housing
- Cost of parking
- Eliminating parking minimums / zero parking developments / market driven approach
- Transportation Demand Management (TDM)
- Cash-in-lieu collected for parking

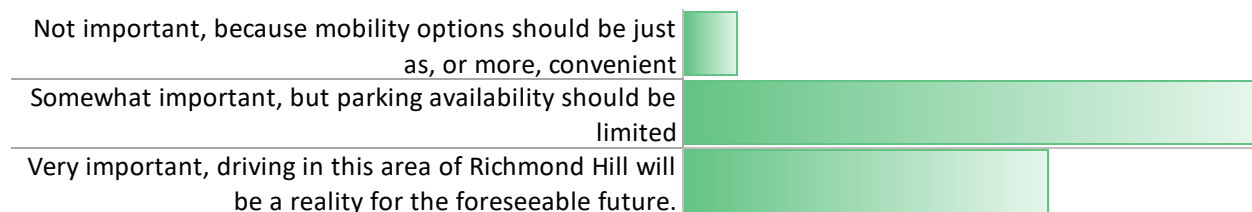
2.3.2 Summary of Responses

There was a total of 19 respondents to the first online developer community survey. Summaries of the responses are provided in **Appendix C**.

2.3.3 Summary of Findings

This section summarizes the questions and response summaries for Developer Survey #1 – High Level Directions.

Questions 1/2/3/4: Respondents were asked questions of how important it is to require parking in different areas of the city, such as Richmond Hill Regional Centre, Key Development Areas, along Highway 7, and the remainder of the city.



The graph above is an amalgamated set of responses for all areas of the City since the trend is fairly consistent for all areas.

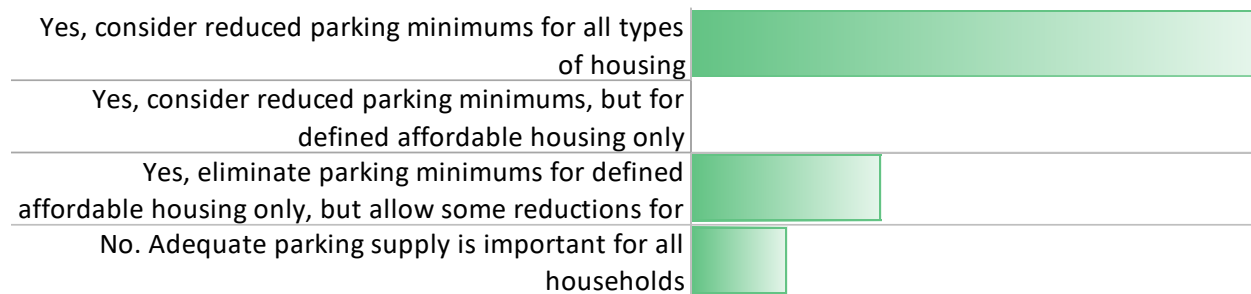
One quarter (26%) of respondents found it very important and 58% somewhat important to provide motor vehicle parking in Richmond Hill Regional Centre (Yonge North Subway Extension, Urban Growth Centre). Over half of the respondents (63%) also find it somewhat



important, and 15% very important to provide motor vehicle parking in Key Development Areas and Major Transit Station Areas (i.e. Yonge Street and Carrville) and along Highway 7 (rapid transit corridors, Regional corridor). All but one respondent indicated that it is important to provide motor vehicle parking in the remainder of the city. The increase in responses to the last question suggests there is less of a need for parking in more central areas of the city that are mixed use and better served by transit, although most participants think there’s a need for some degree of parking in all areas.

Questions 5/6/7: Respondents were asked if parking requirements are a barrier to affordable housing.

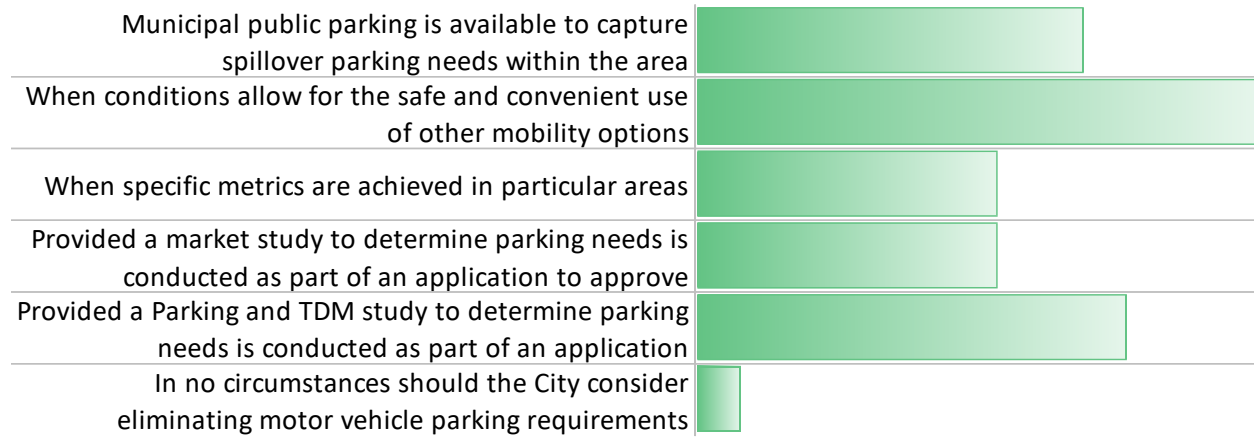
The majority (84%) of respondents said that some degree of parking requirement reductions should be considered as a means to enable affordable housing development. Of these participants, 53% stated that parking requirement reductions should be considered up to and including zero parking to enable affordable housing development while 41% said some parking requirement reductions – but not zero parking – should be considered as a means to enable affordable housing development. The respondents that expanded on this topic stated that requirements for underground parking supply add a large cost that results in more costly units, compared to 11% that said that parking requirements are not a barrier.



Two third (67%) of respondents also said that parking reductions should be used as an incentive to encourage the development of any type of residential dwelling within Richmond Hill. One quarter (22%) of respondents stated that parking minimums should be eliminated for defined affordable housing only, but some reductions for other types of housing should be allowed depending on the area and location within Richmond Hill. Only 11% said adequate parking supply is important for all land uses.



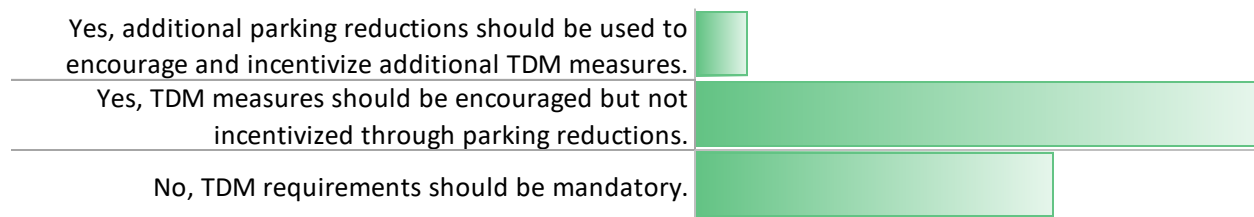
Question 8: Under what conditions should Richmond Hill consider eliminating minimum motor vehicle parking requirements? (multiple responses can be selected)



Participants could choose multiple answers for this question so results equal 261% indicating that on average each respondent selects 2 to 3 options. Many respondents (72%) said that eliminating minimum parking requirements can occur when conditions allow for safe and convenient use of other mobility options (walking, cycling, transit, etc.), followed by 56% who indicated that a parking and TDM study must be done to determine parking needs. Only one respondent said that in no circumstances should the city consider eliminating motor vehicle parking requirements.

Questions 10/11: These questions are about ways Transportation Demand Management (TDM) measures can or should be used in relation to proposed developments and reductions in parking requirements.

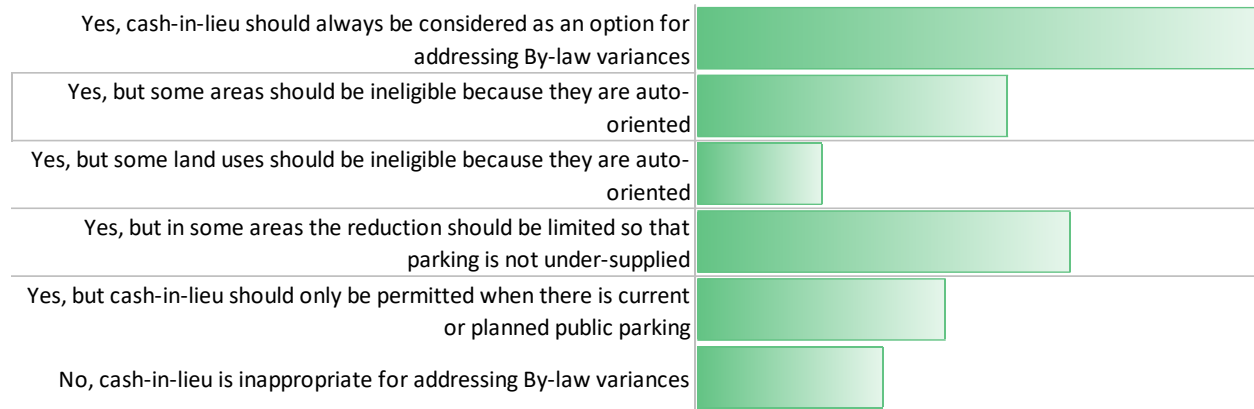
All but one respondent found it to be important for TDM measures to be required for proposed developments. 53% of all respondents said they are somewhat important and should be required so that shifts in travel behaviour can be supported by existing and future service and infrastructure improvements. 41% thought they are very important and on-site TDM measures should always be required so that other mobility options other than privately owned motor vehicle use are encouraged.



All but one respondent also thought that TDM measures should be used to encourage and incentivize additional reductions in parking requirements. 71% thought that additional parking reductions should be used to encourage and incentive additional TDM measures and 24% said TDM measures should be encouraged but not incentivized through parking reductions.

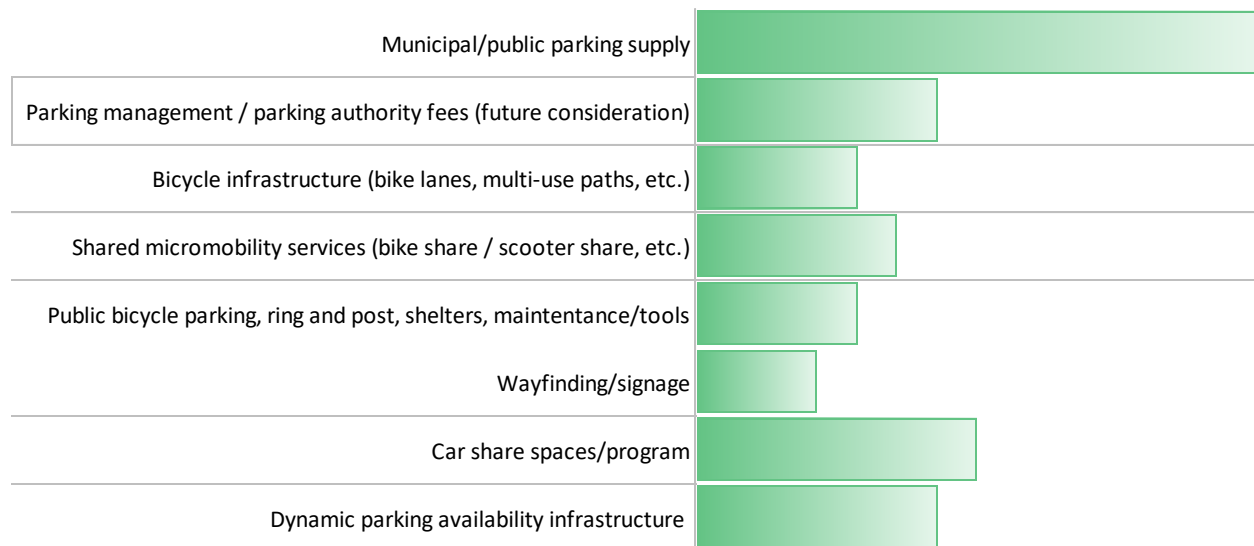


Questions 12/13/14: Respondents were asked if cash-in-lieu should be collected for parking and what the money should be used for.



When asked if Richmond Hill should allow for collection of cash-in-lieu of parking, 82% of respondents said yes with different ideas on how the collected funds should be utilized. Approximately half (53%) answered yes, cash-in-lieu should always be considered as an option for addressing By-law variances, followed by 35% saying yes, but in some areas the reduction should be limited so that parking is not under-supplied. One fifth (18%) of respondents said that cash-in-lieu is inappropriate for addressing By-law variances.

For how cash-in-lieu funding should be spent, participants could choose more than one answer and the most popular answer was municipal/public parking supply (82%), followed by car share spaces/program (41%), parking management/parking authority fees (future consideration) (35%), and dynamic parking availability infrastructure (35%). The least chosen answers were wayfinding/signage and bicycle infrastructure.



Overall, the results of Developer Survey #1 indicate that most developers believe parking is still important in the City of Richmond Hill, and that the City is not yet ready to fully adopt a non-

vehicle oriented approach. However, the developers appear to feel that mechanisms to drive development and built-form towards a less vehicle oriented environment should be incorporated into the Zoning By-law and development application process so that there is flexibility to accommodate future changes and directions, such as transit expansion and other alternative mobility services.

2.4 Online Survey Summary – Developer Community Survey #2 – Electric Vehicles

2.4.1 Survey Description and Purpose

The developer survey which was live during March of 2021 asked respondents questions relating to adoption of EVs and EV charging technologies, including how familiar the development firm is with the vehicles and charging technologies and whether or not the participant thinks that the City and its homes and parking spaces should include EV charging. The questions were specific to the type of dwelling (single family homes, duplexes and street townhomes with private on-side residential parking spaces, commercial retail, multi-dwelling residential developments, and employment uses). It should also be noted that the survey was open to all developers within the Greater Toronto Area, which allowed the surveys to ask questions about future work or residency within the City of Richmond Hill.

The survey was generally structured as follows:

- Development firm's familiarity with EVs and EV charging technologies
- Richmond Hill's need for EV charging
- EV charging in residential homes
- EV charging in commercial-retail
- EV charging at new employment uses

2.4.2 Summary of Responses

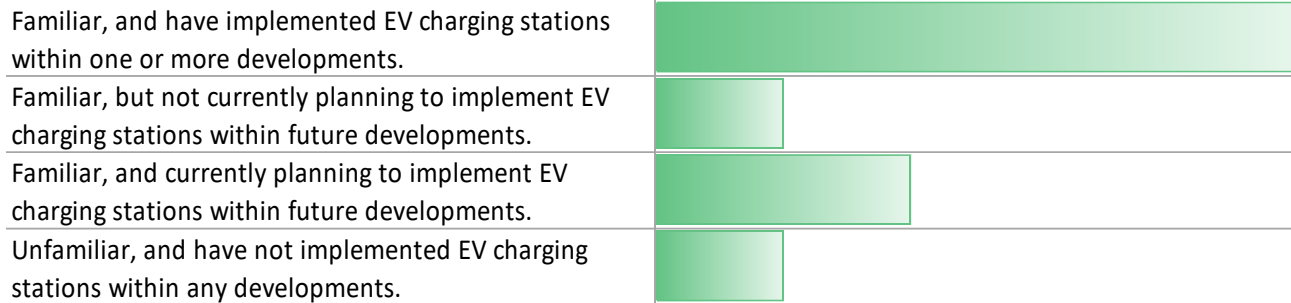
The same group of respondents which responded to Developer Survey #1 was also provided the link to this survey. There was a total of 9 respondents to the second online developer community survey compared to 19 respondents for the first survey. This may have been deliberate or unintentional. If the respondents deliberately did not undertake the second survey, it could be an indication that they were not prepared to answer the questions or did not desire to answer the questions. Summaries of the responses are provided in **Appendix D**.



2.4.3 Summary of Findings

This section summarizes the questions and responses specific to developer input on electric vehicle adoption.

Question 1: How familiar is your development firm with EVs and EV charging technologies?

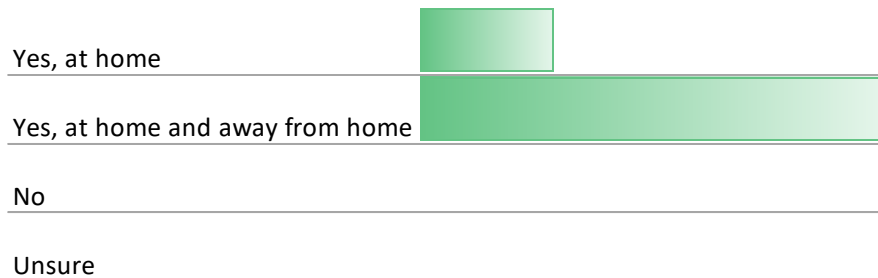


Nearly 90% of the respondents to question 1 worked at development firms that were familiar with EVs and EV charging stations. Most of these respondents have implemented EV charging stations within one or more developments, while a couple were currently planning to implement EV charging stations within future developments and one had no current plans to implement EV charging stations within future developments.

Question 1 shows that electric vehicle adoption is a consideration for developers and that they are gaining knowledge and incorporating EV charging stations increasingly into new developments.

Question 2: Should Richmond Hill be a City where you can always charge your EV?

There was full support for the being able to always charge an EV in the City, with 100% of the participants responding yes. Among this support, 80% said that EV chargers should be available both at home and away from home while 20% suggested charging should only be available at home.



The answers suggest that the ability to charge EVs is something developers find is needed, especially at home. It is not clear if the developers who did not respond would agree or disagree with this conclusion of the 9 respondents.

Question 3: The question asked respondents if new single family homes, duplexes and street townhomes with private on-site residential parking spaces should be required to provide EV Ready systems (i.e., electrification) for Level 2 charge stations.

Yes, one energized outlet capable of providing Level 2 charging for each dwelling (can be shared between 2 EVs within a household), in line with international best practice.



No, planning for electrified parking spaces for family homes, duplexes and street townhomes is not required.

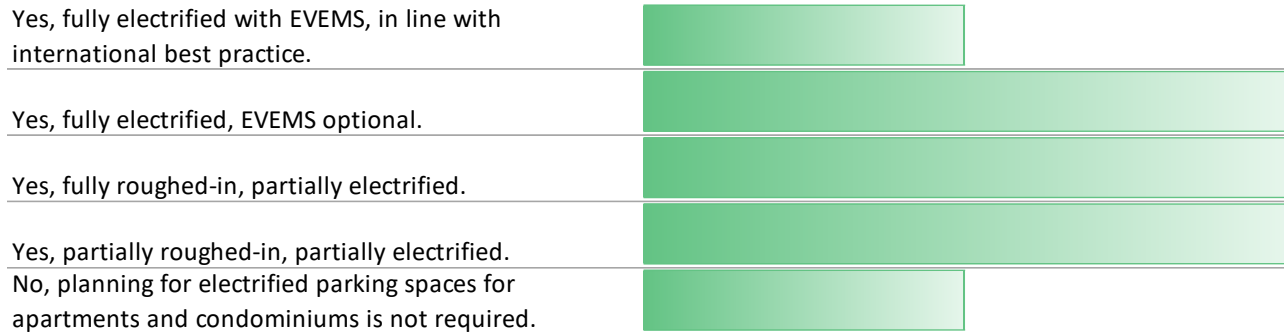


Although most survey participants are in support of increasing the availability of EV chargers in the City, the responses for this more specific question about whether or not it should be required to have EV Ready systems in some new homes were divided – half of the respondents said that yes, those new developments should have one energized outlet capable of providing Level 2 charging for each dwelling (can be shared between 2 EVs within a household), in line with international best practice. The other half said that planning for electrified parking spaces for family homes, duplexes and street townhomes is not required. One respondent who said they are not required expanded on their answer by saying that incentives should be provided to Developers and Builders to include EV ready systems.

This demonstrates an inconsistency between Question 2 and Question 3 since at-home charging is the default and most desired by electric vehicle owners due to convenience. While all respondents believed that electric vehicle charging should always be available, only 50% believe residential developments should be EV ready which is a large discrepancy. However, for these types of dwelling units, the owner/tenant has more control over the ability to install electric vehicle charging with less implementation costs.

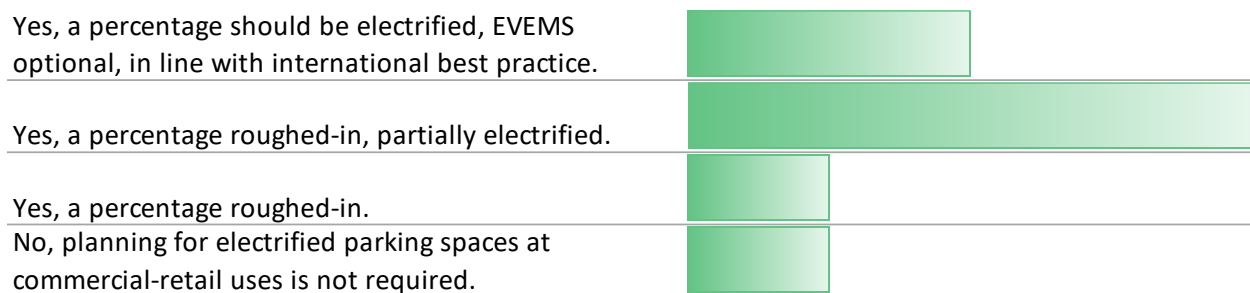
Question 4: Should parking spaces at new multi-dwelling residential developments be required to provide EV Ready systems (i.e., electrification) for Level 2 charge stations? Examples include apartments and condominiums.

The majority (90%) of participants responded that EV Ready systems for Level 2 charge stations should be required at new multi-dwelling residential developments. Among these answers, there were different ideas on the details of the requirements. One response noted that the charge stations should be fully electrified with EVEMS, in line with international best practice. One quarter of respondents said that the charge stations should be fully electrified EVEMS optional, while another 25% said that they should be fully roughed-in, partially electrified, while the remaining 25% noted that the charge stations should be partially roughed-in, partially electrified. Aside from the responses that said charge stations should be required, one participant said planning for electrified parking spaces for apartments and condominiums is not required. The response also suggested that incentives should be provided to Developers and Builders to include EV ready systems.



Compared to the same question regarding lower density residential developments, there is a greater interest in planning for electrification. This demonstrates that the developers acknowledge the challenges of retrofitting, particularly in multi-dwelling unit developments.

Question 5: Should parking spaces at commercial-retail uses be required to provide EV Ready systems (i.e., electrification) for EVs? Examples include shopping centres and plazas.



Similar to Question 4 above, 90% of participants responded that parking spaces at commercial-retail uses should be required to provide EV Ready systems. Over half of these respondents said that a percentage of parking spaced should be roughed-in, partially electrified, while two participants said that a percentage should be electrified, EVEMS optional, in line with international best practice. One participant noted that the requirements should include a percentage roughed-in. There was one person who said that planning is not required for electrified parking spaces at commercial-retail uses because incentives should be provided to developers and Buildings to include EV ready systems.

This demonstrates the same conclusion and perception of electric vehicle infrastructure needs for multi-dwelling unit buildings.

Question 6: Should parking spaces at new employment uses such as offices be required to provide EV Ready systems (i.e., electrification for EVs)?

Nearly all (90%) of participants also agree that EV Ready systems should be required in parking spaces at new employment uses, such as offices. Out of these responses, two said that a percentage should be roughed-in, partially electrified, two stated that a percentage should be electrified with EVEMS, in line with international best practice, two noted that a percentage should be electrified, EVEMS optional, while one said that a percentage should be roughed-in.



Looking at all of the results, one notes that planning for electrified parking spaces at employment uses is not required and incentives should be provided to Developers and Buildings to include EV ready systems.

Yes, a percentage should be electrified with EVEMS, in line with international best practice	100%
Yes, a percentage should be electrified, EVEMS optional	90%
Yes, a percentage roughed-in, partially electrified	90%
Yes, a percentage roughed-in.	50%
No, planning for electrified parking spaces at employment uses is not required.	10%

In summary, the developers who responded to survey 2 were in favor of making EV charging stations available to the public, although there was no consensus on the details of how this would occur. Only 50% of respondents found it necessary to require EV Ready systems in new developments with private on-site residential parking spaces, yet 90% of participants said these systems should be required for parking spaces in new multi-dwelling residential developments, commercial-retail uses, and new employment uses. As previously mentioned, this demonstrates that developers recognize the efforts of retrofitting and incorporating EVEMS post-construction compared to the relative ease of retrofitting for low-density developments without shared parking areas. There was one participant that indicated EV Ready Systems are not required for any of the parking spaces mentioned in the questions, but rather incentives should be provided to Developers and Builders to include EV ready systems.

3 Summary of Minor Variance and Site-Specific Zoning By-law (Requests and Approvals)

Previously approved minor variances, site specific zoning by-laws, and parking justification studies were provided to HDR by the City to review. The information ranged from recent applications, and applications as far back as 2010 were reviewed. The information provides insight into the desires of the development industry and landowners based on the requested minor variance and site specific zoning by-laws. The parking justification studies provide further justification for these requests, along with some data collected in support of the applications. In addition to providing insight into the desires of the applicants, the information also provides an understanding of what the City has historically approved.

The following sections summarize the review of all the documentations provided, after filtering for items related to parking and transportation demand management. Vehicle parking and bicycle parking variances or site specific zoning by-laws were both included in the filtered list and summaries noted below.

3.1 Minor Variance

A total of 43 minor variance were provided for review, and included the Staff Reports as well as the Final Decision documents for each application. The minor variance were filtered for those that included parking variances, which may have included variances associated with parking reductions below the required minimums, as well as some requests for design/built-form variance such as adjustments to parking space sizes.

Out of the 43 variances, 95% were approved and only one was denied and one withdrawn, 34 of the variances were for reduced parking spaces in employment and commercial areas, and 1 was for the addition of parking spaces.

Table 3: Minor Variances with Requested Parking Rates Summary

Land Use	# of Variance Requests	% Approved
Commercial – Retail	2	100%
Commercial - Restaurant	4	100%
Commercial - Office	10	90%
Commercial – Office & retail	2	100%
Commercial – Medical Offices	6	100%
Commercial – Day Nursery	1	100%
Commercial – Data Centre	3	100%
Commercial – Other	3	67%
Commercial - Industrial	1	100%
Residential - Townhouse	2	100%

Detailed summaries of the responses are provided in **Appendix E**. The preliminary 2021 rate recommendations are can be summarized as follows:

- Retail rates for the Rest of Richmond Hill are 6% higher than the average minor variance
- Restaurant rates for Rest of Richmond Hill are 75% higher than the average minor variance requests
- Office rates for Rest of Richmond Hill are 39% more than the average minor variance
- Medical office rates in business parks are 4% less than the average minor variance
- Medical office rates in Rest of Richmond Hill are 63% higher than the average minor variance
- Townhouse rates in Rest of Richmond Hill are 26% less than the minor variances

In general, the preliminary 2021 rate recommendations are higher than the minor variances. However, minor variance are often requested due to change of use or due to constrained sites, which would explain why the requested minor variances are lower. The 2021 preliminary rate recommendations are only lower for medical offices in business parks, but the difference is quite small and within 4%, as well as for townhouses in the rest of Richmond Hill, where the preliminary rates are 26% lower, but the recommended rate is 2.00 spaces per unit which is consistent with the best practices review.

3.2 Site-Specific Zoning By-laws

A total of 225 site-specific zoning by-laws were reviewed and 40 of them included parking rates. The 40 were grouped by land use to show the average parking rate in the by-laws and how often the parking rates were mentioned when a document reviewed a specific land use.

Table 4 summarizes non-residential related site specific zoning by-laws. The most common land uses were offices, followed closely by retail. The average parking rate for non-residential uses, not including day nurseries, is 3.5 spaces per 100 SM of GFA. Offices have the lowest average parking rate and restaurants have the highest. The other commercial uses category is mentioned in bylaws for mixed use apartment buildings. There is little variation in the rates for restaurants and day nurseries but the other land uses can have rates range from 1.8 to 7.0 spaces per 100 SM of GFA, depending on the use.

Table 4: Average Parking Rates in Site-Specific Zoning By-Laws for Commercial Uses

Commercial Uses	% Involved in Site-Specific Zoning By-laws	Average Parking Rate Requested (spaces per 100 SM of GFA unless otherwise noted)	2010 Parking Strategy Rates ('Rest of RH') (spaces per 100 SM of GFA unless otherwise noted)	2021 Preliminary Recommendations (Rest+BP) (spaces per 100 SM of GFA unless otherwise noted)
Retail (Shopping Centres)	18%	3.17	5.00	5.00
Restaurants	8%	4.49	14 (fast food) 11 (standard)	10.00
Commercial School	13%	4.87	6.30 (all other institutional uses)	n/a
Offices	23%	2.12	3.20	3.20
Medical Offices	13%	4.61	5 spaces for the first practitioner plus 3 spaces for each additional	5.00
Day Nursery	8%	0.93 spaces per 6 children	Greater of 1 space per 5 children or 1 space per employee	4.00
Data Centres	0%	-	n/a	n/a
Other	15%	3.55	n/a	n/a
Bicycle Parking	15%	0.38	n/a	n/a

For residential uses, parking rates for 1 and 2-bedroom units in apartment/condominiums and townhouses were the most discussed in the by-laws. Many of the by-laws reviewed which involved single-detached residential uses were unrelated to parking rates.

Similar to the public surveys, the rates in the bylaws show a connection between number of bedrooms/size of the household and the number of household vehicles. The rates increase as bedrooms increase in number and the semi-detached and single-detached housing have rates above 2 parking spaces per unit. Visitor and bicycle parking are at lower spaces per unit at 0.26 and 0.39. There is also variation in location as most of the apartment buildings are located along Yonge Street, yet townhouses and semi-detached housing are located in less urbanized spaces but are still often along or near along high-traffic roads such as Bathurst Street and Bayview Avenue. Townhouse, semi-detached and single detached housing have very similar average parking rates in the by-laws but there is slight differentiation between apartments. For example, the average parking rates for 2-bedroom apartments ranges from 0.75 to 1.5 spaces per unit, with the parking rates below 1 being for apartments along Yonge Street and the highest parking rate being in Bond Crescent. This information shows a trend of lower parking rates in higher density areas.

Table 5: Average Parking Rates in Site-Specific Zoning By-Laws for Residential Uses

Residential Uses	% Involved in Site-Specific Zoning By-laws	Average Parking Rate Approved (spaces / unit)	2010 Parking Strategy Rates ('Rest of RH')	2021 Preliminary Recommendations (Rest + BP) (spaces / unit)
Bachelor Apartment/Condominium Parking	8%	0.73	0.90	1.00
1-Bedroom Apartment/Condominium Parking	28%	0.90	1.10	1.25
2-Bedroom Apartment/Condominium Parking	25%	1.09	1.35	1.30
3+-Bedroom Apartment/Condominium Parking	15%	1.39	1.50	1.40
Townhouses Parking	28%	1.82	2.0	2.00
Semi-Detached Parking	13%	2.00	2.0	2.00
Single-Detached Parking	5%	2.50	2.0	2.00
Senior Residence Parking	0%	-	0.50	0.50
Other Parking	3%	9.00 ¹	n/a	n/a
Visitor Parking	58%	0.26	0.25	Varies
Bicycle Parking	28%	0.39	n/a	n/a

Note: 1) The 9.0 spaces per unit is for a lodging house. It is unclear from the by-law how many units are within the house so it is being treated as a single-detached house.

There are many instances where the average requested office rate is different than the 2010 parking strategy, as shown in **Appendix F**. Approximately half of the examples are more than 10% lower, which are minor and not mentioned here. Almost all of the differences in rates involve a decrease in rate for the average requested rate. **Table 6** includes the rates that have more than a 10% difference.

Table 6: Difference Between Average Proposed Rate and 2021 Preliminary Recommendations

Parking Rate Area	Number of Applications	Average Proposed Rate from SSZBL	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	2021 Preliminary Recommendations
Retail (Shopping Centres)					
Downtown Local Centre	2	2.40 spaces per 100 SM	3.00 spaces per 100 SM	20% decrease	2.80 spaces per 100 SM
KDA (Yonge-16th)	1	1.50 spaces per 100 SM	3.00 spaces per 100 SM	50% decrease	2.80 spaces per 100 SM
Rest of Richmond Hill	4	4.00 spaces per 100 SM	5.00 spaces per 100 SM	20% decrease	5.00 spaces per 100 SM
Restaurants					
Rest of Richmond Hill	3	4.50 spaces per 100 SM	14 spaces per 100 SM (fast food) 11 spaces per 100 SM (standard)	59% decrease (based on 11 spaces per 100 SM/standard restaurant)	10.00 spaces per 100 SM
Commercial School					
Business Parks	1	2.30 spaces per 100 SM	6.3 spaces per 100 SM (all other institutional uses)	63% decrease	n/a
Rest of Richmond Hill	4	5.50 spaces per 100 SM	6.3 spaces per 100 SM (all other institutional uses)	12% decrease	n/a
Offices					
Business Parks	1	2.60 spaces per 100 SM	3.20 spaces per 100 SM	19% decrease	3.20 spaces per 100 SM
Rest of Richmond Hill	5	2.10 spaces per 100 SM	3.20 spaces per 100 SM	34% decrease	3.20 spaces per 100 SM
Bachelor Apartment/Condominium					
Downtown Local Centre	1	0.80 spaces per unit	0.75 spaces per unit	33% increase	0.70 spaces per unit
1-Bedroom Apartment/Condominium					
Richmond Hill Regional Centre	1	1.00 spaces per unit	0.75 / unit	33% increase	0.70 spaces per unit
2-Bedroom Apartment/Condominium					
Downtown Local Centre	3	0.90 spaces per unit	1.00 spaces / unit	10% decrease	0.90 spaces per unit
Richmond Hill Regional Centre	1	1.20 spaces per unit	1.00 spaces / unit	17% increase	0.75 spaces per unit
Rest of Richmond Hill	5	1.20 spaces per unit	1.35 / unit	11% decrease	1.30 spaces per unit

Parking Rate Area	Number of Applications	Average Proposed Rate from SSZBL	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	2021 Preliminary Recommendations
Townhouse Parking					
Rest of Richmond Hill	11	1.80 spaces per unit	2.00 spaces / unit	10% decrease	2.00 spaces per unit
Single-Detached Housing Parking					
Rest of Richmond Hill	2	2.50 spaces per unit	2.00 / unit	20% increase	2.00 spaces per unit
Visitor Parking					
Rest of Richmond Hill	17	0.30 spaces / unit	0.25 spaces / unit	20% increase	Varies

3.2.1 Alignment with 2021 Preliminary Rate Recommendations

Most of the Site-Specific Zoning By-laws (SSZBLs) propose decreases to the current required rates primarily in commercial spaces and higher density housing. These results align generally with the preliminary residential rates recommendations and differences from 2010 parking strategy rates that were included in the Best Practices Report.

Table 7 shows the 2021 preliminary rate recommendations compared with the minor variance and SSZBL results. The primary differences for the preliminary rate recommendations compared to the ZZBL are:

- Retail rates in Downtown Local Centres are 14% more than SSZBL
- Retail rates in the 16th Avenue KDA are 46% more than the SSZBL
- Retail rates in the Rest of Richmond Hill are 20% more than the SSZBL
- Restaurant Rates in the Rest of Richmond Hill are 55% more than the SSZBL
- Office rates in the Downtown Local Centres and KDAs are 29% more than the SSZBL
- Office rates in Business Parks are 19% more than the SSZBL
- Office rates in the Rest of Richmond Hill are 34% more than the SSZBL
- Medical office rates in Richmond Hill Centre are 33% **less** than the SSZBL
- Medical office rates in the Rest of Richmond Hill are 2% more than the SSZBL
- Day nursery rates in the Rest of Richmond Hill are 77% more than the SSZBL
- Bachelor apartment rates in the Downtown Local Centres and KDAs are 13% **less** than the SSZBL
- Bachelor apartment rates in the Rest of Richmond Hill are 10% more than the SSZBL
- 1-bedroom apartment rates in the Downtown Local Centre and KDAs is the same as the SSZBL
- 1-bedroom apartment rates in Richmond Hill Centre are 30% **less** than the SSZBL
- 1-bedroom apartment rates in the Rest of Richmond Hill are 20% more than the SSZBL

- 2-bedroom apartment rates in the Downtown Local Centres and KDAs are the same as the SSZBL
- 2-bedroom apartment rates in Richmond Hill Centre are 38% **less** than the SSZBL
- 2-bedroom apartment rates in the Rest of Richmond Hill are 8% more than the SSZBL
- 3-bedroom apartment rates in the Downtown Local Centres and KDAs are 17% **less** than the SSZBL
- 3-bedroom apartment rates in the Rest of Richmond Hill are 13% **less** than the SSZBL
- Single-family detached home rates in the Rest of Richmond Hill are 90% more than the SSZBL

In general, the non-residential preliminary rate recommendations are higher than the site specific zoning by-law rates. Similar to the minor variance, this may be explained due to constrained sites or due to change of use. Preliminary rates that are lower than the site specific zoning by-law rates are all in Richmond Hill Regional Centre or Downtown Local Centres/KDAs. Five out of the six rate recommendations that are lower than the site specific zoning by-laws are for residential uses. The only non-residential land use that has a preliminary rate recommendation lower than the site specific zoning by-law is for medical offices in Richmond Hill Regional Centre, which is 33% lower. While undersupply of parking for medical office buildings would be a concern in many areas, this may not be a concern in Richmond Hill regional Centre as the area will be higher density and medical offices should be within a very reasonable walking distance of residential uses which also have recommendations to lower rates which corresponds with the reduced medical office rate.

3.3 Parking Justification Studies

A total of 15 parking justification studies were provided for review, all of which were responses to requests for comment by the city for Minor Variance Applications discussed in **Section 3.1**. Many of the studies examined if the parking provisions were sufficient by reviewing parking rates and peak parking demands from proxy survey data, which served as examples of the observed parking demand rates at comparable developments to support the requested rate. The parking justification studies are provided in **Appendix E**.



Table 7: Comparison of Best Practices Recommendations with Minor Variances and SSZBLs

Parking Rate Area	Average Proposed Rate – Minor Variance	Average Proposed Rate - SSZBLs	2010 Parking Strategy Rates	2021 Preliminary Rate Recommendations	% Difference of Recommended from MV	% Difference of Recommended from SSZBL	% Difference of Recommended from Parking Strategy Rates
Office							
Downtown Local / KDA	2.00 spaces per 100 SM*	-	2.00 spaces per 100 SM	2.80 spaces per 100 SM	29% increase	29% increase	0%
Rest of Richmond Hill	2.00 spaces per 100 SM*	2.10 spaces per 100 SM	3.20 spaces per 100 SM	3.20 spaces per 100 SM	38% increase	34% increase	0%
Medical Office							
Rest of Richmond Hill	2.30 spaces per 100 SM	-	5.40 spaces per 100 SM	5.00 spaces per 100 SM	54% increase	n/a	7% decrease
Retail – Regional/Shopping Centres							
Downtown Local / KDA	-	2.10 spaces per 100 SM	3.00 spaces per 100 SM	2.80 spaces per 100 SM	n/a	25% increase	7% decrease
Rest of Richmond Hill	-	4.00 spaces per 100 SM	5.00 spaces per 100 SM	5.0 spaces per 100 SM	n/a	20% increase	0%
Restaurant							
Rest of Richmond Hill	-	4.50 spaces per 100 SM	11.00 spaces per 100 SM	10.0 spaces per 100 SM	n/a	55% increase	9% decrease
Bachelor Apartment/Condominium							



Parking Rate Area	Average Proposed Rate – Minor Variance	Average Proposed Rate - SSZBLs	2010 Parking Strategy Rates	2021 Preliminary Rate Recommendations	% Difference of Recommended from MV	% Difference of Recommended from SSZBL	% Difference of Recommended from Parking Strategy Rates
Downtown Local / KDA	-	0.80 spaces per unit *	0.80 spaces per unit	0.70 spaces per unit	n/a	13% decrease	13% decrease
One Bedroom Apartment/Condominium							
Richmond Hill Regional Centre	-	1.00 spaces per unit	0.90 spaces per unit	0.70 spaces per unit	n/a	30% decrease	22% decrease
Two Bedroom Apartment/Condominium							
Downtown Local / KDA	-	0.90 spaces per unit	1.00 spaces per unit	0.90 spaces per unit	n/a	0%	10% decrease
Richmond Hill Regional Centre	-	1.20 spaces per unit *	1.00 spaces per unit	0.75 spaces per unit	n/a	38% decrease	25% decrease
Rest of Richmond Hill	-	1.20 spaces per unit	1.50 spaces per unit	1.30 spaces per unit	n/a	8% increase	13% decrease
Visitor Parking							
Rest of Richmond Hill	-	0.30 spaces per unit	0.25 spaces per unit	0.25 spaces per unit	n/a	17% decrease	0%
Townhouse							
Downtown Local / KDA	1.00 spaces per unit *	-	1.00 spaces per unit	1.00 spaces per unit	0%	n/a	0%



Parking Rate Area	Average Proposed Rate – Minor Variance	Average Proposed Rate - SSZBLs	2010 Parking Strategy Rates	2021 Preliminary Rate Recommendations	% Difference of Recommended from MV	% Difference of Recommended from SSZBL	% Difference of Recommended from Parking Strategy Rates
Rest of Richmond Hill	2.70 spaces per unit *	1.80 spaces per unit	2.00 spaces per unit	2.00 spaces per unit	26% decrease	10% increase	0%

*One minor variance or SSZBL request only

4 City of Toronto Development Applications

A review of a sample of 42 current development applications within the City of Toronto was undertaken during September 2022. The review revealed the parking rates that are currently being pursued throughout the City, but only for developments that are pursuing minor variance from Zoning By-law 569-2013. In general, the parking rates within the City of Toronto Zoning By-law are already more relaxed than the parking rates currently being proposed for application in the City of Richmond Hill and recommended for adoption into the Comprehensive Zoning By-law, therefore, this is an indication of how the desire for lowered parking rates is spreading throughout the City of Toronto away from the downtown area.

The minor variance applications are summarized in **Appendix G**.

For each development application, the parking rates were extracted and summarized. Then, the parking rate tier currently being proposed for adoption into for Richmond Hill was determined, and the Parking Strategy Area was then plotted on a map showing the geographic distribution of these requested rates. The mapping is shown below **Figure 4**.

The distribution clearly shows that most of the applications for lowered parking rates are for Parking Strategy Area 1 and 2 parking rates. The applications extend out of the downtown area of Toronto, north towards Highway 401. Parking Strategy Area 1 and 2 rates are being proposed all along the major corridors in the City. These parking rates are comparable to Parking Policy Area 3 and 4 rates in the City of Toronto, which also demonstrates that the City of Richmond Hill has much opportunity to further reduced rates and support alternative travel.

It should be noted that the City of Toronto currently has By-law 89-2022 under appeal. This new approach to parking would eliminate parking minimums for most uses, with the exception of accessible parking requirements and visitor parking requirements. Therefore, maintaining minimum parking rates can be considered conservative when compared to other municipalities.

Figure 4: Sample of City of Toronto Parking Minor Variance Applications (September 2022) and Associated Richmond Hill Parking Rate Tier



Appendix A

Public Survey #1 (March 2021)

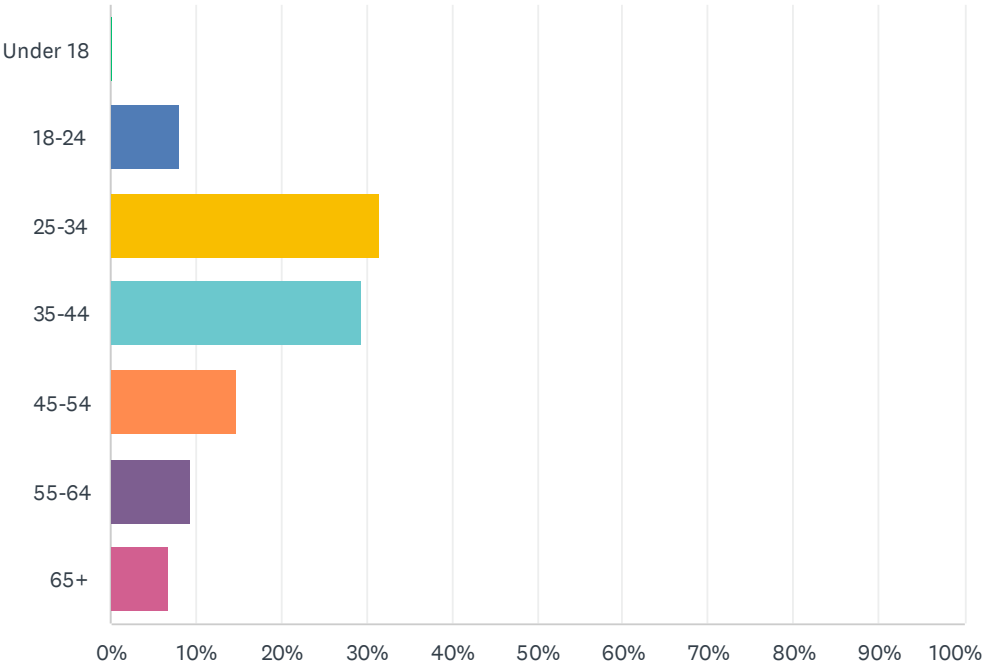
Results Summary

Q1 Provide your current postal code (formatted A1B 2C3).

Answered: 844 Skipped: 0

Q2 What is your age (optional)?

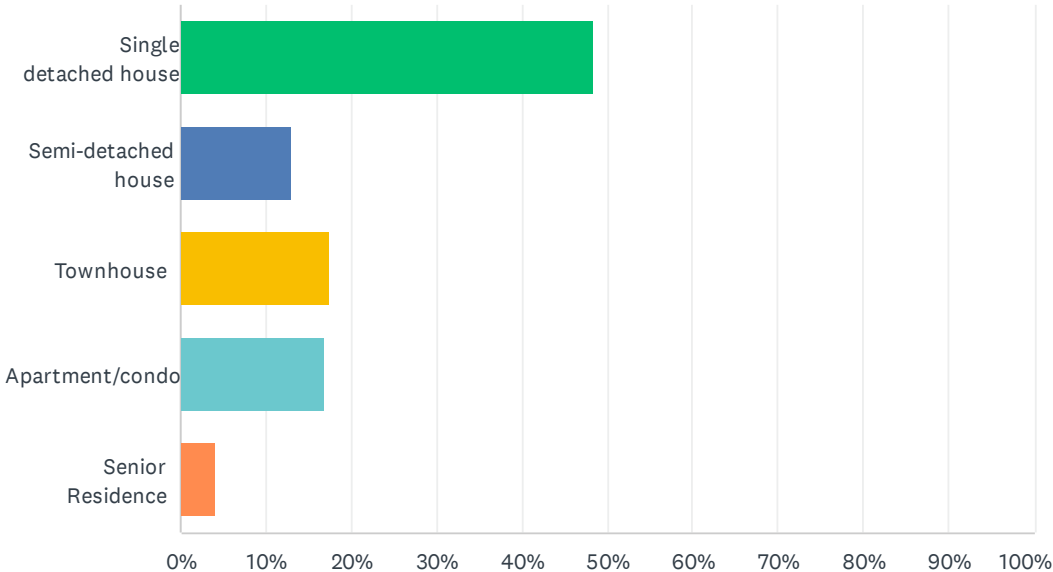
Answered: 750 Skipped: 94



ANSWER CHOICES	RESPONSES
Under 18	0.13% 1
18-24	8.13% 61
25-34	31.47% 236
35-44	29.33% 220
45-54	14.80% 111
55-64	9.33% 70
65+	6.80% 51
TOTAL	750

Q3 In what type of dwelling do you current live?

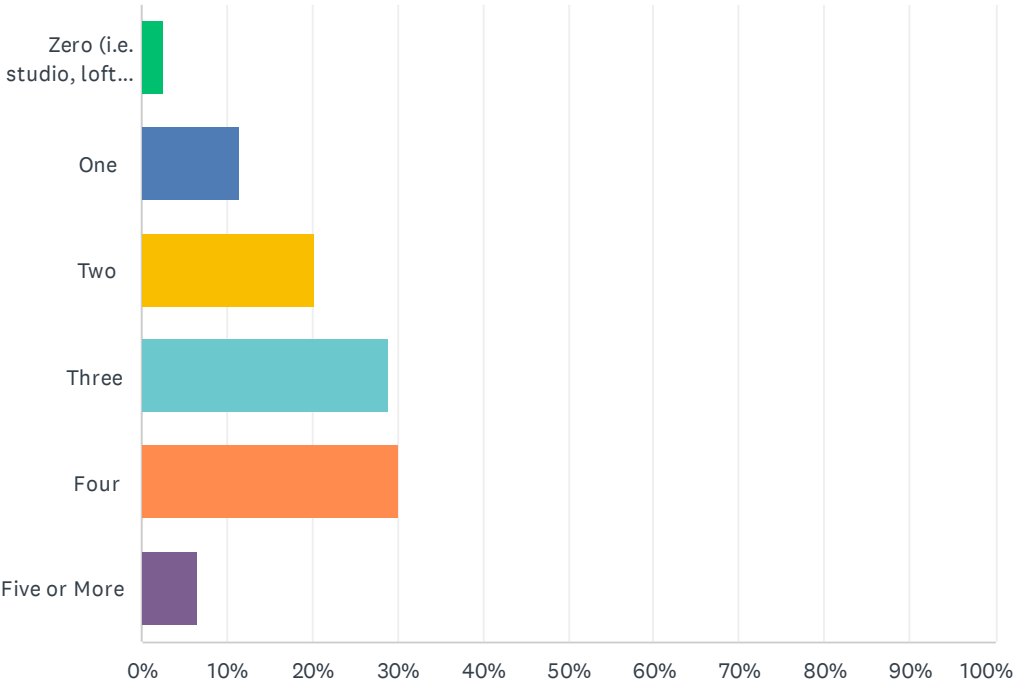
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES	
Single detached house	48.46%	409
Semi-detached house	12.91%	109
Townhouse	17.54%	148
Apartment/condo	16.94%	143
Senior Residence	4.15%	35
TOTAL		844

Q4 How many bedrooms are in your dwelling?

