R.J. Burnside & Associates Limited 1465 Pickering Parkway Suite 200 Pickering ON L1V 7G7 CANADA
telephone (905) 420-5777 **fax** (519) 941-8120 **web** www.rjburnside.com

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

July 13, 2023

Via: Email

Homayoun Harirforoush
Supervisor, Development Planning & Review
Transportation Services
North York Civic Centre
5100 Yonge Street, 4th Floor
Toronto ON M2N 5V7

Dear Homayoun:

Re: 48 Grenoble Drive Response to Transportation Comments
4th Submission
City File: 22 127125 NNY 16 OZ
Project No.: 300054545.0000

R.J. Burnside & Associates Limited (Burnside) has reviewed the City of Toronto's (the City) transportation-related comments in the Transportation Services letter, dated May 16, 2023. Meetings with the City were also held on June 16, 2023, and July 12, 2023, to discuss these comments.

This letter is being submitted as part of the Zoning By-law Amendment (ZBA) application for the subject development. A separate letter will be provided for the future Site Plan application.

Due to these and other comments provided by the City, the proposed site plan has been updated and is shown in Attachment 1. The updated site plan is discussed below followed by the transportation related ZBA comments, which have been repeated in italics, with our responses following each set of comments.

1.0 Updated Development

Table 1 summarizes the differences between the current site plan and the submitted site plan.

Table 1: Site Plan Comparison

Land Use & Statistics	Previous Site Plan	Current Site Plan	Difference
Site			
Apartments	966 units	1,066 units	+100 units
Retail	208 m^2 (2,239 ft^2)	208 m^2 (2,239 ft^2)	0 m^2 (0 ft^2)
Vehicle Parking			
Residents	189 spaces (0.20 spaces/ unit)	180 spaces (0.17 spaces/ unit)	-9 spaces
Visitors [1]	11 spaces (0.011 spaces/ unit)	12 spaces (0.011 spaces/ unit)	+1 spaces
Total	**200 spaces (0.21 spaces / unit)**	**192 spaces (0.18 spaces / unit)**	**-8 spaces**
Bicycle Parking			
Long Term	918 spaces (0.90 spaces / unit)	1,013 spaces (0.95 spaces / unit)	+95 spaces
Short Term	194 spaces (0.20 spaces / unit)	214 spaces (0.20 spaces / unit)	+20 spaces

Note: 1. Does not include pick-up/drop-off spaces.

Compared to the site plan assumed in Burnside's *Response to Transportation Comments*, dated February 8, 2023 (the Response Letter), the updated site plan proposes 100 more units. Based on the trip generation methodology in Burnside's *Transportation Study*, dated March 2022 (the TIS) and the Response Letter, the proposed development will have 14 more vehicular trips during the AM peak hour and 11 more vehicular trips during the PM peak hour in comparison to the site trip projections from the Response Letter. It is our professional opinion that the conclusions in the Response Letter and TIS will remain the same and that an updated study is not required.

Due to the changes in the site plan, an updated parking review is provided below.

1.1 Bicycle Parking

The updated bicycle parking requirements from Zoning By-Law 569-2013 (ZBL) for short-term and long-term spaces are summarized in Table 2, based on Bicycle Zone 1. Applicable excerpts from the ZBL are provided in Attachment 2.

Table 2: ZBL Bicycle Parking Requirements

Proposed Use	ZBL Use	Type	Parking Rate	Required Spaces [1]	Provided Spaces	Surplus / Deficit
High-Rise Residential (1,066 units)	Apartment Building	Short-Term	0.20 space per unit	214	214	0
		Long-Term	0.90 space per unit	960	1,013	+53

Notes: 1. The number of spaces was rounded up to the nearest whole number as per the ZBL.
2. Uses, other than a dwelling unit, where the interior floor area is less than 2,000 m^2, no bicycle parking space is required.

The proposed number of long-term and short-term bicycle spaces will exceed and meet the minimum requirements, respectively.