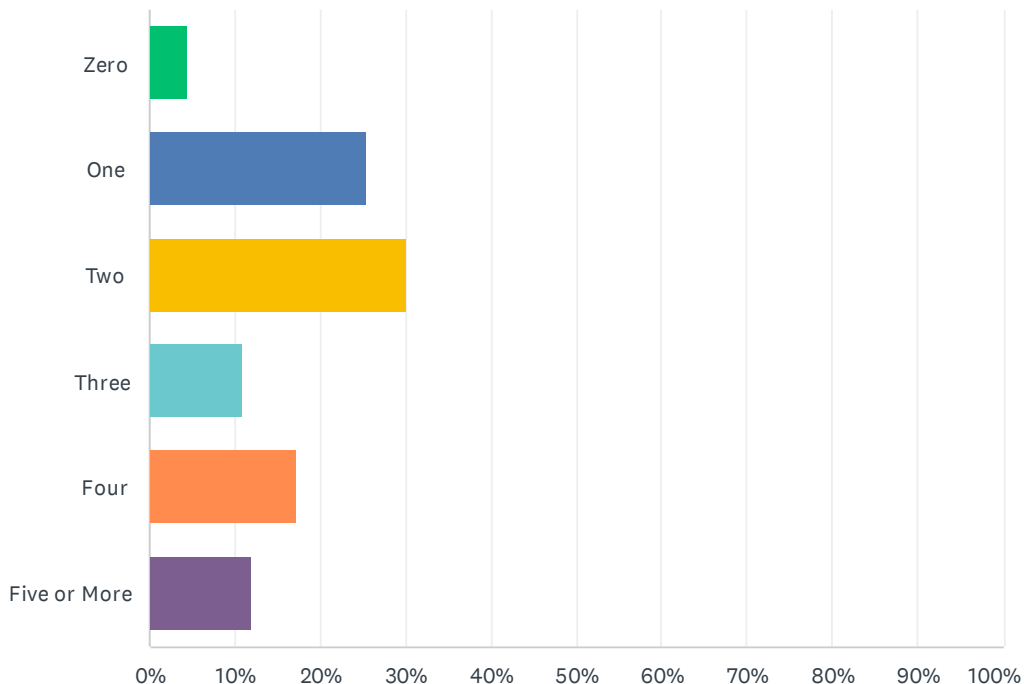
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero (i.e. studio, loft, bachelor unit)	2.49%	21
One	11.61%	98
Two	20.26%	171
Three	29.03%	245
Four	29.98%	253
Five or More	6.64%	56
TOTAL		844

Q5 How many regular sized car parking spaces are available for your household's use, including in a garage? (please estimate the number of spaces if they are located in private driveways or private garages)

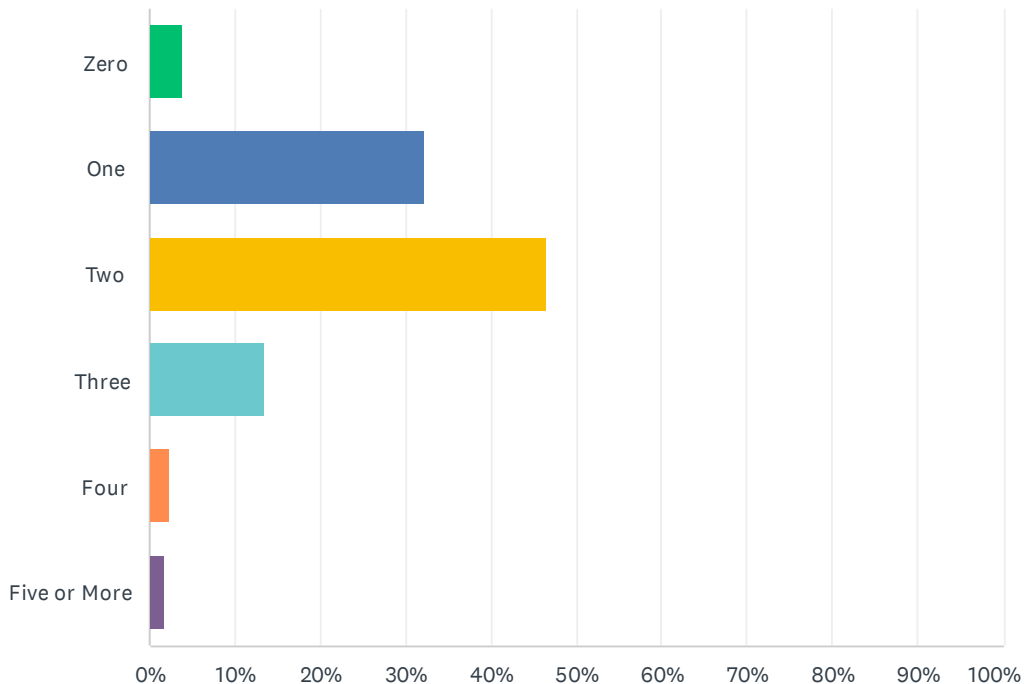
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES
Zero	4.50% 38
One	25.47% 215
Two	30.09% 254
Three	10.78% 91
Four	17.18% 145
Five or More	11.97% 101
TOTAL	844

Q6 How many vehicles are typically at your household (i.e., vehicles owned/leased/used by residents)?

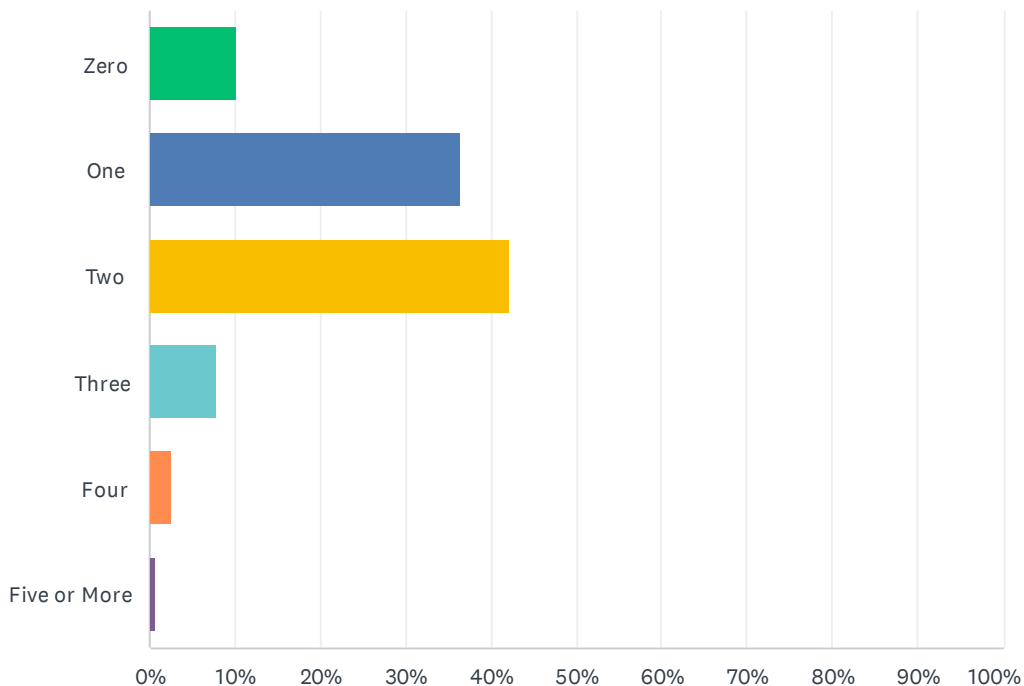
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero	3.91%	33
One	32.11%	271
Two	46.45%	392
Three	13.51%	114
Four	2.25%	19
Five or More	1.78%	15
TOTAL		844

Q7 Prior to COVID-19, how many vehicles at your household were used for commuting to work and/or school on a typical weekday?

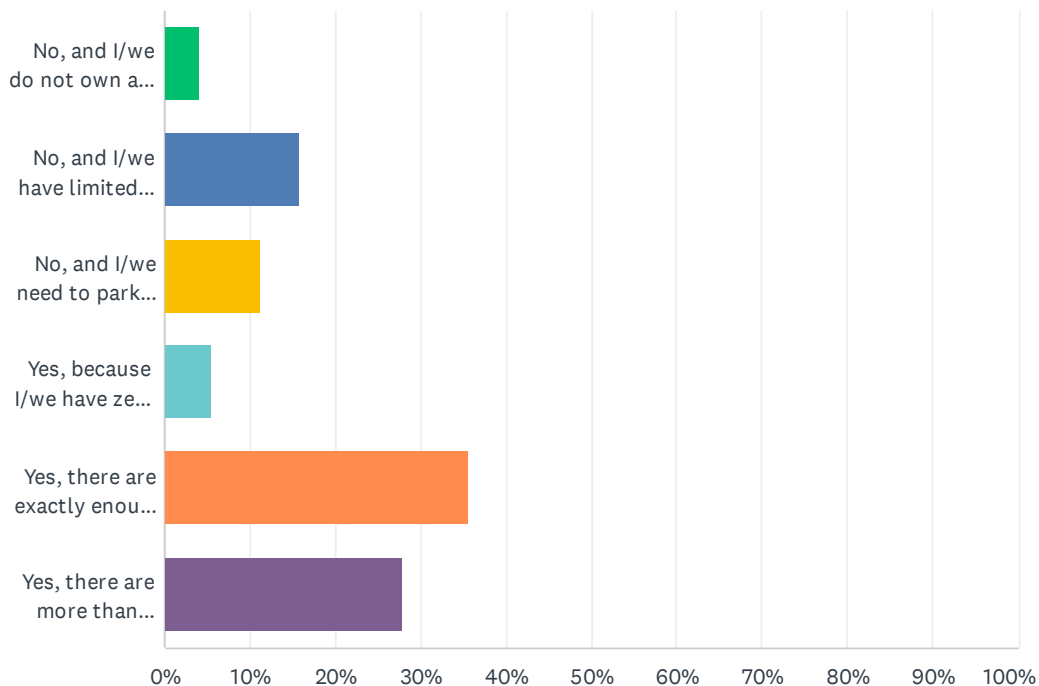
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero	10.31%	87
One	36.49%	308
Two	42.18%	356
Three	7.94%	67
Four	2.49%	21
Five or More	0.59%	5
TOTAL		844

Q8 Are there sufficient parking spaces for your household on your property?

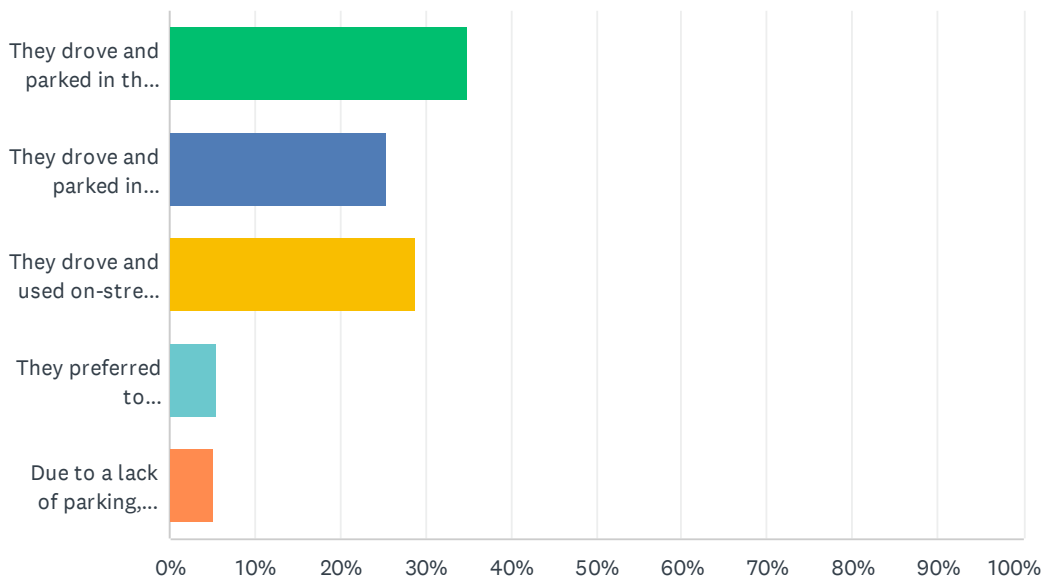
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES	
No, and I/we do not own a vehicle because we have nowhere to park	4.15%	35
No, and I/we have limited additional vehicle purchases because we have nowhere to park additional vehicles	15.76%	133
No, and I/we need to park on-street or off-property due to a lack of parking spaces	11.26%	95
Yes, because I/we have zero vehicles	5.45%	46
Yes, there are exactly enough parking spaces for my household	35.55%	300
Yes, there are more than enough parking spaces	27.84%	235
TOTAL		844

Q9 Prior to COVID-19, when guests visited your residence, how did they typically travel?

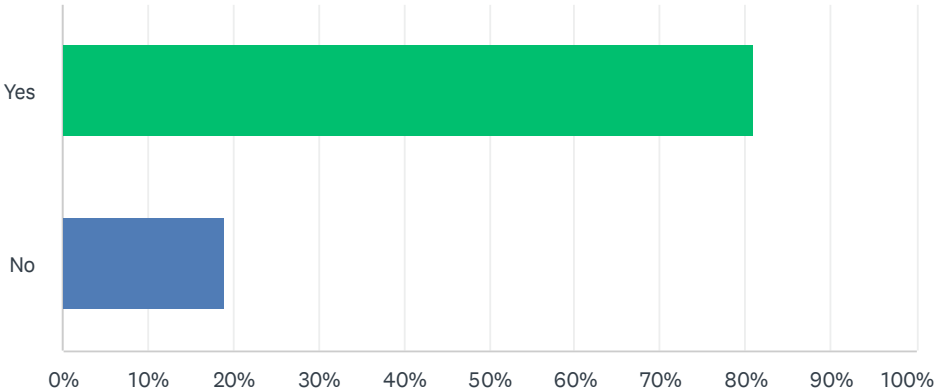
Answered: 844 Skipped: 0



ANSWER CHOICES	RESPONSES	
They drove and parked in the household driveway	35.07%	296
They drove and parked in visitor parking	25.36%	214
They drove and used on-street parking	28.79%	243
They preferred to walk/cycle/take transit/use a taxi or ride-hailing service	5.57%	47
Due to a lack of parking, they had to walk/cycle/take transit/use a taxi or ride-hailing service	5.21%	44
TOTAL		844

Q10 Are you a current resident of Richmond Hill?

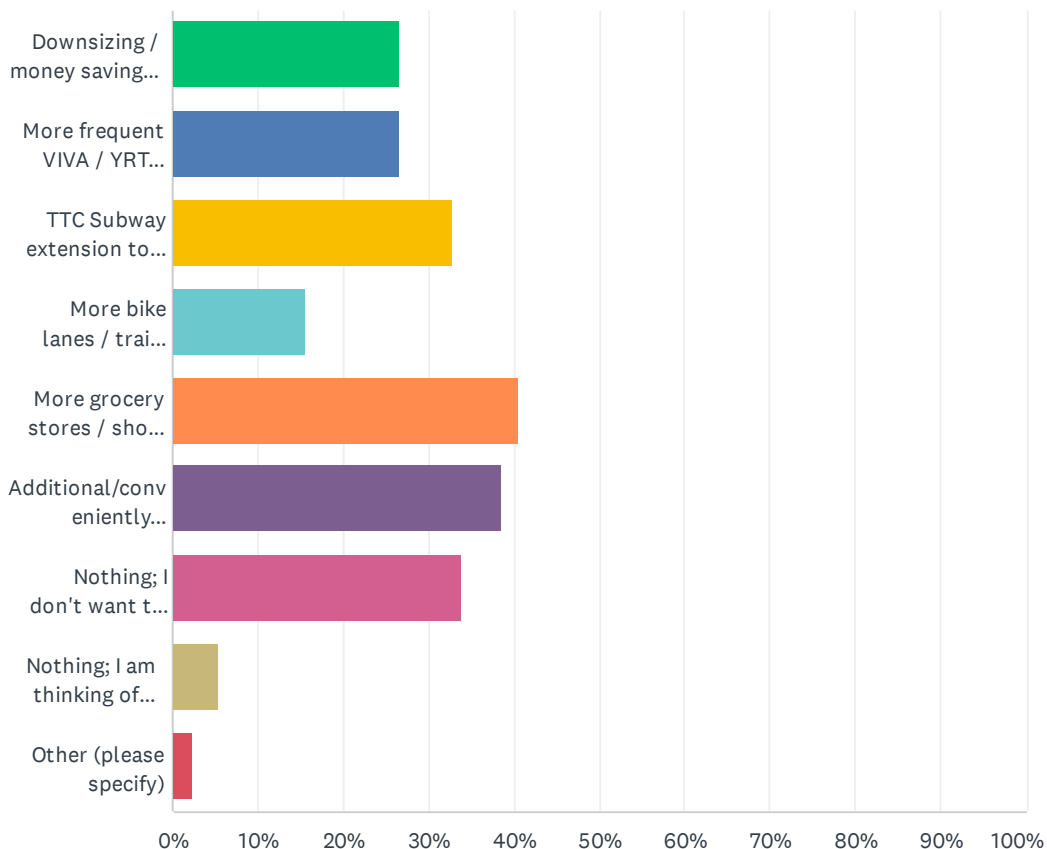
Answered: 842 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	81.12%	683
No	18.88%	159
TOTAL		842

Q11 Which of the following would allow you to live, or continue to live without a vehicle in Richmond Hill? Select all that apply

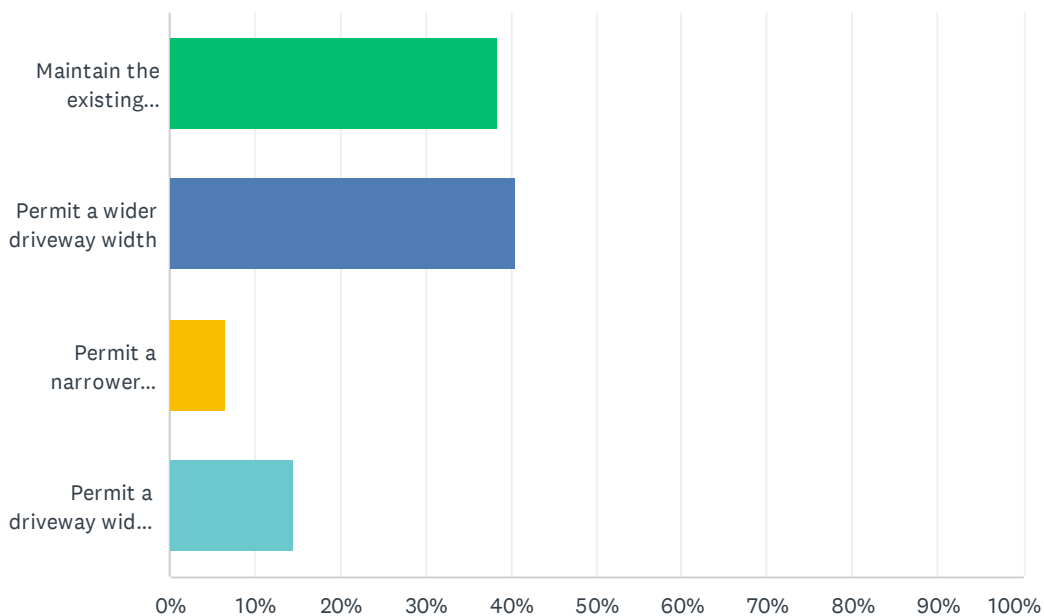
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES
Downsizing / money saving opportunities (i.e. not having to purchase a parking spot, ongoing car payments/maintenance)	26.73% 178
More frequent VIVA / YRT transit service	26.58% 177
TTC Subway extension to Richmond Hill	32.88% 219
More bike lanes / trail connections	15.47% 103
More grocery stores / shops / restaurants / schools / jobs / etc within walking or biking distance	40.54% 270
Additional/conveniently located mobility options (e.g. car rental, car share, shuttle buses, public e-scooters, etc.)	38.59% 257
Nothing; I don't want to get rid of any of my vehicles.	33.93% 226
Nothing; I am thinking of getting another vehicle.	5.41% 36
Other (please specify)	2.25% 15
Total Respondents: 666	

Q12 Presently, the maximum width of a driveway is based on lot frontage. For lots with a frontage less than 9.0 metres, the maximum width can be 3.0 metres. For lots with frontages between 9.0 metres and 18.0 metres, the maximum width can be 6.0 metres. For lots that are 18 metres or wider, the maximum width can be 9 metres. Do you think the City should:

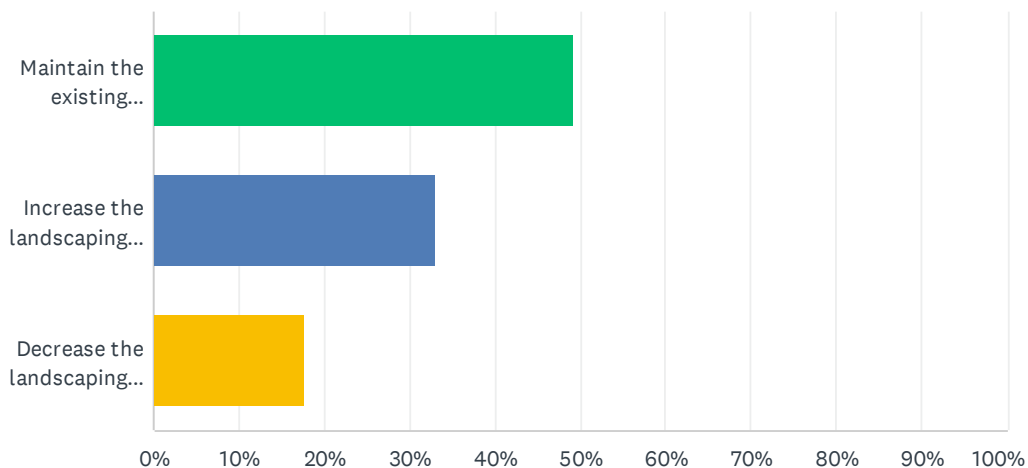
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Maintain the existing permission	38.44%	256
Permit a wider driveway width	40.54%	270
Permit a narrower driveway width	6.61%	44
Permit a driveway width that is the same as the garage width	14.41%	96
TOTAL		666

Q13 Presently, the City requires that a minimum of 45% of a front yard is landscaped, which can be soft landscaping such as grass, shrubs and trees, and/or hard landscaping such as a walkway. Do you think that the City should:

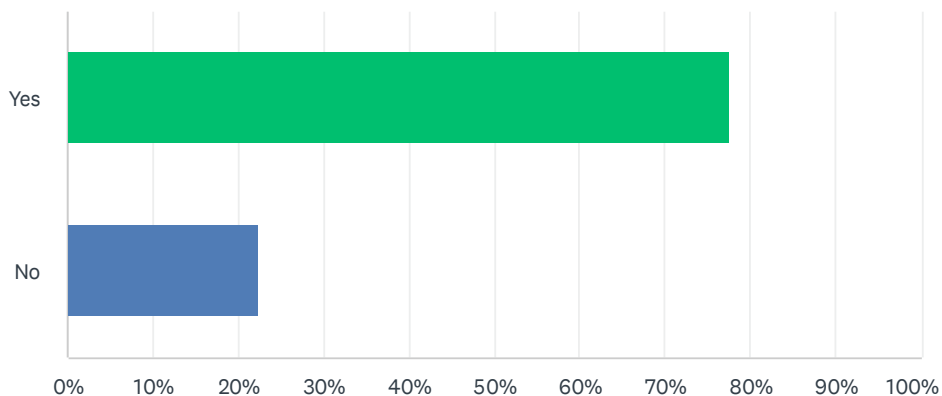
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Maintain the existing permission	49.25%	328
Increase the landscaping percentage	33.03%	220
Decrease the landscaping percentage	17.72%	118
TOTAL		666

Q14 Should the City establish a minimum requirement for soft landscaping in front yards that do not include hardscaping? Soft landscaping can be grass, shrubs and trees.

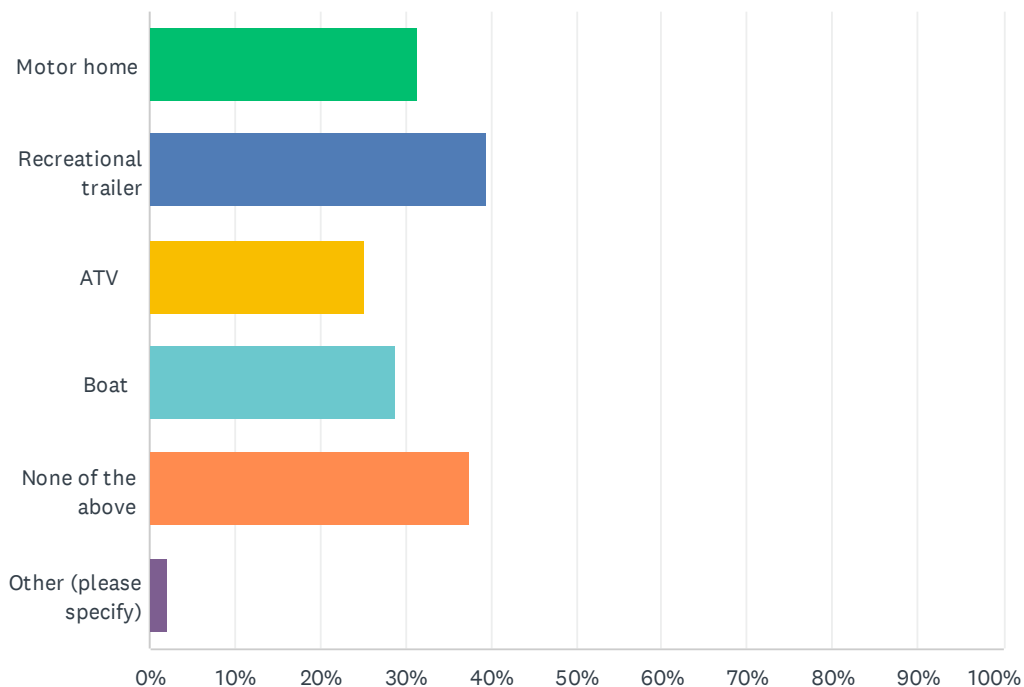
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Yes	77.63%	517
No	22.37%	149
TOTAL		666

Q15 Currently, the City does not permit the parking of recreational vehicles in residential driveways. Which, if any, of the following recreational vehicles types do you think should be permitted to park in residential driveways.
Select all that apply.

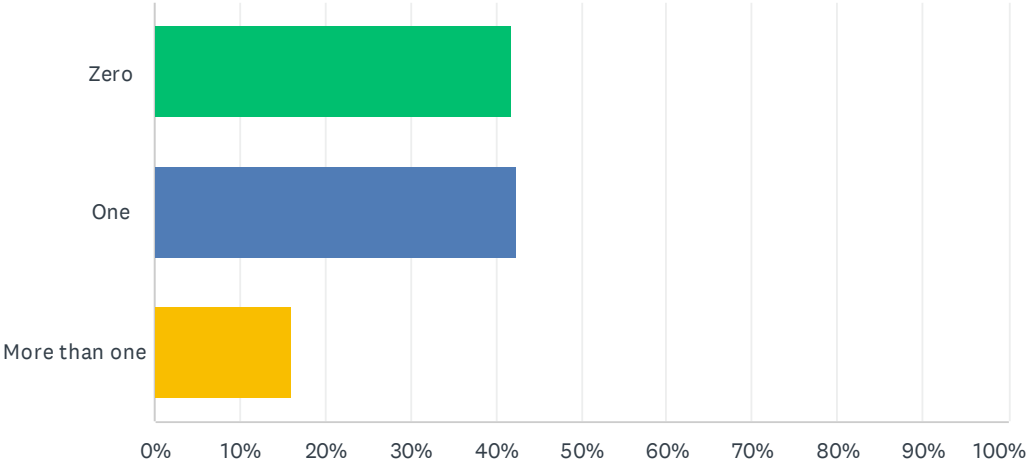
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Motor home	31.38%	209
Recreational trailer	39.49%	263
ATV	25.23%	168
Boat	28.68%	191
None of the above	37.54%	250
Other (please specify)	2.10%	14
Total Respondents: 666		

Q16 How many recreational vehicles do you think the City should permit to park in a residential driveway?

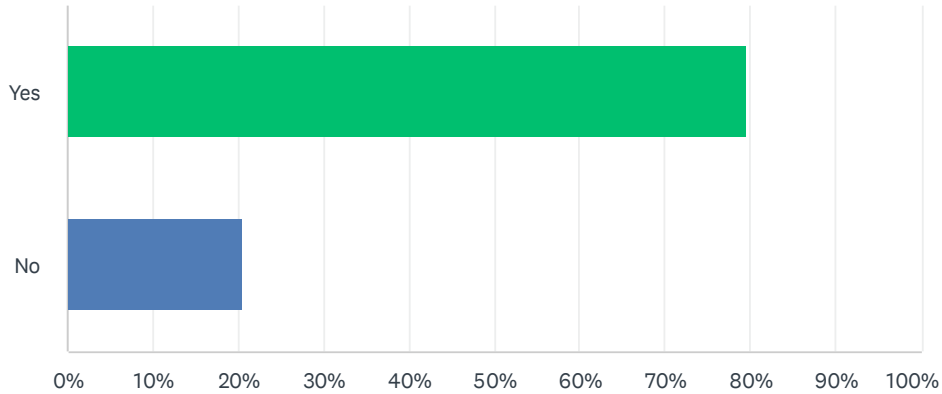
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES
Zero	41.74% 278
One	42.34% 282
More than one	15.92% 106
TOTAL	666

Q17 Currently, the City does not permit the parking of commercial vehicles in residential driveways. Commercial vehicles could include tow trucks, mobile construction equipment, road building equipment, school buses, food trucks and cube vans. Do you agree with this regulation?

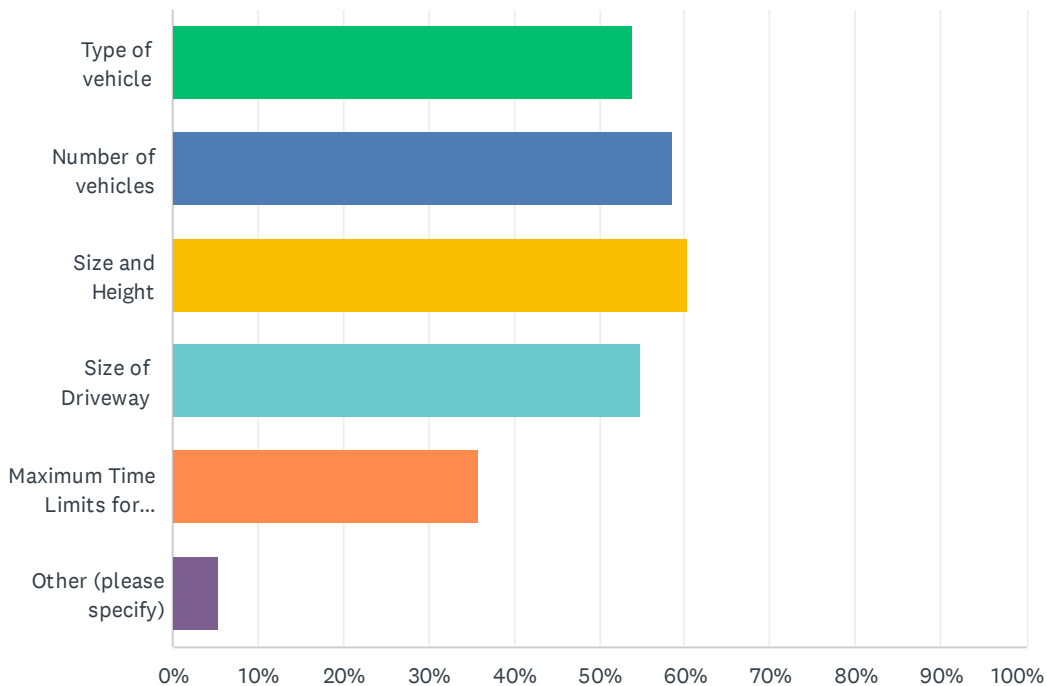
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Yes	79.58%	530
No	20.42%	136
TOTAL		666

Q18 If the City were to allow commercial and recreational motor vehicles to park at residential properties, which of the following should be considered. Select all that apply.

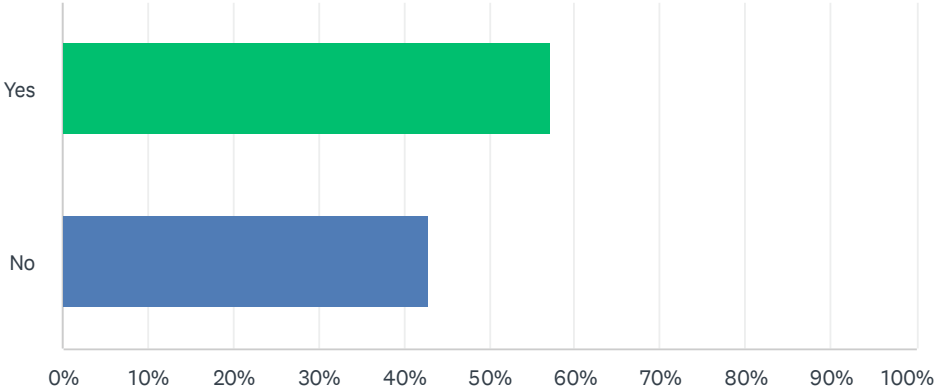
Answered: 655 Skipped: 189



ANSWER CHOICES	RESPONSES	
Type of vehicle	54.05%	354
Number of vehicles	58.63%	384
Size and Height	60.31%	395
Size of Driveway	54.81%	359
Maximum Time Limits for Parking	35.88%	235
Other (please specify)	5.34%	35
Total Respondents: 655		

Q19 Should the City permit temporary structures such as a tent to enclose vehicles on driveways?

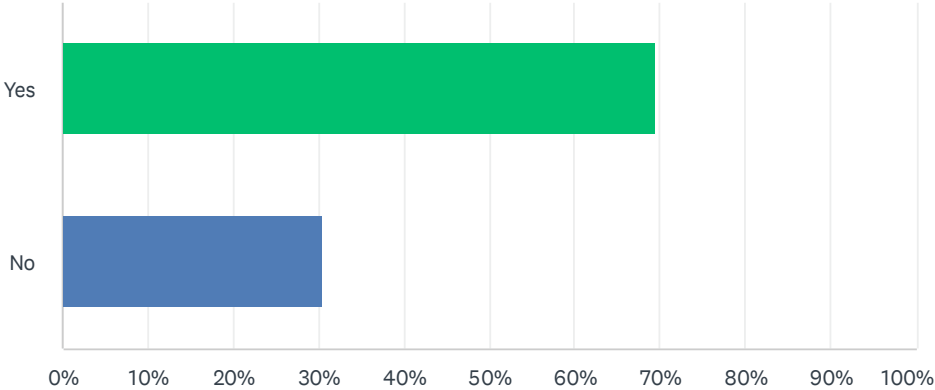
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Yes	57.06%	380
No	42.94%	286
TOTAL		666

Q20 If the City were to permit temporary structures; do you think it should only be permitted if there is no existing garage or carport?

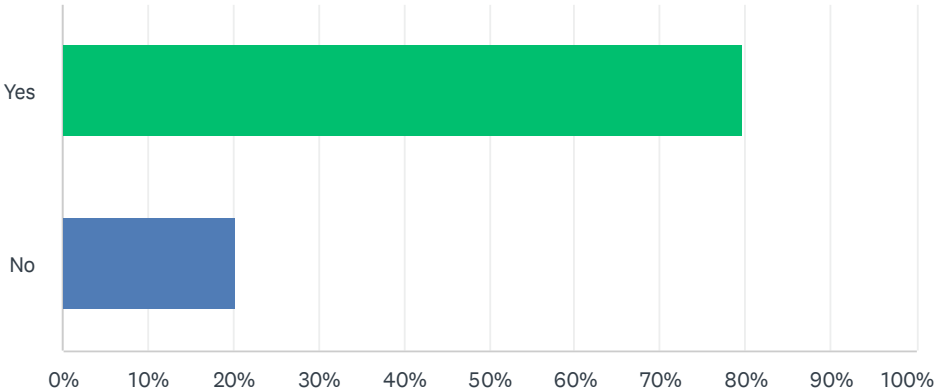
Answered: 666 Skipped: 178



ANSWER CHOICES	RESPONSES	
Yes	69.52%	463
No	30.48%	203
TOTAL		666

Q21 Would you consider moving to/within Richmond Hill in the future?

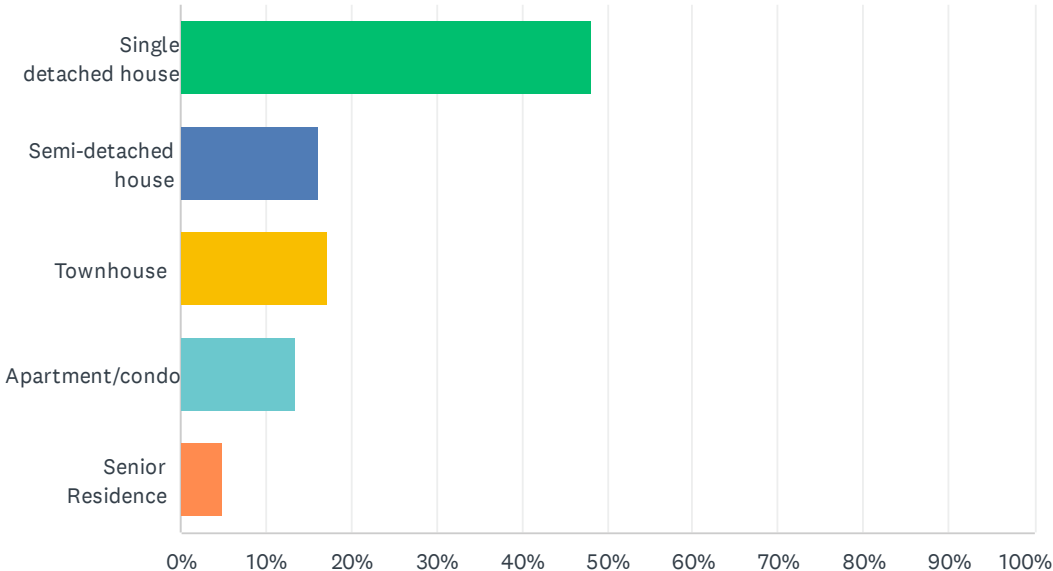
Answered: 825 Skipped: 19



ANSWER CHOICES	RESPONSES	
Yes	79.76%	658
No	20.24%	167
TOTAL		825

Q22 Describe the type of dwelling you would move into within the City of Richmond Hill

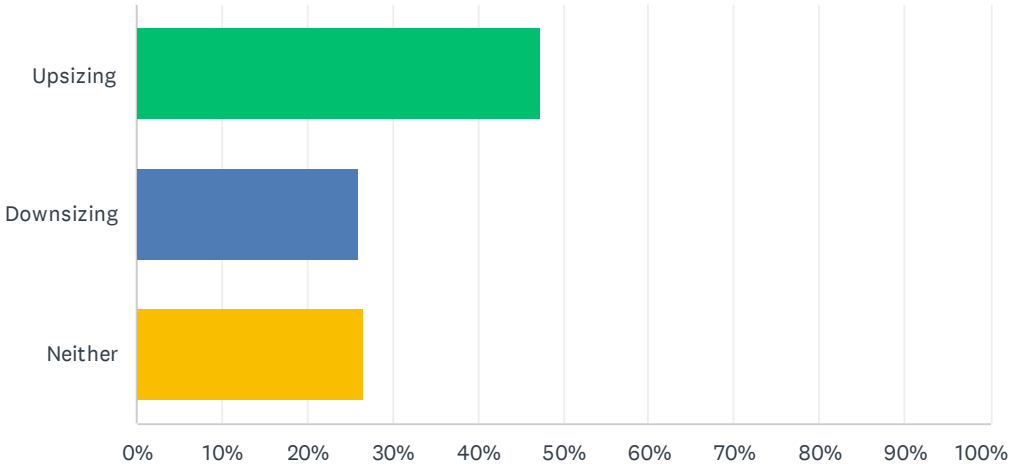
Answered: 644 Skipped: 200



ANSWER CHOICES	RESPONSES	
Single detached house	48.14%	310
Semi-detached house	16.15%	104
Townhouse	17.24%	111
Apartment/condo	13.51%	87
Senior Residence	4.97%	32
TOTAL		644

Q23 Which best describes the reason for your circumstance?

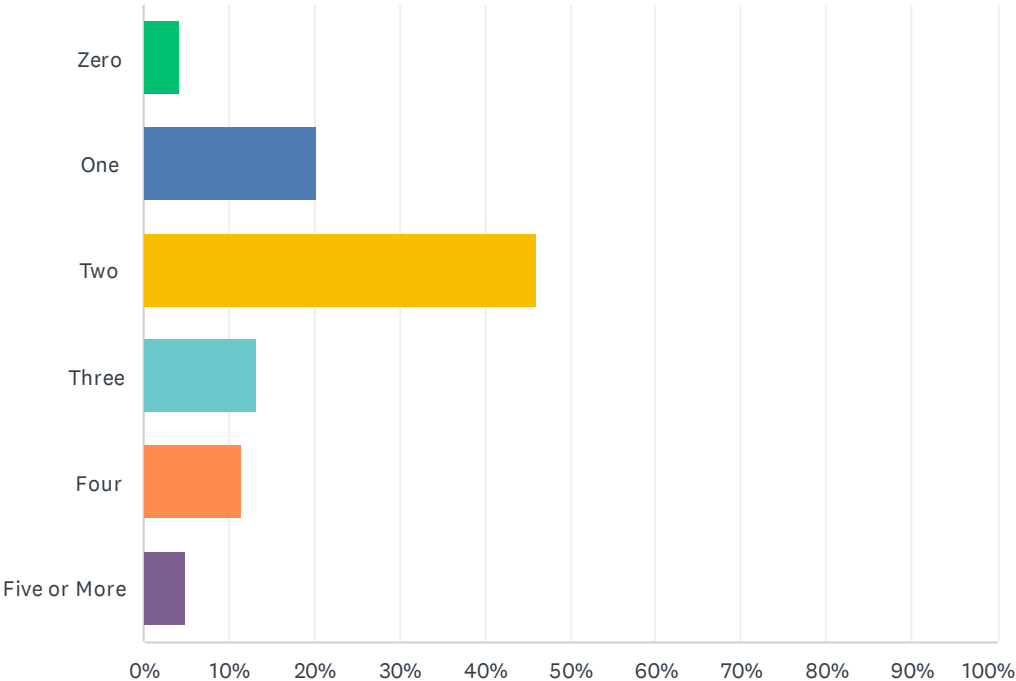
Answered: 644 Skipped: 200



ANSWER CHOICES	RESPONSES
Upsizing	47.36% 305
Downsizing	25.93% 167
Neither	26.71% 172
TOTAL	644

Q24 How many parking spaces would you anticipate requiring?

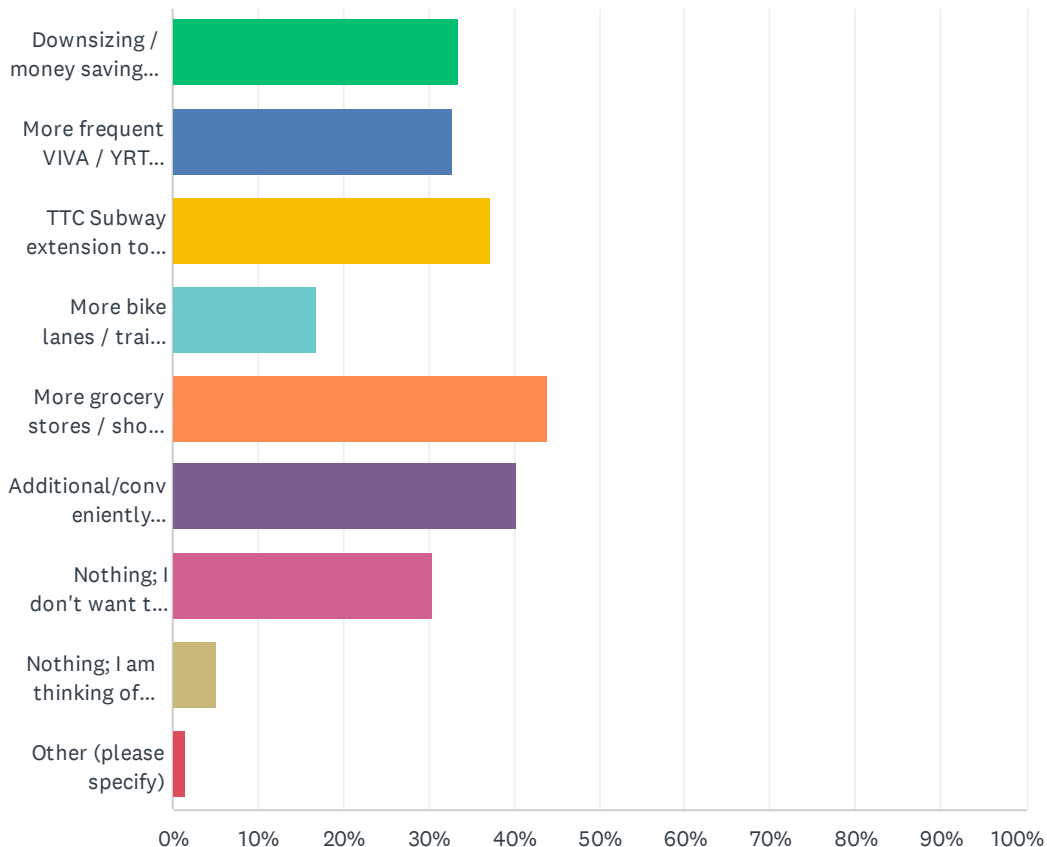
Answered: 644 Skipped: 200



ANSWER CHOICES	RESPONSES	
Zero	4.19%	27
One	20.19%	130
Two	45.96%	296
Three	13.20%	85
Four	11.49%	74
Five or More	4.97%	32
TOTAL		644

Q25 Which of the following would allow you to live, or continue to live without a vehicle in Richmond Hill? Select all that apply

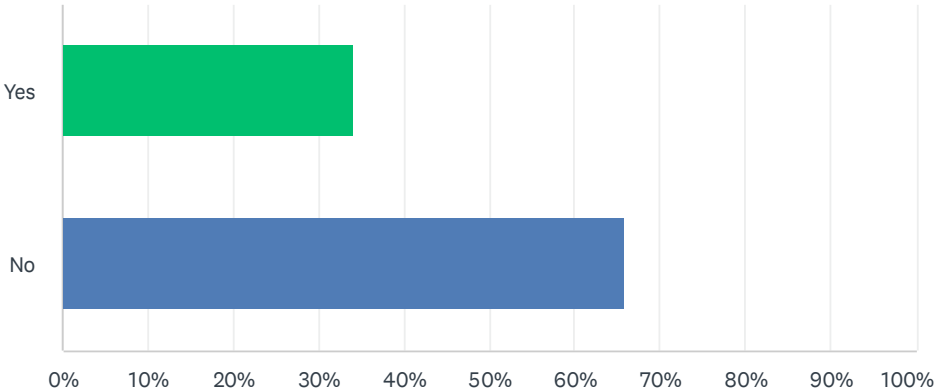
Answered: 644 Skipped: 200



ANSWER CHOICES	RESPONSES
Downsizing / money saving opportunities (i.e. not having to purchase a parking spot, ongoing car payments/maintenance)	33.39% 215
More frequent VIVA / YRT transit service	32.76% 211
TTC Subway extension to Richmond Hill	37.27% 240
More bike lanes / trail connections	16.77% 108
More grocery stores / shops / restaurants / schools / jobs / etc within walking or biking distance	43.94% 283
Additional/conveniently located mobility options (e.g. car rental, car share, shuttle buses, public e-scooters, etc.)	40.22% 259
Nothing; I don't want to get rid of any of my vehicles.	30.43% 196
Nothing; I am thinking of getting another vehicle.	5.12% 33
Other (please specify)	1.55% 10
Total Respondents: 644	

Q26 Do you own a business within Richmond Hill?

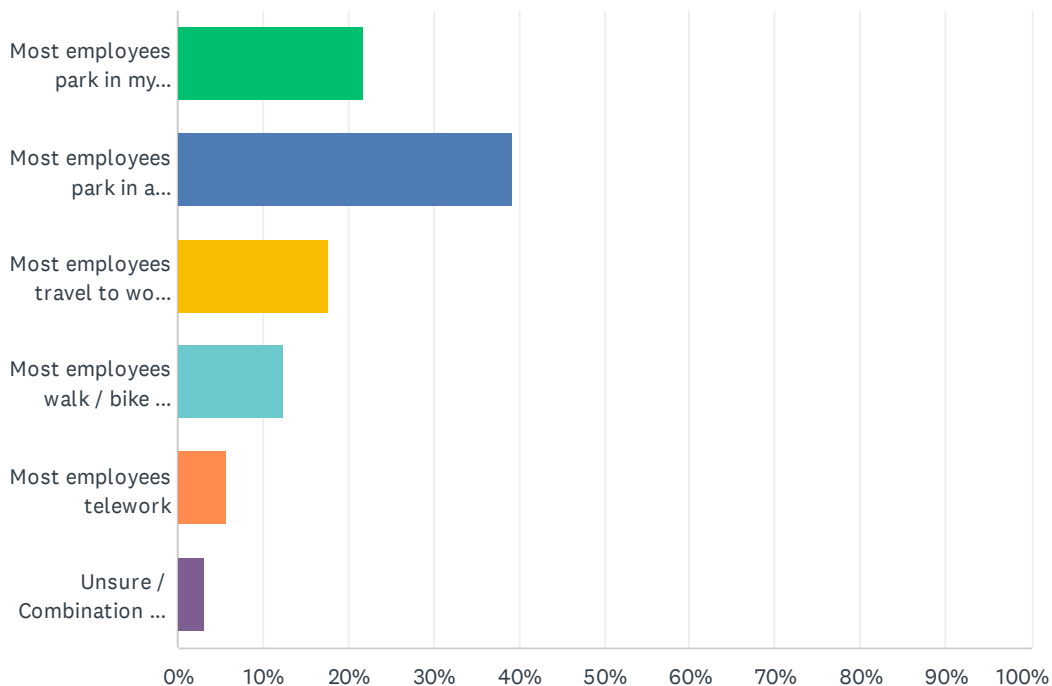
Answered: 810 Skipped: 34



ANSWER CHOICES	RESPONSES	
Yes	34.20%	277
No	65.80%	533
TOTAL		810

Q27 Under typical conditions (i.e. prior to COVID-19) how do most of your employees typically get to work?

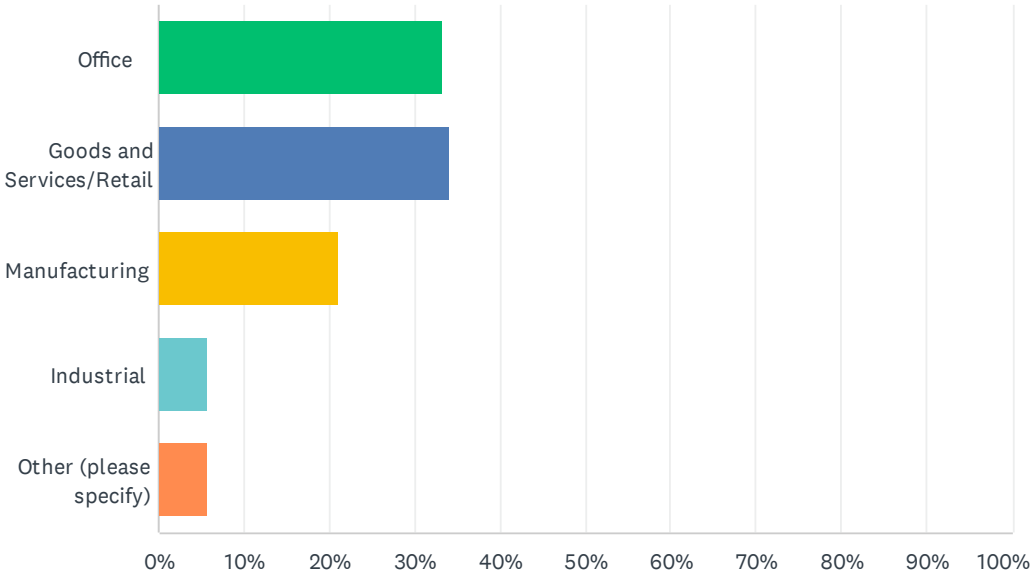
Answered: 276 Skipped: 568



ANSWER CHOICES	RESPONSES	
Most employees park in my business's parking lot	21.74%	60
Most employees park in a nearby parking lot / on street	39.13%	108
Most employees travel to work via transit	17.75%	49
Most employees walk / bike to work	12.32%	34
Most employees telework	5.80%	16
Unsure / Combination of above	3.26%	9
TOTAL		276

Q28 What type of business do you have?

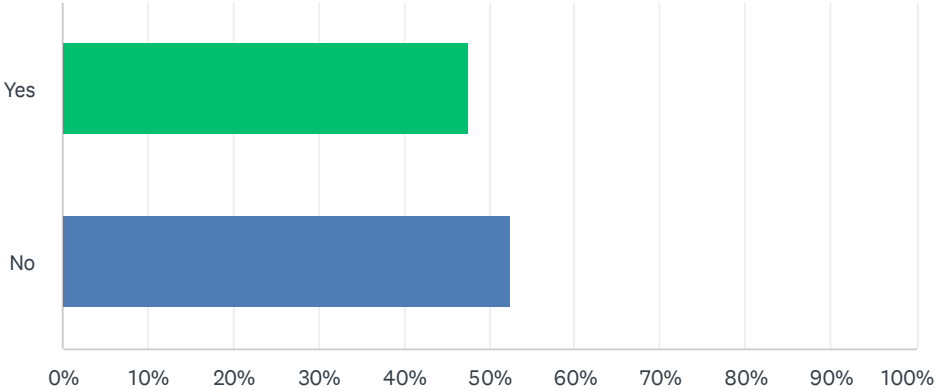
Answered: 276 Skipped: 568



ANSWER CHOICES	RESPONSES	
Office	33.33%	92
Goods and Services/Retail	34.06%	94
Manufacturing	21.01%	58
Industrial	5.80%	16
Other (please specify)	5.80%	16
TOTAL		276

Q29 Would you consider opening a new business located within Richmond Hill in the future?

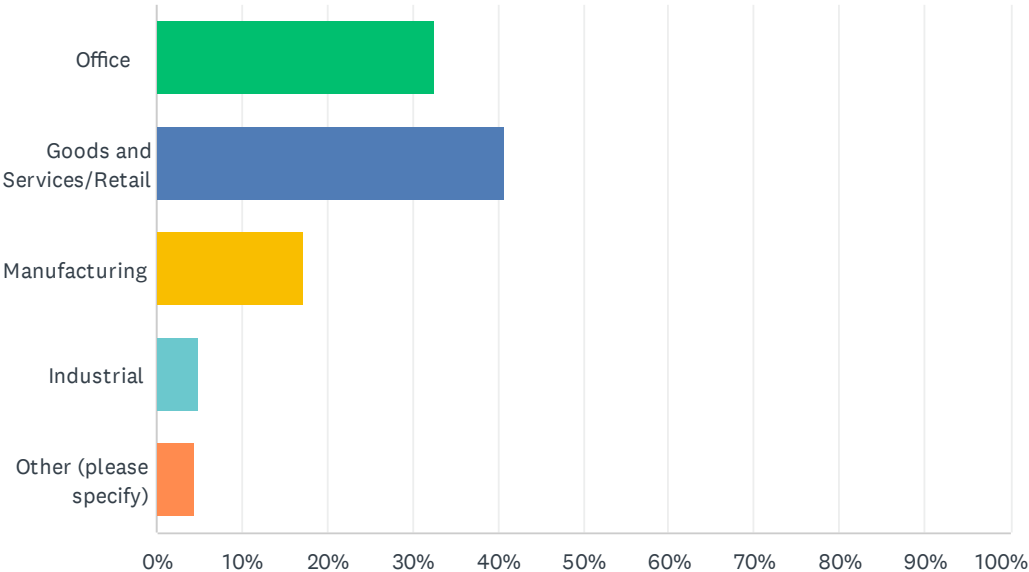
Answered: 808 Skipped: 36



ANSWER CHOICES	RESPONSES	
Yes	47.52%	384
No	52.48%	424
TOTAL		808

Q30 What type of business would you open?

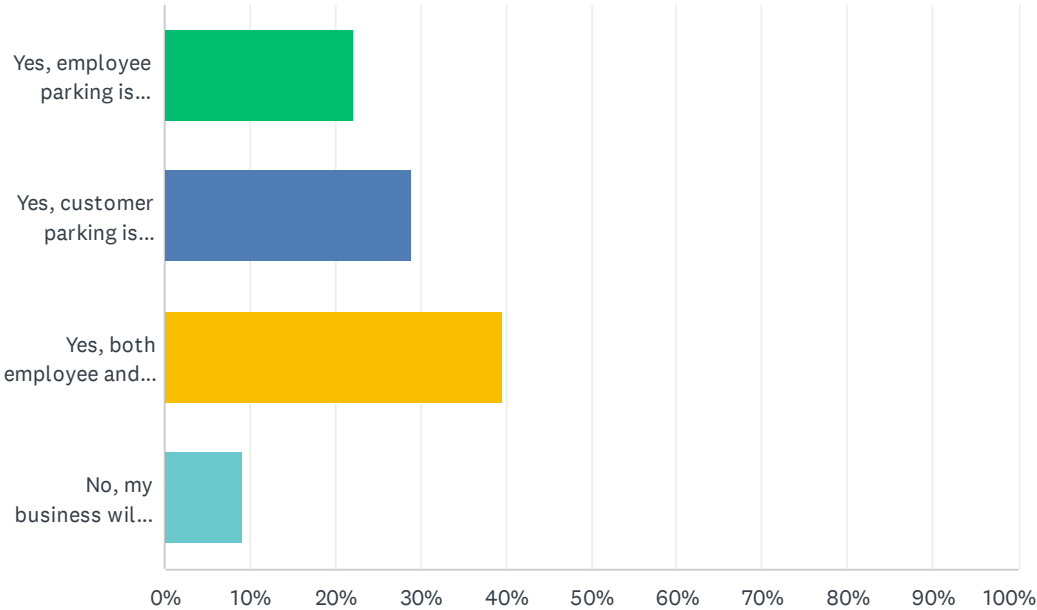
Answered: 383 Skipped: 461



ANSWER CHOICES	RESPONSES	
Office	32.64%	125
Goods and Services/Retail	40.73%	156
Manufacturing	17.23%	66
Industrial	4.96%	19
Other (please specify)	4.44%	17
TOTAL		383

Q31 Would your business rely heavily on parking availability?

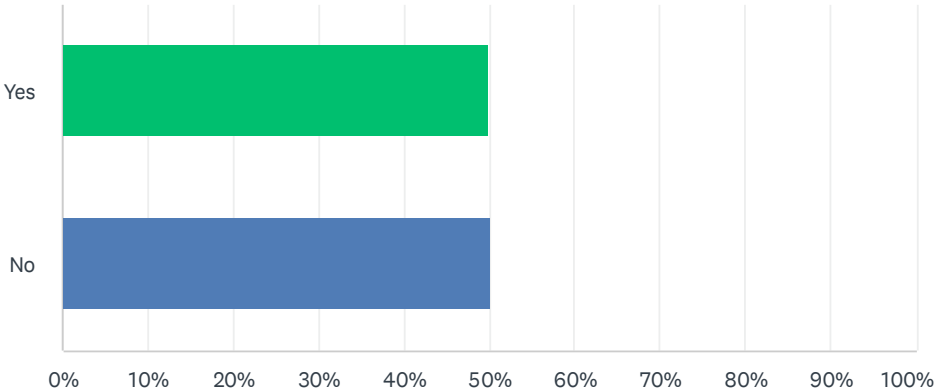
Answered: 383 Skipped: 461



ANSWER CHOICES	RESPONSES	
Yes, employee parking is critical	22.19%	85
Yes, customer parking is critical	28.98%	111
Yes, both employee and customer parking is critical	39.69%	152
No, my business will not be heavily reliant on parking availability	9.14%	35
TOTAL		383

Q32 Do you currently work within Richmond Hill?

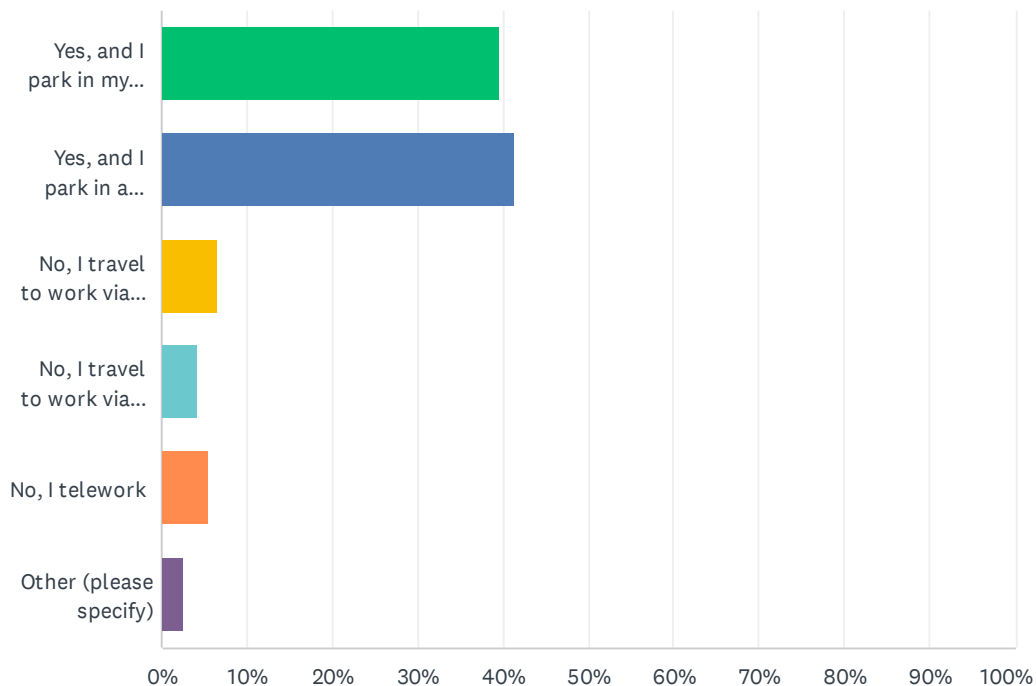
Answered: 807 Skipped: 37



ANSWER CHOICES	RESPONSES
Yes	49.81% 402
No	50.19% 405
TOTAL	807

Q33 Under typical conditions (i.e. prior to COVID-19) did/do you drive to work?

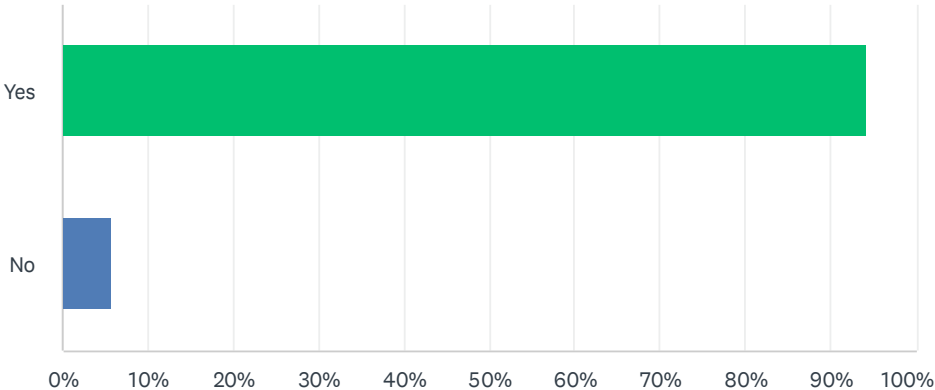
Answered: 403 Skipped: 441



ANSWER CHOICES	RESPONSES	
Yes, and I park in my employer's parking lot	39.70%	160
Yes, and I park in a nearby parking lot / on street	41.44%	167
No, I travel to work via transit	6.70%	27
No, I travel to work via walking / biking	4.22%	17
No, I telework	5.46%	22
Other (please specify)	2.48%	10
TOTAL		403

Q34 Is this your preferred way to travel?

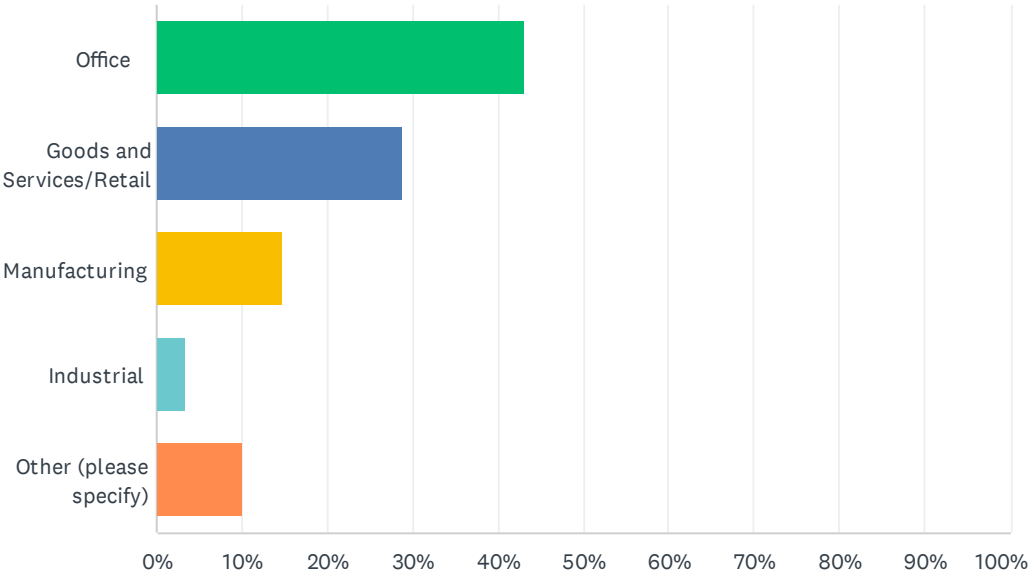
Answered: 403 Skipped: 441



ANSWER CHOICES	RESPONSES	
Yes	94.29%	380
No	5.71%	23
TOTAL		403

Q35 What type of work do you do?

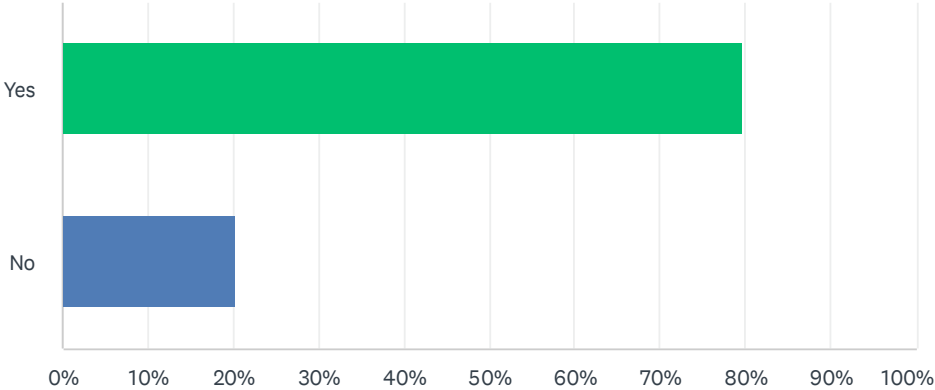
Answered: 403 Skipped: 441



ANSWER CHOICES	RESPONSES
Office	43.18% 174
Goods and Services/Retail	28.78% 116
Manufacturing	14.64% 59
Industrial	3.47% 14
Other (please specify)	9.93% 40
TOTAL	403

Q36 Would you consider applying for a job located within Richmond Hill in the future?

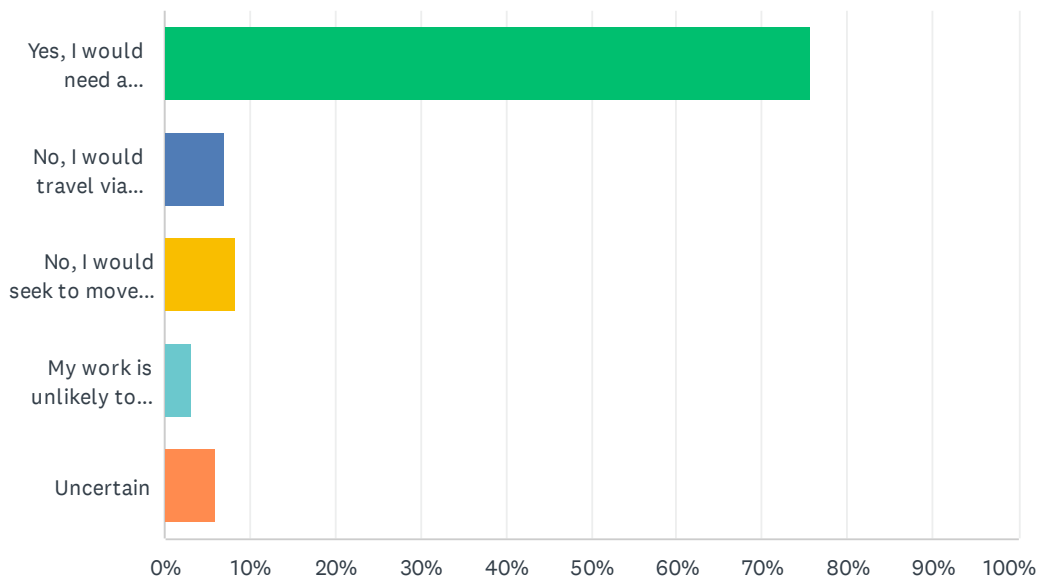
Answered: 807 Skipped: 37



ANSWER CHOICES	RESPONSES	
Yes	79.80%	644
No	20.20%	163
TOTAL		807

Q37 If your future job required you to attend in person, would you consistently require a parking space?

Answered: 644 Skipped: 200



ANSWER CHOICES	RESPONSES	
Yes, I would need a consistent parking space	75.62%	487
No, I would travel via transit	6.99%	45
No, I would seek to move close to my place of work and walk or bike.	8.23%	53
My work is unlikely to require that I attend on a consistent basis.	3.11%	20
Uncertain	6.06%	39
TOTAL		644

Q38 Please provide any additional feedback or input you would like to share regarding Parking and Transportation Demand Management in Richmond Hill.

Answered: 397 Skipped: 447

**Q39 Provide an email address in order to be eligible for the prizes
(optional)**

Answered: 714 Skipped: 130

Appendix B

Public Survey #2 (September 2021)

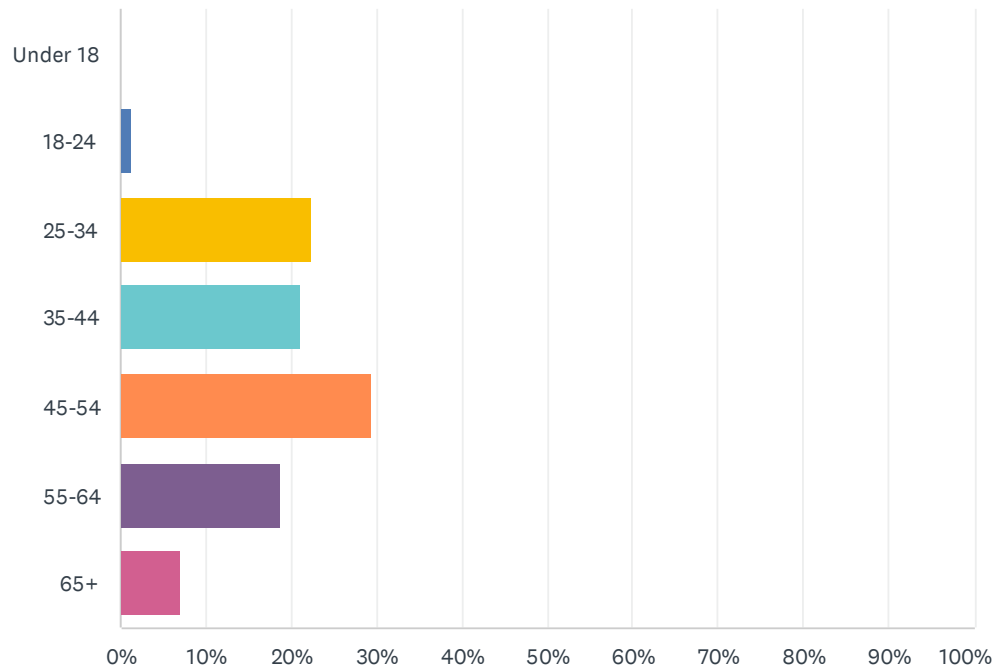
Results Summary

Q1 Provide your current postal code (formatted A1B 2C3).

Answered: 103 Skipped: 0

Q2 What is your age (optional)?

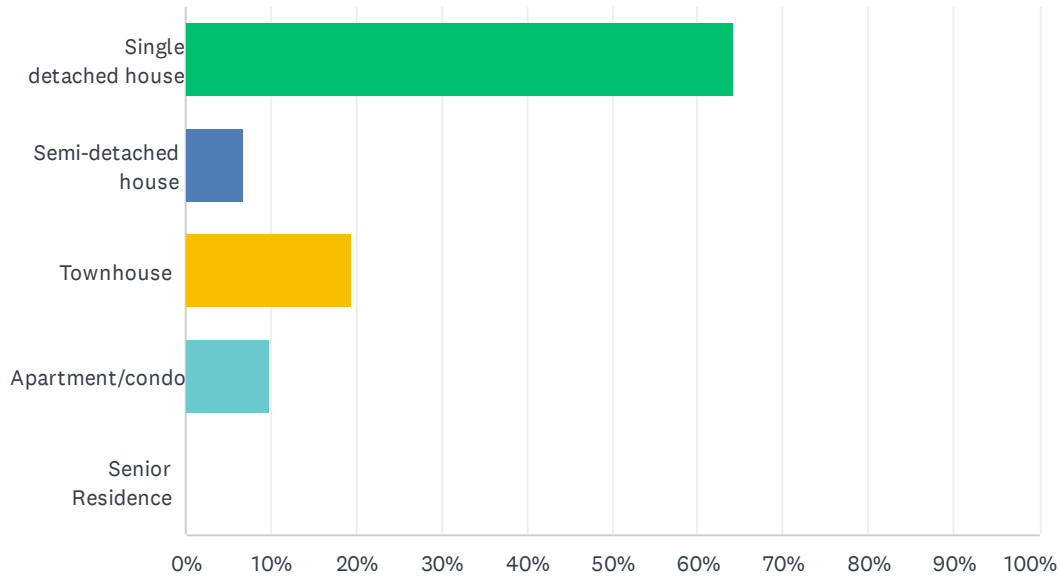
Answered: 85 Skipped: 18



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18-24	1.18%	1
25-34	22.35%	19
35-44	21.18%	18
45-54	29.41%	25
55-64	18.82%	16
65+	7.06%	6
TOTAL		85

Q3 In what type of dwelling do you current live?

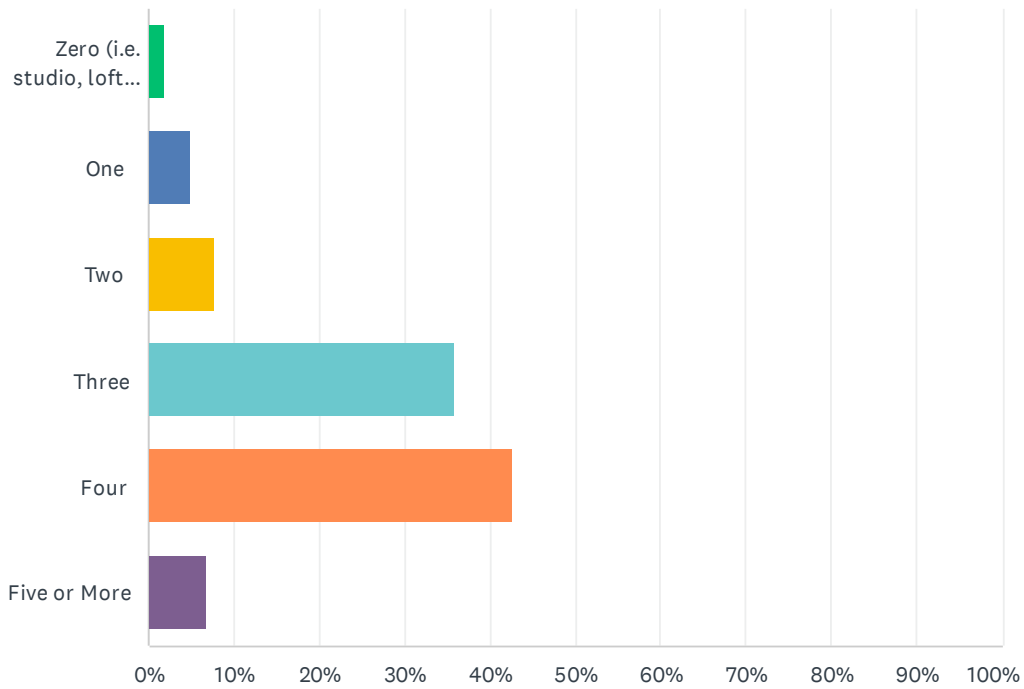
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
Single detached house	64.08%	66
Semi-detached house	6.80%	7
Townhouse	19.42%	20
Apartment/condo	9.71%	10
Senior Residence	0.00%	0
TOTAL		103

Q4 How many bedrooms are in your dwelling?

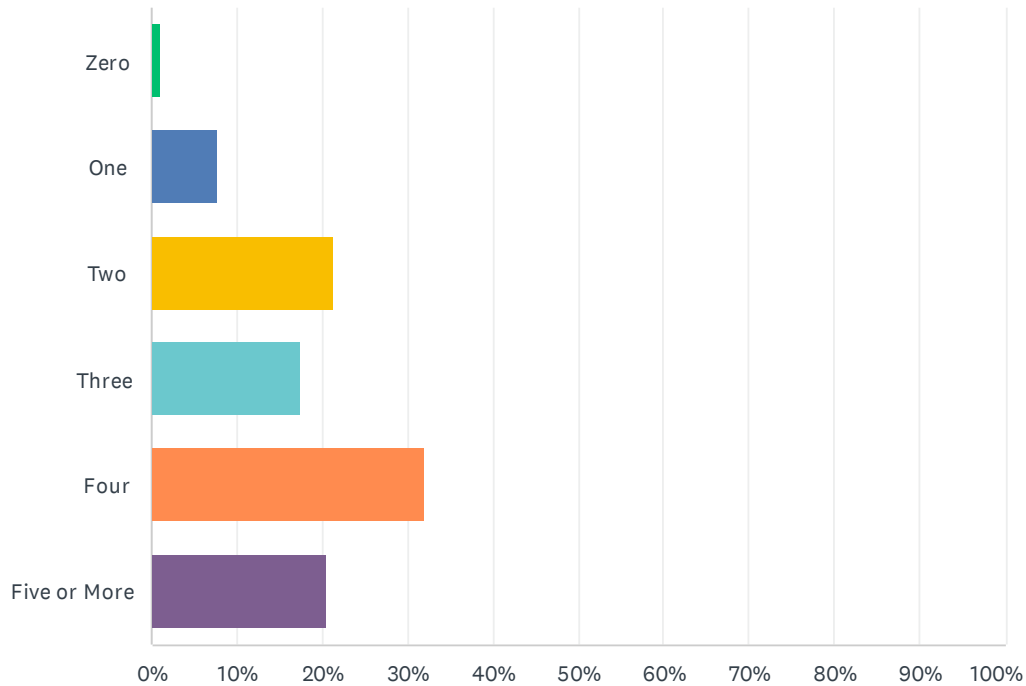
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero (i.e. studio, loft, bachelor unit)	1.94%	2
One	4.85%	5
Two	7.77%	8
Three	35.92%	37
Four	42.72%	44
Five or More	6.80%	7
TOTAL		103

Q5 How many regular sized car parking spaces are available for your household's use, including in a garage? (please estimate the number of spaces if they are located in private driveways or private garages)

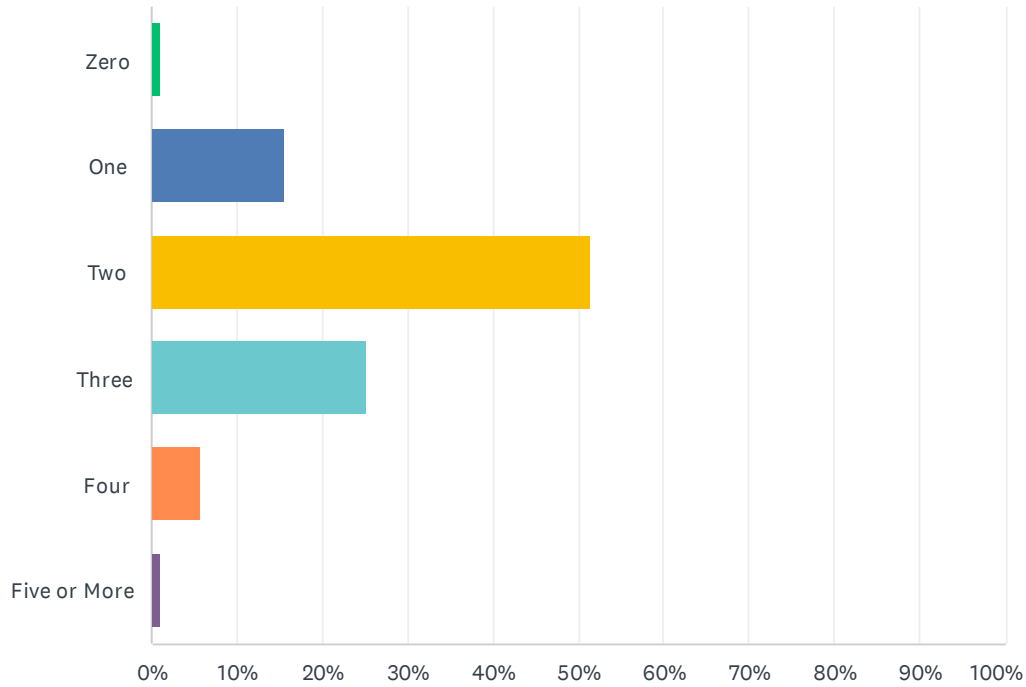
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero	0.97%	1
One	7.77%	8
Two	21.36%	22
Three	17.48%	18
Four	32.04%	33
Five or More	20.39%	21
TOTAL		103

Q6 How many vehicles are typically at your household (i.e., vehicles owned/leased/used by residents)?

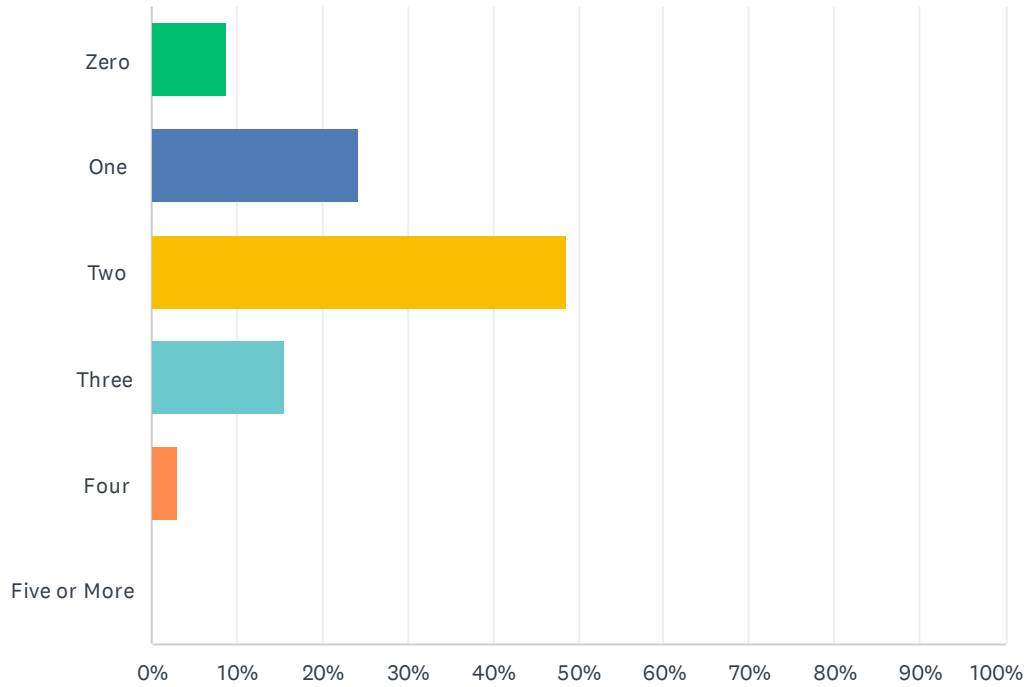
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero	0.97%	1
One	15.53%	16
Two	51.46%	53
Three	25.24%	26
Four	5.83%	6
Five or More	0.97%	1
TOTAL		103

Q7 Prior to COVID-19, how many vehicles at your household were used for commuting to work and/or school on a typical weekday?

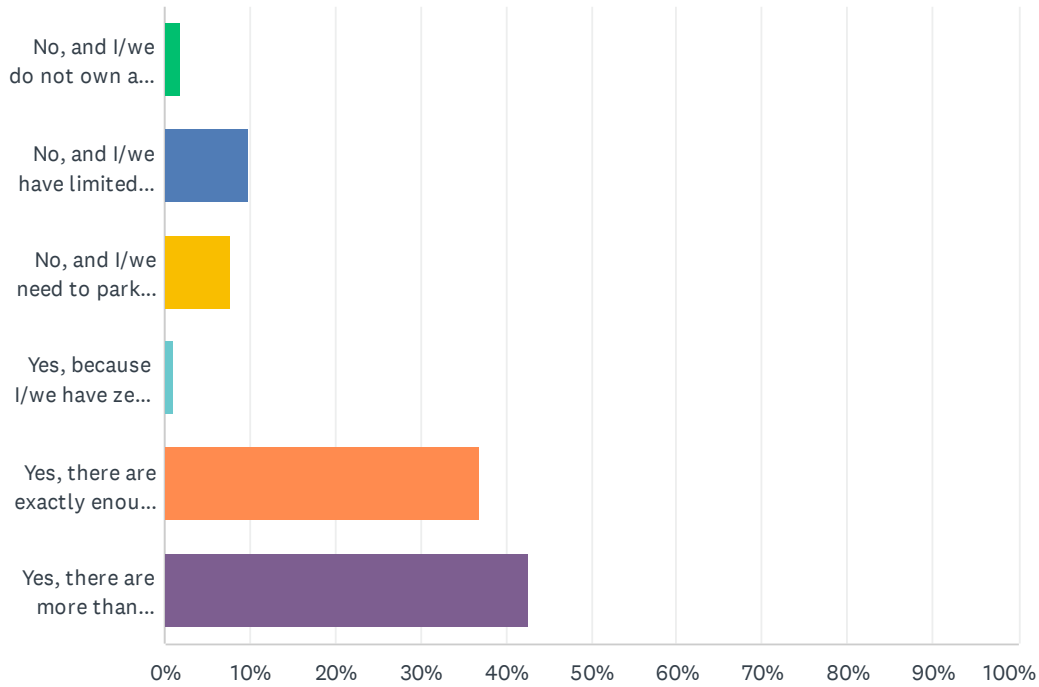
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
Zero	8.74%	9
One	24.27%	25
Two	48.54%	50
Three	15.53%	16
Four	2.91%	3
Five or More	0.00%	0
TOTAL		103

Q8 Are there sufficient parking spaces for your household on your property?

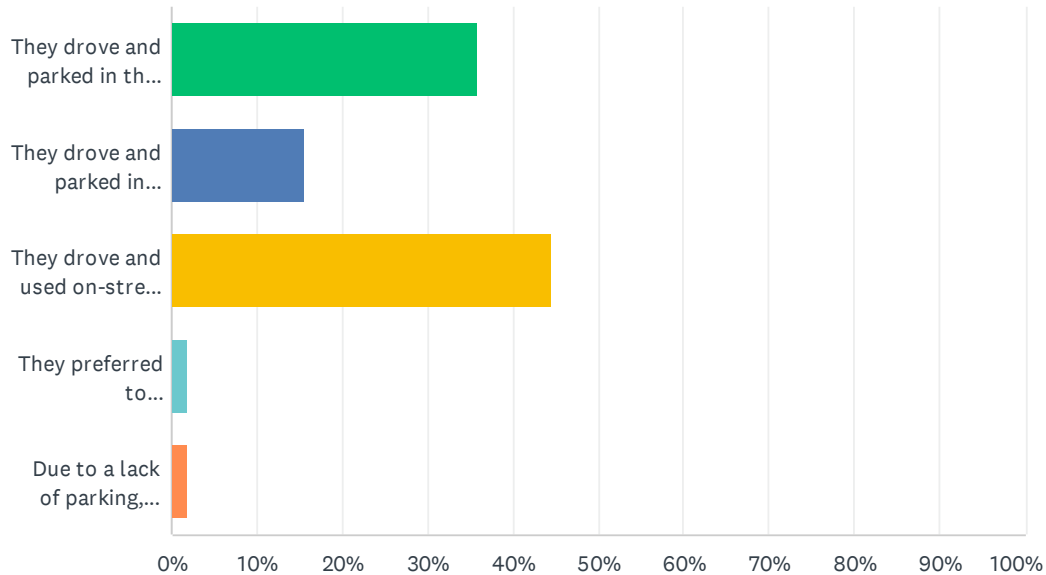
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
No, and I/we do not own a vehicle because we have nowhere to park	1.94%	2
No, and I/we have limited additional vehicle purchases because we have nowhere to park additional vehicles	9.71%	10
No, and I/we need to park on-street or off-property due to a lack of parking spaces	7.77%	8
Yes, because I/we have zero vehicles	0.97%	1
Yes, there are exactly enough parking spaces for my household	36.89%	38
Yes, there are more than enough parking spaces	42.72%	44
TOTAL		103

Q9 Prior to COVID-19, when guests visited your residence, how did they typically travel?

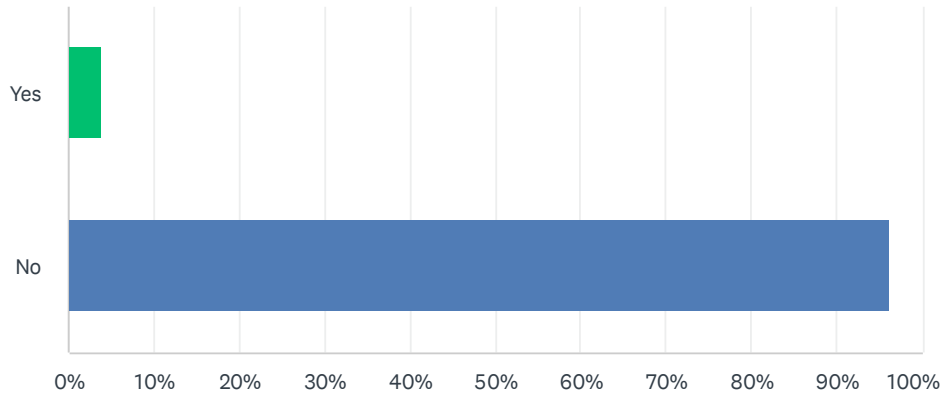
Answered: 103 Skipped: 0



ANSWER CHOICES	RESPONSES	
They drove and parked in the household driveway	35.92%	37
They drove and parked in visitor parking	15.53%	16
They drove and used on-street parking	44.66%	46
They preferred to walk/cycle/take transit/use a taxi or ride-hailing service	1.94%	2
Due to a lack of parking, they had to walk/cycle/take transit/use a taxi or ride-hailing service	1.94%	2
TOTAL		103

Q10 Did you previously complete the Parking and TDM Strategy survey from March 2021?

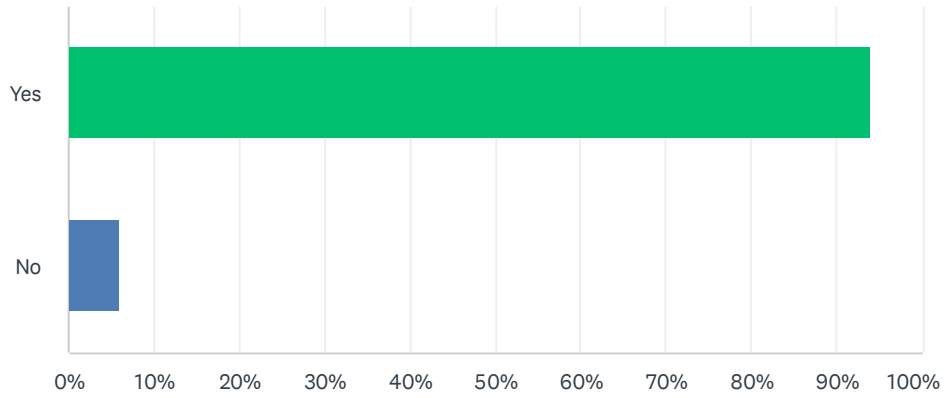
Answered: 102 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	3.92%	4
No	96.08%	98
TOTAL		102

Q11 Are you a current resident of Richmond Hill?

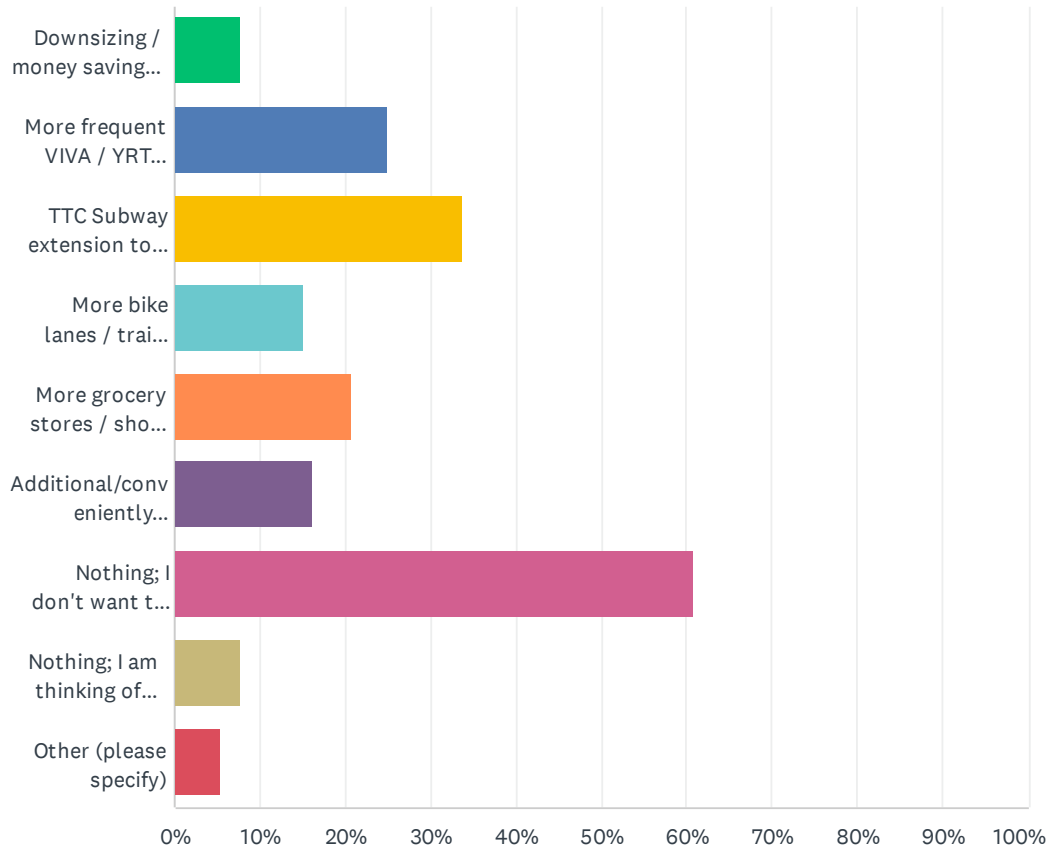
Answered: 99 Skipped: 4



ANSWER CHOICES	RESPONSES
Yes	93.94% 93
No	6.06% 6
TOTAL	99

Q12 Which of the following would allow you to live, or continue to live without a vehicle in Richmond Hill? Select all that apply

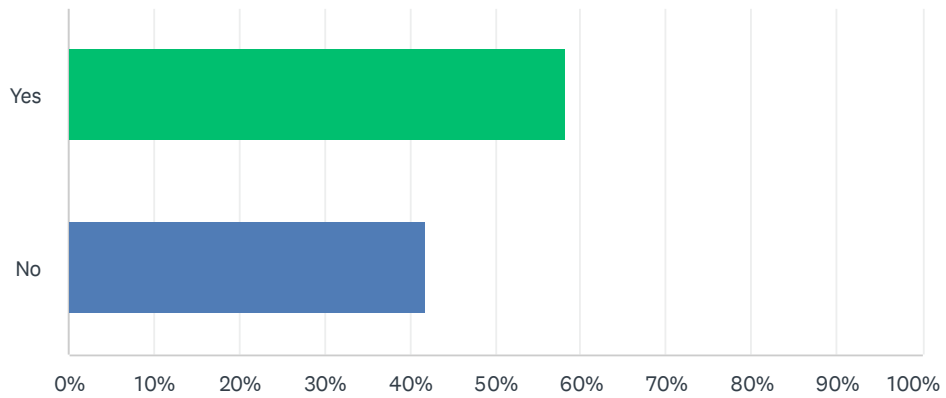
Answered: 92 Skipped: 11



ANSWER CHOICES	RESPONSES	
Downsizing / money saving opportunities (i.e. not having to purchase a parking spot, ongoing car payments/maintenance)	7.61%	7
More frequent VIVA / YRT transit service	25.00%	23
TTC Subway extension to Richmond Hill	33.70%	31
More bike lanes / trail connections	15.22%	14
More grocery stores / shops / restaurants / schools / jobs / etc within walking or biking distance	20.65%	19
Additional/conveniently located mobility options (e.g. car rental, car share, shuttle buses, public e-scooters, etc.)	16.30%	15
Nothing; I don't want to get rid of any of my vehicles.	60.87%	56
Nothing; I am thinking of getting another vehicle.	7.61%	7
Other (please specify)	5.43%	5
Total Respondents: 92		

Q13 Would you consider moving to/within Richmond Hill in the future?