In addition, enhanced bicycle parking facilities are proposed such as a bike ramp and dedicated bike elevators providing direct access to the P1 bike parking rooms, bike repair stations and wash stations for both short term and long-term spaces.

1.2 Vehicle Parking

A total of 192 vehicle parking spaces are proposed within a 2-level underground garage, with 180 spaces for residents and 12 spaces for visitors. Two parking spaces will also be provided on the ground floor, which will be designated for pick-up/ drop-off only. As discussed with the City during the meeting on June 16, 2023, the City confirmed that the site can be considered to be located in Parking Zone A due to its proximity to the future Flemingdon Park subway station, as part of the Ontario Line, that will be built at the intersection of Don Mills Road/ Gateway Boulevard. The minimum visitor parking requirement for an apartment building in Parking Zone A is 2 spaces plus 0.01 spaces per unit. This results in a minimum visitor parking requirement of 12 spaces, which will be met by the proposed visitor parking supply.

The maximum parking requirements, according to the ZBL, are summarized for the proposed development in Table 3. Applicable excerpts from the ZBL are provided in Attachment 2.

Table 3: ZBL Maximum Vehicle Parking Limits

Proposed Use	ZBL Use	Size (units)	Parking Spaces			
			Maximum Rate	Maximum Permitted [1]	Supply	Under (-) / Over (+)
One Bedroom and One Bedroom + Den	One Bedroom	653	0.5	326		
Two Bedroom	Two Bedroom	302	0.8	241		
Three Bedroom	Three or more Bedrooms	111	1.0	111		
Residential		**1,066**	**0.94**	**678**	**180**	**-498**
Visitor			0.10 [2]	111		
Retail	Retail Store	208 m^2	3.5 / 100 m^2	7		
Total Visitor + Retail				**118**	**12**	**-106**
Total				**796**	**192**	**-604**

Note: 1. The number of spaces was rounded down to the nearest whole number as per the ZBL.
2. Rate of 1 space per unit for the first five units plus 0.1 spaces per unit for the sixth and subsequent units

The proposed supply of 180 resident and 12 visitor parking spaces will not exceed the ZBL's maximum parking requirements.

Accessible Parking

The ZBL requires accessible parking spaces to be calculated based on "effective" parking spaces. The results of the analysis are summarized in Table 4 and the applicable excerpts from the ZBL are provided in Attachment 2.

Table 4: Effective Vehicle Parking Requirements

Proposed Use	ZBL Use	Units or Size	Parking Spaces	
			Rate [1]	Effective [2]
One Bedroom and One Bedroom + Den	One Bedroom	653	0.5	326
Two Bedroom and Two Bedroom + Den	Two Bedroom	302	0.8	241
Three Bedroom	Three or more Bedrooms	111	1.0	111
	Visitor Requirement	1,066	0.1	106
Retail	Retail Store	208 m^2	1 / 100 m^2	2
			Total	**786**

Notes: 1. Space per unit for residential.
2. The number of spaces is rounded down to the nearest whole number as per the ZBL.

The ZBL requires a minimum of 5 accessible parking space plus 1 parking space for every 50 effective parking spaces or part thereof in excess of 100 parking spaces, based on an effective parking requirement of more than 100 spaces. Therefore, 19 accessible parking spaces are required for the development. There are 19 accessible parking spaces proposed, which will meet the requirements.

1.3 Loading Review

According to the ZBL, an apartment building with 400 or more dwelling units requires one Type G and one Type C loading spaces. One Type G and one Type C loading spaces are proposed, which meets the ZBL requirements. The applicable excerpts from the ZBL are provided in Attachment 2.

2.0 Response to City's Comments

Where there was no numbering system for the original comments, we have numbered the comments for ease of reference.

B. REVISIONS AND ADDITIONAL INFORMATION REQUIRED FOR ZONING BY-LAW AMENDMENT

1. Provide an updated Transportation Impact Study Addendum to address the comments outlined in Traffic Assessment – Section D;

As noted above, the updated site traffic volumes are projected to be similar to what was assumed in the Response Letter and TIS. It is our professional opinion that the conclusions in the Response Letter and TIS will remain the same and that an updated study is not required.