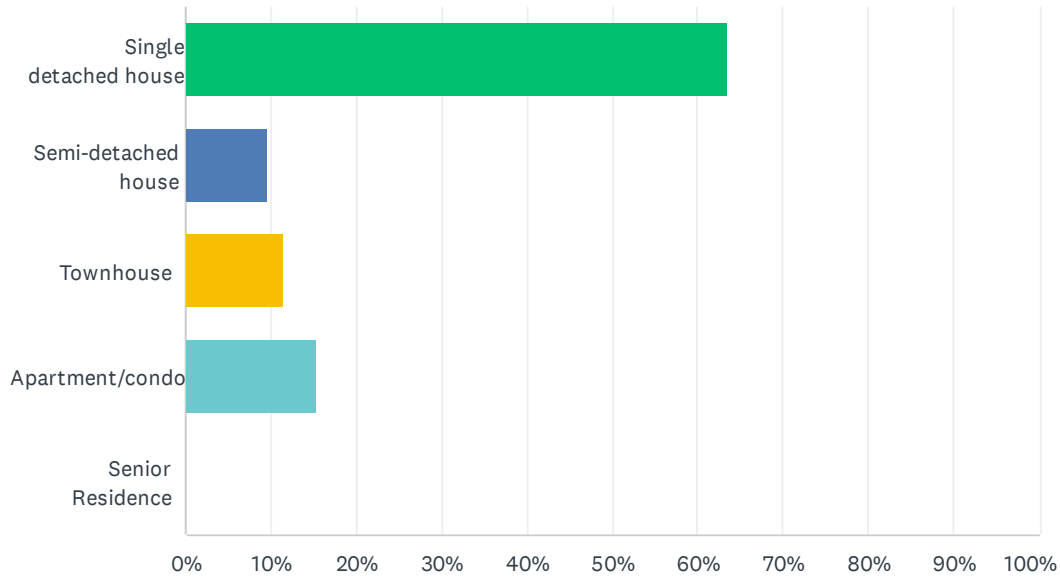
Answered: 98 Skipped: 5



ANSWER CHOICES	RESPONSES
Yes	58.16% 57
No	41.84% 41
TOTAL	98

Q14 Describe the type of dwelling you would move into within the City of Richmond Hill

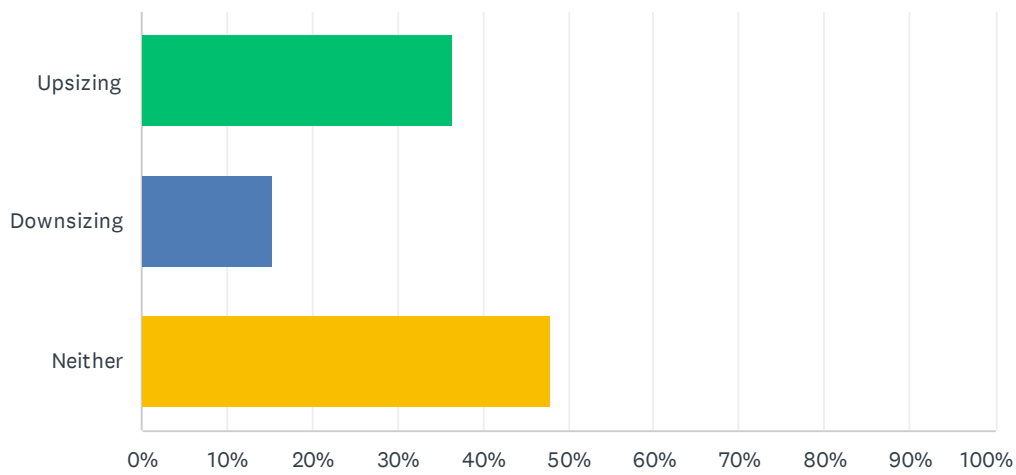
Answered: 52 Skipped: 51



ANSWER CHOICES	RESPONSES	
Single detached house	63.46%	33
Semi-detached house	9.62%	5
Townhouse	11.54%	6
Apartment/condo	15.38%	8
Senior Residence	0.00%	0
TOTAL		52

Q15 Which best describes the reason for your circumstance?

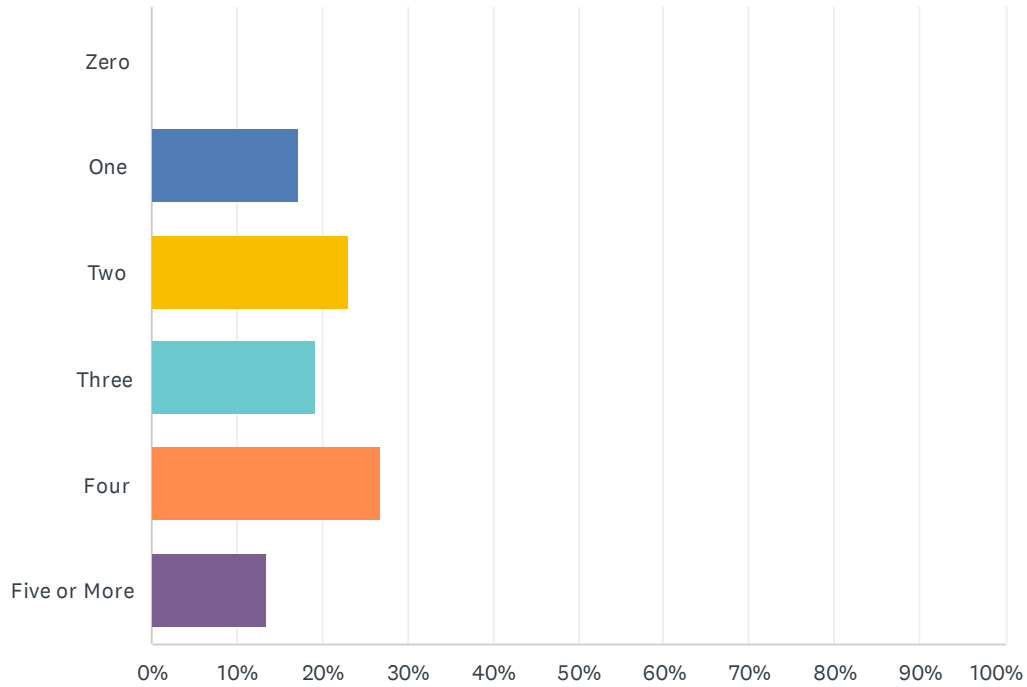
Answered: 52 Skipped: 51



ANSWER CHOICES	RESPONSES	
Upsizing	36.54%	19
Downsizing	15.38%	8
Neither	48.08%	25
TOTAL		52

Q16 How many parking spaces would you anticipate requiring?

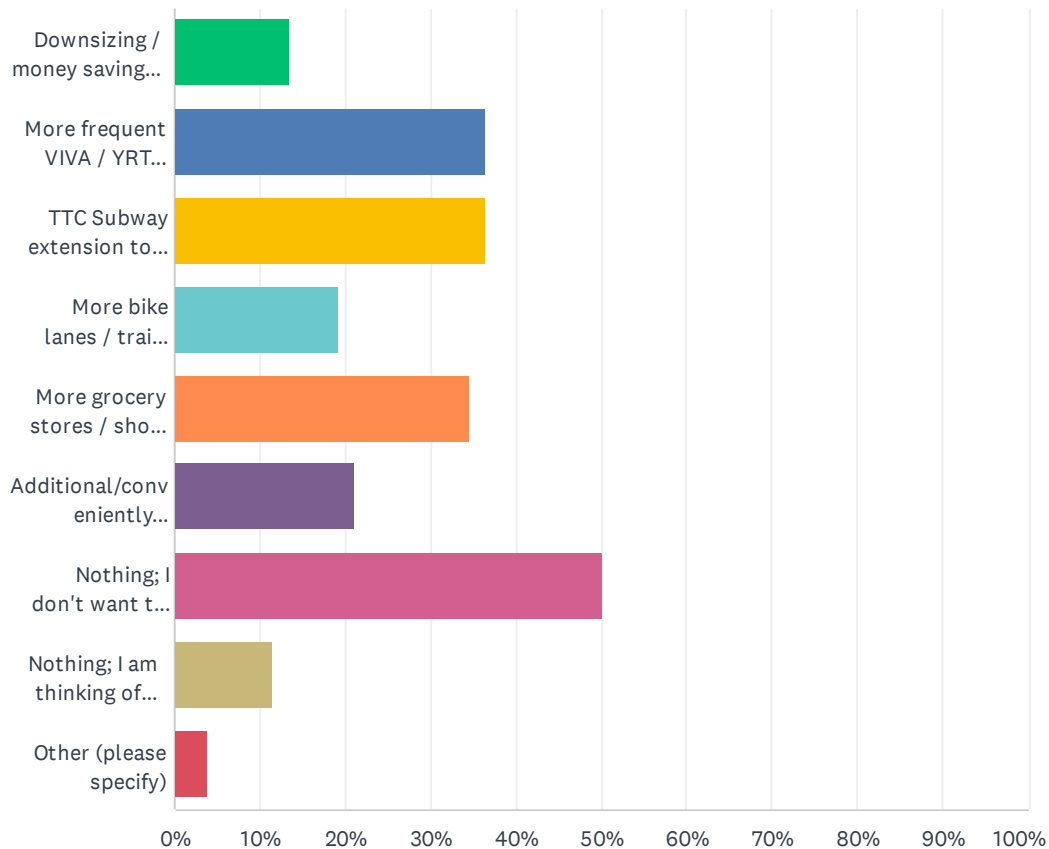
Answered: 52 Skipped: 51



ANSWER CHOICES	RESPONSES	
Zero	0.00%	0
One	17.31%	9
Two	23.08%	12
Three	19.23%	10
Four	26.92%	14
Five or More	13.46%	7
TOTAL		52

Q17 Which of the following would allow you to live, or continue to live without a vehicle in Richmond Hill? Select all that apply

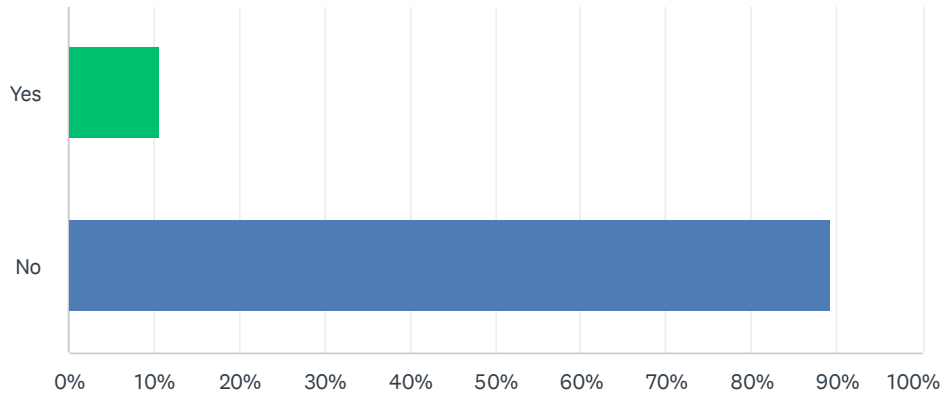
Answered: 52 Skipped: 51



ANSWER CHOICES	RESPONSES
Downsizing / money saving opportunities (i.e. not having to purchase a parking spot, ongoing car payments/maintenance)	13.46% 7
More frequent VIVA / YRT transit service	36.54% 19
TTC Subway extension to Richmond Hill	36.54% 19
More bike lanes / trail connections	19.23% 10
More grocery stores / shops / restaurants / schools / jobs / etc within walking or biking distance	34.62% 18
Additional/conveniently located mobility options (e.g. car rental, car share, shuttle buses, public e-scooters, etc.)	21.15% 11
Nothing; I don't want to get rid of any of my vehicles.	50.00% 26
Nothing; I am thinking of getting another vehicle.	11.54% 6
Other (please specify)	3.85% 2
Total Respondents: 52	

Q18 Do you own a business within Richmond Hill?

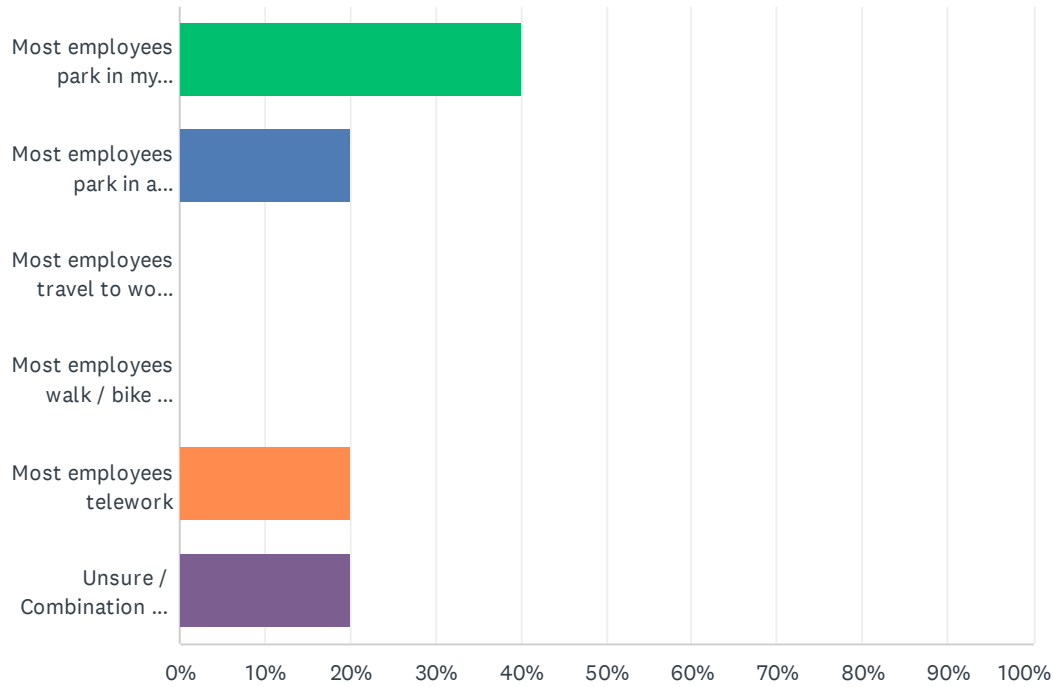
Answered: 93 Skipped: 10



ANSWER CHOICES	RESPONSES	
Yes	10.75%	10
No	89.25%	83
TOTAL		93

Q19 Under typical conditions (i.e. prior to COVID-19) how do most of your employees typically get to work?

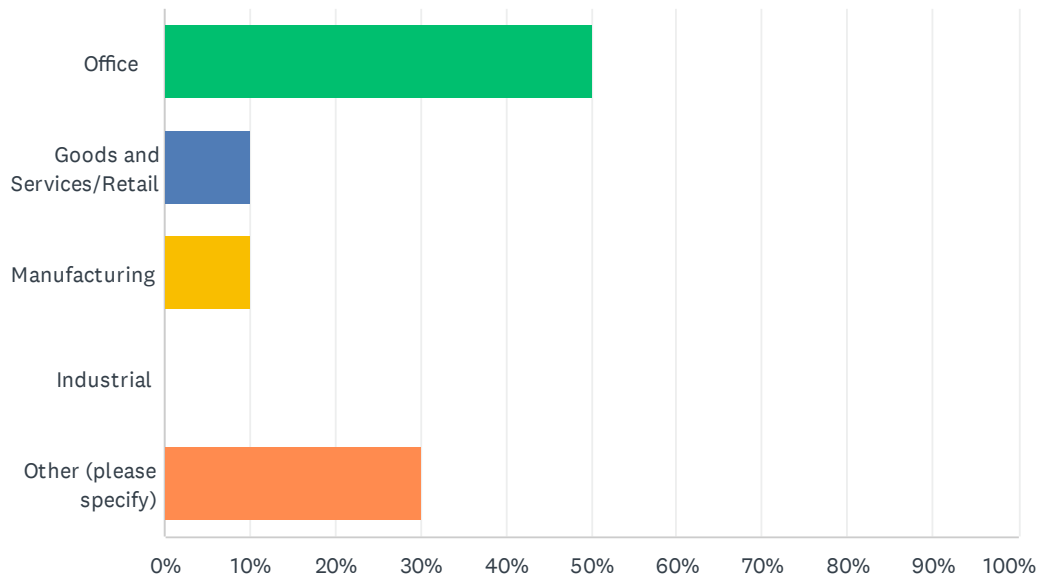
Answered: 10 Skipped: 93



ANSWER CHOICES	RESPONSES	
Most employees park in my business's parking lot	40.00%	4
Most employees park in a nearby parking lot / on street	20.00%	2
Most employees travel to work via transit	0.00%	0
Most employees walk / bike to work	0.00%	0
Most employees telework	20.00%	2
Unsure / Combination of above	20.00%	2
TOTAL		10

Q20 What type of business do you have?

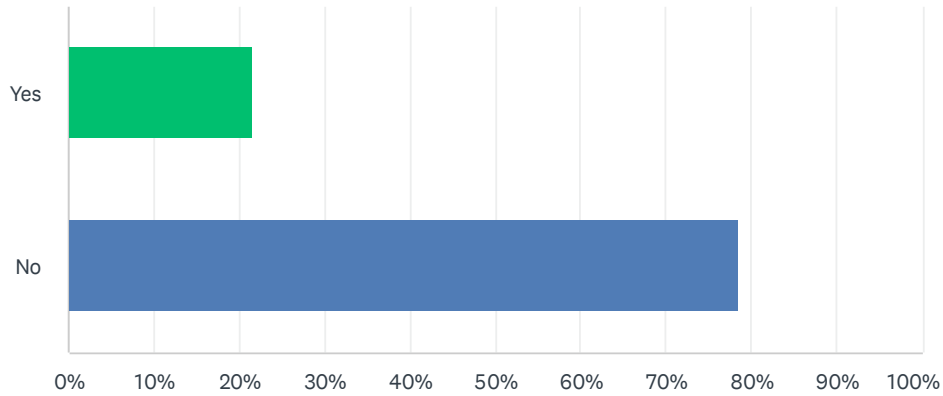
Answered: 10 Skipped: 93



ANSWER CHOICES	RESPONSES	
Office	50.00%	5
Goods and Services/Retail	10.00%	1
Manufacturing	10.00%	1
Industrial	0.00%	0
Other (please specify)	30.00%	3
TOTAL		10

Q21 Would you consider opening a new business located within Richmond Hill in the future?

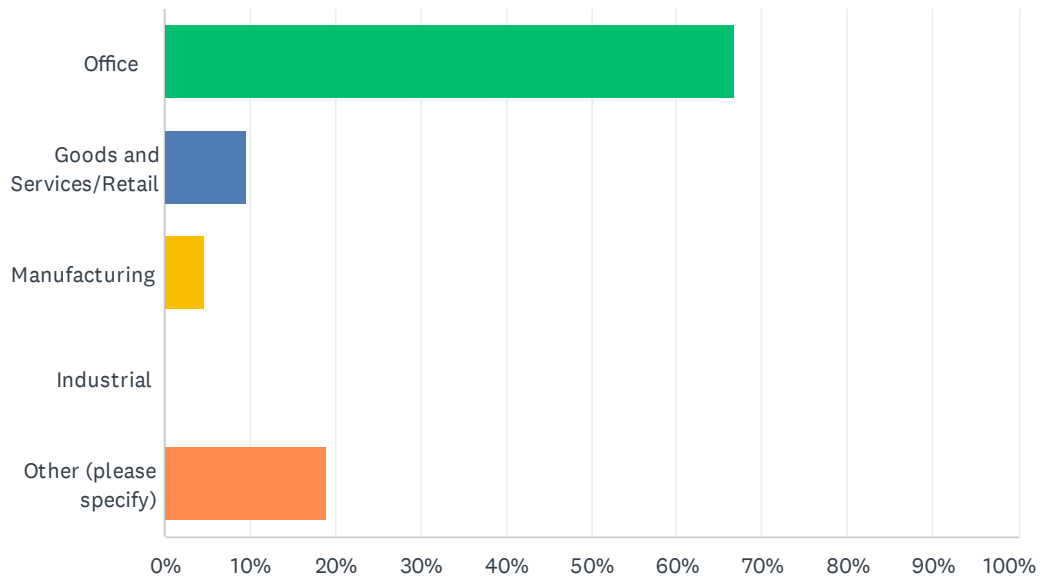
Answered: 93 Skipped: 10



ANSWER CHOICES	RESPONSES	
Yes	21.51%	20
No	78.49%	73
TOTAL		93

Q22 What type of business would you open?

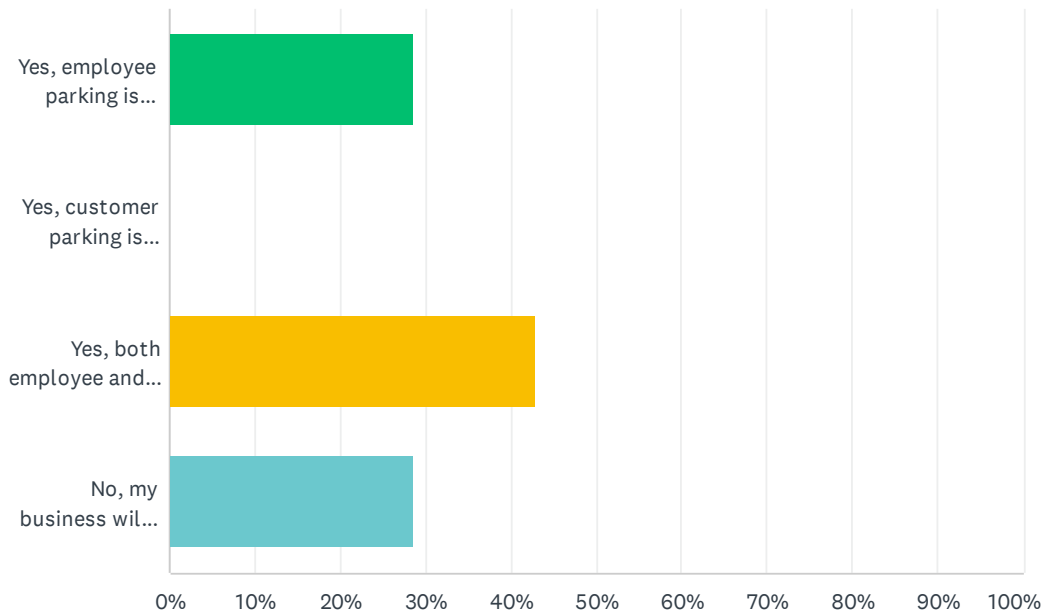
Answered: 21 Skipped: 82



ANSWER CHOICES	RESPONSES	
Office	66.67%	14
Goods and Services/Retail	9.52%	2
Manufacturing	4.76%	1
Industrial	0.00%	0
Other (please specify)	19.05%	4
TOTAL		21

Q23 Would your business rely heavily on parking availability?

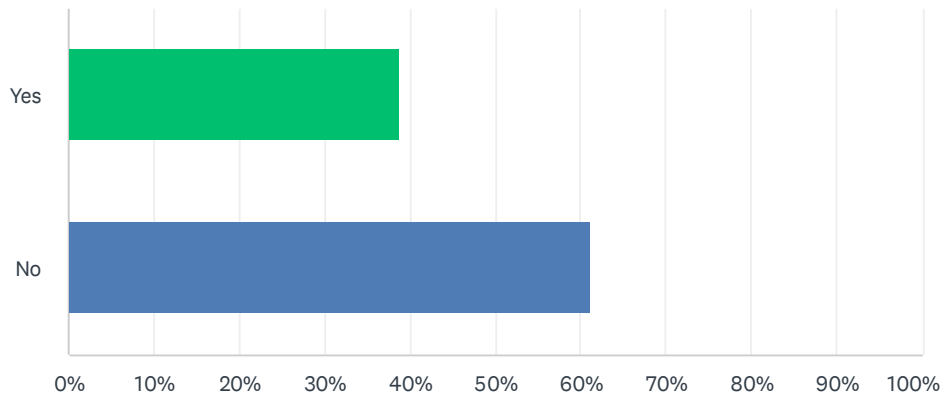
Answered: 21 Skipped: 82



ANSWER CHOICES	RESPONSES	
Yes, employee parking is critical	28.57%	6
Yes, customer parking is critical	0.00%	0
Yes, both employee and customer parking is critical	42.86%	9
No, my business will not be heavily reliant on parking availability	28.57%	6
TOTAL		21

Q24 Do you currently work within Richmond Hill?

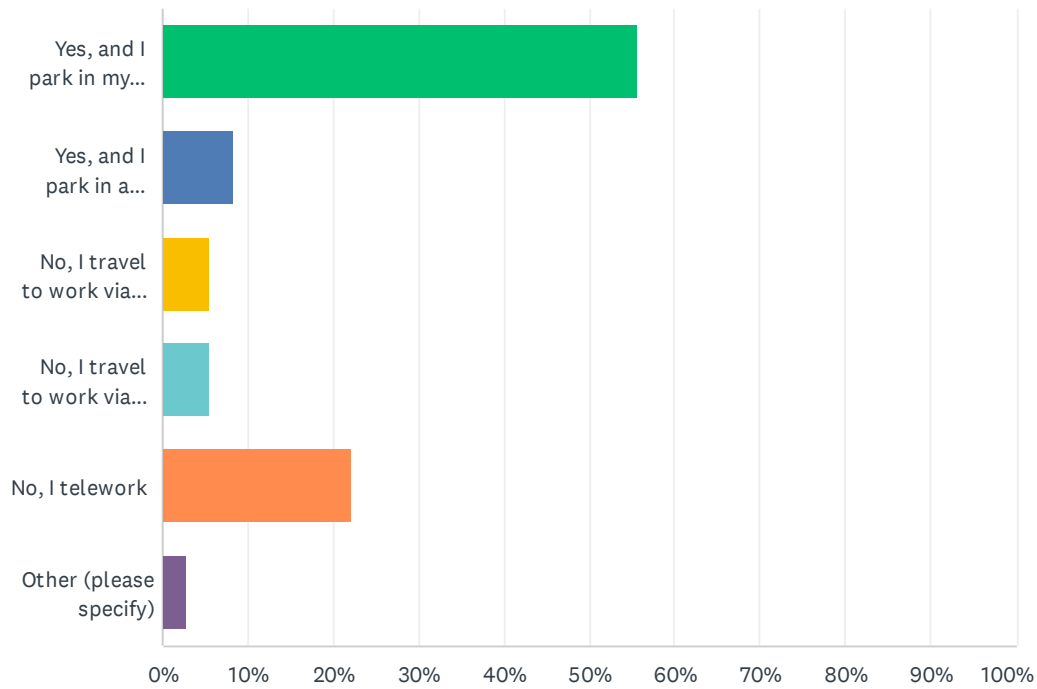
Answered: 93 Skipped: 10



ANSWER CHOICES	RESPONSES	
Yes	38.71%	36
No	61.29%	57
TOTAL		93

Q25 Under typical conditions (i.e. prior to COVID-19) did/do you drive to work?

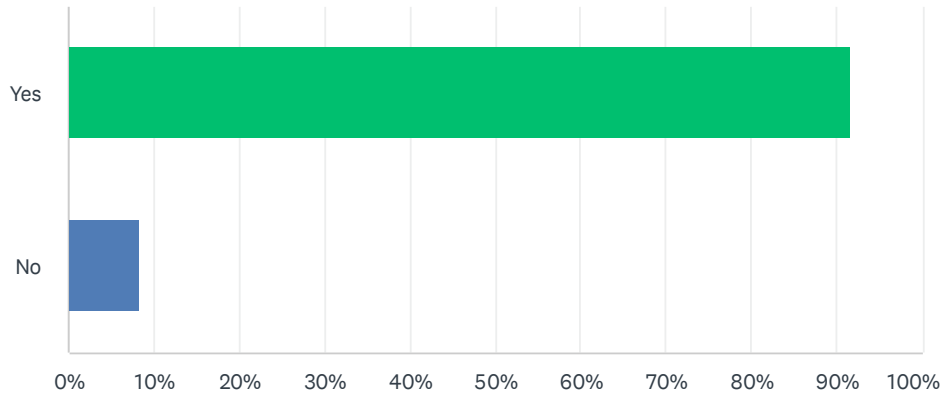
Answered: 36 Skipped: 67



ANSWER CHOICES	RESPONSES	
Yes, and I park in my employer's parking lot	55.56%	20
Yes, and I park in a nearby parking lot / on street	8.33%	3
No, I travel to work via transit	5.56%	2
No, I travel to work via walking / biking	5.56%	2
No, I telework	22.22%	8
Other (please specify)	2.78%	1
TOTAL		36

Q26 Is this your preferred way to travel?

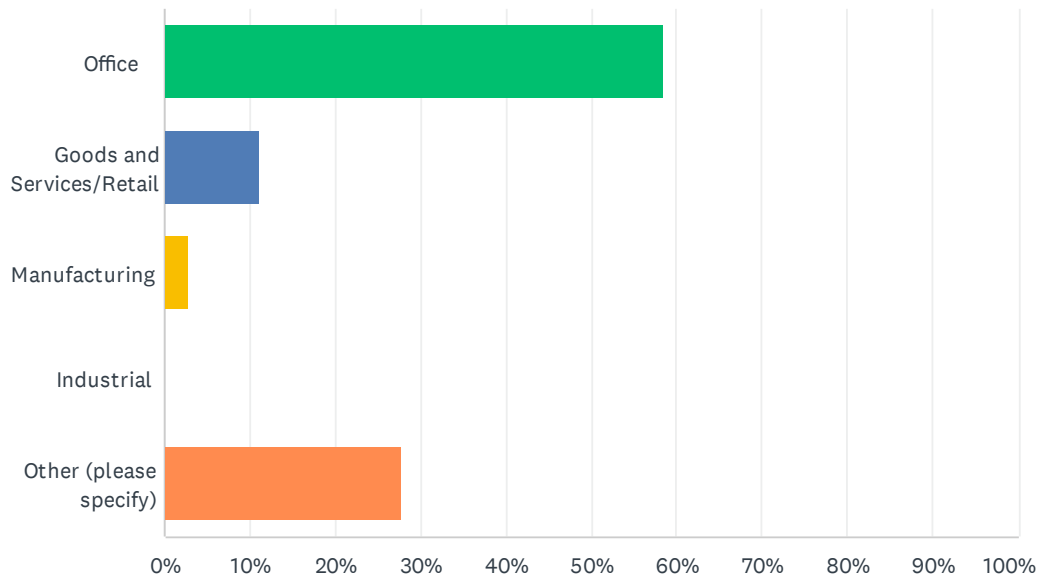
Answered: 36 Skipped: 67



ANSWER CHOICES	RESPONSES
Yes	91.67% 33
No	8.33% 3
TOTAL	36

Q27 What type of work do you do?

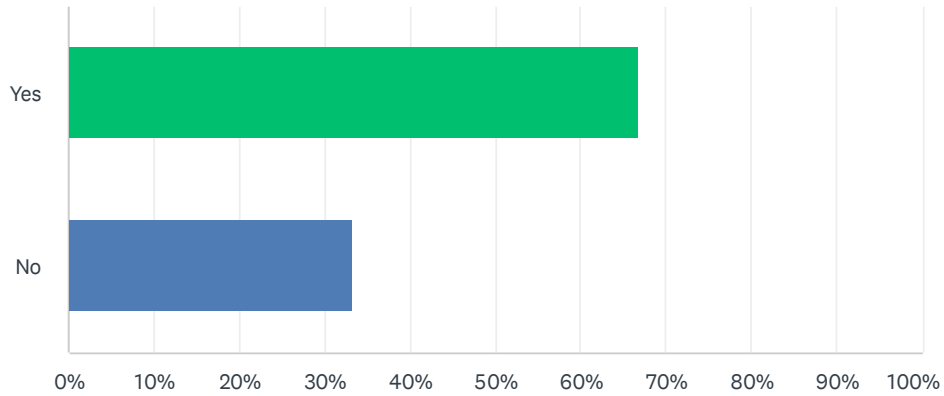
Answered: 36 Skipped: 67



ANSWER CHOICES	RESPONSES	
Office	58.33%	21
Goods and Services/Retail	11.11%	4
Manufacturing	2.78%	1
Industrial	0.00%	0
Other (please specify)	27.78%	10
TOTAL		36

Q28 Would you consider applying for a job located within Richmond Hill in the future?

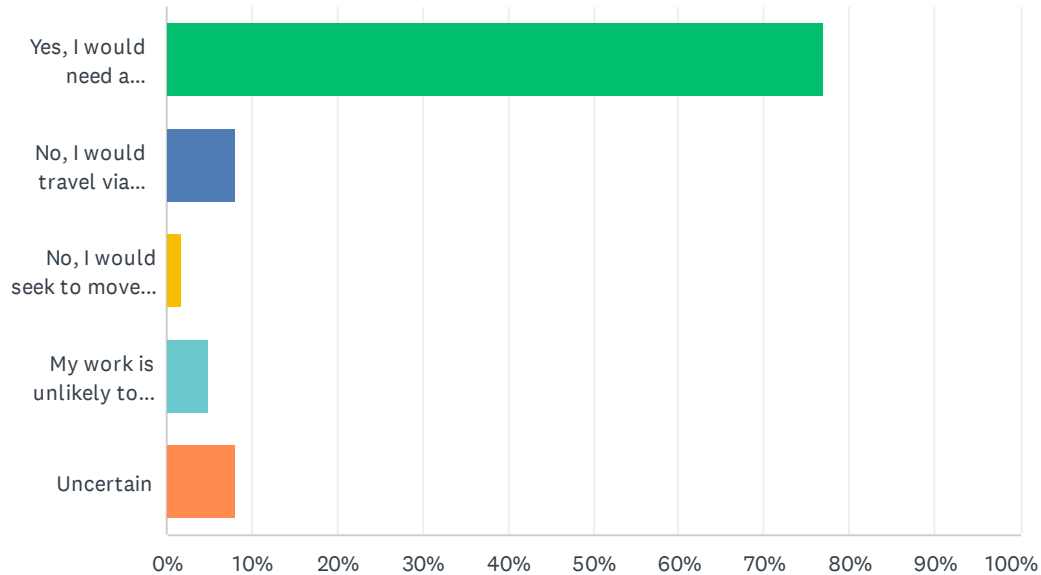
Answered: 93 Skipped: 10



ANSWER CHOICES	RESPONSES	
Yes	66.67%	62
No	33.33%	31
TOTAL		93

Q29 If your future job required you to attend in person, would you consistently require a parking space?

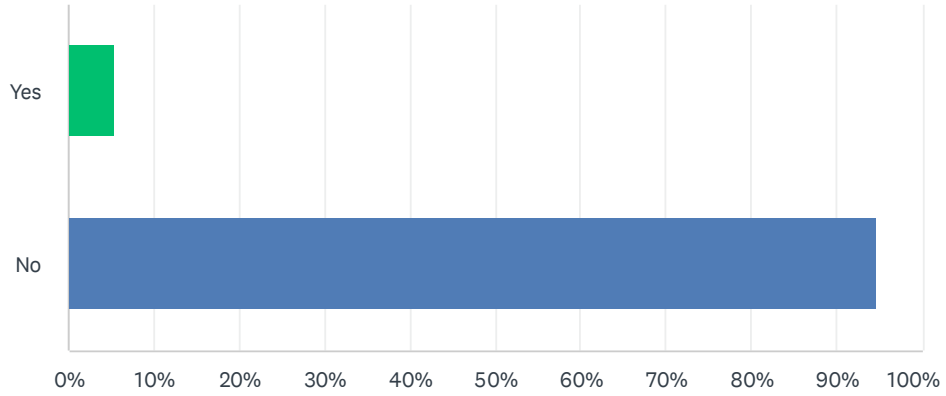
Answered: 61 Skipped: 42



ANSWER CHOICES	RESPONSES	
Yes, I would need a consistent parking space	77.05%	47
No, I would travel via transit	8.20%	5
No, I would seek to move close to my place of work and walk or bike.	1.64%	1
My work is unlikely to require that I attend on a consistent basis.	4.92%	3
Uncertain	8.20%	5
TOTAL		61

Q30 Do you currently own or lease a plug-in electric vehicle (i.e., plug-in hybrid or fully-electric)?

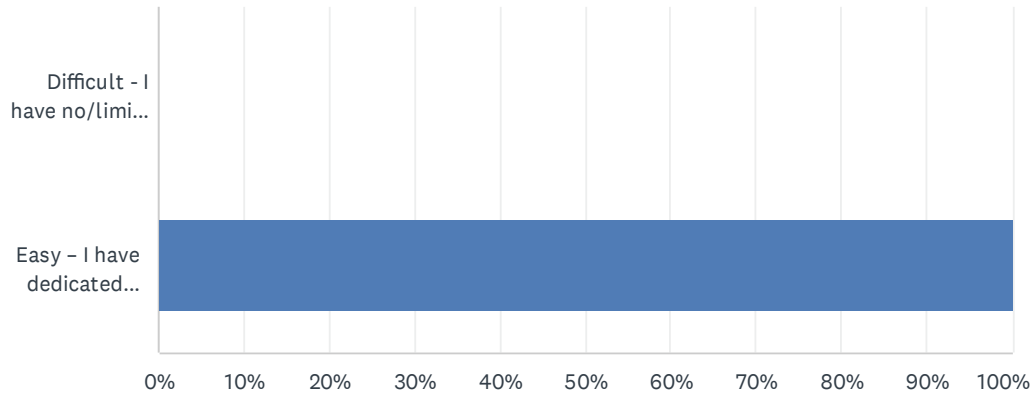
Answered: 95 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes	5.26%	5
No	94.74%	90
TOTAL		95

Q31 How easily can you currently charge your plug-in EV at home?

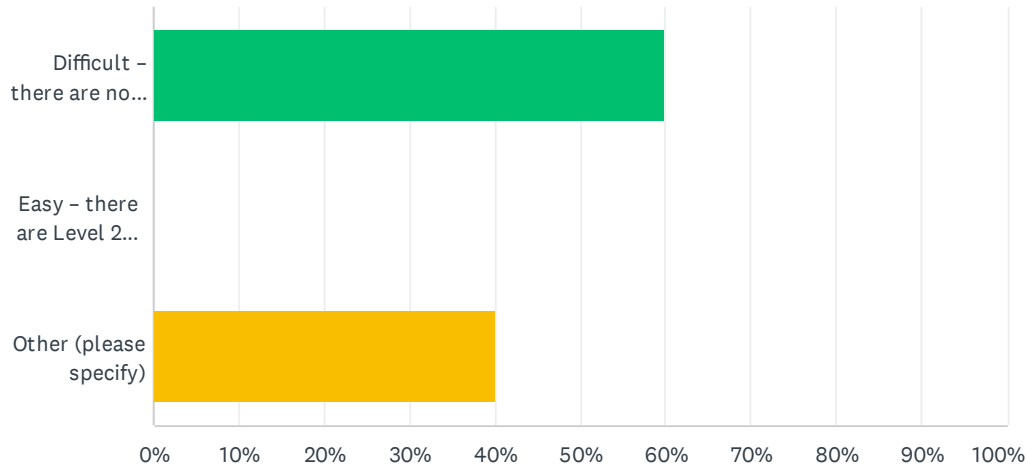
Answered: 4 Skipped: 99



ANSWER CHOICES	RESPONSES	
Difficult - I have no/limited access to a Level 2 charge station at my home.	0.00%	0
Easy – I have dedicated access to a Level 2 charge station at my home.	100.00%	4
TOTAL		4

Q32 How easily can you currently charge your plug-in EV away from home, within Richmond Hill?

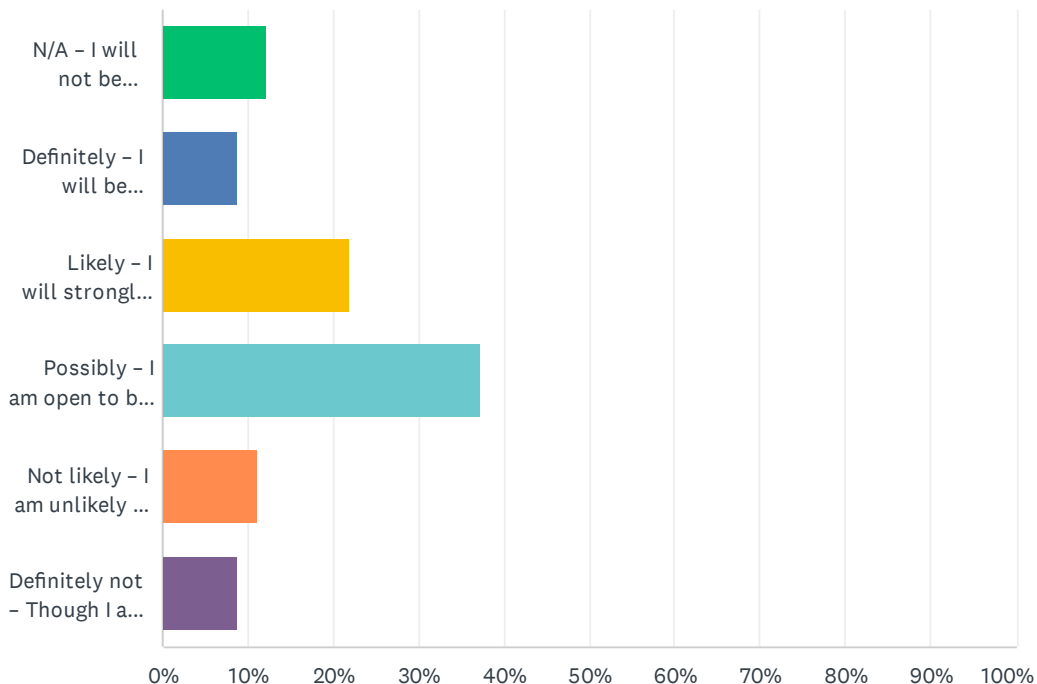
Answered: 5 Skipped: 98



ANSWER CHOICES	RESPONSES	
Difficult – there are no or few Level 2 charge stations at the destinations (shopping centres, place of employment etc.) I frequent most within the City.	60.00%	3
Easy – there are Level 2 charge stations at several of the destinations I frequent most within the City.	0.00%	0
Other (please specify)	40.00%	2
TOTAL		5

Q33 If you plan to purchase or lease your first/next vehicle within the next five years, how likely are you to select a plug-in hybrid or fully-electric vehicle (EV)?

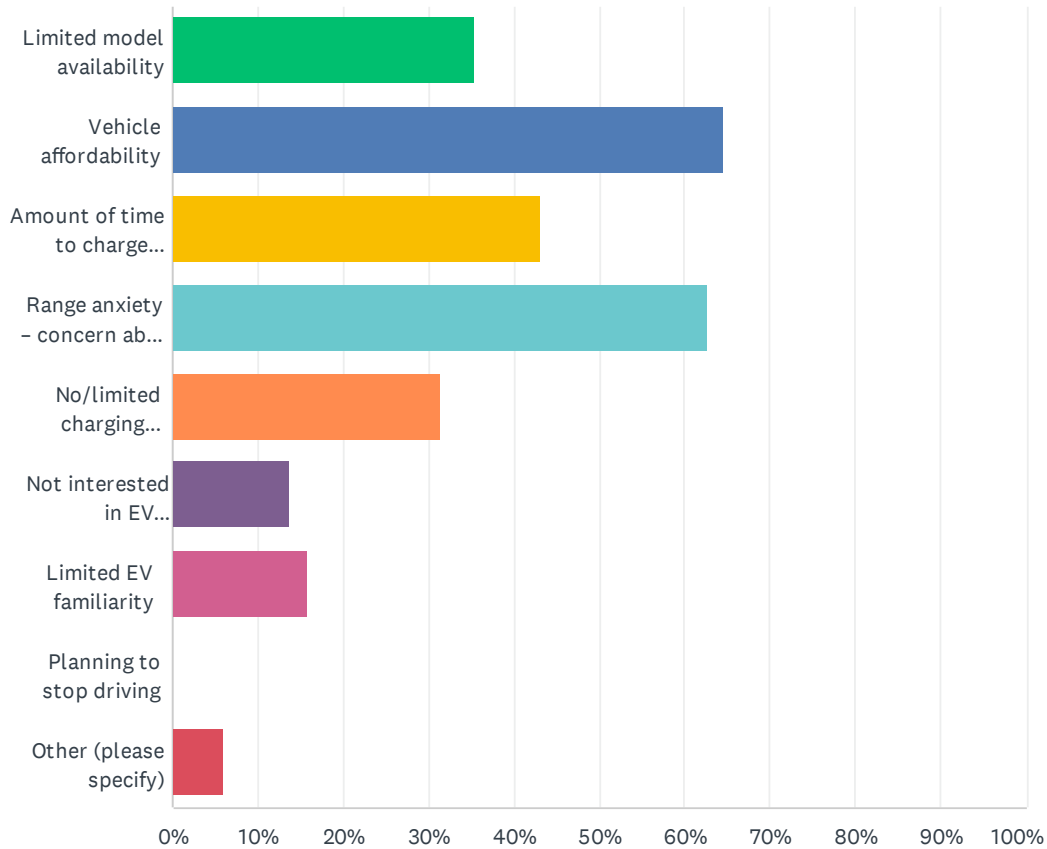
Answered: 91 Skipped: 12



ANSWER CHOICES	RESPONSES	
N/A – I will not be purchasing or leasing a vehicle in the next five years.	12.09%	11
Definitely – I will be selecting a plug-in EV for my first/next vehicle.	8.79%	8
Likely – I will strongly consider a plug-in EV for my first/next vehicle.	21.98%	20
Possibly – I am open to but not sure about the possibility of a plug-in EV.	37.36%	34
Not likely – I am unlikely to select a plug-in EV for my first/next vehicle.	10.99%	10
Definitely not – Though I am likely to purchase or lease a vehicle within the next five years, it will not be a plug-in EV	8.79%	8
TOTAL		91

Q34 Please explain what factors you considered in responding to the last question (Select all that apply).

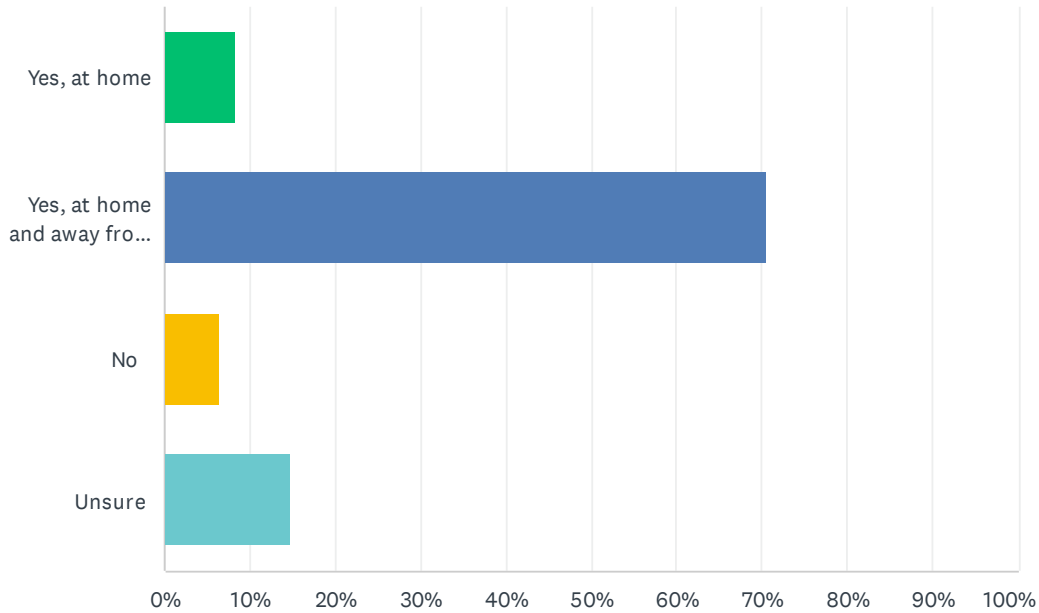
Answered: 51 Skipped: 52



ANSWER CHOICES	RESPONSES	
Limited model availability	35.29%	18
Vehicle affordability	64.71%	33
Amount of time to charge vehicle	43.14%	22
Range anxiety – concern about being stranded	62.75%	32
No/limited charging availability at home	31.37%	16
Not interested in EV technology / preference for internal combustion engine vehicles	13.73%	7
Limited EV familiarity	15.69%	8
Planning to stop driving	0.00%	0
Other (please specify)	5.88%	3
Total Respondents: 51		

Q35 Should Richmond Hill be a city where someone can always charge an EV?

Answered: 95 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes, at home	8.42%	8
Yes, at home and away from home	70.53%	67
No	6.32%	6
Unsure	14.74%	14
TOTAL		95

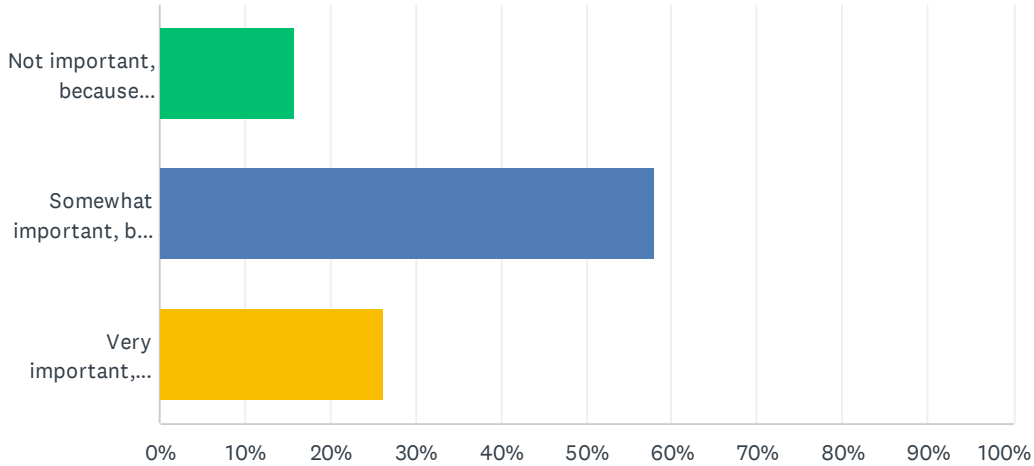
Q36 Please provide any additional feedback or input you would like to share regarding Parking and Transportation Demand Management in Richmond Hill.

Answered: 33 Skipped: 70

Appendix C
Developer Survey #1 – High Level Directions
(September 2021)
Results Summary

Q1 Based on market research, how important is it to provide motor vehicle parking in Richmond Hill Regional Centre (Yonge North Subway Extension, Urban Growth Centre)?

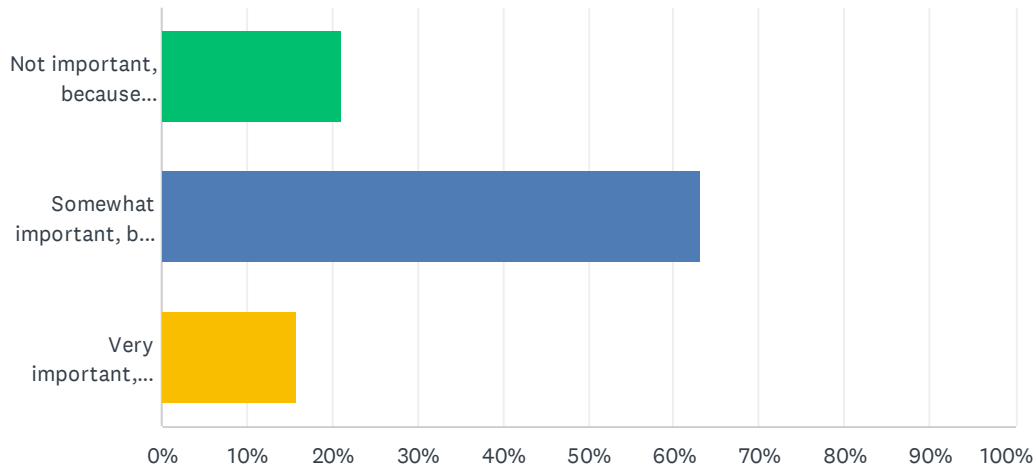
Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES	
Not important, because mobility options such as transit, cycling and walking within this area should be just as, or more, convenient.	15.79%	3
Somewhat important, but parking availability should be limited to discourage driving within this area and to encourage other convenient mobility options such as transit, cycling and walking	57.89%	11
Very important, driving in this area of Richmond Hill will be a reality for the foreseeable future.	26.32%	5
TOTAL		19

Q2 Based on market research, how important is it to provide motor vehicle parking in Key Development Areas and Major Transit Station Areas (i.e. Yonge Street and Carrville)?

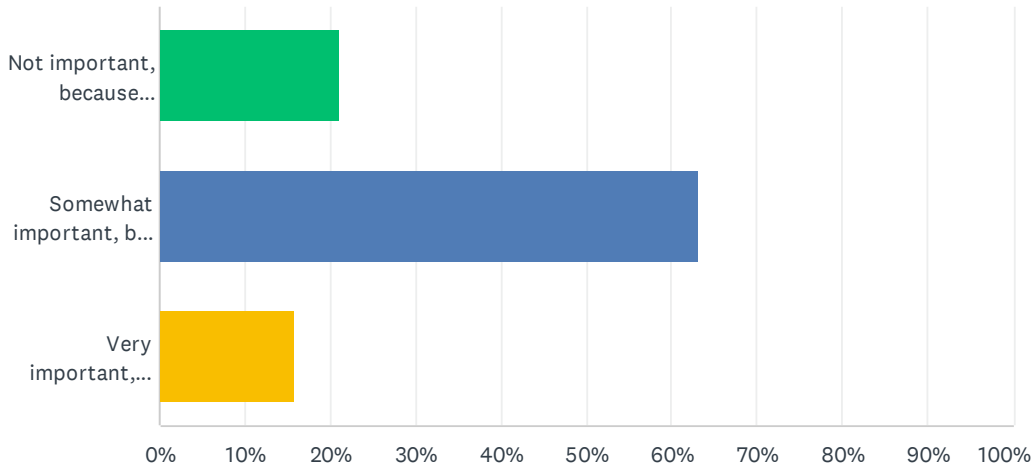
Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES	
Not important, because mobility options such as transit, cycling and walking within this area should be just as, or more, convenient.	21.05%	4
Somewhat important, but parking availability should be limited to discourage driving within this area and to encourage other convenient mobility options such as transit, cycling and walking	63.16%	12
Very important, driving in this area of Richmond Hill will be a reality for the foreseeable future.	15.79%	3
TOTAL		19

Q3 Based on market research, how important is it to provide motor vehicle parking in areas along Highway 7 (rapid transit corridor, Regional corridor)?

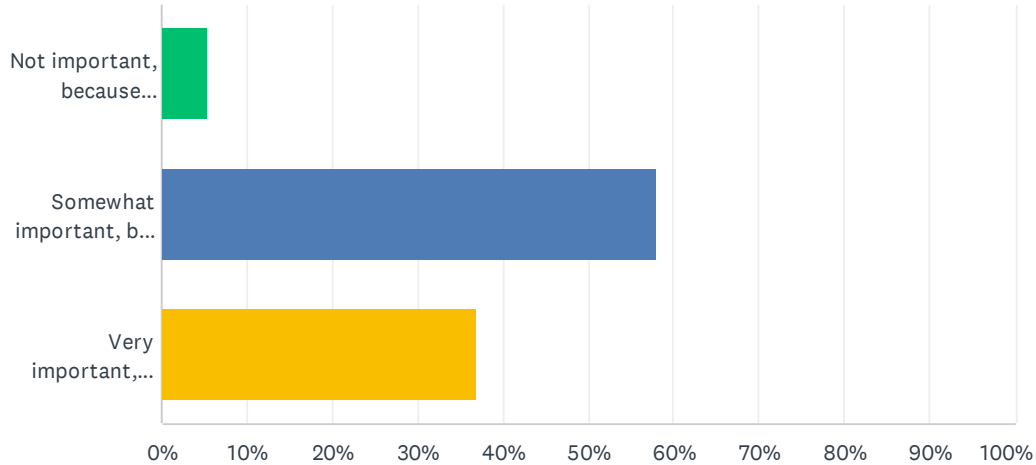
Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES
Not important, because mobility options such as transit, cycling and walking within this area should be just as, or more, convenient.	21.05% 4
Somewhat important, but parking availability should be limited to discourage driving within this area and to encourage other convenient mobility options such as transit, cycling and walking	63.16% 12
Very important, driving in this area of Richmond Hill will be a reality for the foreseeable future.	15.79% 3
TOTAL	19

Q4 Based on market research, how important is it to provide motor vehicle parking in the remainder of the City?

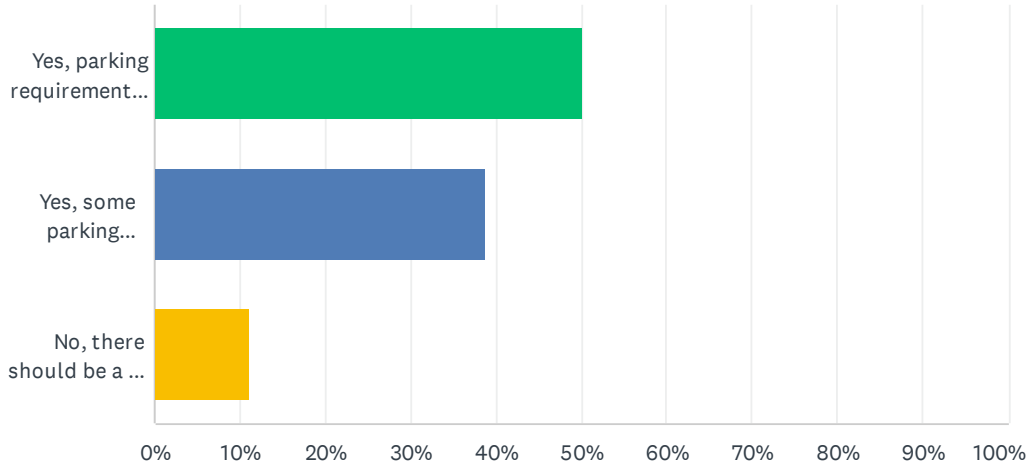
Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES	
Not important, because mobility options such as transit, cycling and walking within this area should be just as, or more, convenient.	5.26%	1
Somewhat important, but parking availability should be limited to discourage driving within this area and to encourage other convenient mobility options such as transit, cycling and walking.	57.89%	11
Very important, driving in this area of Richmond Hill will be a reality for the foreseeable future.	36.84%	7
TOTAL		19

Q5 Where supported by data, should parking requirement reductions be considered as a means to enable affordable housing development?

Answered: 18 Skipped: 1



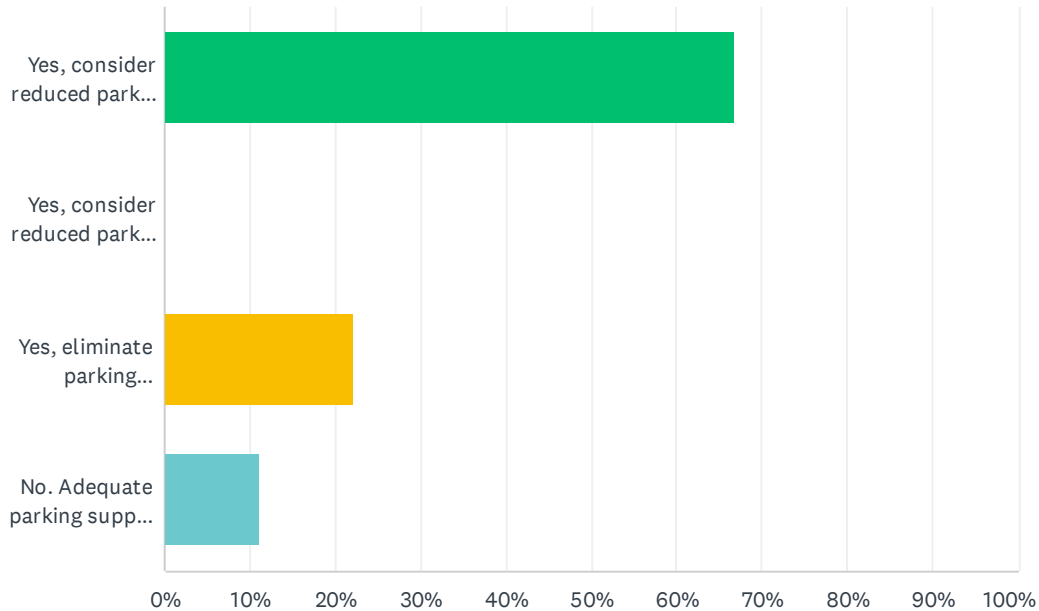
ANSWER CHOICES	RESPONSES	
Yes, parking requirement reductions should be considered up to and including zero parking to enable affordable housing development.	50.00%	9
Yes, some parking requirement reductions—but not zero parking—should be considered as a means to enable affordable housing development.	38.89%	7
No, there should be a set standard for parking requirements for all residential dwellings irrespective of the unit cost/rent price.	11.11%	2
TOTAL		18

Q6 (Optional) Describe if / how parking requirements have been a barrier to providing affordable housing. Provide location and context where applicable:[Comment box 2000 char]

Answered: 5 Skipped: 14

Q7 Should parking reductions be used as an incentive to encourage the development of any type of residential dwelling within Richmond Hill?

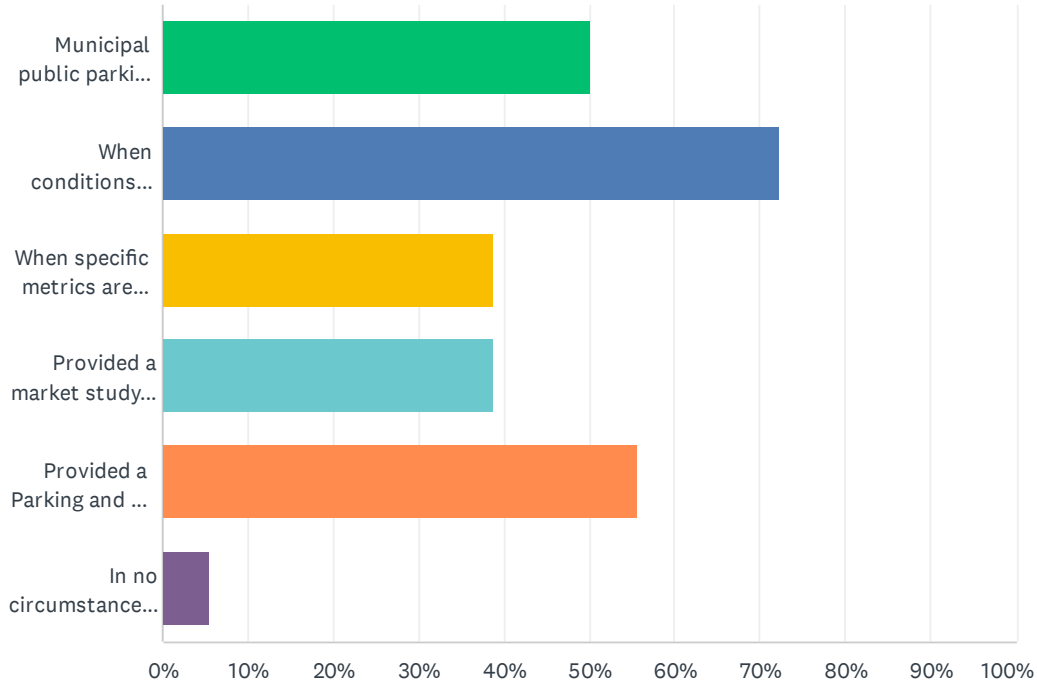
Answered: 18 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes, consider reduced parking minimums for all types of housing.	66.67%	12
Yes, consider reduced parking minimums, but for defined affordable housing only.	0.00%	0
Yes, eliminate parking minimums for defined affordable housing only, but allow some reductions for other types of housing depending on the area and location within Richmond Hill.	22.22%	4
No. Adequate parking supply is important for all households. Driving in Richmond Hill is a reality for the foreseeable future.	11.11%	2
TOTAL		18

Q8 Under what conditions should Richmond Hill consider eliminating minimum motor vehicle parking requirements? [select all that apply]

Answered: 18 Skipped: 1



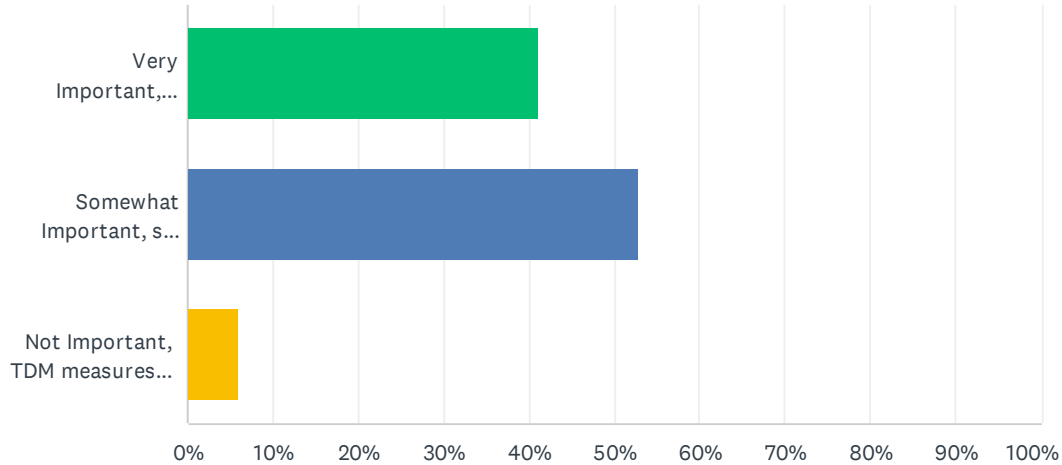
ANSWER CHOICES	RESPONSES	
Municipal public parking is available to capture spillover parking needs within the area.	50.00%	9
When conditions allow for the safe and convenient use of other mobility options (walking, cycling, transit, etc.).	72.22%	13
When specific metrics are achieved in particular areas (e.g., vehicle ownership drops below a certain level, mode shares targets are achieved, etc.).	38.89%	7
Provided a market study to determine parking needs is conducted as part of an application to approve variance against the more onerous By-law requirements.	38.89%	7
Provided a Parking and TDM study to determine parking needs is conducted as part of an application (part of the existing process).	55.56%	10
In no circumstances should the City consider eliminating motor vehicle parking requirements.	5.56%	1
Total Respondents: 18		

Q9 Please provide any additional further comments: [Comment box 2000 char]

Answered: 3 Skipped: 16

Q10 How important is it for TDM measures to be required for proposed developments?

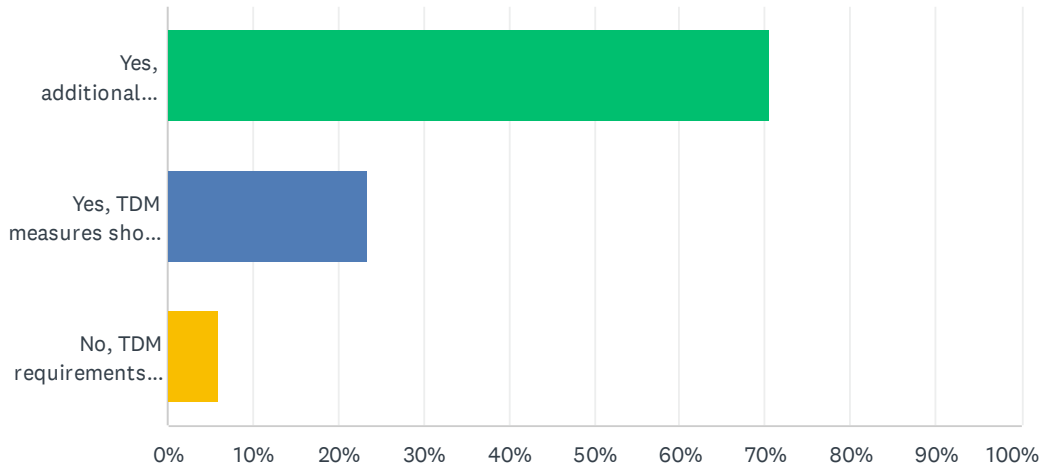
Answered: 17 Skipped: 2



ANSWER CHOICES	RESPONSES	
Very Important, on-site TDM measures should always be required so that other mobility options other than privately-owned motor vehicle use are encouraged (walking, cycling, micromobility, transit, car share, etc.).	41.18%	7
Somewhat Important, so that shifts in travel behaviour can be supported by existing and future service and infrastructure improvements.	52.94%	9
Not Important, TDM measures should be optional because privately-owned motor vehicle use will remain the best option for the foreseeable future.	5.88%	1
TOTAL		17

Q11 Should TDM measures be used to encourage and incentivize additional reductions in parking requirements?

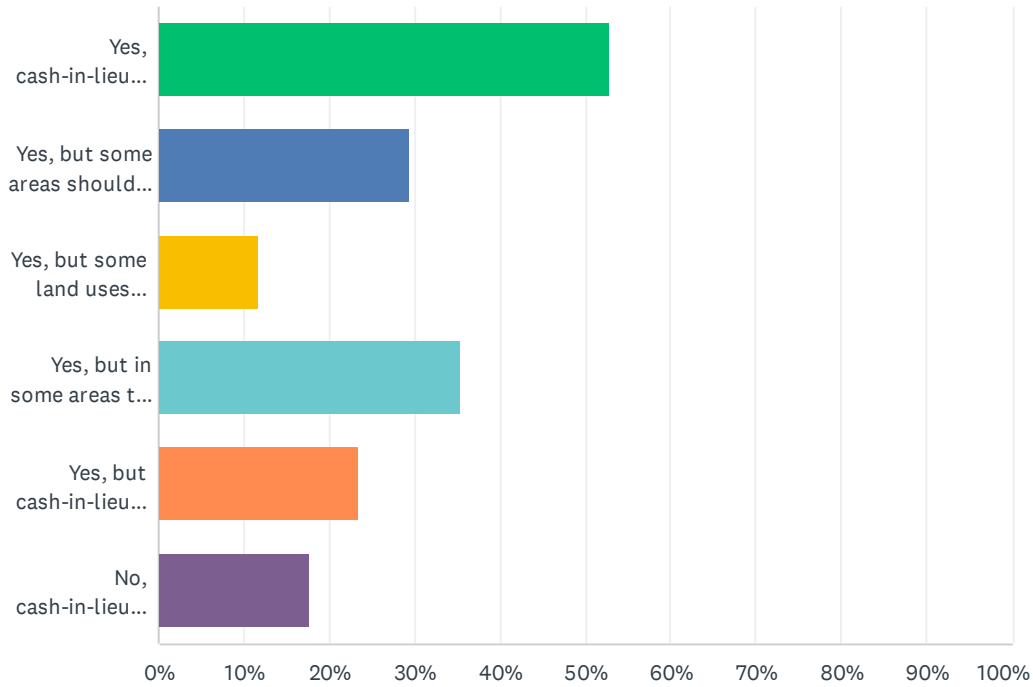
Answered: 17 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes, additional parking reductions should be used to encourage and incentivize additional TDM measures.	70.59%	12
Yes, TDM measures should be encouraged but not incentivized through parking reductions.	23.53%	4
No, TDM requirements should be mandatory.	5.88%	1
TOTAL		17

Q12 Should Richmond Hill allow for collection of cash-in-lieu of parking? [Select all that apply]

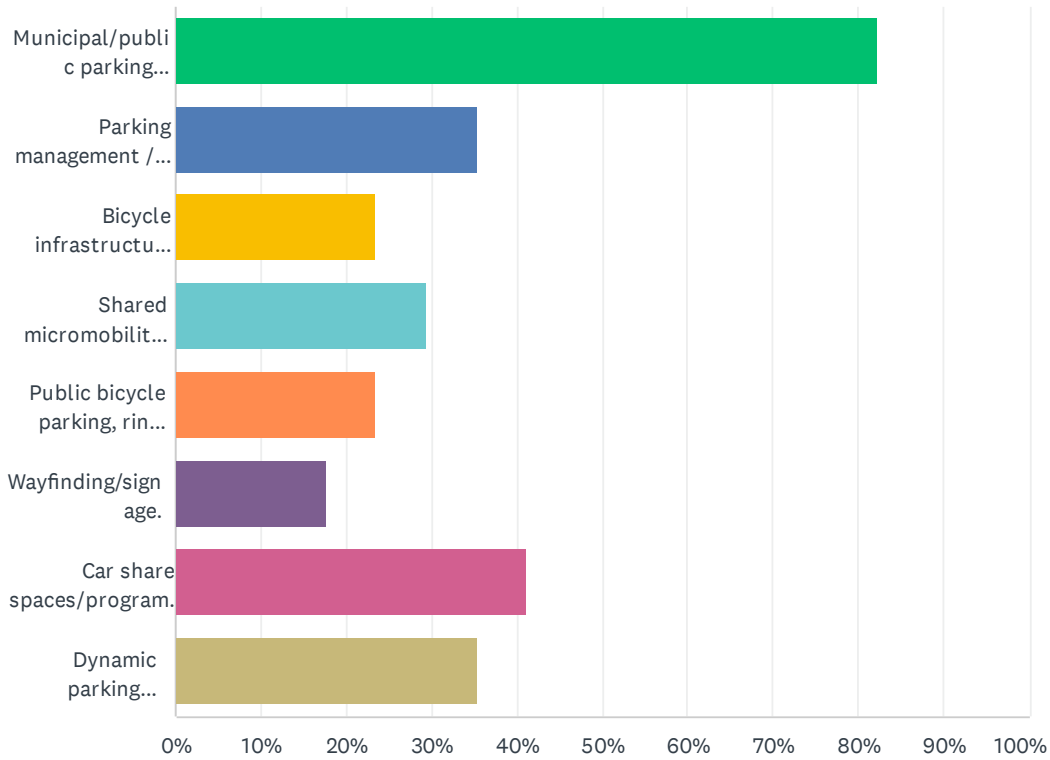
Answered: 17 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes, cash-in-lieu should always be considered as an option for addressing By-law variances.	52.94%	9
Yes, but some areas should be ineligible because they are auto-oriented.	29.41%	5
Yes, but some land uses should be ineligible because they are auto-oriented.	11.76%	2
Yes, but in some areas the reduction should be limited so that parking is not under-supplied.	35.29%	6
Yes, but cash-in-lieu should only be permitted when there is current or planned public parking.	23.53%	4
No, cash-in-lieu is inappropriate for addressing By-law variances.	17.65%	3
Total Respondents: 17		

Q13 How should cash-in-lieu funding be spent? [Select all that apply]

Answered: 17 Skipped: 2



ANSWER CHOICES	RESPONSES	
Municipal/public parking supply.	82.35%	14
Parking management / parking authority fees (future consideration).	35.29%	6
Bicycle infrastructure (bike lanes, multi-use paths, etc.).	23.53%	4
Shared micromobility services (bike share / scooter share, etc.).	29.41%	5
Public bicycle parking, ring and post, shelters, maintenance/tools.	23.53%	4
Wayfinding/signage.	17.65%	3
Car share spaces/program.	41.18%	7
Dynamic parking availability infrastructure.	35.29%	6
Total Respondents: 17		

Q14 [Optional] Describe the barriers to development which cash-in-lieu of parking (for TDM purposes, as described above) may be able to address:

Answered: 1 Skipped: 18

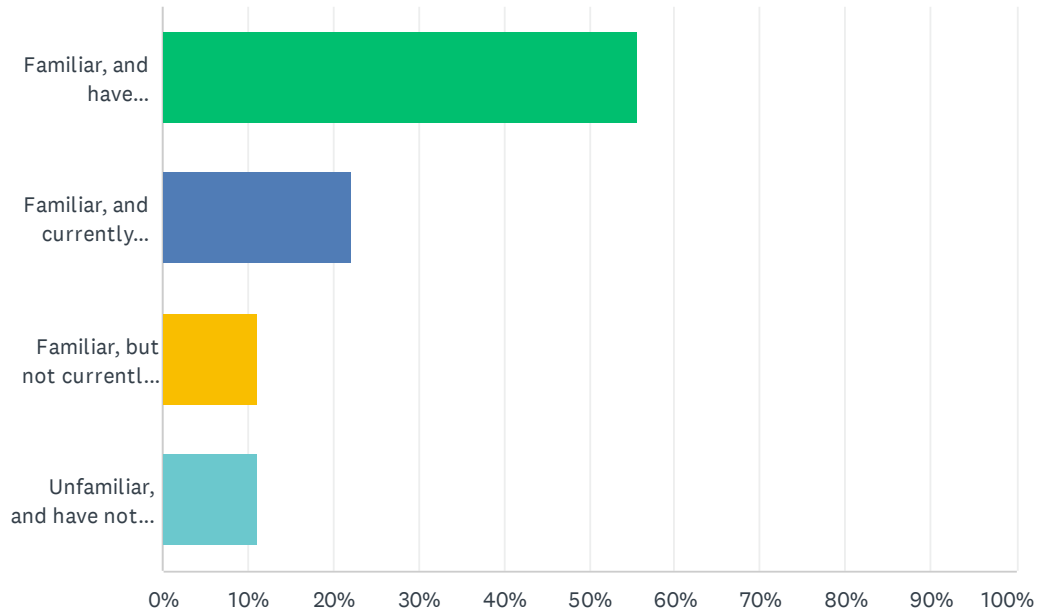
Q15 Would you like to leave a contact email for possible future follow-up?

Answered: 6 Skipped: 13

Appendix D
Developer Survey #2 – Electric Vehicles
(September 2021)
Results Summary

Q1 How familiar is your development firm with EVs and EV charging technologies?

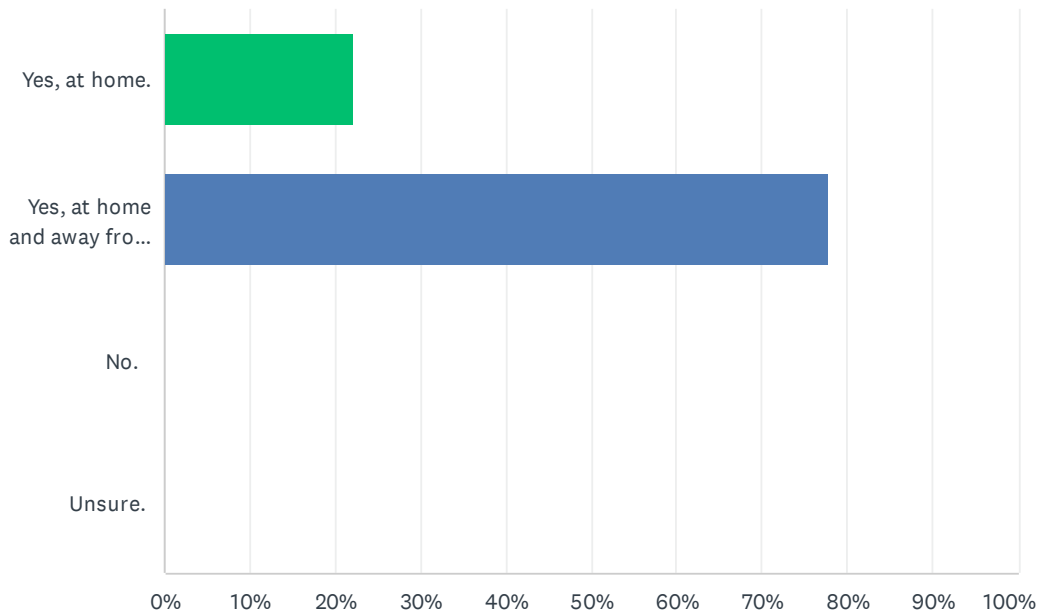
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Familiar, and have implemented EV charging stations within one or more developments.	55.56%	5
Familiar, and currently planning to implement EV charging stations within future developments.	22.22%	2
Familiar, but not currently planning to implement EV charging stations within future developments.	11.11%	1
Unfamiliar, and have not implemented EV charging stations within any developments.	11.11%	1
TOTAL		9

Q2 Should Richmond Hill be a City where you can always charge your EV?

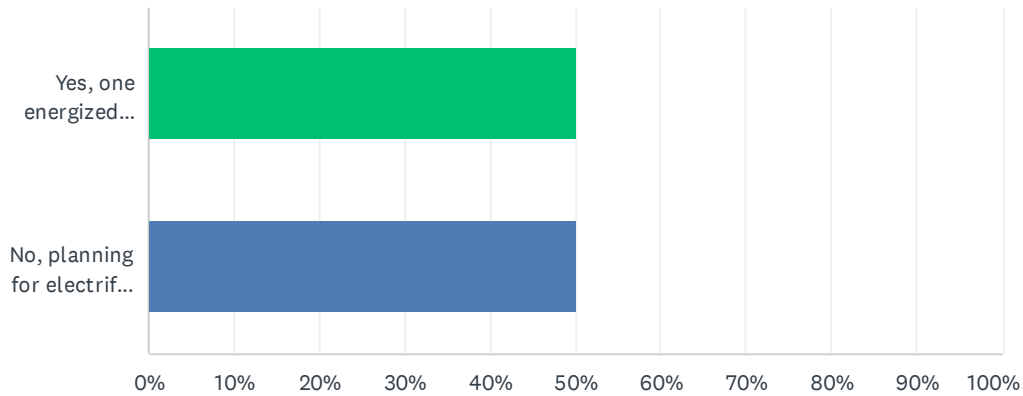
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes, at home.	22.22%	2
Yes, at home and away from home.	77.78%	7
No.	0.00%	0
Unsure.	0.00%	0
TOTAL		9

Q3 Should new single family homes, duplexes and street townhomes with private on-site residential parking spaces be required to provide EV Ready systems (i.e., electrification) for Level 2 charge stations?

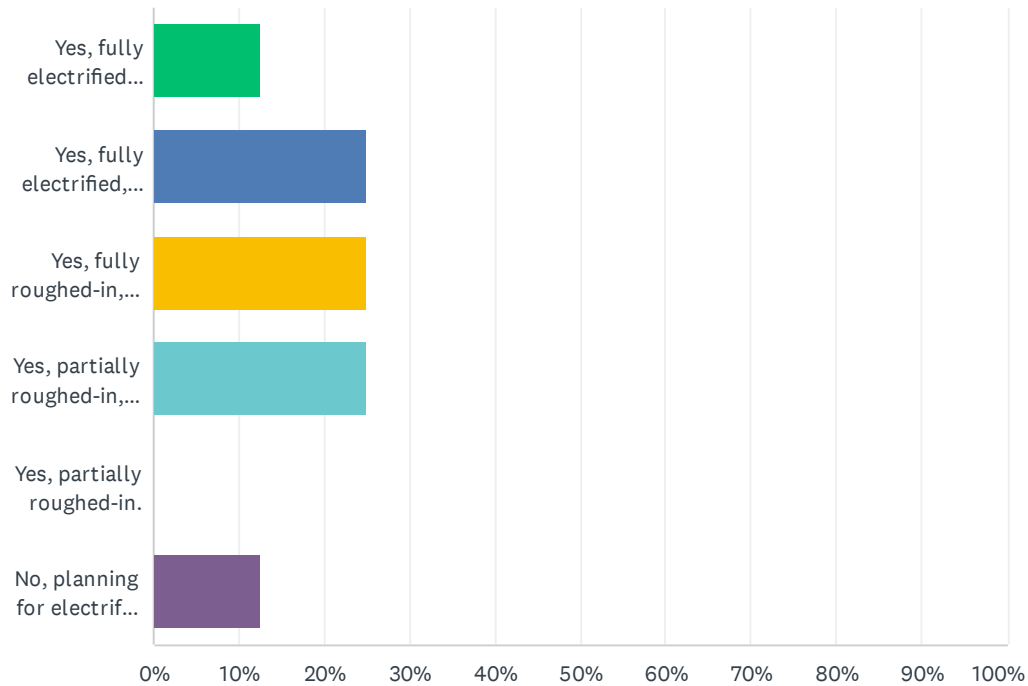
Answered: 8 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes, one energized outlet capable of providing Level 2 charging for each dwelling (can be shared between 2 EVs within a household), in line with international best practice.	50.00%	4
No, planning for electrified parking spaces for family homes, duplexes and street townhomes is not required.	50.00%	4
TOTAL		8

Q4 Should parking spaces at new multi-dwelling residential developments be required to provide EV Ready systems (i.e., electrification) for Level 2 charge stations? Examples include apartments and condominiums.

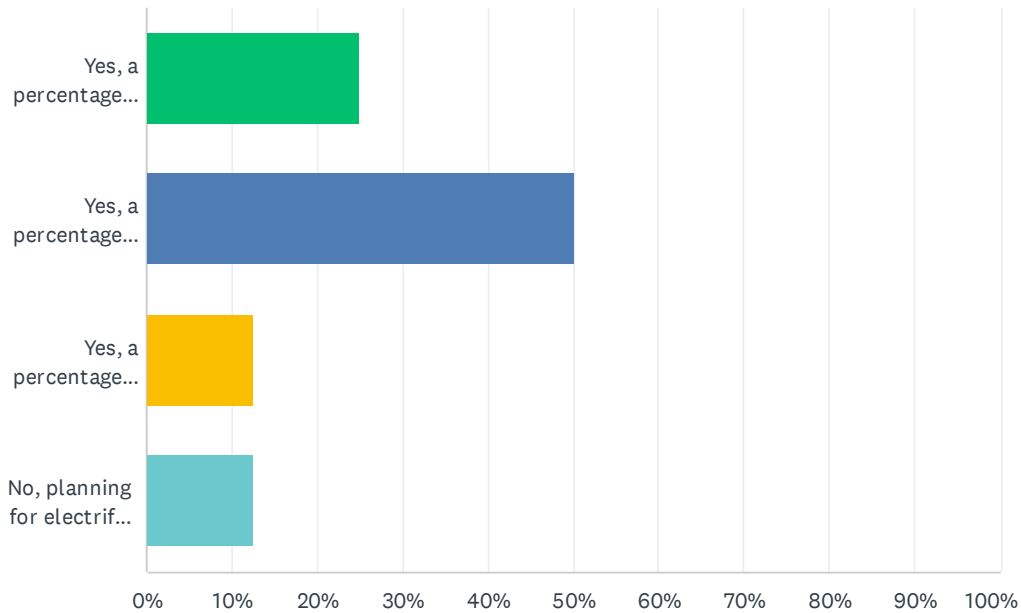
Answered: 8 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes, fully electrified with EVEMS, in line with international best practice.	12.50%	1
Yes, fully electrified, EVEMS optional.	25.00%	2
Yes, fully roughed-in, partially electrified.	25.00%	2
Yes, partially roughed-in, partially electrified.	25.00%	2
Yes, partially roughed-in.	0.00%	0
No, planning for electrified parking spaces for apartments and condominiums is not required.	12.50%	1
TOTAL		8

Q5 Should parking spaces at commercial-retail uses be required to provide EV Ready systems (i.e., electrification) for EVs? Examples include shopping centres and plazas.

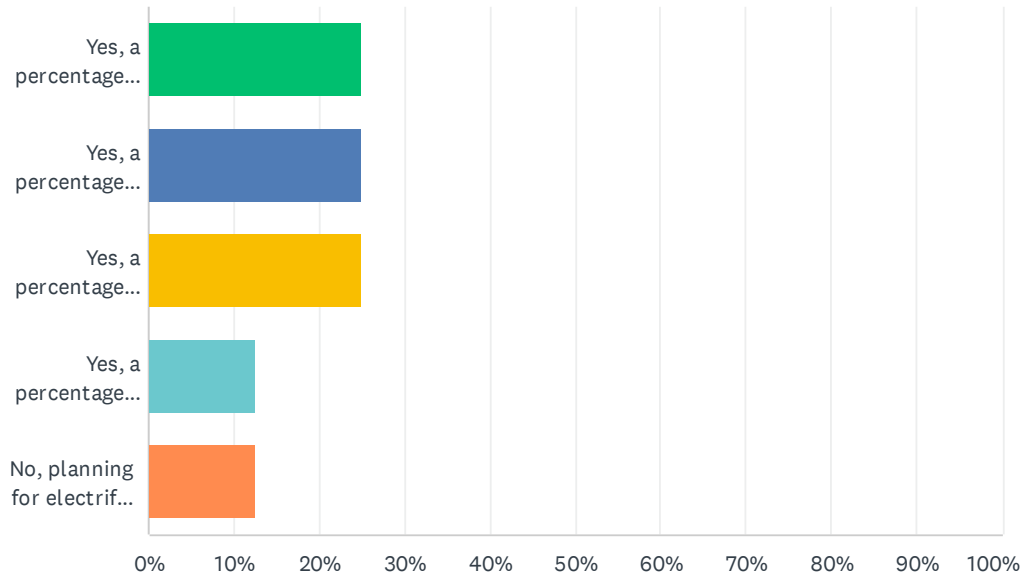
Answered: 8 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes, a percentage should be electrified, EVEMS optional, in line with international best practice.	25.00%	2
Yes, a percentage roughed-in, partially electrified.	50.00%	4
Yes, a percentage roughed-in.	12.50%	1
No, planning for electrified parking spaces at commercial-retail uses is not required.	12.50%	1
TOTAL		8

Q6 Should parking spaces at new employment uses such as offices be required to provide EV Ready systems (i.e., electrification) for EVs?

Answered: 8 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes, a percentage should be electrified with EVEMS, in line with international best practice.	25.00%	2
Yes, a percentage should be electrified, EVEMS optional.	25.00%	2
Yes, a percentage roughed-in, partially electrified.	25.00%	2
Yes, a percentage roughed-in.	12.50%	1
No, planning for electrified parking spaces at employment uses is not required.	12.50%	1
TOTAL		8

Q7 Would you like to leave a contact email for possible future follow-up?

Answered: 4 Skipped: 5

Appendix E

Minor Variance Request Summary

(2010-2021)

Table E1: Parking Rate Minor Variance Summary by Land Use

Application Number	Year	Spaces Required	Spaces Proposed	Difference	Required Rate	Proposed Rate	Status	Parking Strategy Area
Retail								
A022/12	2012	642	637	5 (0.8%)	4.7	4.7	Approved	Rest of Richmond Hill
A071/12	2012	2898	2500	398 (14%)	n/a	n/a	Approved	KDA (Yonge-16 th)
Restaurant								
A023/16	2012	120	70	50 (42%)	4.3	2.5	Approved	Rest of Richmond Hill
A045/11	2011	1604	1601	3 (0.2%)	n/a	n/a	Approved	Business Parks
A045/16	2016	575	565	10 (2%)	n/a	n/a	Approved	Business Parks
A087/14	2014	107	97	10 (9%)	14	n/a	Approved	Rest of Richmond Hill
Office								
A011/10	2010	7	5	2 (29%)	n/a	n/a	Approved	Downtown Local Centre
A029/12	2013	356	351	5 (1%)	3.2	3.2	Approved	Business Park (Newkirk)
A034/12	2013	354	351	3 (0.8%)	3.2	3.2	Approved	Business Park (Newkirk)
A041/19	2019	64	31	33 (52%)	n/a	n/a	Approved	Business Parks
A043/16	2016	188	140	48 (26%)	n/a	n/a	Withdrawn	Business Parks
A049/16	2016	99	88	11 (11%)	n/a	n/a	Approved	Business Parks
A060/18	2018	38	31	7 (18%)	3.2	2	Approved	Rest of Richmond Hill
A067/13 - Phase 1	2013	518	334	184 (36%)	n/a	n/a	Approved	Business Parks
A067/13 - Phase 2	2013	565	399	166 (29%)	n/a	n/a	Approved	Business Parks
A102/15	2015	355	321	4 (1%)	3.2	3.2	Approved	Business Park (Newkirk)
Office & Retail								
A054/12	2012	2	1	1 (50%)	n/a	n/a	Approved	Downtown Local Centre
A082/11	2011	67	40	27 (40%)	3.2	1.9	Approved	Rest of Richmond Hill
Medical Offices								
A001/11	2011	452	440	12 (3%)	5.4	5.2	Approved	Business Parks

Application Number	Year	Spaces Required	Spaces Proposed	Difference	Required Rate	Proposed Rate	Status	Parking Strategy Area
A047/15	2015	181	177	4 (2%)	Shopping centre: 4.3; Medical Offices: 5.4	n/a	Approved	Rest of Richmond Hill
A059/10	2010	182	141	41 (23%)	n/a	n/a	Approved	Rest of Richmond Hill
A065/19	2019	448	443	15 (3%)	5.4	5.2	Approved	Business Parks
A067/16	2016	263	259	4 (2%)	n/a	n/a	Approved	Business Parks
A044/11	2011	4.3	3.1	1.2 (28%)	3.2	2.3	Approved	Rest of Richmond Hill
Day Nursery								
A118/14	2014	30	10	20 (67%)	n/a	n/a	Approved	Downtown Local Centre
Data Centre								
A003/16	2016	155	50	105 (68%)	n/a	0.45	Approved	Business Parks
A101/16	2016	132	40	92 (70%)	n/a	n/a	Approved	Business Parks
A102/16	2016	144	46	98 (68%)	n/a	n/a	Approved	Business Parks
Other Commercial								
A006/18	2018	267	255	12 (5%)			Approved	Business Park (Newkirk)
A010/13	2013	106	104	2 (2%)	Retail: 2.5; Office: 2.0; Medical: 2.5-3.3	n/a	Denied	Downtown Local Centre
A072/12	2012	85	52	33 (39%)			Approved	Business Park (Newkirk)
Industrial								
A005/18	2018	46	9	37 (80%)	n/a	0.21	Approved	Business Park (Newkirk)
Townhouse								
A090/11	2011	2	1	1 (50%)	2 spaces per unit	1 space per unit	Approved	Richmond Hill Regional Centre
A023/12	2012	21	19	2 (10%)	3 spaces per unit	2.7 spaces per unit	Approved	Rest of Richmond Hill



Table E2: Parking Rate Minor Variance by Parking Strategy Areas

Application Number	Number of Applications	Average Required Rate	Average Proposed Rate	2010 Parking Rates	Difference between Average Proposed Rate and 2010 Parking Rates	2021 Preliminary Recommendations	Difference between Average Proposed Rate and Recommendations
Retail							
KDA (Yonge-16th)	1	n/a	n/a	4.00 spaces per 100 SM	n/a	2.80 spaces per 100 SM	n/a
Rest of Richmond Hill	1	4.70 spaces per 100 SM	4.70 spaces per 100 SM	5.00 spaces per 100 SM	Proposed rate is a 0.30 spaces per 100 SM, or a 6%, decrease	5.00 spaces per 100 SM	Recommendation is 0.30 spaces per 100 SM, or 6%, more than the average MV rate
Restaurant							
Business Parks	2	n/a	n/a	11.00 spaces per 100 SM	n/a	10.00 spaces per 100 SM	n/a
Rest of Richmond Hill	2	9.00 spaces per 100 SM	2.50 spaces per 100 SM	11.00 spaces per 100 SM	Proposed rate is 8.50 spaces per 100 SM, or a 77%, decrease	10.00 spaces per 100 SM	Recommendation is 7.50 spaces per 100 SM, or 75%, more than the average MV rate
Office							
Downtown Local Centre	1	n/a	n/a	2.00 spaces per 100 SM	n/a	2.80 spaces per 100 SM	
Business Park (Newkirk)	3	3.20 spaces per 100 SM	3.20 spaces per 100 SM	3.20 spaces per 100 SM	0%	3.20 spaces per 100 SM	0%
Business Parks	5	n/a	n/a	3.20 spaces per 100 SM	n/a	3.20 spaces per 100 SM	n/a
Rest of Richmond Hill	1	3.20 spaces per 100 SM	2.00 spaces per 100 SM	3.20 spaces per 100 SM	Proposed rate is a 1.20 spaces per 100 SM, or 38%, decrease	3.20 spaces per 100 SM	Recommendation is 1.20 spaces per 100 SM, or 38%, more than the average MV rate

Application Number	Number of Applications	Average Required Rate	Average Proposed Rate	2010 Parking Rates	Difference between Average Proposed Rate and 2010 Parking Rates	2021 Preliminary Recommendations	Difference between Average Proposed Rate and Recommendations
Office & Retail							
Downtown Local Centre	1	n/a	n/a	n/a	n/a	n/a	n/a
Rest of Richmond Hill	1	3.20 spaces per 100 SM	1.90 spaces per 100 SM	n/a	n/a	n/a	n/a
Medical Offices							
Business Parks	3	5.40 spaces per 100 SM	5.20 spaces per 100 SM	5 spaces for the first practitioner plus 3 spaces for each additional practitioner	n/a	5.00 spaces per 100 SM	Recommendation is 0.20 spaces per 100 SM, or 4%, less than the average MV rate
Rest of Richmond Hill	3	4.30 spaces per 100 SM	2.30 spaces per 100 SM	5 spaces for the first practitioner plus 3 spaces for each additional	n/a	5.00 spaces per 100 SM	Recommendation is 2.70 spaces per 100 SM, or 63%, more than the average MV rate
Day Nursery							
Downtown Local Centre	1	n/a	n/a	Greater of 1 space per 7 children or 0.7 space per employee	n/a	2.80 spaces per 100 SM	n/a
Data Centre							
Business Parks	3	n/a	0.45	n/a	n/a	n/a	n/a
Other Commercial							
Downtown Local Centre	1	n/a	n/a	n/a	n/a	n/a	n/a
Business Park (Newkirk)	2	n/a	n/a	n/a	n/a	n/a	n/a
Industrial							
Business Park (Newkirk)	1	n/a	0.21 spaces per 100 SM	2.40 for first 2,800SM plus 1.1 for GFA exceeding 2,800SM	n/a	n/a	n/a



Application Number	Number of Applications	Average Required Rate	Average Proposed Rate	2010 Parking Rates	Difference between Average Proposed Rate and 2010 Parking Rates	2021 Preliminary Recommendations	Difference between Average Proposed Rate and Recommendations
Townhouse							
Richmond Hill Regional Centre	1	2.00 spaces / unit	1.00 space / unit	1.00 space / unit	None	1.00 space / unit	0%
Rest of Richmond Hill	1	3.00 spaces per unit	2.70 spaces per unit	2.00 spaces per unit	Proposed rate is 0.7 spaces per unit, or 26% decrease	2.00 spaces / unit	Recommendation is 0.70 spaces per unit, or 26%, less than the average MV rate

Appendix F

Site-Specific Zoning By-Laws Summary

(2010-2021)



Table F1: Parking Rates by Parking Strategy Areas for Site-Specific Zoning By-Laws

Application Number	Number of Applications	Average Proposed Rate	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	Recommendations	Difference between Average Proposed Rate and Recommendations
Retail (Shopping Centres)						
Downtown Local Centre	2	2.40 spaces per 100 SM	3.00 spaces per 100 SM	Proposed rate is 0.60 spaces per 100 SM, or 20%, decrease	2.80 spaces per 100 SM	Recommendation is 0.40 spaces per 100 SM, or 14%, more than the average SSZBL rate
KDA (Yonge-16th)	1	1.50 spaces per 100 SM	3.00 spaces per 100 SM	Proposed rate is 1.50 spaces per 100 SM or 50% decrease	2.80 spaces per 100 SM	Recommendation is 0.20 spaces per 100 SM, or 46%, more than the average SSZBL rate
Rest of Richmond Hill	4	4.00 spaces per 100 SM	5.00 spaces per 100 SM	Proposed rate is 1.00 spaces per 100 SM, or 20% decrease	5.00 spaces per 100 SM	Recommendation is 1.00 spaces per 100 SM, or 20%, more than the average SSZBL rate
Restaurants						
Rest of Richmond Hill	3	4.50 spaces per 100 SM	14 spaces per 100 SM (fast food) 11 spaces per 100 SM (standard)	Proposed rate is 6.50 spaces per 100 SM, or 59% decrease (based on 11 spaces per 100 SM/standard restaurant)	10.00 spaces per 100 SM	Recommendation is 5.50 spaces per 100 SM, or 55%, more than the average SSZBL rate
Commercial School						
Business Parks	1	2.30 spaces per 100 SM	6.30 spaces per 100 SM (all other institutional uses)	Proposed rate is 4 spaces per 100 SM, or 63% decrease	n/a	n/a
Rest of Richmond Hill	4	5.50 spaces per 100 SM	6.30 spaces per 100 SM (all other institutional uses)	Proposed rate is 0.80 spaces per 100 SM, or 12% decrease	n/a	n/a



Application Number	Number of Applications	Average Proposed Rate	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	Recommendations	Difference between Average Proposed Rate and Recommendations
Offices						
Downtown Local Centre	2	2.00 spaces per 100 SM	2.00 spaces per 100 SM	None	2.80 spaces per 100 SM	Recommendation is 0.80 spaces per 100 SM, or 29%, more than the average SSZBL rate
Business Parks	1	2.60 spaces per 100 SM	3.20 spaces per 100 SM	Proposed rate is 0.60 spaces per 100 SM, or 19% decrease	3.20 spaces per 100 SM	Recommendation is 0.6 spaces per 100 SM, or 19%, more than the average SSZBL rate
Rest of Richmond Hill	5	2.10 spaces per 100 SM	3.20 spaces per 100 SM	Proposed rate is 1.10 spaces per 100 SM, or 34% decrease	3.20 spaces per 100 SM	Recommendation is 1.10 spaces per 100 SM, or 34%, more than the average SSZBL rate
Medical Offices						
Richmond Hill Regional Centre	1	3.60 spaces per 100 SM	3.50 spaces for the first practitioner plus 2.1 spaces for each additional practitioner	n/a	2.40 spaces per 100 SM	Recommendation is 1.20 spaces per 100 SM, or 33%, less than the average SSZBL rate
Rest of Richmond Hill	4	4.90 spaces per 100 SM	5 spaces for the first practitioner plus 3 spaces for each additional	Proposed rate is 0.10 spaces per 100 SM or 2% decrease	5.00 spaces per 100 SM	Recommendation is 0.10 spaces per 100 SM, or 2%, more than the average SSZBL rate
Day Nursery						
Rest of Richmond Hill	3	0.93 spaces per 100 SM	Greater of 1 space per 5 children or 1 space per employee	n/a	4.00 spaces per 100 SM	Recommendation is 3.07 spaces per 100 SM, or 77%, more than the average SSZBL rate
Commercial - Other						
Downtown Local Centre	1	3.00 spaces per 100 SM	n/a	n/a	n/a	n/a