2. Please provide parking spaces in accordance with the rates specified in Condition No. B1;

It appears this comment should refer to Condition No. C1 (parking rates for residential visitors). As noted in Section 1.2 above, the City confirmed that the site can be considered to be located in Parking Zone A due to its proximity to the future Flemingdon Park subway station, as part of

the Ontario Line, that will be built at the intersection of Don Mills Road/ Gateway Boulevard. Based on the analysis in Section 1.2 above, the visitor parking supply will meet the current ZBL requirements assuming that the site is located in Parking Zone A.

3. *Provide accessible parking spaces in accordance with By-law 89-2022;*

Please see the updated accessible parking analysis in Section 1.2 above, which confirms the proposed accessible parking supply will meet the current ZBL requirements.

4. *Please provide tactile walking surface indicators (TWSI) at the southeast corner of the site (northwest corner of the Deauville Lane and Grenoble Drive intersection);*

Tactile walking surface indicators have been provided in the updated site plan. Please see Attachment 1.

5. *Please ensure consistency between the survey plan, the existing configuration design of the intersection of Grenoble Drive and Deauville Lane, and the proposed site plans. Be advised, In the event that any design changes are made based on the survey, we reserve the right to request a corner rounding in subsequent submissions;*

The City provided the proposed configuration of the intersection of Grenoble Drive and Deauville Lane, which is provided in Attachment 3. The site plan reflects the City's proposal, as shown in Attachment 1.

6. *Demonstrate compliance with the requirements of the Toronto Green Standard (TGS) Version 3.0, as further discussed in Section D; and*

It appears this comment should refer to Section G, which includes comments relating to TGS. Please see our responses under Section G below.

7. *Please label the dimension of all parking spaces. Clearly identify the distance of the parking spaces from walls and obstructions. The minimum dimensions of a parking space are 2.6m wide by 5.6m long by 2.0m high. The width must be increased by 0.3m for each side of the parking space that is obstructed more than 1.0m from the front or back of a parking space.*

As discussed during the meeting with the City on June 16, 2023, typical parking space dimensions are shown in place of labelling all parking spaces. Please see the updated parking level plans in Attachment 4, which shows the dimensions of a typical parking space and that it complies with the City's ZBL.

G. BACKGROUND

TRAFFIC ASSESSMENT

1) Capacity Analysis

Based on the Traffic Impact Study (TIS) and vehicle trip distribution (see Table 6, dated March 2022), it was assumed that 80% of vehicle trips would utilize St. Dennis. However, upon reviewing the traffic operations data (refer to Table 1 and Table 2, Attachment 5, dated February 8, 2023), it appears that the level of service (LOS), delay, and queue lengths

remained similar when comparing the background and future total conditions. Therefore, further clarifications regarding this matter are required.

In addition to the level-of-service, delay, and queue information provided in the study, it is imperative to include separate tables that summarize the traffic volume for all intersections and each movement.

A call was held with the City on July 12, 2023, where further clarification from the City was requested on this comment. As per the call, the City requested further information regarding the assumed vehicle trip distribution in the TIS and the difference in the level of service, delay and queue lengths between background and total conditions.

As noted in Section 4.2 of the TIS, the overall site vehicle trip distribution was based on the findings from the *Don Mills Crossing – Mobility Planning Study*, dated February 2019 (Don Mills Crossing Study). Excerpts from Section 4.2 of the TIS and the Don Mills Crossing Study are provided in Attachment 5. However, the TIS did not assume that 80% of all site trips would utilize St. Dennis, as noted in this comment. As shown in Table 6 of the TIS, 30% of site trips are projected to travel to/from the east via Eglinton Avenue, and 80% of this portion of site trips will be routed through St. Dennis, due to its direct access to Eglinton Avenue.