Application Number	Number of Applications	Average Proposed Rate	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	Recommendations	Difference between Average Proposed Rate and Recommendations
Rest of Richmond Hill	5	3.70 spaces per 100 SM	n/a	n/a	n/a	n/a
Commercial Bicycle Parking						
Downtown Local Centre	1	0.80 spaces per 100 SM	n/a	n/a	n/a	n/a
Business Parks	1	0.30 spaces per 100 SM	n/a	n/a	n/a	n/a
Rest of Richmond Hill	4	0.30 spaces per 100 SM	n/a	n/a	n/a	n/a
Bachelor Apartment Parking						
Downtown Local Centre	1	0.80 spaces per unit	0.75 spaces per unit	Proposed rate is 0.25 spaces/unit, or 33% increase	0.70 spaces per unit	Recommendation is 0.10 spaces per unit, or 13%, less than the average SSZBL rate
Rest of Richmond Hill	1	0.90 spaces per unit	0.90 spaces per unit	None	1.00 spaces per unit	Recommendation is 0.10 spaces per unit, or 10%, more than the average SSZBL rate
1-Bedroom Apartment Parking						
Downtown Local Centre	4	0.80 spaces per unit	0.85 / unit	Proposed rate is 0.05 spaces/unit, or 6% decrease	0.80 spaces per unit	0%
Richmond Hill Regional Centre	1	1.00 spaces per unit	0.75 / unit	Proposed rate is 0.25 spaces/unit, or 33% increase	0.70 spaces per unit	Recommendation is 0.30 spaces per unit, or 30%, less than the average SSZBL rate
Rest of Richmond Hill	5	1.00 spaces per unit	1.10 / unit	Proposed rate is 0.10 spaces/unit, or 9% decrease	1.25 spaces per unit	Recommendation is 0.25 spaces per unit, or 20%, more than the average SSZBL rate
2-Bedroom Apartment Parking						
Downtown Local Centre	3	0.90 spaces per unit	1.00 spaces / unit	Proposed rate is 0.10 spaces/unit, or 10% decrease	0.90 spaces per unit	0%

Application Number	Number of Applications	Average Proposed Rate	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	Recommendations	Difference between Average Proposed Rate and Recommendations
Richmond Hill Regional Centre	1	1.20 spaces per unit	1.00 spaces / unit	Proposed rate is 0.20 spaces/unit, or 17% increase	0.75 spaces per unit	Recommendation is 0.45 spaces per unit, or 38%, less than the average SSZBL rate
Rest of Richmond Hill	5	1.20 spaces per unit	1.35 / unit	Proposed rate is 0.15 spaces/unit, or 11% decrease	1.30 spaces per unit	Recommendation is 0.10 spaces per unit, or 8%, more than the average SSZBL rate
3+ Bedroom Apartment Parking						
Downtown Local Centre	1	1.20 spaces per unit	1.20 / unit	None	1.00 spaces per unit	Recommendation is 0.20 spaces per unit, or 17%, less than the average SSZBL rate
Rest of Richmond Hill	4	1.60 spaces per unit	1.50 / unit	Proposed rate is 0.10 spaces/unit, or 6% increase	1.40 spaces per unit	Recommendation is 0.20 spaces per unit, or 13%, less than the average SSZBL rate
Townhouse Parking						
Rest of Richmond Hill	11	1.80 spaces per unit	2.00 spaces / unit	Proposed rate is 0.20 spaces/unit, or 10% decrease	2.00 spaces per unit	Recommendation is 0.20 spaces per unit, or 10%, more than the average SSZBL rate
Semi-Detached Housing Parking						
Rest of Richmond Hill	5	2.00 spaces per unit	2.00 / unit	None	2.00 spaces per unit	0%
Single-Detached Housing Parking						
Rest of Richmond Hill	2	0.20 spaces per unit	2.00 / unit	Proposed rate is 1.80 spaces/unit, or 90% decrease	2.00 spaces per unit	Recommendation is 1.80 spaces per unit, or 90%, more than the average SSZBL rate
Other Residential Parking						
Rest of Richmond Hill	1	9.00	n/a	n/a	n/a	n/a
Residential Visitor Parking						



Application Number	Number of Applications	Average Proposed Rate	2010 Parking Strategy Rates (minimum rates if given min. and max.)	Difference between Average Proposed Rate and 2010 Parking Rates	Recommendations	Difference between Average Proposed Rate and Recommendations
Downtown Local Centre	4	0.15 spaces / unit	0.15 spaces /unit	None	n/a	n/a
Richmond Hill Regional Centre	1	0.15 spaces/unit	0.15 spaces / unit	None	n/a	n/a
Rest of Richmond Hill	17	0.30 spaces / unit	0.25 spaces / unit	Proposed rate is a 0.05 spaces/unit, or 20% increase	n/a	n/a
Bicycle Residential Parking						
Downtown Local Centre	2	0.40 spaces / unit	n/a	n/a	n/a	n/a
Rest of Richmond Hill	8	0.40 spaces per unit	n/a	n/a	n/a	n/a

Appendix G

City of Toronto Development Applications Summary (for Parking Minor Variance)

City of Toronto Development Applications

(and associated Richmond Hill Parking Strategy Area Tier for the rates being pursued in Toronto)

Source	Address	Latitude	Longitude	Status	Use	# of Units	Non-Res GFA (\$M)	Toronto Policy Area (or adj. PA)	Category	Special Space Type	Resident Parking Spaces	Visitor and/or Retail Parking Spaces	Total Parking Spaces	Residential Parking Rate	Visitor/Retail/Carshare Parkig Rate (per unit)	Blended Parking Rate (per unit)	Most Comparable RH Parking Rates
Transportation Impact Study	2221 Yonge Street	43.70646034	-79.39785674	Approved	Mixed use residential	605	785	PA2	2				213	0.00	0.00	0.35	PA1
Transportation Impact Study	55 Eglinton Avenue East	43.7082682	-79.39555129	Approved	Mixed use residential	461	6,641	Adjacent to PA2	2				117	0.00	0.00	0.25	PA1
Transportation Impact Study	1860-1868 Keele Street	43.69274594	-79.47457883	Approved	Residential	216	0	Adjacent to PA3	3				99	0.00	0.00	0.36	PA1
Transportation Impact Study	2400 Eglinton Avenue East	43.73326815	-79.26957797	Proposed Development	Mixed use residential	396	<1000	PA4. Adjacent to PA3	3				80	0.00	0.00	0.20	PA1
Transportation Impact Study	426 University Avenue	43.65538586	-79.38884063	Approved	Residential	315	0	Former By-law 438-86	1	Car-Share			9	0.00	0.00	0.03	PA1
CoT Dev Application Site	354-358 Pape Avenue	43.67099191	-79.33959795	Under Review	Mixed use residential	41	330	PA4	4				20	0.00	0.00	0.49	PA1 TIER 2
CoT Dev Application Site	794 Gerrard St E	43.66876714	-79.34531663	Closed	Mixed use residential	58	678	PA4	4	Private stacker			38	0.00	0.00	0.66	PA1 TIER 1 or PA2 TIER 2
CoT Dev Application Site	1030 Danforth Ave	43.68222794	-79.33596559	Under Review	Mixed use residential	53	325	PA3	3				42	0.00	0.00	0.79	PA1 BASE or PA2 TIER 1
CoT Dev Application Site	1860 Keele St	43.69262182	-79.4744493	Under Review	Mixed use residential	235	390	Adjacent to PA3	3		58	12	70	0.25	0.05	0.30	PA1
CoT Dev Application Site	2400 Eglinton Ave W	43.69473118	-79.46717641	Under Review	Mixed use residential	397	798	PA3	3				80	0.00	0.00	0.20	PA1
CoT Dev Application Site	1886 Eglinton Ave W	43.69682394	-79.45162405	Under Review	Mixed use residential	194	1,201	PA3	3				87	0.00	0.00	0.45	PA1 TIER 2
CoT Dev Application Site	2180 Yonge St	43.70598796	-79.39820234	Under Review	Mixed use residential	2,701	61,000	Adjacent to PA2	2				864	0.00	0.00	0.32	PA1
CoT Dev Application Site	191 Eglinton Ave E	43.70937562	-79.39164914	Under Review	Mixed use residential	479	4,040	PA2	2				164	0.00	0.00	0.34	PA1
CoT Dev Application Site	1366 Yonge St	43.68739833	-79.39405749	Under Review	Mixed use residential	489		PA3	3				2	0.00	0.00	0.00	PA1
CoT Dev Application Site	5 Scrivener Sq	43.68179912	-79.3901194	Under Review	Residential	182	3,085	PA3. Adjacent to PA1	1				164	0.00	0.00	0.90	PA3 BASE or PA4 TIER 1
CoT Dev Application Site	619 Yonge St	43.66880578	-79.38507704	Under Review	Mixed use residential	606	3,133	Adjacent to PA1	1		77	60	137	0.13	0.10	0.23	PA1
CoT Dev Application Site	1710 Bayview Avenue	43.71104673	-79.37702873	Approved	Mixed use residential	216		Adjacent to PA4	4		65	12	77	0.30	0.06	0.36	PA1
CoT Dev Application Site	503 Eglinton Avenue E	43.71143934	-79.37959219	Under Review	Mixed use residential	174	311	Adjacent to PA3	3				80	0.00	0.00	0.46	PA1 TIER 2
CoT Dev Application Site	840 Broadview Ave	43.68022414	-79.35822695	Under Review	Mixed use residential	107	536	PA4	4		39	35	74	0.36	0.33	0.69	PA1 TIER 1 or PA2 TIER 2
CoT Dev Application Site	682 Broadview Ave	43.67565266	-79.35767058	Under Review	Mixed use residential	503	2,091	Adjacent PA3	3		150	70	220	0.30	0.14	0.44	PA1 TIER 2
CoT Dev Application Site	21 Broadview Ave	43.65876146	-79.3488615	Under Review	Mixed use residential	340	794	Adjacent to PA4	4		82	20	102	0.24	0.06	0.30	PA1
CoT Dev Application Site	975 Danforth Ave	43.68151169	-79.3376182	Under Review	Mixed use residential	57	3,986	PA3	3		6	2	8	0.11	0.04	0.14	PA1
CoT Dev Application Site	1111 Danforth Ave	43.68223872	-79.33462116	Under Review	Mixed use residential	228	629	PA3	3		0	12	12	0.00	0.05	0.05	PA1
CoT Dev Application Site	1821 Danforth Ave	43.68621037	-79.31862693	Under Review	Mixed use residential	30	74	PA3	3				7	0.00	0.00	0.23	PA1
CoT Dev Application Site	1793 Danforth Ave	43.68577584	-79.31871761	Under Review	Mixed use residential	15	100	PA3	3				8	0.00	0.00	0.53	PA1 TIER 2
CoT Dev Application Site	2575 Danforth Ave	43.68944282	-79.29996562	Under Review	Mixed use residential	1,552	6,074	Adjacent to PA3	3		206	198	404	0.13	0.13	0.26	PA1
CoT Dev Application Site	1053 Don Mills Rd	43.73553523	-79.3419316	Under Review	Mixed use residential	1,185	6,038	All other areas			681	119	800	0.57	0.10	0.68	PA1 TIER 1 or PA2 TIER 2
CoT Dev Application Site	40 Moccasin Trl	43.73205629	-79.33742695	Under Review	Mixed use residential	294		All other areas			194	39	233	0.66	0.13	0.79	PA1 BASE or PA2 TIER 1
CoT Dev Application Site	1236 Birchmount Rd	43.74787235	-79.28493477	Approved	Mixed use residential	220	156	Adjacent to PA4	4			93	93	0.00	0.42	0.42	PA1
CoT Dev Application Site	240 Finch Ave W	43.77680744	-79.43729925	Under Review	Residential	30		Adjacent to PA4	4		21	4	25	0.70	0.13	0.83	PA2 BASE or PA3 TIER 1
CoT Dev Application Site	3180-3182 Yonge St	43.72928627	-79.4034068	Under Review	Mixed use residential	109		PA3	3				91	0.00	0.00	0.83	PA2 BASE or PA3 TIER 1
CoT Dev Application Site	126 Laird Dr	43.70890325	-79.36331152	Under Review	Residential	132	246	All other areas					99	0.00	0.00	0.75	PA1 BASE or PA2 TIER 1
CoT Dev Application Site	17 St Andrew St	43.65570405	-79.40011382	Under Review	Mixed use residential	77	172	PA1	1				0	0.00	0.00	0.00	PA1
CoT Dev Application Site	98 Bond St	43.65841066	-79.37914445	Under Review	Mixed use residential	311	189	PA1	1		0	2	2	0.00	0.01	0.01	PA1
CoT Dev Application Site	240 Adelaide St W	43.64968228	-79.38856817	Approved	Mixed use residential	554	1,528	PA1	1				63	0.00	0.00	0.11	PA1
CoT Dev Application Site	325 Front St W	43.64528222	-79.39028564	Under Review	Mixed use residential	832	273,592	PA1	1				668	0.00	0.00	0.80	PA1 BASE or PA2 TIER 1
CoT Dev Application Site	145 Wellington St W	43.64759427	-79.38519193	Under Review	Mixed use residential	512	14,540	PA1	1				100	0.00	0.00	0.20	PA1
CoT Dev Application Site	1075 Leslie St	43.71915605	-79.3493301	Under Review	Mixed use residential	1,846	565	Adjacent to PA3	3		749	96	845	0.41	0.05	0.46	PA1 TIER 2
CoT Dev Application Site	7 St Dennis Dr	43.71673048	-79.33651454	Under Review	Residential	2,197		All other areas					1445			0.66	PA1 TIER 1 or PA2 TIER 2
CoT Dev Application Site	968 O'Connor Dr	43.70894317	-79.31110712	Under Review	Mixed use residential	122	368	PA4	4				103			0.84	PA2 BASE or PA3 TIER 1
CoT Dev Application Site	1763 Dundas St E	43.66824447	-79.32312803	Under Review	Residential	23		Adjacent to PA4	4				2			0.09	PA1
CoT Dev Application Site	1631 Queen St E	43.66717144	-79.31573024	Under Review	Mixed use residential	279	1,688	Adjacent to PA5	4				81			0.29	PA1



Appendix E

Parking Research Review and Survey Analysis

Parking Research Review and Survey Analysis

October 20, 2023

Prepared for: City of Richmond Hill

Prepared by: Tate Economic Research Inc.



TATE
ECONOMIC
RESEARCH INC.

Mr. Hubert Ng
Manager, Transportation and Traffic
City of Richmond Hill
Planning and Infrastructure Services Department
225 East Beaver Creek, Richmond Hill, ON
L4B 3P4

October 20, 2023

Re: Parking Research Review and Survey Analysis

Dear Mr. Ng:

Please find attached our report that summarizes our parking research review and our parking survey analysis.

We look forward to discussing the results with you.

Yours truly,

TATE ECONOMIC RESEARCH INC.



Sameer Patel
Vice President



James Tate
President

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1 Introduction

Tate Economic Research Inc. (“TER”) has been retained by the City of Richmond Hill (“Richmond Hill” or “City”) to prepare the following research and analysis study of parking trends that could impact planning and management of parking in Richmond Hill.

The intent of this report is to provide information for the City in order to assist in making decisions relating to future parking requirements. Parking requirements, particularly in increasingly urbanized areas such as Richmond Hill, are changing. Parking requirements are being impacted by transit, ride sharing, increased active transportation and other trends.

This report analyses secondary research, a study of parking situations in other municipalities and includes a survey component. The approach is outlined in greater detail below.

1.1 Study Approach

This TER report builds upon previous research conducted for the City by HDR Inc. HDR completed a report in 2021 titled “Parking and TDM Strategy – Data Collection Summary Report”. The HDR Report states: “This report summarizes the data collection and data analysis supporting the development of recommendations within the Parking and Transportation Demand Management Strategy.” The HDR Report analysed the results of two public surveys, as well as a survey of developers. It also included a summary of requests for variances in parking permissions that had been submitted to the City.

The TER report is summarized as follows:

Parking Trends Review - TER conducted a literature review in order to glean information relatable to the Richmond Hill parking situation. This information is summarized in Section 2 of this report and is referred to as a “Parking Trends Review”. It includes a summary of relevant information such as: Factors Influencing Parking, Trends in Parking, Shared Mobility, Parking Technology, Vehicle Ownership and Usage, Construction Costs and Autonomous Vehicles.

Parking Policy and Trends - Section 3 of this report provides a summary of relevant Parking Policy and Trends. It refers to Policy Considerations, Benefits of

Reduced Parking, Parking Requirements, as well as Policy and Management Trends.

Survey Results and Analysis - Section 4 of this report summarizes the survey methodology and its results. The current TER survey includes respondents from Mississauga, Vaughan, Richmond Hill, Etobicoke, North York and Scarborough. It focuses on the urban core areas of these areas. Respondents addressed issues relating to supply of parking, their parking requirements, usage trends and others.

In this section, TER has summarized the results of a survey that built upon previous research undertaken on behalf of the City. The survey analyzed parking requirements and supply in urban areas of the Greater Toronto Area, including the City.

1.2 Basic Assumptions

This report should be reviewed considering these basic assumptions:

- This report utilizes primary and secondary data sources as well as information provided by the client. TER strives to ensure the secondary data used is accurate, however, we cannot guarantee the validity of the methodology and therefore cannot guarantee the accuracy of these secondary data sources. TER reserves the right to adjust the recommendations of this report should new secondary data sources be revealed; and,
- This report is intended for the uses outlined in the mandate. No parts of this report may be replicated or used for uses other than that stated in the mandate without the written consent of Tate Economic Research Inc.

2 Parking Trends Review

The planning and management of parking in urban environments, such as Richmond Hill, can have an impact on traffic congestion, vehicle ownership, business operations, and the promotion of sustainable transportation. This section of the report examines current trends in the parking industry and how they relate to municipal planning.

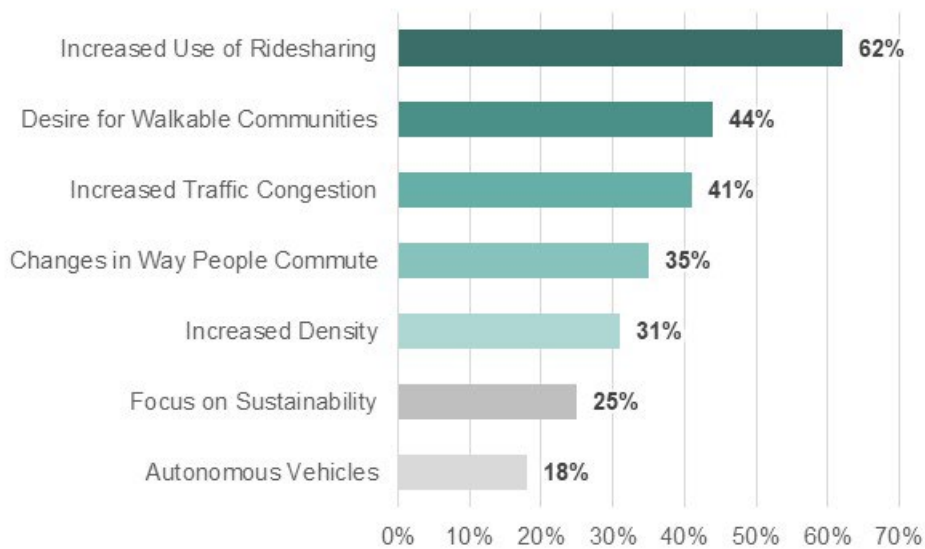
2.1 Factors Influencing Parking

The way people travel is changing, especially in urban environments. Ride sharing, expanding bike networks, and improvements to public transit systems have broadened the options available to the public.

The International Parking & Mobility Institute conducted an Emerging Trends in Parking Survey in 2018 (“IPMI Survey”¹). The IPMI Survey includes professionals in the parking and transportation industry, including private sector, municipalities, and universities.

Figure 1-1, below, indicates the societal changes currently influencing the parking industry.

Figure 1-1: Societal Changes Influencing Parking



Parking & Mobility Institute 2018 Emerging Trends in Parking Survey.

¹ The 2018 survey is the most recent survey published by the IPMI.

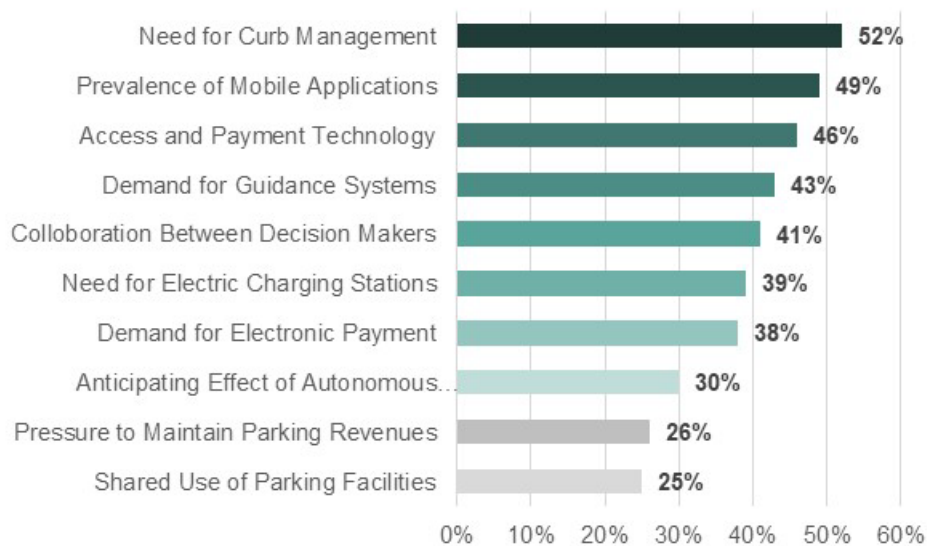
The top three societal changes are the increased use of ridesharing companies, a desire for more walkable communities, and increases in traffic congestion.

The societal changes identified in Figure 1-1 have a net effect of reducing car ownership and resulting parking requirements. Furthermore, these changes influence trends occurring in the parking industry, as discussed below.

2.2 Trends in Parking

The IPMI Survey identifies the top emerging trends in the parking industry. Figure 1-2 summarizes the IPMI Survey results relating to parking trends.

Figure 1-2: Top Emerging Trends in Parking



Source: Tate Economic Research Inc. based on data from the International Parking & Mobility Institute 2018 Emerging Trends in Parking Survey.

The top trend relates to the need for Curb Management. The curb is the border between the street and the sidewalk. Increasingly the curb plays host to many functions such as travel lanes, on-street parking, bicycle lanes and on-street dining.

Many of these trends relate to the increased efficiency of parking facilities using new technologies. Efficiency increases include changes such as the use of mobile applications that provide real time pricing, access and payment technology, and parking guidance systems that help drivers find parking.

In addition to becoming more efficient for vehicles, parking facilities are providing options for a broader range of users. This includes bike infrastructure and parking, bike-sharing, and ridesharing.

2.3 Shared Mobility

Shared mobility is an emerging form of transportation that provides an alternative to traditional modes such as private vehicle, public transit, and bike. Shared mobility includes transportation modes that are shared by users, such as ridesharing, carsharing, and micro mobility. These modes are described below:

- Ridesharing: This mode has grown rapidly on a global scale and includes services such as Uber and Lyft. These services provide convenient, on-demand transportation options. In certain municipalities, ridesharing has faced regulatory barriers due to safety, worker classification, and impact on the taxi industry.
- Carsharing: This mode includes fleet-based carsharing services such as Enterprise and Zipcar, as well as peer to peer carsharing. Carsharing can lead to a reduction in auto ownership, however, the majority of carshare users still own personal vehicles.
- Micro Mobility: This mode typically includes electric scooters,

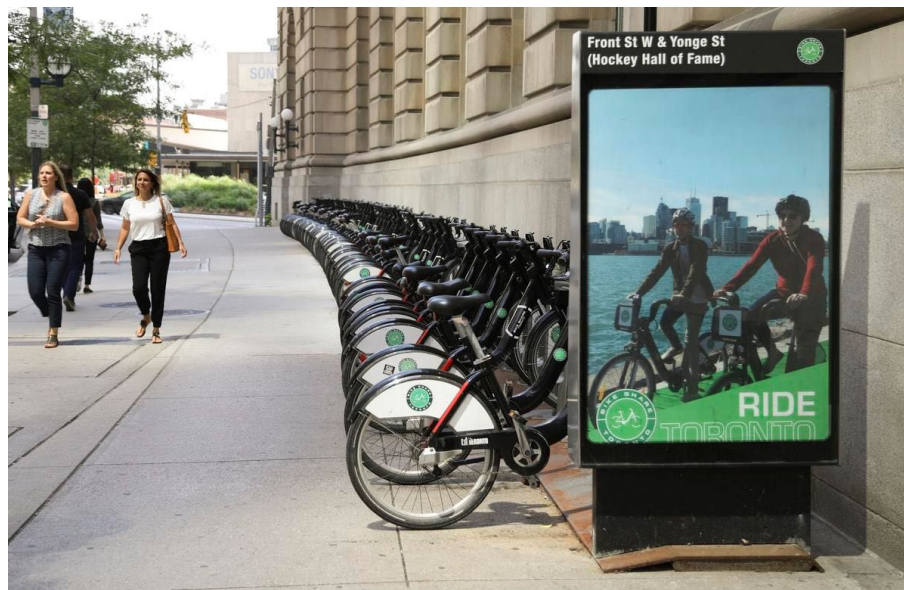


Image of Bike Share Toronto Location

skateboards, and bikeshare. In the example of Bike Share Toronto, users pick up and return bikes to designated parking areas and pay online. In other examples, bikes or scooters can be left on the sidewalk and users can view a map to find the nearest device. These services have faced challenges such as safety regulation and curbside management. Micro

mobility is more likely to replace walking, ridesharing, and public transit versus automobile trips.

- **Autonomous Vehicles:** The emergence of autonomous vehicles is anticipated to have significant impacts on the transportation and parking industry. This includes both private vehicles and autonomous ridesharing. Of the IPMI Survey respondents, 63% believe that autonomous vehicles will result in increased congestion at pick up and drop off areas.

The emergence of shared mobility has increased the importance of curb management. Built environments will need to further establish new design standards and operational use criteria to optimize the use of limited curb space. Rideshare services require adequate pick up and drop off areas and micro mobility services require space for bike or scooter racks. Shared mobility is also contributing to lower private vehicle ownership / usage and therefore, lower requirements for parking spaces in urban residential buildings.

2.4 Parking Technology

Smart parking uses various technologies to improve the customer experience and increase the efficiency of parking facilities. This technology includes sensing devices that monitor parking occupancy, guidance systems that direct vehicles to a vacant parking space, and electronic or automatic payment methods. Furthermore, there are a number of mobile applications that provide real time information for on-street and off-street parking availability and direct users to the nearest facility.

In urban areas where space and parking are at a premium, parking elevators or stacked parking is being used as a potential solution. These systems can park cars within a smaller area, thereby reducing space requirements and costs. An example of this type of technology is The Eddy, a 6 storey condo with 52 units in Ottawa. Due to its irregular triangular lot, providing underground parking



Image of The Eddy, Ottawa



represented a significant challenge. The Eddy uses an automated elevator parking system where residents park cars on sliding platforms and exit the vehicle, the vehicle is then lowered and moved into a compact parking space. This system requires less space than a conventional garage as it uses compact parking spaces and eliminates the requirement for ramps and lanes.

2.5 Vehicle Ownership and Usage

Figure 1-3: Canada Vehicle Registration Trends



Source: Tate Economic Research Inc. based on Statistics Canada Vehicle Registrations and Census of Canada.

Despite the increase in Ride Sharing and Shared Mobility, Canada has one of the highest car ownership rates in the world. Vehicle ownership has been steadily increasing over the past two decades. In 2021, there were approximately 630 light vehicles registered per 1,000 people in Canada. This is an increase of 15% compared to 550 light vehicles registered per 1,000 people in 2001².

Travel to and from work represents a significant portion of total automobile trips. The mode of transportation to work is influenced by a number of factors, such as access to public transit, parking availability, and distance to work.

² Based on Statistics Canada Table 23-10-0308-01. Light vehicles weighing less than 4,535 kilograms.








The Transportation Tomorrow Survey (“TTS”) provides additional insight into transportation and parking trends in the GTHA. The TTS is a survey that has been undertaken every five years since 1986. The 2021 survey was postponed due to Covid-19. It has been branded as TTS2023 and is currently being undertaken.

The TTS indicates the following:

- In 2016, 84% of households in the GTHA had one or more vehicles;
- In 2016, 73% of trips are made using cars. This compares to 74% in 1986. As such, there has been no change in vehicle use in the GTHA over the 30 year period examined in the TTS;
- In the Town of Richmond Hill, 95% of households have one or more vehicles; and,
- Residents of Richmond Hill make 83% of trips using a car.

Even in Toronto, one of the most urbanized environment in Canada, approximately 68% of people travel to work by car and 24% utilize public transit. In Richmond Hill specifically, approximately 81% of people travel to work by car, 15% use public transit, 2% walk, and 0.5% bicycle³.

Figure 1-4: Commuting Mode, 2016, 2021 and 2022

	 Driver/passenger in a car	 Bus	 Subway	 Train	 Walk	 Bicycle	 Motorcycle
2022 (thousands)	12,768	797	271	103	726	215	37
2021 to 2022 (% change)	18.3	17.5	14.4	32.6	11.6	57.4	83.8
2016 to 2022 (% change)	2.5	-32.7	-48.1	-58.3	-14.5	-2.1	43.9
2021 (thousands)	10,790	678	237	78	651	137	20
2016 (thousands)	12,454	1,184	523	248	849	220	25

Source: Statistics Canada, The Daily, November 30, 2022.

³ Environics Analytics 2022 Household Population 15 Years or Over by Method of Travel to Work.

Statistics Canada indicates that in May 2021, during the Covid-19 Pandemic, there were 2.8 million fewer Canadians commuting compared to 2016. This decrease includes 1.7 million fewer people travelling to work by car, nearly 1 million fewer taking public transit, and nearly 300,000 fewer using active transportation⁴. This decline was a result of employment losses and a shift towards working from home. By May 2022, the number of car commuters had returned to 2016 levels, whereas public transit and active transportation remain below 2016 levels.

2.6 Construction Costs

The 2019 Residential and Civil Construction Alliance of Ontario report titled “How Parking Regulations Need to Evolve for High-Rise Buildings” (“CCAO Report”) found that the cost of constructing below-grade parking in residential buildings has increased rapidly over the last decade. It often costs between \$80,000 and \$100,000 per underground parking space in downtown. This cost is influenced by increased construction complexity and timelines.

The Altus Group Canadian Cost Guide provides information relating to real estate development and infrastructure construction costs. This data indicates that the construction cost for private sector underground parking has increased by nearly 60% over the past 5 years, from \$95-170 per square foot to \$195-270 per square foot.

Furthermore, in 2021 the Residential Construction Council of Ontario surveyed members in the development industry and determined that, on average, new condominium projects were left with 33% of parking spaces unsold.

The City of Toronto retained N. Barry Lyon Consultants Ltd. in 2021 to examine the potential impact associated with elimination of minimum parking standards as they related to high-density residential uses. The findings are summarized in a memorandum titled Economic Impacts of Removal of Minimum City Parking Standard (“NBLC Memo”). The NBLC Memo concludes:

Unbundling parking from units can be an important measure to improve housing affordability as it lowers the minimum construction cost to deliver a unit, thereby making projects financially viable at lower sale prices.

⁴ Need a source here. And can we get more detail about 2022?

However, home prices are established based on the characteristics of supply and demand. Developers typically price housing at the maximum the market will bear, regardless of the costs of construction. Reduced parking in high demand area such as Yonge-Eglinton or the Danforth may have little bearing on home prices.

However, in areas such as Weston Road, Guildwood Village or Jane Finch where the high-density market is just beginning to emerge, the savings associated with reduced parking could help bring housing products to market at a lower price point.

Overall, the time and costs savings associated with the reduction in parking could have a material impact on the viability and delivery of projects irrespective of the project location. This could help accelerate the supply of housing which may help to alleviate some upward pressure on Toronto home prices.

2.7 Autonomous Vehicles

Autonomous vehicles have the potential to significantly impact parking patterns in the future. The exact magnitude and timing of this impact is subject to debate, but most industry experts agree that parking demand will decrease. In addition to a decline in parking demand, parking capacity will increase as the required parking space width can be reduced. Research conducted by the University of Toronto, and summarized in Figure 1-5, on the following page, found that autonomous vehicle parking lots could accommodate 62% to 87% more cars than conventional vehicle parking lots.⁵

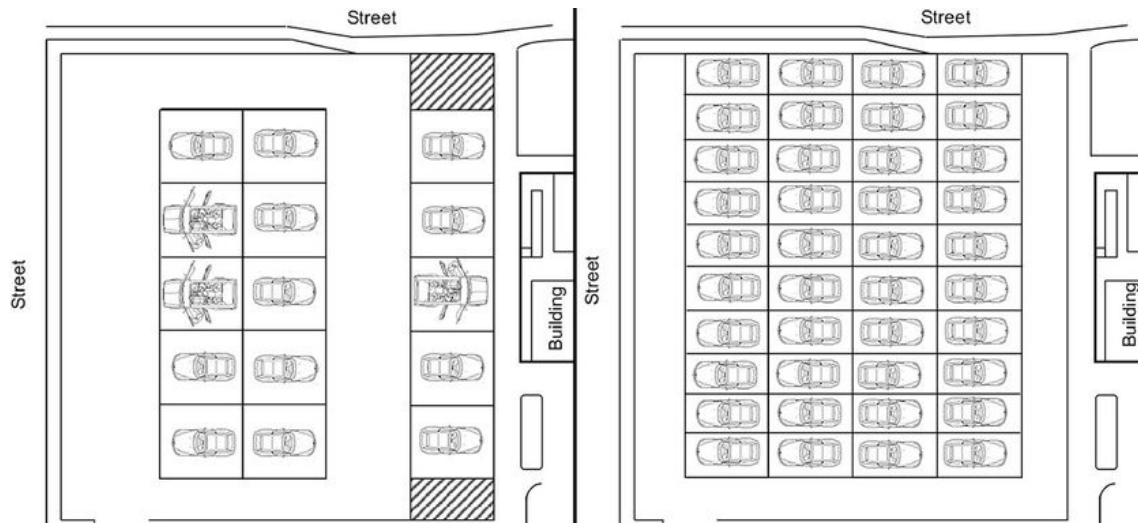
While the number and size of parking spaces will decrease, it is anticipated that there will be greater demand for curbside space for pick up and drop off. These factors indicate a trend towards a decline in the demand for parking spaces.

Furthermore, there is the potential for increased traffic congestion due to induced demand and autonomous vehicle behavior. Specifically, it may be more economical for an autonomous vehicle to travel home or circle the area rather than pay for parking. Research conducted by the University of California

⁵ Transportation Research Part B: Methodological, Designing Parking Facilities for Autonomous Vehicles, March 2018.

indicates that circling may only cost 29 to 50 cents per hour, which is less than the typical cost of parking.

Figure 1-5: Conventional vs. Autonomous Parking Grid



Source: IEEE Spectrum, How Self-Driving Cars Might Transform City Parking, February 2019.

2.8 Parking Trends Summary

This review has indicated that, despite an increase in vehicle registration per capita, there are many factors that are indicative of a decline in demand for parking spaces. There are many technological and behavioural changes that are supportive of a reduction in parking requirements. These trends are expected to lead to further decreases in demand for parking in the future.

3 Parking Policy Trends

Municipal parking policy is evolving to reflect the industry trends examined in the previous section of the report and to achieve political and social objectives. These objectives include promoting sustainability and the creation of complete communities.

3.1 Policy Considerations

There is growing recognition of the impact that parking policies have on real estate development, environmental sustainability, and broader social and urban planning objectives.

Previously, parking planning focused on personal vehicle use and ensuring a sufficient supply of parking spaces to accommodate residents, customers, and employees. However, the way people travel is changing, especially in urban environments. Planning and management of parking is evolving to reflect multimodal travel and respond to concerns relating to land use, quality of life, and sustainability.

The new parking approach views parking holistically, integrating the needs of all transportation users and acknowledges the impact of parking on urban systems, quality of life, and sustainability. The new approach considers sharing of parking facilities, smart solutions for management and pricing, more efficient and effective regulations, and promotion of public transport and other alternative modes of travelling.

The new parking approach recognizes a central idea of 'induced demand'. Induced demand is the phenomenon whereby an increase in supply results in a decline in cost and an increase in consumption. With respect to parking, induced demand suggests that an increase in parking supply can reduce prices, increase availability, and as such provide an incentive for use. As such, municipal policies that requiring a minimum amount of parking can lead to a self-perpetuating cycle in which increased supply of parking leads to increased demand.

3.2 Benefits of Reduced Parking

There are many potential benefits to reducing or eliminating minimum parking requirements, as examined below:

- Reducing or eliminating parking can allow developers and municipalities to utilize space for other uses. This may include bike racks and lanes, widened sidewalks, and increased greenspace. Furthermore, the elimination of surface or above ground parking can create opportunities for intensification;
- Reducing the amount of parking spaces can encourage active and public transportation, in turn reducing congestion and emissions and making roads safer;
- In the residential context, parking construction costs are passed onto unit owners. Reducing the amount of parking required in residential buildings can also reduce housing cost. This cost implication is particularly relevant if a municipality requires a developer to include more parking than is marketable – the costs of creating the parking may be passed on to the purchasers of residential units.

3.3 Parking Requirements

Historically, parking policies focused on providing a sufficient supply of parking spaces for different land uses, including residential properties. These requirements were implemented to ensure adequate parking availability while considering factors such as neighbourhood context, proximity to public transportation, and sustainable transportation options.

There is an emerging trend towards reducing or eliminating minimum parking requirements. This trend is primarily driven by an increase in public transportation, active transit, and shared mobility, as well as municipal objectives to promote sustainability.

It is a common conception among developers, residents, and business owners that a reduction of parking spaces will be detrimental to business opportunities and quality of life. However, there is research that suggests the opposite can be true, reducing or removing parking in favour of active and sustainable transportation modes, in the right context, can support business and quality of life.

A study conducted by the Clean Air Partnership in 2008 surveyed 61 businesses and 538 patrons on Bloor Street in Toronto. The study found that only 10% of patrons drove to the Bloor Annex neighbourhood, and that during peak periods less than 80% of parking spaces are paid for. It also found that patrons arriving by foot and bicycle visit more often and spend the most per month. Furthermore,

the study found that most businesses believed a bike lane or widened sidewalk would increase business and the reduction in on-street parking could be accommodated in municipal parking lots.

Typical benefits cited for reducing or eliminating parking spaces include:

- Utilize land for other uses, such as housing, parks, and schools;
- Developers can lower construction and maintenance costs which are typically past on to the owners or renters;
- Pedestrian and cyclist traffic can benefit businesses;
- Reducing the paved surface area has environmental benefits relating to flooding and heat retention; and,
- Reducing the amount of parking can induce a reduction in vehicle traffic, making roads safer and reducing carbon emissions.

Certain municipalities have moved towards implementing parking maximums, which limit the number of parking spaces allowed in new developments. Parking maximums can encourage developers to prioritize sustainable transportation options.

Case Study – City of Toronto

Historically, the development of parking in Toronto was governed by Zoning By-laws which included minimum parking requirements. The minimum parking requirements varied depending on the type of use, dwelling unit, location, and zoning category.

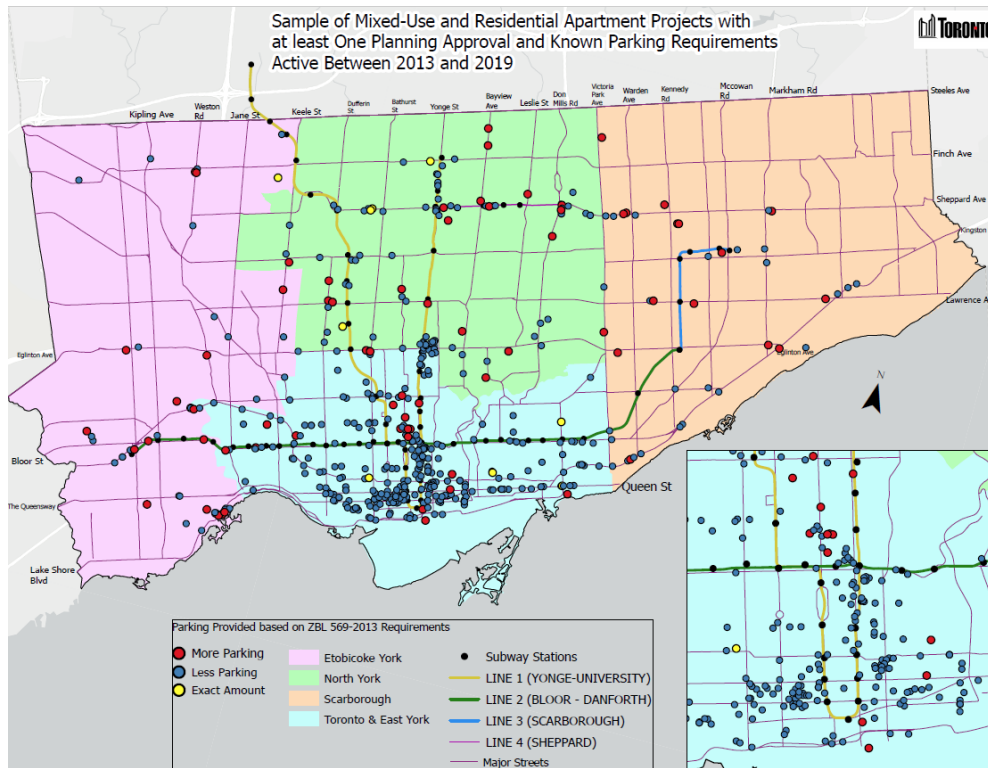
In 2021, the City adopted zoning by-law amendments which removed most requirements for new developments to provide a minimum number of parking spaces and introduced maximum parking limits.

Prior to this, the majority of development applications in Toronto proposed fewer parking spaces than was required by the Zoning By-law. Figure 3-1, on the following page, which shows development applications that proposed more, less, or the required amount of parking spaces. This analysis includes a sample of projects with at least one planning approval and known parking requirements between 2013 and 2019. The analysis indicates the following:

- 46% were approved with parking rates below the minimum;

- 81% of mixed use projects were approved with parking rates below the minimum; and,
- 76% of residential singles and townhouses were approved with parking rates above the minimum.

Figure 3-1: Toronto Applications Relative to Parking Requirement



Source: City of Toronto.

UrbanToronto conducted an analysis of the number of parking spaces planned for proposed developments in the City of Toronto in 2021 and 2022. The UrbanToronto analysis is summarized as follows:

- In 2021, generally prior to the elimination of parking requirements, 73,189 vehicle parking spaces were proposed and 35,419 bike parking spaces. This equates to 0.59 vehicle parking spaces per unit and 0.35 bike parking spaces per unit;
- In 2022, 51,518 vehicle parking spaces were proposed and 60,502 bike parking spaces. This equates to 0.51 vehicle parking spaces per unit and 0.59 bike parking spaces per unit;

- The vehicle parking per dwelling unit ratio decreased from 59% in 2021 to 51% in 2022. Furthermore, the bike parking per dwelling unit ratio increased from 35% in 2021 to 59% in 2022; and,
- For mixed-use and rental development applications, the vehicle parking per dwelling unit ratio declined from 56% in 2021 to 41% in 2022.

As such, the UrbanToronto analysis concluded that eliminating minimum parking requirements has led to less vehicle parking spaces per unit.

Case Study – Vaughan Metropolitan Centre

The development of parking in the City of Vaughan is governed by the City of Vaughan Zoning By-law 001-2021. The Zoning By-law includes minimum and maximum parking requirements for different types of uses and land use categories. There are certain uses which do not include a minimum or maximum parking requirement.

Zoning By-law 001-2021 came into effect as of October 20, 2021. The former City of Vaughan Zoning By-law 1-88 included minimum and maximum parking requirements. The minimum parking requirements in Zoning By-law 1-88 were greater than the current Zoning By-law 001-2021.

This case study examines a sample of existing and proposed high density developments in the Vaughan Metropolitan Centre (VMC) and surrounding area. This analysis examines whether the provision of parking in high density developments has declined since minimum parking requirements were reduced. This analysis is indicated in Figure 3-2, below, and is summarized as follows:

- This analysis examines four completed developments in the VMC and surrounding area. It includes high density residential and mixed-use developments ranging from 568 residential units to 1,565 residential units;
- The number of parking spaces per residential unit ranges from 1.0 to 1.3 with an average of 1.1;
- For developments with non-residential space, the number of parking spaces per 1000 square feet of space ranges from 2 to 3;
- Similarly, this analysis examines four proposed or under construction developments in the VMC and surrounding area. Developments range from 840 residential units to 1,787 residential units;

- The number of parking spaces per residential unit ranges from 0.4 to 1.0 with an average of 0.6;
- For developments with non-residential space, the number of parking spaces per 100 square feet of space ranges from 0.0 to 0.1; and,
- Overall, this analysis indicates a decline in parking ratios for proposed and under construction developments relative to completed developments. The amount of parking per residential unit in proposed and under construction developments is nearly half of completed developments.

Overall, this case study indicates that the reduction of minimum parking requirements in the City of Vaughan has likely resulted in a reduction in the amount of parking provided in new developments. This case study suggests that minimum parking standards may result in the over supply of parking.

Figure 3-2: Vaughan Parking Ratio Analysis

Development	Residential Units	Non-Residential (sq.ft.)	Residential Parking	Non-Residential Parking	Residential Parking	Non-Residential Parking
					Ratio	Ratio
					<i>Per Residential Unit</i>	<i>Per 100 sq.ft.</i>
<u>Complete</u>						
The Met	572	0	620	0	1.1	N/A
Expo City	1,565	13,800	2,000	47	1.3	0.3
Park Avenue Place	568	0	630	0	1.1	N/A
Centro Square	783	285,900	810	625	1.0	0.2
<u>Proposed / Under Construction</u>						
Festival	1,701	31,400	681	35	0.4	0.1
130 Doughton Road	1,277	0	692	0	0.5	N/A
VMC Block A7	1,787	3,300	714	0	0.4	0.0
2800 Highway 7	840	0	848	0	1.0	N/A

Source: Tate Economic Research Inc. based on development application materials obtained from the City of Vaughan.

3.4 Policy and Management Trends

Shared parking initiatives are becoming more common, allowing multiple land uses to share parking spaces. This approach optimizes parking utilization, reduces the number of parking spaces required, and supports mixed-use development.

In a mixed-use development, it may not be necessary to provide separate parking for residential, retail, and office uses. It is becoming more common for visitors and commercial tenants to share parking spaces.

Many cities are adopting dynamic parking management strategies, such as pricing adjustments based on demand, to efficiently utilize existing parking infrastructure. These strategies encourage turnover and reduce the need for excessive parking provision.

3.5 Parking Policy Trends Conclusion

In the Canadian context, the elimination of parking requirements is a recent trend. Many urban municipalities are reducing or eliminating residential and commercial parking requirements.

Trends are indicative of a decline in the amount of parking required. The implications of these changes have not yet become fully realized, however, there is evidence to suggest that the elimination of parking requirements has resulted in less parking being constructed.

4 Summary of Survey Results

In this section, TER has summarized the results of a survey that built upon previous research undertaken on behalf of the City. The previous and current surveys analysed parking requirements and usage patterns of residents in urban areas of the Greater Toronto Area.

This current TER survey updates the results of previous research. The previous research is summarized in a 2021 HDR report titled “Parking and TDM Strategy – Data Collection Summary Report”. The HDR Report states: “This report summarizes the data collection and data analysis supporting the development of recommendations within the Parking and Transportation Demand Management Strategy.” The HDR Report analysed the results of two public surveys, as well as a survey of developers.

The current TER survey includes respondents from Mississauga, Vaughan, Richmond Hill, Etobicoke, North York and Scarborough. It focuses on the urban core areas of these communities. Respondents addressed issues relating to supply of parking, parking requirements, usage trends and others.

4.1 Survey Methodology

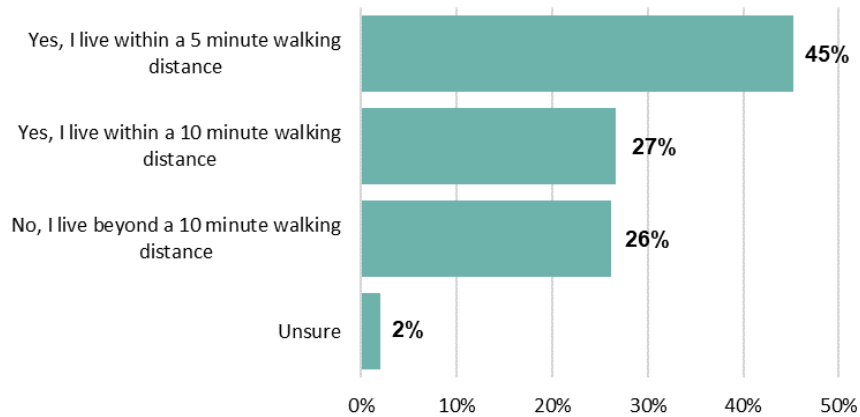
The survey was conducted on-line through Logit, a field survey company. The interview respondents were selected based on their geographic location in the defined “City Centre” areas of the selected Greater Toronto Area locations. The respondents were also pre-qualified based on their type of residence. Only respondents who lived in buildings of over 5 storeys, within the defined areas, were qualified to complete the survey.

The surveys were undertaken in September and October 2023. There were a total of 500 completes.

4.2 Summary of Selected Survey Results

The following section summarizes selected survey results that are considered most relevant from the parking and transportation perspective. The detailed survey results are included in tabular form, in Appendix A.