Regarding the traffic operations between background and total conditions, as shown in Attachment 5 of the Response Letter and as noted in the comment, the projected operations at the intersection of St. Dennis Drive/ Deauville Lane are similar between background and total conditions (i.e., similar level of service, delay, and queue lengths) due to the little impact from site traffic on this intersection. Site traffic represents less than 6% of the total volumes at this intersection.

Traffic volumes have also been summarized for all intersections and each movement in Attachment 6.

2) <u>Queuing Assessment</u>

Mitigation measures must be considered in cases where projected queues extend into adjacent intersections or beyond available storage (e.g., Westbound left-turn at the intersection of Deauville Lane and St. Dennis Drive) as a result of the addition of site traffic to the road network.

In addition, available storage areas for all applicable movements must also be provided in the tables. This information must not include any applicable taper areas. As such, please use the correct data and revise the analysis accordingly.

As shown in Attachment 5 of the Response Letter, all existing and projected queues are and will be contained within their respective storage and link distances, except for the westbound left turn queue at the intersection of Deauville Lane/ St. Dennis Drive. This queue is currently exceeding and will continue to exceed its storage length, regardless of site traffic. Site traffic is only projected to increase the 95th queue length by 2 m during both peak hours. As discussed during the meeting with the City on June 16, 2023, the City agreed this should not be considered an issue. Therefore, the City should monitor this movement for possible mitigation measures. Existing storage lengths and link distances have been reported based on what is available in the field.

3) Pick-up/Drop-off Activity

The consultant must provide an assessment of the projected pick-up/drop-off demand for the proposed development in order to determine if the subject pick-up/drop-off spaces are adequate.

During the call with the City on June 16, 2023, the City was not able to provide what methodology would be appropriate to determine pick-up/drop-off demand. As discussed with the City, the requested assessment will be deferred to the Site Plan application stage should the City determine an appropriate methodology. It is our professional opinion that the two proposed pick-up/drop-off parking spaces will be sufficient for the proposed scale of the development. This opinion takes into account the availability of existing and future active transportation facilities and higher order transit. It also takes into consideration the increasing use of bicycles and other non-vehicular conveyances to deliver goods and services throughout the City.

4) Digital Synchro File

In order to fully assess the traffic impacts, digital Synchro and SimTraffic files must be provided. Additional comments pertaining to the Synchro/SimTraffic analysis may be provided upon further review.

During the call with the City on June 16, 2023, it was noted that the City did not receive the Synchro files, even though they were provided with the 2nd submission. The Synchro files were resent to the City in an email, dated June 16, 2023. However, no comments were received on the Synchro files since the email was sent. The City confirmed receipt of the Synchro files during the call with the City on July 12, 2023.

TORONTO GREEN STANDARDS

1) *The Toronto Green Standard (TGS) Version 3.0 applies to the site given that the application for the development proposal was received by the City on or after May 1, 2018. Tier 1 of the TGS is mandatory, while Tier 2 is voluntary.*

TGS Version 3.0 Tier 1 requirements:

AQ 1.1 – Single-Occupant Auto Vehicle Trips

A AQ 1.1 of the TGS requires single-occupancy automobile trips that are generated by the proposed development to be reduced by 15 percent through a variety of multimodal infrastructure strategies and Transportation Demand Management (TDM) measures. Be advised that the bicycle space requirements under the bylaw, existing bike lanes and parking supply reduction, and parking supply reduction do not count towards TDM. According to information provided on February 8, 2022, Transportation Study report, by Burnside, TDM measures including parking supply reduction and transit, and cycling incentives are proposed. The consultant concludes that the proposed TDM measures are projected to reduce single automobile occupancy by more than 30%. However, the consultant's statement indicates that there is no available data from the reviewed source that individually quantifies the expected reduction in single-occupancy auto-vehicle trips for each measure. It is important to emphasize that providing a specific number without any appropriate sources or data would be mere speculation and not a reliable estimate.

The transportation consultant is required to submit acceptable documentation which:

1. Individually quantifies how much each measure is expected to reduce single-occupancy auto-vehicle trips using appropriate and reasonable data/methodologies.