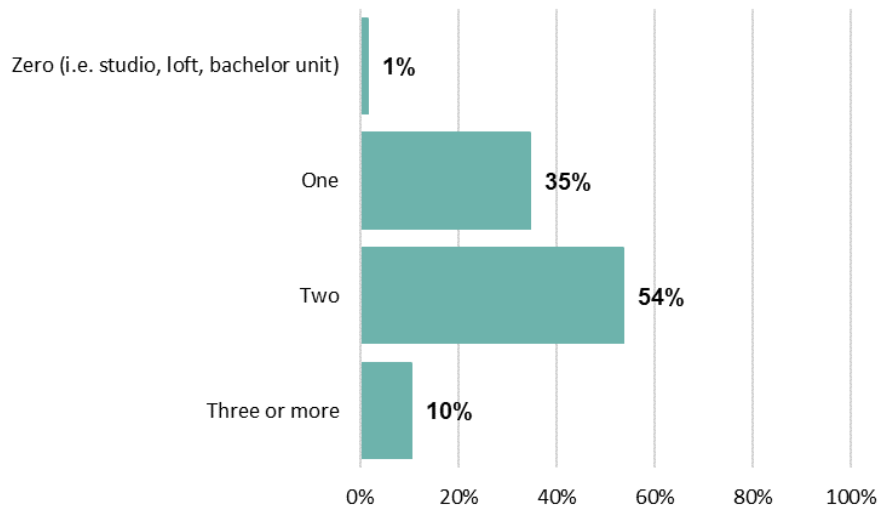
Question 3: *Do you live within walking distance of a TTC subway station, GO station, or VIVA transit hub?*



Based on the responses to Question 3, many respondents (45%) live within a 5 minute walking distance of a TTC subway station, GO station, or VIVA transit hub. The second most common response (27%) is that they live within a 10 minute walking distance of a TTC subway station, GO station, or VIVA transit hub.

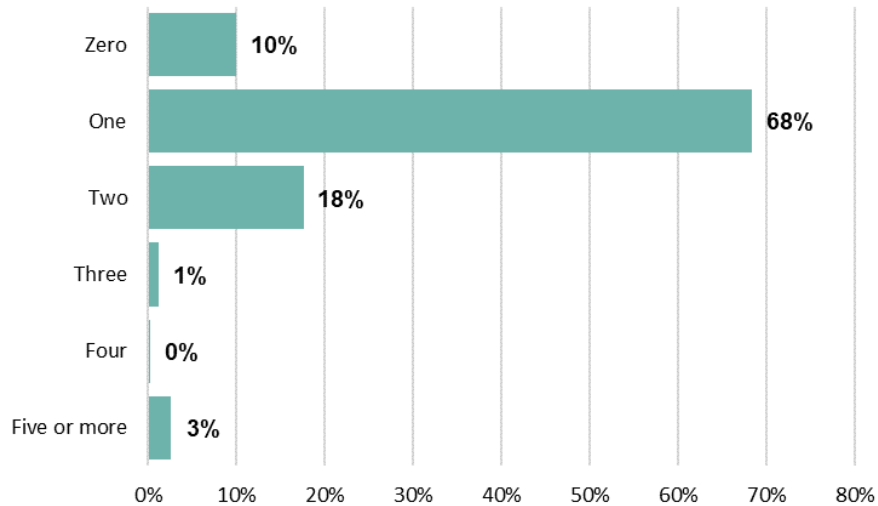
Question 3 indicates that a majority of respondents (72%) live within a 10 minute walk of a major transit station. These results may indicate that a significant portion of the population has the opportunity to conveniently use rapid transit.

Question 6: *How many bedrooms are in your dwelling?*



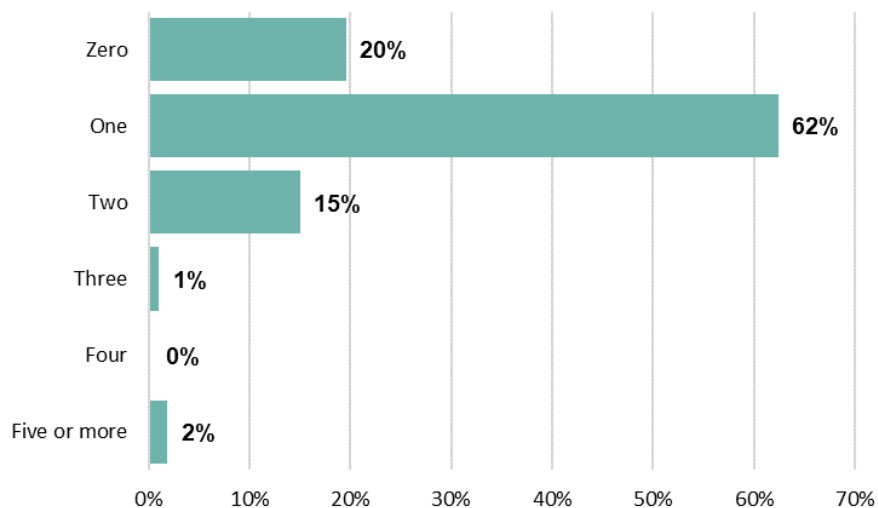
Based on the responses on Question 6, 64% of respondents live in a dwelling with two or more bedrooms. These results may indicate a large number of families living in these areas.

Question 7: *How many motor vehicle parking spaces are available for your household's use, including in a garage?*



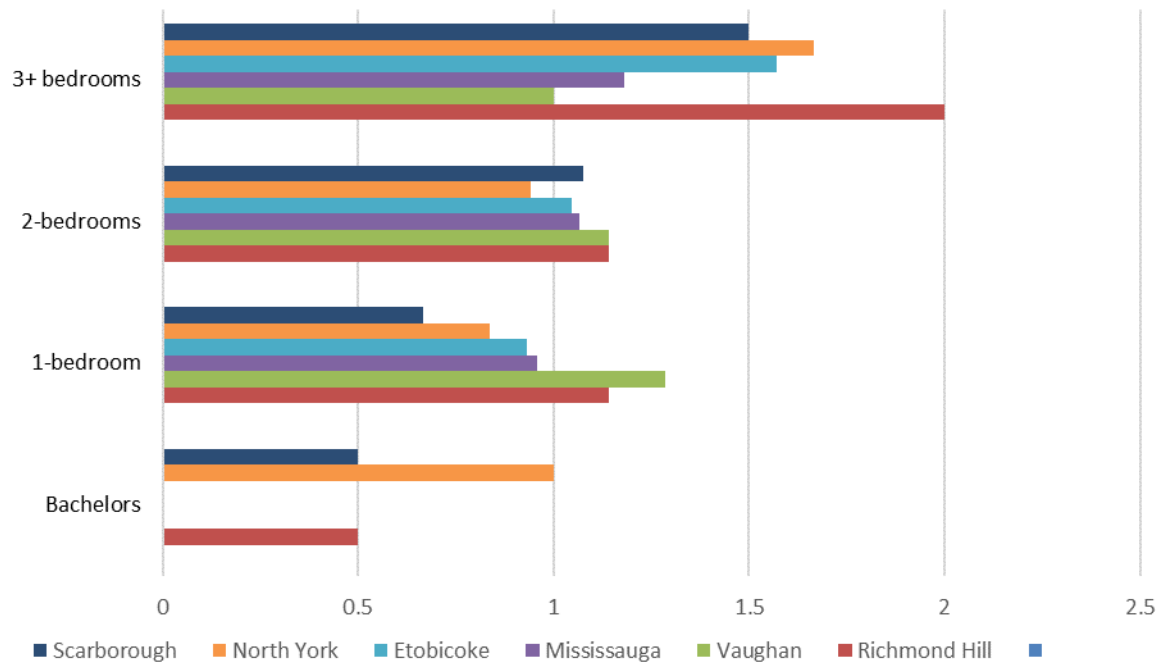
Out of the 500 respondents to the online survey, 90% indicated that they have at least one parking spot available to their household. The majority of respondents, 68%, have one parking spot available.

Question 8: *How many personal motor vehicles are typically at your dwelling (i.e., owned/leased/used by household members)?*



The survey indicated 20% of respondents do not have a personal motor vehicle at home. The majority, 62%, of respondents typically have one personal vehicle in their household. Only 18% report having more than 1 personal vehicle available to their household.

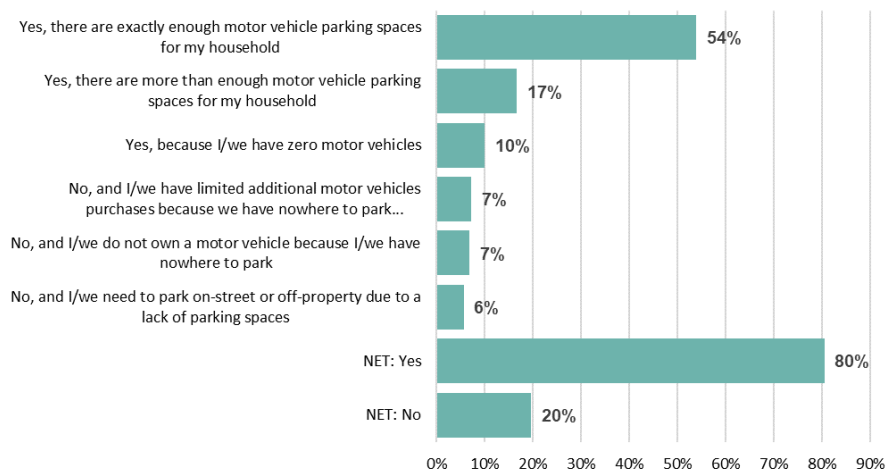
Auto ownership per residential unit - (COMPUTED) Average number of cars for each dwelling size



Note: TER removed one survey response as it was considered erroneous. If included, it would have increased the average auto ownership for bachelor apartment residents to 1.14. The response indicated that a survey respondent lived in a bachelor apartment and had 5 or more vehicles.

The survey results indicate that the number of vehicles per dwelling unit increases as the number of bedrooms increases. The survey indicated 0.5 vehicles per bachelor unit, increasing to 0.93 for 1 bedroom units and further to 1.44 for 3+ bedroom units.

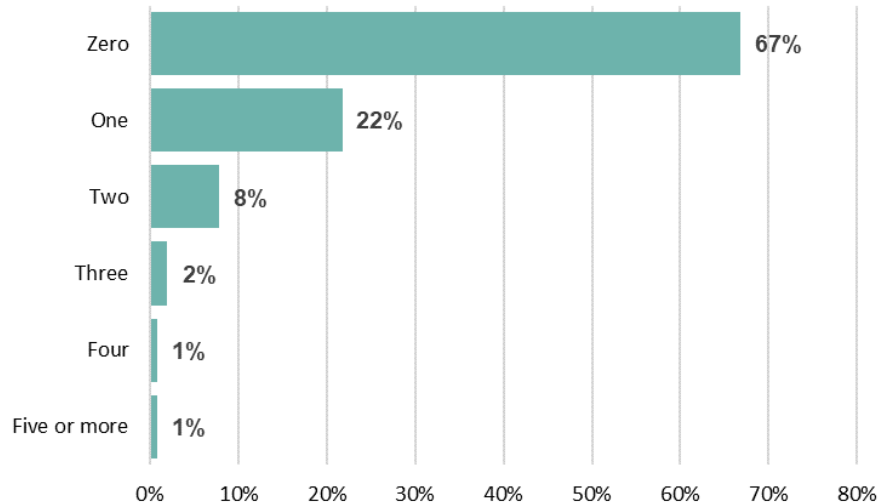
Question 9: Are there sufficient motor vehicle parking spaces for household members at your dwelling?



A majority of respondents (80%) indicated that there is a sufficient number of

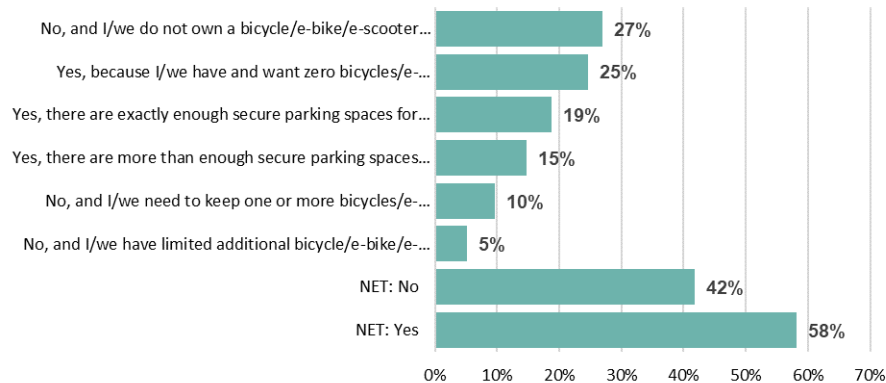
parking spaces available for their household. Within that 80%, approximately 17% indicated there is more than enough parking, which compares to 20% of respondents who indicated there is not enough parking.

Question 10: *How many bicycles/e-bikes/e-scooters are at your household (i.e. owned/used by household members) are used for typical travel needs?*



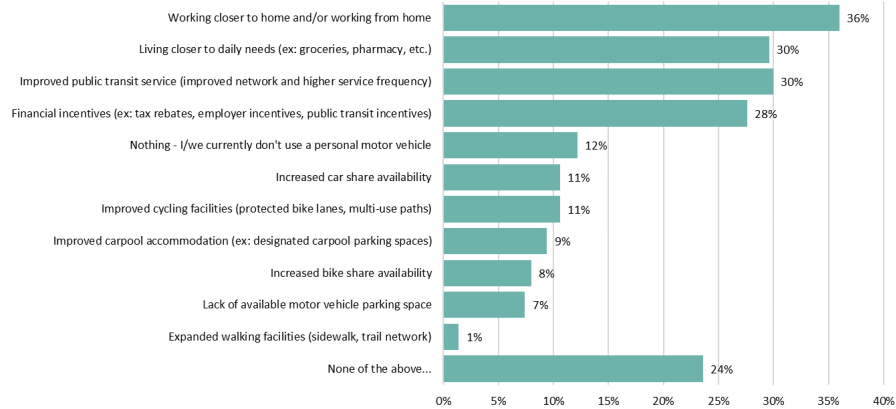
One third (33%) of respondents indicate owning/using bicycles/e-bikes/e-scooters. This result could indicate active transportation and micromobility is under utilized in these areas.

Question 11: *Are there sufficient dedicated bicycle/e-bike/e-scooter secure parking spaces (ex: bike parking room, locker) for your household members at your dwelling?*



A majority of respondents (58%) indicated that there are sufficient dedicated bicycle/e-bike/e-scooter secure parking spaces available. These results, along with the results of Question 10, further indicate the potential challenges residents may face while using active transport or micromobility, leading to underutilization.

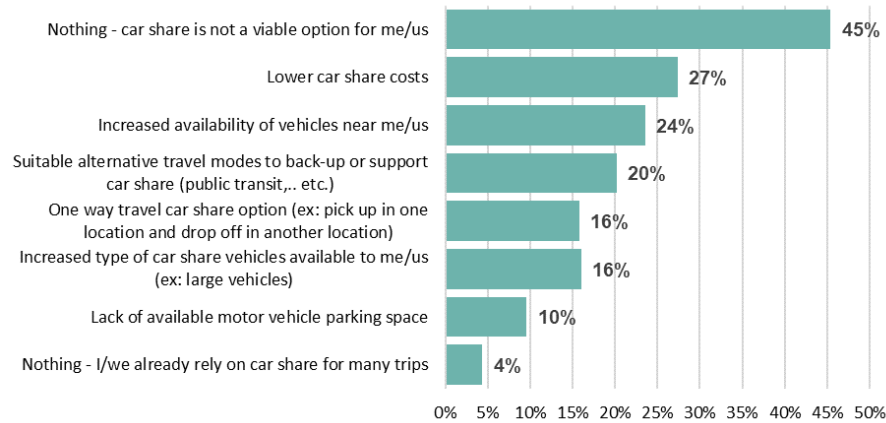
Question 15: What factors or incentives would encourage your household to reduce or fully replace personal motor vehicle use for your typical travel needs?



Note: Respondents can choose multiple responses.

The survey indicated 36% of respondents stated living closer to work and 30% stated living closer to their daily needs would incent them to reduce or fully replace their personal motor vehicle usage.

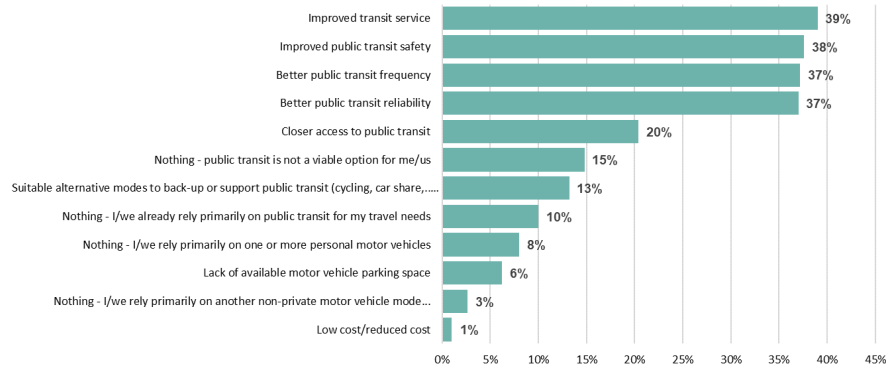
Question 16: What factors would need to change for your household to regularly rely on car share (ex: Communauto, Enterprise CarShare) for your typical travel needs?



Note: Respondents can choose multiple responses.

There are a number of factors that could increase the usage of car shares, such as increased availability and lower costs. However, 45% of respondents indicated that car share was not a viable option for them.

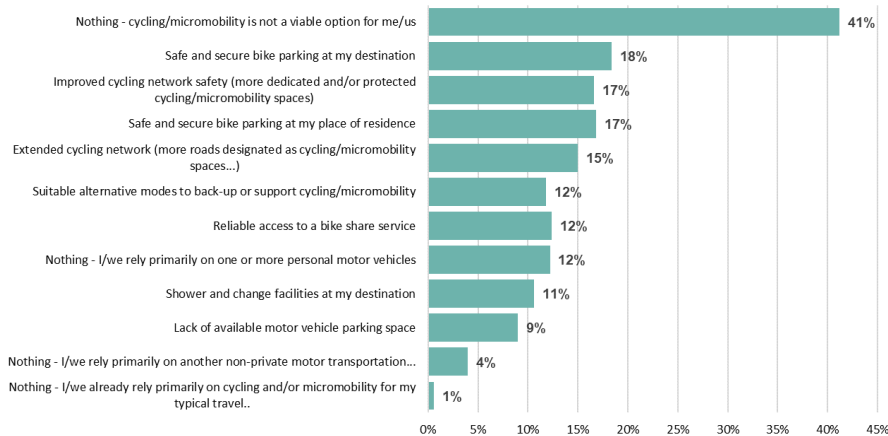
Question 17: What factors would need to change for your household to regularly rely on public transit for your typical travel needs?



Note: Respondents can choose multiple responses.

Improvements to transit (Improved Service, Better Frequency, Better Reliability, Closer Access, etc.) would all increase household reliance on public transit. There were 23% of respondents that indicated that there are no factors that would need to change for their household to regularly rely on public transit. These results may indicate an opportunity to improve transit which would result in increased ridership.

Question 18: What factors would need to change for your household to regularly rely on cycling and/or micromobility for your typical travel needs?



Note: Respondents can choose multiple responses.

There were a range of improvements suggested by respondents that could improve their use of cycling or micromobility. However, 41% of respondents recorded that cycling and/or micromobility is not a viable option for their household.

5 APPENDIX A: DETAILED SURVEY RESULTS

Qualifying Question - LOCATION and Number of Storeys

	NUMBER OF STOREYS	
	5 TO 9	10+
TOTAL	87	413
Richmond Hill	19	45
	22%	11%
Vaughan	2	13
	2%	3%
Mississauga	24	138
	28%	33%
Scarborough	12	57
	14%	14%
North York	7	89
	8%	22%
Etobicoke	23	71
	26%	17%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October

Q3 - Do you live within walking distance of a TTC subway station, GO station, or VIVA transit hub?

	TOTAL	LOCATION					
		Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Yes, I live within a 5 minute walking distance	226	27	10	40	52	64	33
	45%	42%	67%	25%	55%	67%	48%
Yes, I live within a 10 minute walking distance	133	18	4	44	24	26	17
	27%	28%	27%	27%	26%	27%	25%
No, I live beyond a 10 minute walking distance	131	15	1	76	18	4	17
	26%	23%	7%	47%	19%	4%	25%
Unsure	10	4	-	2	-	2	2
	2%	6%		1%		2%	3%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q4 - What is your age?

	TOTAL	LOCATION					
		Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
16-24	35	3	1	15	1	6	9
	7%	5%	7%	9%	1%	6%	13%
25-34	120	10	8	35	24	27	16
	24%	16%	53%	22%	26%	28%	23%
35-44	130	14	4	43	22	22	25
	26%	22%	27%	27%	23%	23%	36%
45-54	76	11	1	27	16	14	7
	15%	17%	7%	17%	17%	15%	10%
55-64	57	13	-	20	9	11	4
	11%	20%		12%	10%	11%	6%
65+	82	13	1	22	22	16	8
	16%	20%	7%	14%	23%	17%	12%
NET: 16-34	155	13	9	50	25	33	25
	31%	20%	60%	31%	27%	34%	36%
NET: 35-54	206	25	5	70	38	36	32
	41%	39%	33%	43%	40%	38%	46%
NET: 55+	139	26	1	42	31	27	12
	28%	41%	7%	26%	33%	28%	17%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q5 - In what type of dwelling do you currently live?

		LOCATION					
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Apartment/condo unit	487	61	14	159	93	94	66
	97%	95%	93%	98%	99%	98%	96%
Senior residence unit	6	1	-	1	-	1	3
	1%	2%		1%		1%	4%
Stacked townhouse	7	2	1	2	1	1	-
	1%	3%	7%	1%	1%	1%	

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q6 - How many bedrooms are in your dwelling?

		LOCATION					
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Zero (i.e. studio, loft, bachelor unit)	7	2	-	1	-	2	2
	1%	3%		1%		2%	3%
One	173	21	7	47	43	37	18
	35%	33%	47%	29%	46%	39%	26%
Two	268	35	7	92	44	51	39
	54%	55%	47%	57%	47%	53%	57%
Three or more	52	6	1	22	7	6	10
	10%	9%	7%	14%	7%	6%	14%
NET: One or more	493	62	15	161	94	94	67
	99%	97%	100%	99%	100%	98%	97%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q6A) - In addition to bedrooms, do you have a den within your dwelling that is used as a bedroom?

		LOCATION					
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Yes	159	21	7	54	23	29	25
	32%	33%	47%	33%	24%	30%	36%
No	335	43	8	105	71	66	42
	67%	67%	53%	65%	76%	69%	61%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q7 - How many motor vehicle parking spaces are available for your household's use, including in a garage?

		LOCATION					
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Zero	50	3	1	15	11	8	12
	10%	5%	7%	9%	12%	8%	17%
One	342	46	9	100	67	78	42
	68%	72%	60%	62%	71%	81%	61%
Two	88	13	1	41	12	9	12
	18%	20%	7%	25%	13%	9%	17%
Three	6	2	1	1	-	-	2
	1%	3%	7%	1%			3%
Four	1	-	-	1	-	-	-
	0%			1%			
Five or more	13	-	3	4	4	1	1
	3%		20%	2%	4%	1%	1%
NET: One or more	450	61	14	147	83	88	57
	90%	95%	93%	91%	88%	92%	83%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q8 - How many personal motor vehicles are typically at your dwelling (i.e., owned/leased/used by household members)?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Zero	98	4	2	35	23	19	15
	20%	6%	13%	22%	24%	20%	22%
One	312	45	11	92	55	68	41
	62%	70%	73%	57%	59%	71%	59%
Two	75	13	1	31	12	6	12
	15%	20%	7%	19%	13%	6%	17%
Three	5	2	-	2	1	-	-
	1%	3%		1%	1%		
Four	1	-	-	1	-	-	-
	0%			1%			
Five or more	9	-	1	1	3	3	1
	2%		7%	1%	3%	3%	1%
NET: One or more	402	60	13	127	71	77	54
	80%	94%	87%	78%	76%	80%	78%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Auto ownership per residential unit - (COMPUTED) Average number of cars for each dwelling size

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Bachelors	0.50	0.50	-	0.00	-	1.00	0.50
1-bedroom	0.93	1.14	1.29	0.96	0.93	0.84	0.67
2-bedrooms	1.05	1.14	1.14	1.07	1.05	0.94	1.08
3+ bedrooms	1.44	2.00	1.00	1.18	1.57	1.67	1.50

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q9 - Are there sufficient motor vehicle parking spaces for household members at your dwelling?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
No, and I/we do not own a motor vehicle because I/we have nowhere	34	4	-	9	5	9	7
	7%	6%		6%	5%	9%	10%
No, and I/we have limited additional motor vehicles purchases because	36	6	2	13	6	7	2
	7%	9%	13%	8%	6%	7%	3%
No, and I/we need to park on-street or off-property due to a lack of	28	2	2	12	8	-	4
	6%	3%	13%	7%	9%		6%
Yes, because I/we have zero motor vehicles	50	4	2	20	12	4	8
	10%	6%	13%	12%	13%	4%	12%
Yes, there are exactly enough motor vehicle parking spaces for my	269	40	6	77	51	58	37
	54%	63%	40%	48%	54%	60%	54%
Yes, there are more than enough motor vehicle parking spaces for my	83	8	3	31	12	18	11
	17%	13%	20%	19%	13%	19%	16%
NET: Yes	402	52	11	128	75	80	56
	80%	81%	73%	79%	80%	83%	81%
NET: No	98	12	4	34	19	16	13
	20%	19%	27%	21%	20%	17%	19%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q10 - How many bicycles/e-bikes/e-scooters are at your household (i.e. owned/used by household members) are used for typical travel needs?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Zero	334	44	10	105	62	66	47
	67%	69%	67%	65%	66%	69%	68%
One	109	13	4	44	16	19	13
	22%	20%	27%	27%	17%	20%	19%
Two	39	6	1	8	10	9	5
	8%	9%	7%	5%	11%	9%	7%
Three	10	1	-	2	4	1	2
	2%	2%		1%	4%	1%	3%
Four	4	-	-	1	2	-	1
	1%			1%	2%		1%
Five or more	4	-	-	2	-	1	1
	1%			1%		1%	1%
NET: One or more	166	20	5	57	32	30	22
	33%	31%	33%	35%	34%	31%	32%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q11 - Are there sufficient dedicated bicycle/e-bike/e-scooter secure parking spaces (ex: bike parking room, locker) for your household members at your dwelling?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
No, and I/we do not own a bicycle/e-bike/e-scooter because I/we have nowhere secure to park	135	24	5	32	20	30	24
	27%	38%	33%	20%	21%	31%	35%
No, and I/we have limited additional bicycle/e-bike/e-scooter purchases because we have nowhere secure..	26	2	2	13	3	3	3
	5%	3%	13%	8%	3%	3%	4%
No, and I/we need to keep one or more bicycles/e-bikes/e-scooters in	48	5	1	18	10	5	9
	10%	8%	7%	11%	11%	5%	13%
Yes, because I/we have and want zero bicycles/e-bikes/e-scooters	123	11	1	53	21	23	14
	25%	17%	7%	33%	22%	24%	20%
Yes, there are exactly enough secure parking spaces for my household	94	13	4	26	18	22	11
	19%	20%	27%	16%	19%	23%	16%
Yes, there are more than enough secure parking spaces for my	74	9	2	20	22	13	8
	15%	14%	13%	12%	23%	14%	12%
NET: Yes	291	33	7	99	61	58	33
	58%	52%	47%	61%	65%	60%	48%
NET: No	209	31	8	63	33	38	36
	42%	48%	53%	39%	35%	40%	52%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q12 - How did the COVID-19 pandemic impact your household's: - personal motor vehicle use?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
No change	234	30	6	81	44	39	34
	47%	47%	40%	50%	47%	41%	49%
Temporarily increased use	70	7	2	20	14	15	12
	14%	11%	13%	12%	15%	16%	17%
Temporarily decreased use	106	17	4	36	16	22	11
	21%	27%	27%	22%	17%	23%	16%
Increased use for foreseeable future	64	6	2	21	16	12	7
	13%	9%	13%	13%	17%	13%	10%
Decreased use for foreseeable future	26	4	1	4	4	8	5
	5%	6%	7%	2%	4%	8%	7%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q13 - How did the COVID-19 pandemic impact your household's: - public transit use?

	TOTAL	LOCATION					
		Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
No change	203	32	7	72	31	32	29
	41%	50%	47%	44%	33%	33%	42%
Temporarily increased use	39	7	-	14	4	4	10
	8%	11%		9%	4%	4%	14%
Temporarily decreased use	151	12	4	46	38	32	19
	30%	19%	27%	28%	40%	33%	28%
Increased use for foreseeable future	41	5	1	18	6	7	4
	8%	8%	7%	11%	6%	7%	6%
Decreased use for foreseeable future	66	8	3	12	15	21	7
	13%	13%	20%	7%	16%	22%	10%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q14 - How did the COVID-19 pandemic impact your household's: - bicycle and micromobility (e-bikes, e-scooters) use?

	TOTAL	LOCATION					
		Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
No change	370	47	11	113	71	73	55
	74%	73%	73%	70%	76%	76%	80%
Temporarily increased use	47	7	-	17	10	8	5
	9%	11%		10%	11%	8%	7%
Temporarily decreased use	38	5	2	12	8	4	7
	8%	8%	13%	7%	9%	4%	10%
Increased use for foreseeable future	38	5	2	17	5	7	2
	8%	8%	13%	10%	5%	7%	3%
Decreased use for foreseeable future	7	-	-	3	-	4	-
	1%			2%		4%	

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q15 - What factors or incentives would encourage your household to reduce or fully replace personal motor vehicle use for your typical travel needs?

	TOTAL	LOCATION					
		Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Expanded walking facilities (sidewalk, trail network)	89	12	5	35	15	13	9
	1%	1%	1%	1%	1%	1%	1%
Improved cycling facilities (protected bike lanes, multi-use paths)	53	8	2	18	12	6	7
	11%	13%	13%	11%	13%	6%	10%
Improved public transit service (improved network and higher service frequency)	150	15	7	46	29	33	20
	30%	23%	47%	28%	31%	34%	29%
Increased bike share availability	40	3	5	14	10	3	5
	8%	5%	33%	9%	11%	3%	7%
Increased car share availability	53	6	3	18	12	6	8
	11%	9%	20%	11%	13%	6%	12%
Improved carpool accommodation (ex: designated carpool parking)	47	5	2	20	11	5	4
	9%	8%	13%	12%	12%	5%	6%
Working closer to home and/or working from home	180	15	11	54	33	42	25
	36%	23%	73%	33%	35%	44%	36%
Living closer to daily needs (ex: groceries, pharmacy, etc.)	148	20	8	50	28	26	16
	30%	31%	53%	31%	30%	27%	23%
Financial incentives (ex: tax rebates, employer incentives, public transit)	138	19	5	41	28	26	19
	28%	30%	33%	25%	30%	27%	28%
Lack of available motor vehicle parking space	37	4	-	11	9	4	9
	7%	6%		7%	10%	4%	13%
Other	2	-	-	-	1	1	-
	0%				1%	1%	
Nothing - I/we currently don't use a personal motor vehicle	61	4	1	23	14	10	9
	12%	6%	7%	14%	15%	10%	13%
None of the above...	118	25	2	32	20	26	13
	24%	39%	13%	20%	21%	27%	19%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q16 - What factors would need to change for your household to regularly rely on car share (ex: Communauto, Enterprise CarShare) for your typical travel needs? - Increased availability of vehicles near me/us

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Increased availability of vehicles near me/us	118	8	5	37	32	25	11
	24%	13%	33%	23%	34%	26%	16%
Increased type of car share vehicles available to me/us (ex: large vehicles)	80	6	-	37	14	14	9
	16%	9%		23%	15%	15%	13%
One way travel car share option (ex: pick up in one location and drop off in another location)	79	7	4	30	16	14	8
	16%	11%	27%	19%	17%	15%	12%
Lower car share costs	137	12	4	43	29	27	22
	27%	19%	27%	27%	31%	28%	32%
Suitable alternative travel modes to back-up or support car share (public transit)	101	12	7	34	18	20	10
	20%	19%	47%	21%	19%	21%	14%
Lack of available motor vehicle parking space	48	6	2	19	11	4	6
	10%	9%	13%	12%	12%	4%	9%
Other	1	-	-	-	1	-	-
	0%				1%		
Nothing - I/we already rely on car share for many trips	22	-	1	8	3	5	5
	4%		7%	5%	3%	5%	7%
Nothing - car share is not a viable option for me/us	227	40	4	64	42	46	31
	45%	63%	27%	40%	45%	48%	45%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q17- What factors would need to change for your household to regularly rely on public transit for your typical travel needs?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Improved transit service	195	20	7	57	39	39	33
	39%	31%	47%	35%	41%	41%	48%
Better public transit frequency	186	17	9	57	36	43	24
	37%	27%	60%	35%	38%	45%	35%
Better public transit reliability	185	15	8	52	39	44	27
	37%	23%	53%	32%	41%	46%	39%
Closer access to public transit	102	8	2	46	17	19	10
	20%	13%	13%	28%	18%	20%	14%
Improved public transit safety	188	17	9	51	45	40	26
	38%	27%	60%	31%	48%	42%	38%
Suitable alternative modes to back-up or support public transit (cycling, car share)	66	11	1	18	16	10	10
	13%	17%	7%	11%	17%	10%	14%
Lack of available motor vehicle parking space	31	4	1	14	4	3	5
	6%	6%	7%	9%	4%	3%	7%
Low cost/reduced cost	5	-	-	3	2	-	-
	1%			2%	2%		
Other	1	-	-	-	-	1	-
	0%					1%	
Nothing - I/we rely primarily on one or more personal motor vehicles	40	8	-	12	6	6	8
	8%	13%		7%	6%	6%	12%
Nothing - I/we already rely primarily on public transit for my travel needs	50	2	1	21	16	8	2
	10%	3%	7%	13%	17%	8%	3%
Nothing - I/we rely primarily on another non-private motor vehicle	13	-	-	4	3	5	1
	3%			2%	3%	5%	1%
Nothing - public transit is not a viable option for me/us	74	21	3	21	7	11	11
	15%	33%	20%	13%	7%	11%	16%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q18 - What factors would need to change for your household to regularly rely on cycling and/or micromobility for your typical travel needs?

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
Total	500	64	15	162	94	96	69
Improved cycling network safety (more dedicated and/or protected cycling/micromobility spaces)	83	10	4	24	23	12	10
	17%	16%	27%	15%	24%	13%	14%
Extended cycling network (more roads designated as cycling/micromobility spaces...)	75	6	1	22	23	12	11
	15%	9%	7%	14%	24%	13%	16%
Reliable access to a bike share service	62	7	3	27	8	10	7
	12%	11%	20%	17%	9%	10%	10%
Safe and secure bike parking at my place of residence	84	10	3	29	12	17	13
	17%	16%	20%	18%	13%	18%	19%
Safe and secure bike parking at my destination	92	13	3	33	19	13	11
	18%	20%	20%	20%	20%	14%	16%
Shower and change facilities at my destination	53	6	2	16	11	8	10
	11%	9%	13%	10%	12%	8%	14%
Suitable alternative modes to back-up or support cycling/micromobility	59	6	2	24	11	13	3
	12%	9%	13%	15%	12%	14%	4%
Lack of available motor vehicle parking space	45	5	2	15	7	3	13
	9%	8%	13%	9%	7%	3%	19%
Other	2	-	-	1	-	-	1
	0%	-	-	1%	-	-	1%
Nothing - I/we rely primarily on one or more personal motor vehicles	61	15	1	19	10	8	8
	12%	23%	7%	12%	11%	8%	12%
Nothing - I/we already rely primarily on cycling and/or micromobility for	3	-	-	1	1	1	-
	1%	-	-	1%	1%	1%	-
Nothing - I/we rely primarily on another non-private motor	20	-	-	8	2	7	3
	4%	-	-	5%	2%	7%	4%
Nothing - cycling/micromobility is not a viable option for me/us	206	27	7	58	40	45	29
	41%	42%	47%	36%	43%	47%	42%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.

Q19 - Please provide any additional feedback you would like to share regarding your household parking situation or travel behaviour.

	LOCATION						
	TOTAL	Richmond Hill	Vaughan	Mississauga	Etobicoke	North York	Scarborough
BASE: Optional	282	31	5	104	52	49	41
Need more bike lanes/path	4	-	-	3	-	-	1
	1%			3%			2%
Too old for biking/physical condition/neither wait for nor take	6	1	1	-	3	-	1
	2%	3%	20%		6%		2%
Better safety/security measures	15	4	-	3	3	3	2
	5%	13%		3%	6%	6%	5%
Better public transit frequency	14	1	-	3	5	3	2
	5%	3%		3%	10%	6%	5%
Need closer access to public transit	4	1	-	-	1	1	1
	1%	3%			2%	2%	2%
Well managed (e.g., enough space, clean and safe)	20	5	1	4	3	4	3
	7%	16%	20%	4%	6%	8%	7%
Bike lanes make everything worse/choking traffic/taking away	7	1	-	-	5	1	-
	2%	3%			10%	2%	
Don't drive/don't own car/don't need personal parking	10	-	-	5	3	1	1
	4%			5%	6%	2%	2%
Lower cost/affordable transportation	2	-	-	2	-	-	-
	1%			2%			
Better public transit reliability	5	-	-	1	2	1	1
	2%			1%	4%	2%	2%
We have enough parking for our vehicle/parking is not a problem	29	5	1	13	4	3	3
	10%	16%	20%	13%	8%	6%	7%
Prefer to drive my car (e.g., safety, health reasons, toddler)	8	2	-	1	1	2	2
	3%	6%		1%	2%	4%	5%
Parking cost should be lower (e.g., too expensive)	7	1	1	2	2	1	-
	2%	3%	20%	2%	4%	2%	
More parking spaces needed/not enough parking spaces (e.g., my Bike frequently to get to places	24	4	-	7	3	6	4
	9%	13%		7%	6%	12%	10%
	2	-	-	1	1	-	-
	1%			1%	2%		
Relay on public transit/using public transit (e.g., work, grocery)	17	1	-	8	5	2	1
	6%	3%		8%	10%	4%	2%
Have great access to public transit/other transportation	6	1	-	1	-	2	2
	2%	3%		1%		4%	5%
We use our vehicle for various things (e.g., only grocery, weekend use)	7	2	-	3	1	1	-
	2%	6%		3%	2%	2%	
Better traffic management	4	-	-	-	4	-	-
	1%				8%		
Will have my own car in the future	3	-	-	-	1	1	1
	1%				2%	2%	2%
Walking distance my work/working from home	8	-	-	2	3	2	1
	3%			2%	6%	4%	2%
We are looking to reduce our use of the automobile (e.g., gas prices are	6	-	-	4	-	1	1
	2%			4%		2%	2%
Parking occasionally used by friends	3	-	-	1	2	-	-
	1%			1%	4%		
Need more bike/escooter availability (e.g., rental)	3	-	-	-	1	1	1
	1%				2%	2%	2%
Okay/average	8	1	-	3	-	1	3
	3%	3%		3%		2%	7%
Need more charging stations	4	-	-	1	2	1	-
	1%			1%	4%	2%	
Other	23	2	-	6	10	4	1
	8%	6%		6%	19%	8%	2%
None/nothing	67	7	1	29	6	15	9
	24%	23%	20%	28%	12%	31%	22%
Don't know/refused	56	3	-	22	10	8	13
	20%	10%		21%	19%	16%	32%

Source: Tate Economic Research Inc. Based on an online survey conducted by Logit Group in September and October 2023.



Appendix F

Municipal Review of Emerging Land Uses

Municipal Review of Emerging Land Uses

Short Term Accommodation

Short Term Accommodations are becoming increasingly popular, as evidence by the proliferation of services such as Airbnb. However, from a parking perspective, parking needs for this use would already be captured within the parking standard for the type of dwelling and strategy area within which the Short-Term Accommodation is contained, and as a result, additional parking standards would not be applicable. For example, a 2-bedroom apartment that is being used as a short-term accommodation would already have dedicated resident and visitor parking according to the default requirement. Should the City consider adopting the permissions for short-term accommodations, the following parking rates should apply:

RECOMMENDATIONS

Adopt the following parking rates:

- ▶ **Short-Term Accommodation:** No additional parking requirement. Parking needs would be managed based on the requirements for the primary dwelling.

Additional Residential Units (ARUs) / Multi-Tach Units

Additional Residential Units (ARUs) are often referred to as Secondary Suites, or Laneway Houses, and sometimes referred to as additional dwelling unit. An ARU is a self-contained unit with a private kitchen, bathroom facilities and sleeping areas in:

- A main residential building (such as a single detached house, semi-detached house or townhouse), and/or
- A separate building (such as above a detached garage) on the same property.

ARUs may be accessed by rear laneways or from within the primary dwelling. ARUs are currently also permitted in detached accessory buildings not accessed by rear laneways. These units add 'gentle' density within otherwise lower density neighborhoods and are not appropriate for higher density developments (e.g., apartments or condominiums). Currently, the permission for ARU's is:

- Two units in a detached house and 1 unit in an accessory structure, or
- Up to 3 units in a detached house with no additional units in accessory structures.

Parking requirements for ARUs shall be investigated and recommended through the Richmond Hill studies prepared for the 4x4 Housing Accelerator Fund (HAF) initiative.

The City will be undertaking a study that will investigate ARUs further. The study is in response to the City's Housing Accelerator Fund application and includes an investigation on four units as-of-right in Neighbourhoods as defined by the City's Official Plan.

Multi-tach is a multi-family, detached building containing three to five condominium/rental units that complies to all existing height and setback limits. There is no additional parking requirement for multi-tach units. Introducing multi-tach zoning therefore contributes to gentle densification in typically low-density areas without significantly affecting neighborhood character. Should the City consider adopting the permissions for multi-tach housing, the following parking rates should apply:

- RECOMMENDATIONS** Adopt the following parking rates (for all Parking Strategy Areas):
- ▶ **ARU:** Refer to the Richmond Hill studies prepared for the 4x4 HAF initiative.
 - ▶ **Multi-Tach:** No additional parking requirement.

Affordable Housing

The City of Richmond Hill’s Affordable Housing Strategy (July 2021)¹⁹ was endorsed by Council in November 2021, of which its purpose was to:

1. Develop a “Made in Richmond Hill Housing Strategy” to identify what the City can do to provide housing that is affordable to moderate-income households in the City.
2. Provide a framework for the City to deliver affordable housing through partnerships with other levels of government, developers, landowners and residents.

The Official Plan has definitions for ownership and rental affordable housing that are tied to household income. Households with income in the lowest 60% of the income distribution are considered low- and moderate-income for rental and ownership. The Official Plan definition also considers market price. The Affordable Housing Strategy recommends using household income as the test for ownership housing affordability and using a percentage of average market rent as a test for rental housing affordability. Instead of using the income distribution of the regional market area, Richmond Hill uses a more localized metric so that income levels and market rent are not overstated.

Several action items and recommendations in the Affordable Housing Strategy are relevant to parking and transportation, since parking provision and vehicle-ownership are strongly correlated to income and affordability in areas with few convenient mobility options. Specific actions include:

- 3.1** Assign parking requirements for residential developments in Major Transit Station Areas and other appropriate areas (e.g. areas that are well-served by public transit) that are commiserate with the walkability and existing and planned transit for that area. Based on the findings from the Parking and TDM Strategy Update, consider permitting further

¹⁹ <https://www.richmondhill.ca/en/shared-content/resources/documents/SRPI.21.089-Appendix-B-Affordable-Housing-Strategy-AODA.pdf>

reductions of parking requirements for affordable, supportive and purpose-built rental housing projects where appropriate and where the proponent can demonstrate that the demand for parking will be less than what is otherwise required.

3.2 Consider permitting above ground structured parking in mid-rise and high-rise buildings across the city where these developments are zoned.

4.4 As part of the Comprehensive Zoning By-law (CZBL) review, introduce a multi-tach zoning category to allow, as of right, multi-unit buildings that fit within the existing envelope in low density zones, as a way to introduce gentle density in established residential areas.

Furthermore, the findings of the Consolidated Best Practices Report and Data Collection Report were considered in establishing suitable parking requirements for affordable housing. As part of the Data Collection Report, it was found that most survey respondents believed that some degree of parking requirement reductions should be considered as a means to enable affordable housing development.

Other municipalities such as Newmarket and Toronto have adopted lower parking requirements for affordable housing or related land uses, where parking reductions ranging between 25% and 80% compared to standard condominium/apartment rates have been implemented for the parking supply requirements for residents. However, no reductions were implemented for visitor parking in these municipalities.

The action items of the Affordable Housing Strategy and the findings of the Reports have been incorporated into the updated parking standard recommendations by developing rates for affordable housing that are approximately 40% lower than the base rates for condominium/apartment style housing. These reduced rates apply to all the Parking Strategy Areas.

RECOMMENDATIONS Adopt the following parking rates (for all Parking Strategy Areas):

- ▶ **Affordable Housing:** 40% lower parking requirements for residents than the base rates of condominium/apartment style housing, but no reduction for residential-visitor parking.

A separate land use for Affordable Housing should be established to differentiate it from standard residential land uses.

Home Based Live-work / Home Occupations

Home Based Non-Residential / Live-work / Home Occupations are situations in which a business is operated within a personal home. The [Richmond Hill Zoning By-Law Review Home-Based Business \(Home Occupations / Live-Work Units / Home Businesses / Home Industries\) Technical Report](#) (June 1, 2021) describes and contrasts Home Occupations and Live-Work Units:

A Live-Work Unit is essentially a custom-built space for employment within a residential dwelling unit, which is the principal use. Unlike Home Occupations, which are permitted in low-rise residential areas, Live-Work Units are directed to intensification areas and mixed-use areas.

Usually when people think of Live-Work Units, they think of a two-storey building where the commercial component is on the main floor and the residents live upstairs. At the other end of the spectrum, a Live-Work Unit might be a three or four storey townhouse, with commercial space on the first floor and the residential component being on the remaining floors.

Generally speaking, the majority of live-work arrangements are built as part of new planned mixed-use projects with commercial space on the main floor and residential units on the other floors. Although such developments may appear to consist of self-contained Live-Work Units, the resident living in the upper level dwelling unit does not necessarily also own and operate a business within the building.

The amount of parking required for a Home Occupation – beyond the requirements for the primary dwelling – may be influenced by the number of non-resident employees within the occupation. The technical report recommended that non-resident employees be limited to one. The City should consider limiting the allowance of medical offices as Home Occupations so as to avoid concerns with many patients arriving by vehicle and causing parking disruptions. The Report further recommended the following:

In keeping with City's initiatives and policies to reduce single-occupancy vehicle use, and promote complete communities and active transportation, Richmond Hill Staff may wish to reassess the need for non-resident employee parking in neighborhoods with good alternative transportation options and/or permit the sharing of parking spaces between the Home Occupation and residents.

The City's Yonge/Bernard KDA Zoning By-law contains requirements for Home Occupation use in the context of mid- and high-density residential uses. The By-law does not require additional parking to be provided as long as the primary dwelling unit provides for the minimum required parking spaces. However, it stipulates additional restrictions beyond parking:

Home occupation is permitted in an apartment dwelling unit, street townhouse dwelling, block townhouse dwelling, stacked townhouse dwelling, rear lane townhouse dwelling, back to back dwelling or a quadruplex dwelling subject to the following provisions:

- a) shall be conducted entirely within an enclosed building;*
- b) shall not detract from the residential character of the dwelling unit or the lot on which the home occupation is located;*

c) shall not involve the outdoor storage or an outdoor display and sales area for materials or finished products associated with the home occupation use;

d) shall not occupy more than 25 percent of the gross floor area of the dwelling unit;

e) shall not result in the discharge or emission of odorous, noxious or toxic matter or vapours, heat, glare, noise or radiation, or recurrently generated ground vibrations;

f) shall only be for an office;

g) shall not consist of an occupation that involves the salvage, repair, maintenance or sales of motor vehicles or motor vehicles' engines or parts; and,

h) shall not consist of an occupation that involves the sale of a commodity not produced on the premises, except that telephone or mail order sales of goods may be permitted provided that customers do not enter the premises to inspect, purchase or take possession of the goods.

The recommendation for Home Occupations is that no additional parking space shall be required provided that the primary dwelling unit provides for the minimum required parking spaces. However, additional requirements beyond parking – such as restrictions on the maximum floor area and the permitted land uses – are recommended to be captured in the CZBL.

Live-Work Units should account for additional parking required for the dedicated commercial, retail, and/or office components of the units in addition to the residential component. For Live-Work Units in Parking Strategy Area 4 of the City, two parking spaces would be required. For Parking Strategy Areas 1-3, one parking space would be required for the live-work unit under the assumption that there would be access to sustainable transportation modes.

The maximum parking for both Home Occupations and Live-Work Units would be three spaces in Parking Strategy Area 4, and two spaces in Parking Strategy Areas 1-3.

RECOMMENDATIONS

Adopt the following parking rates:

▶ **Home-Based Live Work:**

↳ Parking Strategy Area 1-3: 1 parking space.

↳ Parking Strategy Area 4: 2 parking spaces.

▶ **Home Occupations:**

↳ Parking Strategy Area 1-4: No additional parking space is required provided that the primary dwelling unit provides for the minimum required parking spaces. Additional requirements beyond parking, such as restrictions on the maximum floor area and the permitted land uses, are recommended to be captured in the CZBL.

Shared Housing with and without Support

Shared Housing offer affordable housing and need service, and fall into two categories: (1) group homes where support and care are offered, and (2) rooming houses, lodging houses, and boarding houses where no support is offered. The City is determining how shared housing fits with the character of the neighborhoods and whether the CZBL will need to address this form of accommodation.

Shared Housing are typically limited to 10 persons per household/unit but can have varying numbers of persons being housed. Parking at a Shared Housing is primarily intended to serve staff who provide residents with assistance. The parking standards will be updated to include Shared Housing as a land use. This avoids the complexity of determining the number of bedrooms in each unit and enforcing the parking requirements based on number of rooms. All three of the variations of Shared Housing listed above would have the same parking requirements.

RECOMMENDATIONS

Adopt the following parking rates:

- ▶ **Shared Housing with Support** (Including Long Term Care Homes and Group Homes) for all Parking Strategy Areas:
 - ↳ 0.25 parking spaces per bed
- ▶ **Shared Housing without Support** (Including Rooming Houses, Lodging Houses, and Board Houses):
 - ↳ Parking Strategy Area 1-3: 1 parking space per unit
 - ↳ Parking Strategy Area 4: 2 parking spaces per unit

Automotive Commercial

Automotive commercial uses were reviewed in the **Automotive Commercial Zoning By-law Technical Paper – First Draft Study** (September 2021, gladki planning associates). The study recommended that automotive commercial land uses be made more consistent and that definitions be clarified, as follows:

- **Fuel Station**: a place where petrol, petroleum products or automobile accessories are sold but does not include any repairs;
- **Automotive Body Shop**: a place used for the major repair of automobiles and motor vehicles including body work and painting;
- **Repair Shop**: a place used for the repair of automobiles and motor vehicles. A repair shop shall not include an automotive body shop use;
- **Car Wash**: a building, part of a building or commercial premises used for the washing of automobiles by automatic equipment, semi-automatic equipment or manually;

- **Automotive Dealership:** a place where new or used motor vehicles are sold, displayed or leased;
- **Rental Agency:** a commercial establishment or a part of a premises where vehicles are rented;
- **Vehicle Storage Facility:** a place for storing, parking, cleaning, dispatch or minor repair of fleet vehicles including taxi, car services or vehicle sharing fleet, a displace office or administrative office may be included as an accessory use; and
- **Transit Terminal:** a place for storing, parking, or dispatch of transit vehicles operated by or on behalf of a municipal government or provincial agency.

Transit terminal rates would be dependent on location/facility specific studies undertaken by transit agencies, taking into account fleet sizes, employee numbers, and other unique facility characteristics. Although some municipalities have transit terminal rates, the use is unique enough that it should warrant location-specific parking studies which may account for anticipated park and ride activity levels, staffing requirements, and generally the area in which the terminal is located.

The Current Practices Review for automotive uses is provided in **Appendix H**. There is some consistency between by-laws in terms of land uses, however some land uses are grouped in with comparable uses. Dealerships and rental agencies, for example, are grouped in some by-laws in terms of parking rates. Another example of grouping is for automobile body shops and repair shops – however, some municipalities also distinguish these uses by requiring different rates.

In terms of control variables, some uses refer to the number of service bays, wash bays, or fuel pumps as control variables, depending on land use, rather than using only floor area based rates. In some cases, the parking rates are a function of two variables. In general, increasing the number of control variables also increases the complexity of determining parking needs, which is acceptable as long as the accuracy improves for the parking calculation.

Some other peripheral by-laws from the City of Richmond Hill developed in the 1990s were also reviewed, but the rates are typically much higher than modernized rates. The rates are also occasionally grouped into very general groupings that do not address specific needs of each land use.

In general, the recommendation is to have the following land use groups for parking requirements:

- Fuel Station
- Automotive Body Shop / Repair Shop
- Car Washing / Vehicle Washing Facilities (mechanical drive-through, or manual/bays)
- Automotive Dealership / Rental Agency

RECOMMENDATIONS

Adopt the following parking rates (for all Parking Strategy Areas):

- ▶ **Fuel Station:**
3.0 spaces per 100 SM of the kiosk (excluding restaurant) plus the restaurant component
- ▶ **Automotive Body Shop / Repair Shop:**
3.0 spaces per 100 SM (of the kiosk) except for Parking Strategy Area 1 where the requirement is 2.0 spaces per 100 SM
- ▶ **Car Wash / Vehicle Washing Facility Manual/Vacuum/Stall):**
1 parking space per bay
- ▶ **Car Wash / Vehicle Washing Facility (Mechanical/Stacking):**
8 stacking spaces
- ▶ **Automotive Dealership / Rental Agency:**
3.0 spaces per 100 SM

Details for each of the above recommendations are provided below.

Fuel Station

Some municipalities use number of gas pumps as the control variable, while others use kiosk or convenience store gross floor area (GFA) as the control variable. Newmarket is the only municipality that has a tiered approach with a reduced rate for kiosks over a size threshold of 26 square meters, where the smaller kiosks only require two parking spaces as a fixed value, and for fueling stations with kiosks greater than 26 SM parking must be supplied at a rate.

It is recommended that Richmond Hill proceed with a rate based on kiosk floor area, as the number of pumps is not directly related to the number of additional parking spaces that would be required. Typically, additional parking spaces are only necessary when there is a supplementary use within the kiosk that would generate trips in addition to the trips that refueling generates, such as a food partner (restaurant). Supplementary uses would only be accommodated in larger kiosks, and as a result, the number of fueling positions and the number of supplementary uses are not directly correlated. The recommended rate for fuel stations is 3.0 spaces per 100 SM GFA (excluding restaurant GFA), with a minimum of two parking spaces, plus the restaurant component.

Automotive Dealership / Rental Agency

Some municipalities combine these uses for parking consideration, considering that rental services are sometimes paired with vehicle sales/dealerships. Some municipalities distinguish between the areas intended for vehicle showings and those intended for vehicle servicing and repair. For simplicity, recommended parking rates for these uses is 3.0 parking spaces per 100 SM GFA.

Car Wash

Car wash and car washing facility parking requirements are inconsistent across municipalities. Some municipalities only address the needs of mechanical drive-through style car washes, while others only address the needs of manual car washing facilities with dedicated bays (which also typically have vacuums external to the washing bays). It is recommended that the by-law differentiate between manual and mechanical car washes.

For mechanical car washes, the recommendation is to require a stacking lane to accommodate 8 vehicles using the stacking lane space dimensions.

For manual car washes/vacuum facilities, the recommendation is to require one parking space for each washing bay (external to the washing bay). Vacuums could be placed at these parking spaces and would allow for those who are washing their vehicle to also vacuum their vehicles before or after the washing. If manual facilities are paired with a fueling station, then kiosk parking may not be shared with the manual car wash facility when calculating parking requirements.

Automotive Body Shop / Repair Shop

Automotive body shops and repair shops are related uses that are typically distinct within zoning by-laws largely due to considerations outside of parking needs. For example, automotive body shops can generate higher noise levels than a typical repair shop and are often not permitted near residential zones. Similar to fueling stations, auto body and repair shops are sometimes governed by control variables that are not GFA-based, such as the number of service bays – occasionally they are based on both GFA and number of service bays. For simplicity, it is recommended that parking requirements for these uses be combined, and based only on floor areas. Newmarket uses a floor area only approach with a relatively low rate, but it excludes the service bays from the calculation for repair shops and includes the service bays for body shops. Brampton and Mississauga have comparable rates that are lower than Newmarket, and they allow for 50% of spaces to be tandem, which is a reflection of the expectation that many people drop their vehicles off for work to be done which may result in the vehicle being stored for extended periods of time. For simplicity, it is recommended that a rate be established based on floor areas only. The recommended rate is 3.0 spaces per 100 SM GFA, with a minimum of 2 parking spaces.

Community Centre

Community centers are distinguished from other uses in many municipal by-laws and are defined as used for indoor and outdoor recreational activities and/or other community facilities which may include recreation, arts, crafts, museums, social and charitable activities. There are only two instances where community centers are grouped with other community uses or facilities, such as art galleries, day nurseries, libraries, and museums. Therefore, separating community centers is recommended for Richmond Hill. The recommended general rate is 4.50

spaces per 100 SM for Parking Strategy Area 4 with reduced rates for other Parking Strategy Areas.

RECOMMENDATIONS	Adopt the following parking base rates, with additional tiers depending on the Parking Strategy Area:
	▶ Community Centre and Recreation Centre:
	↳ <u>Parking Strategy Area 1</u> : 2.0 parking spaces per 100 SM
	↳ <u>Parking Strategy Area 2</u> : 2.5 parking spaces per 100 SM
	↳ <u>Parking Strategy Area 3</u> : 3.5 parking spaces per 100 SM
	↳ <u>Parking Strategy Area 4</u> : 4.5 parking spaces per 100 SM

Recreation Centre

Recreation Centres may differ from Community Centres in that they are geared toward playing sports in fields, courts, and swimming pools. Therefore, recreation centre rates often use these other metrics in addition to floor area to establish rates. The City of Richmond Hill's 2010 PS recommendations used a combination of floor areas plus fields. In order to simplify the calculation and reduce the number of similar and overlapping land use classifications within the CZBL, it is recommended that the recreation centre rates match the community centre rates.

Library

A public library is addressed in most of the reviewed by-laws and studies. Similar to Community Centres, there were two examples where libraries were grouped into community uses or facilities, but there were large enough variations in rates for the rest of the by-laws and studies between library and other uses that necessitate the separation of library as its own use. Based on the other by-laws and studies, the recommended rate for the Rest of Richmond Hill and Business parks is 2.85 spaces per SM GFA.

RECOMMENDATIONS

Adopt the following parking base rates, with additional tiers depending on the Parking Strategy Area:

► **Library:**

- ↳ Parking Strategy Area 1: 1.00 parking spaces per 100 SM
- ↳ Parking Strategy Area 2: 1.50 parking spaces per 100 SM
- ↳ Parking Strategy Area 3: 2.00 parking spaces per 100 SM
- ↳ Parking Strategy Area 4: 2.85 parking spaces per 100 SM

Theatre

Parking rates for theatres are fairly consistent across municipalities. The majority of municipalities specify theatre parking rates, except for a couple that add theatres into a larger category such as Commercial Recreation Centre, or to a list of similar large spaces with many seats (e.g., stadiums and auditoriums). Most municipalities do not use floor areas as the variable, but rather specify rates per 6 seats. Richmond Hill has this variable for the Rest of Richmond Hill and Business Park rates but the rate is established based on per 7.5 seats for Rapid Transit Corridors. Due to most municipalities using 6 seats as the control variable for theatre, it is recommended for Richmond Hill to consistently use the 6 seats variable for the theatre land use. The current Richmond Hill rates align with other municipalities so it should stay the same with the slight adjustment of Rapid Transit Corridors rate from 1.00 space per 7.5 seats to 0.80 spaces per 6 seats.

RECOMMENDATIONS Adopt the following parking base rates, with additional tiers depending on the Parking Strategy Area:

► **Theatre:**

- ↳ Parking Strategy Area 1: 0.50 parking spaces per 6 seats
- ↳ Parking Strategy Area 2: 0.60 parking spaces per 6 seats
- ↳ Parking Strategy Area 3: 0.80 parking spaces per 6 seats
- ↳ Parking Strategy Area 4: 1.00 parking spaces per 6 seats

Warehousing

Municipalities address warehousing slightly differently – the majority simply have it under a “warehouse” land use, whereas others couple it with distribution facilities; one even places it within storage uses. Regardless, warehouses are addressed as large facilities that typically only have general rates since they are usually located in more industrial places outside of urban centres or growth areas. The 2010 Parking Strategy has “Retail Warehousing” as a category, unique amongst reviewed municipalities for its retail connection, with much higher rates than other municipalities at 6.00 per 100 SM for the Rest of Richmond Hill. The median for rates of other municipalities is 1.10 per 100 SM. The recommended rate for Richmond Hill 'warehousing' without the 'retail' qualifier is 0.7 per 100 SM, without distinction between 'general warehousing' and 'retail warehousing'.

RECOMMENDATIONS Adopt the following parking base rates (for all Parking Strategy Areas):

- **Warehouse:** 0.7 parking spaces per 100 SM

All Other Institutional Uses

Titled “All other institutional uses” in the 2010 Richmond Hill Parking Strategy, this category is labelled “Commercial School” for other municipalities, which differs from elementary, secondary, and post-secondary schools. Museums and emergency care facilities are also considered All Other Institutional Uses as they have similar median recommended rates. The median rate for other municipalities is 5.00 per 100 SM, which is 21% lower than Richmond Hill’s 6.30 per 100 SM rate. Thus, the recommended rate is 4.50 per 100 SM for Parking Strategy Area 4. The remaining Parking Strategy Areas also have a reduced recommended rate from the original Richmond Hill Parking Strategy rate, which results in 3.00 per 100 SM for Parking Strategy Area 2 and 2.50 per 100 SM for Parking Strategy Area 1.

RECOMMENDATIONS Adopt the following parking base rates, with additional tiers depending on the Parking Strategy Area:

▶ **All Other Institutional Uses:**

- ↳ Parking Strategy Area 1: 2.50 parking spaces per 100 SM
- ↳ Parking Strategy Area 2: 3.00 parking spaces per 100 SM
- ↳ Parking Strategy Area 3: 4.00 parking spaces per 100 SM
- ↳ Parking Strategy Area 4: 4.50 parking spaces per 100 SM

Industrial

Industrial uses are only permitted in the Rest of Richmond Hill and Business Parks areas. These uses typically need a large amount of space away from urban centres and/or residential areas. They have the same 2010 Richmond Hill Parking Strategy and recommended rates of 1.10 spaces per 100 SM. For reference, the City of Toronto has a manufacturing rate of 0.5 spaces per 100 SM in policy areas, which increases to 1.0 parking spaces per 100 SM in general areas of the City.

RECOMMENDATIONS Adopt the following parking base rates (for all Parking Strategy Areas):

- ▶ **Industrial:** 1.10 parking spaces per 100 SM

Hospital

Hospitals are mentioned in parking rate by-laws as their own land use as they are a unique land use that requires a large space. Many municipalities show the parking rate per 100 SM, but at times there are rates per bed or both 100 SM and per bed rates in parking by-laws. Based on these findings, it is recommended to change the parking rate variable from per bed to per 100 SM and have a new rate of 2.50 spaces per 100 SM for all Parking Strategy Areas.

RECOMMENDATIONS Adopt the following parking base rates (for all Parking Strategy Areas):

- ▶ **Hospital:** 2.50 parking spaces per 100 SM



Appendix G

Automotive Uses Current Practices Comparison

Minimum Parking Requirements - Automotive Commercial Uses

Town of Richmond Hill 2010 Parking Strategy Parking Strategy (By-law 111-17 does not include these uses)						City of Hamilton By-law 05-200 (+ By-law 17-240 not final and binding)	
Land Use	Rest of RH	Downtown Local / KDA	Region Centre	Rapid Transit Corridors	Business Parks	Land Use	General Rates
Fuel Station	3.2 / 100 SM (minimum of 2 spaces)	n/a	n/a	2.6 / 100 SM (minimum of 2 spaces)	3.2 / 100 SM (minimum of 2 spaces)	Motor Vehicle Gas Bar	1 / 25 SM GFA
Automotive Body Shop	n/a	n/a	n/a	n/a	n/a	Commercial Motor Vehicle Sales, Rental and Service Establishment	1 / 100 SM + 2 / service bay OR 1 / 115 SM
Repair Shop	3.2 / 100 SM (minimum of 2 spaces)	n/a	n/a	2.6 / 100 SM (minimum of 2 spaces)	3.2 / 100 SM (minimum of 2 spaces)	Motor Vehicle Service Station	4 / service bay
Car Wash	n/a	n/a	n/a	n/a	n/a	Motor Vehicle Washing Establishment	1 / 30 SM + 2 / washing bay
Automotive Dealership	n/a	n/a	n/a	n/a	n/a	Motor Vehicle Dealership	1 / 100 SM + 2 / service bay
Rental Agency	n/a	n/a	n/a	n/a	n/a	Commercial Motor Vehicle Sales, Rental and Service Establishment	1 / 100 SM + 2 / service bay OR 1 / 115 SM
Vehicle Storage Facility	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Town of Richmond Hill Grandfathered By-laws (other)

42-02 & 313-96:

Motor Vehicle oil/lubrication establishment	-2 parking spaces per employee -1 parking space for each service bay
Gas bar convenience retail store	5.4 / 100 SM (minium 4)
Gas bar or automobile service station	3.2 / 100 SM (min 2)

66-71 - no relevant specific uses / old by-law

190-87 - no relevant specific uses / old by-law

2325-68 - no relevant specific uses / old by-law

2523 - no relevant specific uses / old by-law

B1703 - no relevant specific uses / old by-law

Minimum Parking Requirements - Automotive Commercial Uses

City of Markham By-law 28-97		Markham Centre By-law 2004-196		Town of Newmarket By-laws 2010-40 & 2019-06			
Land Use	General Rates	Land Use	MC-D1	Land Use	General Rates	Urban Centre Land Use / Rates	
Gas Bar	Greater of 5 OR 1 / 15 SM NFA	Fuel Station	n/a	Motor Vehicle Service Stations (means a fuel station)	<ul style="list-style-type: none"> • 2 parking spaces where the gross floor area of the kiosk is 26 m2 or less or • 1 parking space per 18 m2 where the kiosk is greater than 26 m2 with a minimum of 2 parking spaces 	Motor Vehicle Service Stations (means a fuel station)	<ul style="list-style-type: none"> • 2.0 parking spaces where the gross floor area of the kiosk is 25m2 or less or • 1.0 parking space per 18m2 where the kiosk is greater than 26m2 with a minimum of 2.0 parking spaces
n/a	n/a	Automotive Body Shop	n/a	Motor Vehicle Body Shop	1 / 13 SM (incl. service bays)	Motor Vehicle Repair Facility	1 / 13 SM (incl. service bays)
Motor Vehicle Service Station	Greater of 5 / premises OR 1 / 20 SM NFA	Repair Shop	n/a	Motor Vehicle Service Shop	1 / 13 SM (excl. service bays)	Motor Vehicle Service Shop	1 / 13 SM (incl. service bays)
Motor Vehicle Service Station (incl. Car Wash)	Greater of 5 / premises OR 1 / 20 SM NFA	Car Wash	n/a	Motor Vehicle Washing Establishment	Queing/Stacking: - 10 vehicles inbound - 3 vehicles outbound	n/a	n/a
n/a	n/a	Automotive Dealership	n/a	Motor Vehicle Sales Establishment	1 / 25 SM (showing, repairing, displaying, and retailing vehicles plus) + 1 / 45 SM (visitor/customer parking to a maximum requirement of 10 spaces)	Motor Vehicle Sales Establishment	1 / 40 SM (excl. showroom)
Motor Vehicle Service Station (incl. Rental Agency)	Greater of 5 / premises OR 1 / 20 SM NFA	Rental Agency	n/a	Motor Vehicle Service Shop (includes rentals)	1 / 13 SM (excl. service bays)	Motor Vehicle Rental Establishment	1 / 35 SM GFA
n/a	n/a	Vehicle Storage Facility	n/a	Transportation Depot	0.5 / 100 SM GFA	n/a	n/a

Minimum Parking Requirements - Automotive Commercial Uses

City of Toronto By-law 569-2013		City of Vaughan Draft Comprehensive Zoning By-Law No. 001-2021				
Land Use	General Rates	Land Use	General Rates	VMC	MMU, HMU, CMU, GMU, EMU	LMU, KMS, MMS, WMS
Vehicle Fuel Station	(A) PA1-3: 2.5 / 100 SM GFA (B) PA4 3.0 / 100 SM GFA (C) other: 3.5 / 100 SM GFA	Fueling Station	4 / gas pump	n/a	0.25 / gas pump	n/a
Vehicle Repair Shop	3.5 / 100 SM GFA	Motor Vehicle Body Repair	2 / service bay	n/a	2 / service bay	n/a
Vehicle Service Shop	3.5 / 100 SM GFA	Motor Vehicle Repair	2 / service bay	n/a	2 / service bay	n/a
Vehicle Washing Establishment	10 vehicle stacking spaces (min)	Car Wash	8 vehicle stacking spaces			
Vehicle Dealership	(A) PA1-4: 1 / 100 SM GFA; (B) other: 3 / 100 SM GFA	Motor Vehicle Sales	4 / 100 SM GFA	n/a	1.4 / 100 SM GFA	n/a
Vehicle Dealership (incl. rentals)	(A) PA1-4: 1 / 100 SM GFA; (B) other: 3 / 100 SM GFA	Motor Vehicle Rental	3 / 100 SM GFA	n/a	1.5 / 100 SM GFA	n/a
Vehicle Depot	(A) PA1-3 (excl. 4): 0.1 / 100 SM GFA; (B) other: 0.2 / 100 SM GFA	n/a	n/a	n/a	n/a	n/a

Minimum Parking Requirements - Automotive Commercial Uses

City of Brampton By-law 270-2004		City of Mississauga By-law 0225-2007		Town of Oakville By-law 2014-014	
Land Use	General Rates	Land Use	General Rates	Land Use	General Rates
Motor Vehicle Service Station or Gas Bar	1 / 23 SM GFA	Motor Vehicle Service Station	5.4 / 100 SM GFA	Motor Vehicle Service Station	1 / 100 SM NFA
Motor Vehicle Repair Shop or Motor Vehicle Body Shop	1 / 18 SM GFA (50% of the spaces may be in tandem)	Motor Vehicle Body Repair Facility	4.3 / 100 SM GFA (50% of the spaces may be tandem)	Motor Vehicle Body Shop	1 / 100 SM NFA
Motor Vehicle Repair Shop or Motor Vehicle Body Shop	1 / 18 SM GFA (50% of the spaces may be in tandem)	Motor Vehicle Repair Facility	4.3 / 100 SM GFA (50% of the spaces may be tandem)	Motor Vehicle Repair Facility	1 / 100 SM NFA
Motor Vehicle Washing Establishment	5 + 10 car stacking spaces	Motor Vehicle Wash Facility	4.0 / wash bay, of which 2.0 spaces can be located at vacuum stations, + a stacking lane with <u>10 spaces / bay</u>	Motor Vehicle Washing Facility	1 / 100 SM NFA
n/a	n/a	Motor Vehicle Sales, Leasing and/or Renting Facility	4.3 / 100 SM GFA (exclusive of display and storage parking)	Motor Vehicle Dealership	1 / 100 SM NFA
n/a	n/a	Motor Vehicle Sales, Leasing and/or Renting Facility	4.3 / 100 SM GFA (exclusive of display and storage parking)	Motor Vehicle Rental Facility	1 / 100 SM NFA
n/a	n/a	Vehicle Pound Facility	3.2 / 100 SM GFA (office) (minimum of 4 spaces)	Motor Vehicle Storage Compound	1 / 100 SM NFA

Recommendations

MEDIAN RATE (/ 100 SM)	AVERAGE RATE (/ 100 SM)	Notes/Comments
GENERAL AREAS		
4.2	4.2	<ul style="list-style-type: none"> - Fuel pumps not a good control variable. - Consider minimum of 2 spaces. - Newmarket has 2 tiers based on kiosk size.
3.9	3.9	<ul style="list-style-type: none"> - service bays less common control variable, sometimes used in combination with GFA-based - consider allowing tandem parking spaces (50%)
4.3	4.3	<ul style="list-style-type: none"> - service bays less common control variable, sometimes used in combination with GFA-based - consider allowing tandem parking spaces (50%)
10 stacking spaces (mechanical drive-thru) <u>OR</u> 1 / washing bay (manual)		<ul style="list-style-type: none"> - most do not distinguish between manual bays and mechanical car washes - only Newmarket requires outbound stacking
3.0	2.8	<ul style="list-style-type: none"> - some municipalities use service bays as a secondary control variable, but less common - one distinguishes between service area and showing area, requiring different parking rates for visitors vs. repair/service - consider excluding display/storage/showroom
3.0	3.6	
0.8	1.2	<ul style="list-style-type: none"> - not all municipalities have a rate for this - Mississauga rate is much higher than others, however, a pound facility is not necessarily simply for storage



Appendix H

Compact Car Parking Space Review

Compact Car Parking Space Review

This is a review of the City’s existing compact car parking space standards and explores the potential for a second type of compact parking space with its own set of dimensions that is different from standard-sized parking spaces and the City’s previous compact car parking space standard of 4.8m x 2.4m. The purpose of allowing reduced parking space dimensions is to increase the efficiency of developable lands while maintaining functionality of the parking area. The second type of compact parking space is intended to serve compact sport utility vehicles (SUVs) and mid-size sedans which may not require a full-sized standard parking space, but require greater dimensions compared to compact car parking spaces.

Vehicle Type Use Trends in Ontario

Statistics Canada (StatsCan) publishes the number of registered light-duty vehicles in Ontario from year 2017 to year 2022²⁰. Light-duty vehicles are defined by StatsCan as vehicles weighing less than 4,353 kg and is representative of passenger vehicles. This data can be used to establish the ownership rates of the passenger vehicle types.

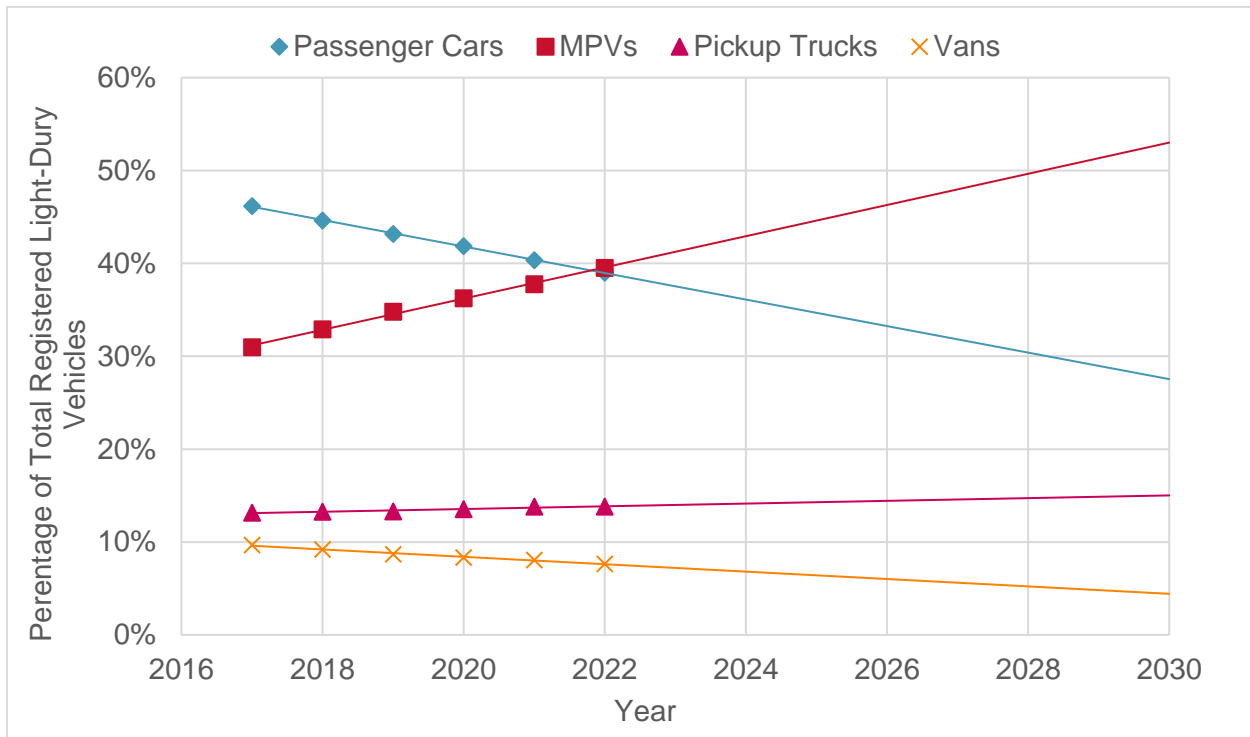
Table H.1 shows the number of registered light-duty vehicles in Ontario from 2017 to 2022, categorized into passenger cars, multi-purpose vehicles (MPVs), pick-up trucks, and vans. MPVs include SUVs and crossovers. The percentages of each category of the total for the year are also shown. **Figure H.1** shows the projected percentage split of vehicle types in Ontario by 2030 based on the StatsCan data.

Table H.1 – Number of Registered Light-Duty Vehicles in Ontario, StatsCan

Year	Passenger Cars	MPVs	Pickup Trucks	Vans	Total Light-Duty Vehicles
2017	3,784,050 (46%)	2,539,062 (31%)	1,079,015 (13%)	795,209 (10%)	8,197,336
2018	3,729,089 (45%)	2,750,286 (33%)	1,107,684 (13%)	768,177 (13%)	8,355,236
2019	3,676,862 (43%)	2,961,897 (35%)	1,133,370 (14%)	740,638 (8%)	8,512,767
2020	3,679,498 (42%)	3,185,339 (36%)	1,190,209 (14%)	733,069 (8%)	8,788,115
2021	3,580,565 (40%)	3,350,857 (38%)	1,225,682 (14%)	714,508 (8%)	8,871,612
2022	3,444,160 (39%)	3,491,477 (40%)	1,219,595 (14%)	677,249 (8%)	8,832,481

²⁰ <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2022023-eng.htm>

Figure H.1 – Projected Vehicle Type Split of Registered Vehicles in Ontario by 2030



Based on the projection, it is expected that by year 2030:

- Approx. 30% of registered light-duty vehicles in Ontario will be passenger cars.
- Approx. 50% of registered light-duty vehicles in Ontario will be MPVs, including SUVs and crossovers.
- Approx. 15% of registered light-duty vehicles in Ontario will be pick-up trucks.
- Approx. 5% of registered light-duty vehicles in Ontario will be vans.

Additional Breakdown by Vehicle Type

StatsCan does not provide a further breakdown on the vehicle types beyond the categories of passenger cars, MPVs, pick-up trucks, and vans. Another data source must be used to establish a further breakdown of the vehicle categories. For example, passenger cars can be broken down into compact, sub-compact, mid-sized, or full-sized sedans, etc. Similarly, MPVs can be broken down into compact SUVs or large SUVs, etc.

Statista conducted an online survey on the popularity of car type in Canada as of December 2023²¹. The surveyed percentage use split by vehicle type is shown in **Table H.2**. This data can be used in conjunction with the projected vehicle use splits by 2030 established from the StatsCan data.

²¹ <https://www.statista.com/forecasts/998599/car-by-type-in-canada>

Table H.2 – Surveyed Car by Type in Canada as of December 2023, Statista

Vehicle Type	Percentage of Use
Passenger Car	
Compact Car	17%
Subcompact Car	5%
Microcar	2%
Mid-size car	17%
Sports car	2%
Full-size car	9%
Full-size luxury car	3%
MPVs	
Compact SUV	17%
Full-size / large SUV	13%
Vans	
Minivan	3%
Campervan	1%
Large Van	1%
Pick-up trucks	7%

Using the Statista data in conjunction with the vehicle type use split projection based on the StatsCan data, which projects a decrease in passenger car use and an increase in MPV use, it is expected that by 2030:

- Approx. 11% of light-duty vehicles in Ontario will be compact cars (including subcompact and microcars).
- Approx. 11% of light-duty vehicles in Ontario will be mid-size cars (including sports cars).
- Approx. 7% of light-duty vehicles in Ontario will be large / full-size cars.
- Approx. 28% of light-duty vehicles in Ontario will be compact SUVs.
- Approx. 22% of light-duty vehicles in Ontario will be full-size / large SUVs.
- Approx. 5% of light-duty vehicles in Ontario will be vans.
- Approx. 15% of light-duty vehicles in Ontario will be pick-up trucks.

The projected 11% use split for compact cars is in line with the City’s previous standard that allows up to 10% of resident parking spaces to be in the form of compact car parking spaces with dimensions of 4.8m x 2.4m.

The projection also indicates an approximate use split of 39% for compact SUVs and mid-sized sedans combined. As such, there is opportunity to allow up to 40% of a parking supply to be in the form of a third type of parking space for compact SUVs and mid-sized sedans, which shall have different dimensions compared to standard and compact car parking spaces.

Manufacturer Sales Data and Vehicle Dimensions

Driving.ca provides data on the top 10 bestselling sedans in Canada in 2023²², of which 9 of the 10 sedans can be considered compact cars. The compact cars and their dimensions based on 2023 models are shown in **Table H.3**.

Table H.3 – 2023 Best Selling Compact Cars in Canada, Driving.ca

Model	Length (m)	Width without Side Mirrors (m)	Estimated Width with Side Mirrors, +0.3m (m)
Toyota Corolla	4.63	1.78	2.08
Honda Civic	4.67	1.80	2.10
Hyundai Elantra	4.68	1.83	2.13
Tesla Model 3	4.72	1.85	2.15
Chevrolet Bolt	4.30	1.77	2.07
Kia Forte	4.64	1.80	2.10
Mazda 3	4.66	1.80	2.10
Nissan Sentra	4.64	1.82	2.12
Volkswagen Jetta	4.74	1.80	2.10
Maximum Dimensions	4.74	1.85	2.15
Average Dimensions	4.63	1.80	2.10

Note: Dimensions are based on the popular trims of the 2023 models. However, dimensions for the same model year may vary slightly depending on the trim.

The vehicle dimensions shown in **Table H.3** indicate that the previous City standard of 4.8m x 2.4m for compact parking spaces can generally accommodate the best-selling compact cars of 2023 but may be constrained because cars have increased in size over the last 10 years. Furthermore, additional length should be provided to accommodate area for electric vehicle supply equipment (EVSE) in residential parking areas. For these reasons, the previous City standard of 4.8m x 2.4m is recommended to be updated to 5.0m x 2.5m.

There is limited recent information on the most popular mid-size sedans in Canada, so the Kelley Blue Book (KBB) data on popular mid-sized sedans in the US was consulted²³. **Table H.4** shows the mid-sized sedans from the KBB data and the dimensions based on 2023 models.

²² <https://driving.ca/column/driving-by-numbers/canadas-best-selling-auto-brands-cars-pickups-and-suvs-in-2023>

²³ <https://www.kbb.com/best-cars/most-popular-sedans/>

Table H.4 – Recent Most Popular Mid-Sized Sedans in Canada and US, KBB

Model	Length (m)	Width without Side Mirrors (m)	Estimated Width with Side Mirrors, +0.3m (m)
Toyota Camry	4.90	1.84	2.14
Honda Accord	4.97	1.86	2.16
Nissan Altima	4.90	1.85	2.15
Ford Fusion	4.87	1.85	2.15
Hyundai Elantra	4.68	1.83	2.13
Chevrolet Malibu	4.93	1.85	2.15
Hyundai Sonata	4.90	1.86	2.16
Lexus ES-Series	4.98	1.86	2.16
BMW 3-Series	4.71	1.83	2.13
Kia K5	4.90	1.86	2.16
Subaru Legacy	4.85	1.84	2.14
BMW 5-Series	4.97	1.87	2.17
Mercedes C-Class	4.75	1.89	2.19
Mercedes E-Class	4.94	1.87	2.17
Volkswagen Passat	4.78	1.83	2.13
Maximum Dimensions	4.98	1.89	2.19
Average Dimensions	4.87	1.85	2.15

Note: Dimensions are based on the popular trims of the 2023 models. However, dimensions for the same model year may vary slightly depending on the trim.

Driving.ca provides data on the top 10 best-selling SUVs in Canada in 2023, of which 9 of the 10 SUVs can be considered compact SUVs. These compact SUVs and their dimensions based on 2023 models are shown in **Table H.5**.

Table H.5 – 2023 Best Selling Compact SUVs in Canada, Driving.ca

Model	Length (m)	Width without Side Mirrors (m)	Estimated Width with Side Mirrors, +0.3m (m)
Toyota RAV4	4.59	1.86	2.16
Honda CR-V	4.69	1.87	2.17
Hyundai Kona	4.21	1.80	2.10
Jeep Wrangler	4.79	1.87	2.17
Mazda CX-5	4.57	1.84	2.14
Ford Escape	4.60	1.88	2.18
Hyundai Tucson	4.63	1.86	2.16
Nissan Rogue	4.65	1.84	2.14
Kia Seltos	4.37	1.80	2.10
Maximum Dimensions	4.79	1.88	2.18
Average Dimensions	4.57	1.85	2.15

Note: Dimensions are based on the popular trims of the 2023 models. However, dimensions for the same model year may vary slightly depending on the trim.

Comparing the maximum lengths of the list of popular mid-size sedans and compact SUVs, the critical length is determined as per the average length of popular mid-sized sedans plus an additional 0.3m. As such, the recommended length of the second type of compact parking space is 5.2m. Furthermore, the recommended width is 2.6m, which allows for a width of at least of 0.3m on each side of the vehicle to allow for door opening.

Recommendations

- Allow up to 10% of a parking supply to be in the form of compact car parking spaces with dimensions of 5.0m x 2.5m.
- Allow up to 40% of a parking supply to be in the form of second type of compact parking space for mid-sized cars / compact SUVs with dimensions of 5.2m x 2.6m.



Appendix I

EV Charging Requirements Review

EV Charging Requirements Review

This review establishes the recommendations on electric vehicle (EV) charging requirements using a data-driven approach. The recommendations are based on a projection on the adoption of EVs and plug-in hybrid vehicles by 2030 and data on the user charging characteristics.

EV Adoption Trends in Ontario

Statistics Canada (StatsCan) publishes the number of registered light-duty vehicles by fuel type in Ontario from year 2017 to year 2022²⁴. Light-duty vehicles are defined by StatsCan as vehicles weighing less than 4,353 kg, which is representative of passenger vehicles. This data can be used to establish the rate of adoption of zero emission vehicles (ZEVs), which StatsCan defines as vehicles with the potential of emitting no tailpipe emissions such as full EVs and plug-in hybrids. Full EVs and plug-in hybrids benefit from the provision of EV charging provisions.

Table I.1 shows the number of registered light-duty vehicles in Ontario from 2017 to 2022, categorized into gasoline, hybrid, and plug-in hybrid vehicles, and full EVs.

Table I.1 – Number of Registered Light-Duty Vehicles by Fuel Type in Ontario, StatsCan

Year	Gasoline	Hybrid	Plug-in Hybrid	Full EV	ZEV total (Plug-in Hybrid + Full EV)	ZEV % of Total Light-Duty Vehicles
2017	7,905,668	65,183	7,732	5,808	13,540	0.17%
2018	8,055,704	71,882	14,681	11,561	26,242	0.32%
2019	8,190,348	81,236	19,230	18,051	37,281	0.45%
2020	8,437,507	93,714	21,647	24,568	46,215	0.54%
2021	8,485,801	115,396	24,395	35,930	60,325	0.70%
2022	8,396,932	144,909	29,464	57,782	87,246	1.01%

The data from 2017 to 2022 indicates that the rate of adoption of ZEVs is better characterized as exponential rather than linear, based on the R² values when the data is plotted, as shown in **Figure I.1** and **Figure I.2**. **Figure I.3** shows the projected rate of EV adoption by 2030 based on the exponential trendline. It is estimated that approximately 15% of registered light-duty vehicles in Ontario will be ZEVs by 2030.

²⁴ <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2022023-eng.htm>

Figure I.1 – ZEV Percentage of Total Registered Light-Duty Vehicles in Ontario, Exponential Trendline, StatsCan

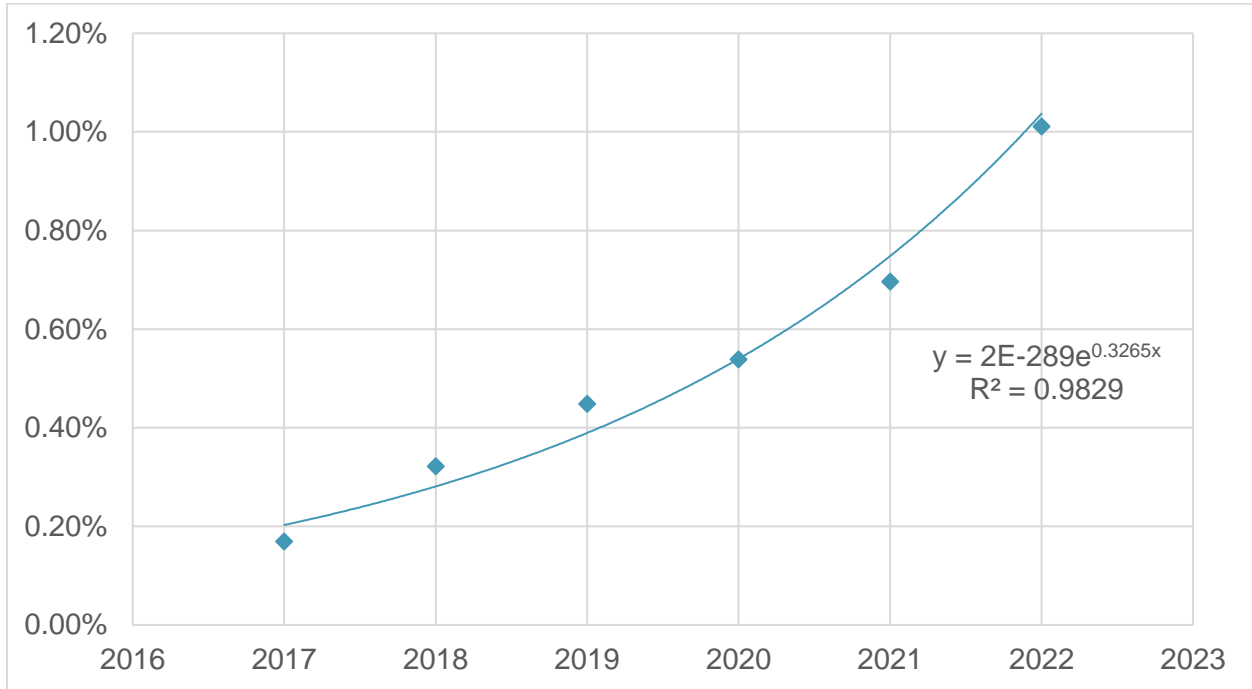


Figure I.2 – ZEV Percentage of Total Registered Light-Duty Vehicles by Fuel Type in Ontario, Linear Trendline, StatsCan

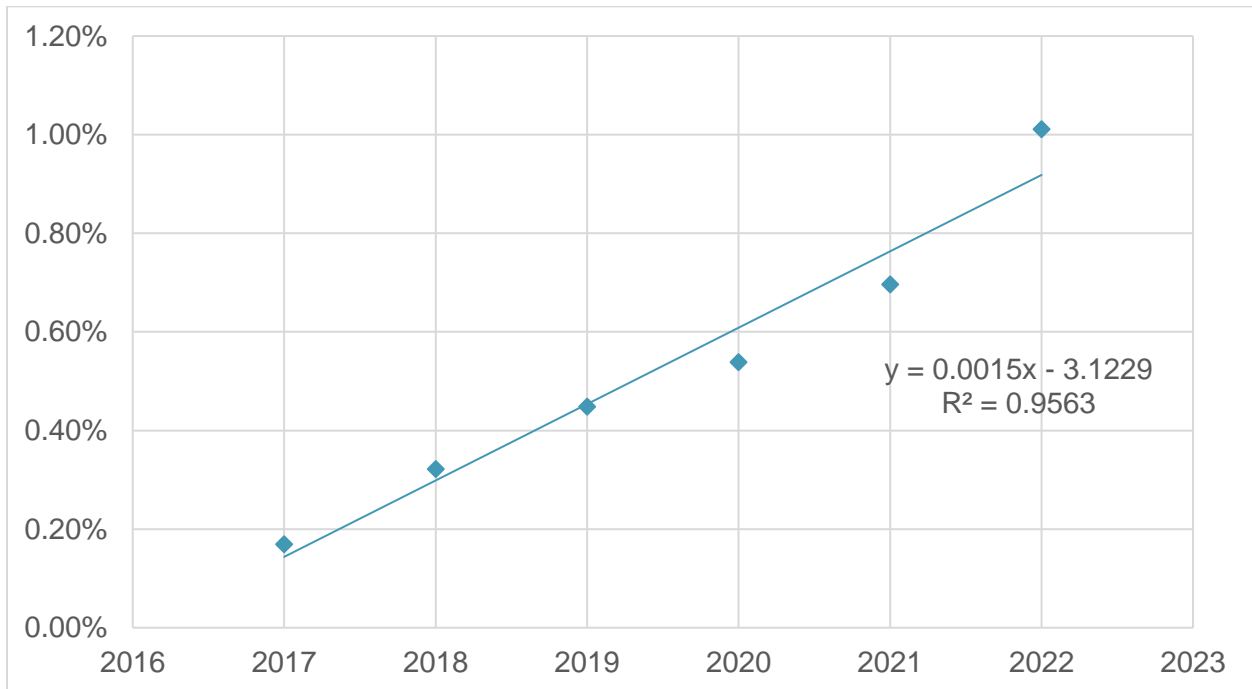
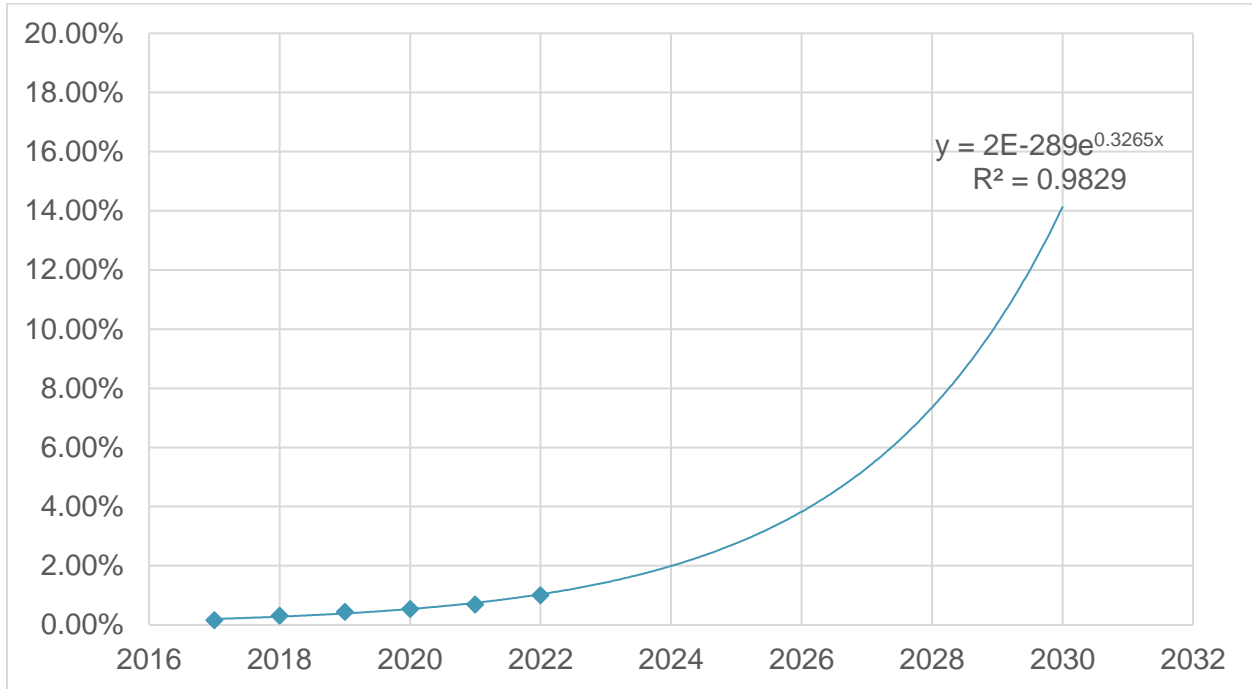


Figure I.3 – Projected ZEV Percentage of Total Registered Light-Duty Vehicles by 2030 in Ontario, StatsCan



EV Driver Survey Report 2020

The EV Driver Survey Report 2020 prepared by NewMotion contains survey data collected from respondents in Europe pertaining to EV user charging characteristics, which includes user preferences on charging at home vs. away from home and the frequency of charging²⁵. It is noted that Europe is ahead of North America in the adoption of EVs²⁶.

Table I.2 shows the frequency of which users charge their EVs depending on the location according to the data.

²⁵

https://assets.ctfassets.net/ulfvrf1itxm/3gNS3F5NPiiU2W7tA62QqH/f6269e4852bb147bc7e29709e2383989/EV_driver_survey_report_2020_EN.pdf

²⁶ <https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars>



Table I.2 – Survey Responses on Frequency of EV Charging by Location, NewMotion

	Daily or Almost Daily	Frequently (Several times a week)	Weekly	Frequently or more (Several times a week or more)	Weekly or more
Home	46%	20%	22%	66%	88%
Work	19%	12%	14%	31%	45%
Public Destination (excluding fast charging)	10%	4%	8%	14%	22%
Fast Charging	2%	4%	14%	6%	20%

The data indicates that home is the most important location for EV charging, where 66% of respondents indicated that they charge frequently or more (at least several times a week) and 88% of respondents indicated that they charge once a week or more.

As such, it is recommended that 100% of the resident parking supply in residential uses without exclusive use garages (e.g., condominiums, apartments, and some townhouses) shall be EV-ready. Residential uses with exclusive use garages shall have one EV-ready parking space per dwelling. Electric vehicle supply equipment (EVSE) is not required for new residential dwellings so that buyers have the flexibility to choose their own EVSE after purchasing the dwelling.

Charging at the workplace is the second most popular location, where 31% of respondents indicated that they charge frequently or more (presumably meaning at least several times a week) and 45% of respondents indicated that they charge once a week or more. Fewer EV users charge at publicly accessible destinations (e.g., retail stores, restaurants, etc.) compared to at home or at the workplace.

It is recommended that EVSE shall be required at the workplace and publicly accessible locations to the degree so that EV users that charge several times a week or more are fully accommodated. Users that charge once a week can leverage the EVSE when the more frequent users are not using it.

Considering that approx. 15% of vehicles in Ontario are expected to be ZEVs by 2030 and approx. 30% of users (rounded from 31%) charge several times a week or more at the workplace, it is recommended that a minimum of 5% of the total required parking supply at offices uses shall contain EVSE.

Similarly, considering the approx. 15% ZEV use split by 2030 and that approx. 15% of users (rounded from 14%) charge several times a week or more at publicly accessible locations, it is recommended that a minimum of 2.5% of the total required parking supply at non-residential and non-office locations shall contain EVSE.

Additional EV-ready requirements should also be established to accommodate for the future potential installation of EVSE when EVs are more prevalent. However, this would require a further projection of the adoption rate of EVs beyond 2030, which may be unreliable using existing data. As such, a policy-based approach using an aspirational 30% ZEV use split – matching the City’s 2030 Community Energy and Emissions Plan target for new vehicle sales – can be used to establish the EV-ready requirements for offices and other non-residential uses. This results in EV-ready requirements of 10% and 5% of the total required parking supply for offices and other non-residential uses, respectively.

The City is recommended to re-assess these recommendations at the next update of the Parking and TDM Strategy for Developments when new data on the rate of EV adoption is available.

Recommendations

- 100% of the resident parking supply at residential uses without exclusive use garages (e.g., condominium, apartments, and some townhouses) shall be EV-ready. Installation of EVSE is at the discretion of the purchaser/developer.
- Residential uses with exclusive use garages shall have one EV-ready parking space per dwelling. Installation of EVSE is at the discretion of the purchaser/developer.
- A minimum of 5% of the total required parking supply at office uses shall contain EVSE, plus another 10% of the total required supply shall be EV-ready.
- A minimum of 2.5% of the total required parking supply at non-office and non-residential uses shall contain EVSE, plus another 5% of the total required supply shall be EV-ready.