As a result, this requirement has not been satisfied.

The TDM plan provided in the TIS and Response Letter quantified how much each measure is expected to reduce single-occupancy auto-vehicle trips. In addition, the sources of the TDM data are clearly identified in Section 8.0 (page 20) of the TIS. Excerpts from the data sources are provided in Attachment 7. It is our professional opinion that the combination of these proposed TDM measures and the addition of transit and active transportation improvements in the area will reduce vehicle trips by at least 30%.

AQ 1.2 LEV and Sustainable Mobility Spaces

If providing more than the minimum parking required under the Zoning By-law, AQ 1.2 of the TGS requires the excess spaces to be dedicated priority parking spaces for Low-Emitting Vehicles (LEV), carpooling/ridesharing, or for publicly accessible spaces dedicated to shared vehicle systems such as car-sharing, ride-sharing, or micro-mobility systems. This requirement does not apply as the parking proposed is under the minimum by-law requirement.

The ZBL does not require any parking for residents and retail uses and the minimum visitor parking requirement has been met.

AQ 1.3 Electric Vehicle Infrastructure

AQ 1.3 of the TGS requires the building to be designed to provide 20 percent of the parking spaces with Electric Vehicle Supply Equipment (EVSE). The remaining parking spaces must be designed to permit future EVSE installation. This requirement applies to parking spaces that are defined as inside the building, excluding outdoor parking lots. This requirement has not been satisfied.

All resident spaces and 25% of visitor spaces will be supplied with energized outlets as required by the ZBL. This has been indicated in the notes of the underground parking plans, as shown in Attachment 4. The remaining visitor spaces will be equipped with infrastructure that will permit the addition of future electric vehicle charging.

AQ 2.1 - Cycling Infrastructure

According to the TGS the cycling infrastructure requirements of Bicycle Zone 1 apply. A summary of the applicable cycling infrastructure requirements for the site is shown in Table 5.

Table 5 – TGS Cycling Infrastructure Requirements

Use	Development Scale	Minimum No. of Bicycle Spaces Required		
		Long-Term	Short-Term	Total
Resident	993 units	894	199	1,093
Retail	208 m^2	1	4	5
Total		**895**	**203**	**1,098**

Based on the site statistics, it is noted that a total of 1,112 bicycle parking spaces are proposed, consisting of 918 long-term spaces and 194 short-term spaces. While the overall bicycle parking supply meets the requirement, it does not meet the minimum requirement for short-term bicycle parking.

The development statistics noted in Table 5 of this comment are incorrect for the 2nd submission of the site plan, which proposed 966 units. The ZBL also does not require bicycle parking spaces for uses on a lot, other than a dwelling unit, with a floor area of 2,000 m^2 or less. Therefore, no bicycle parking spaces are required for the retail component of the development. As reviewed in the Response Letter, the proposed long-term bicycle parking spaces exceeded the minimum requirements and the proposed short-term bicycle parking spaces met the minimum requirements. With the updated site plan and as shown in Section 1.2, the proposed long-term bicycle parking spaces will continue to exceed the minimum requirements and the proposed short-term bicycle parking spaces will continue to meet the minimum requirements.

AQ 3.2 – Sidewalk Space

Provide a context-sensitive pedestrian clearway that is a minimum of 2.1m wide, to safely and comfortably accommodate the pedestrian flow. This requirement has not been satisfied.

A minimum 2.1 m wide pedestrian clearway has been provided, as shown in the updated site plan in Attachment 1.

Should you require any clarification on the above, please contact either of the undersigned.

Yours truly,

R.J. Burnside & Associates Limited

Cedric Mosdell M.Eng., EIT
Transportation Planner

David Angelakis, C.E.T.
Senior Project Manager - Transportation

CM\DWA:cv

Enclosure(s) Attachment 1 – Updated Site Plan
Attachment 2 – Excerpts from Zoning By-law 569-2013
Attachment 3 – Future intersection design at Grenoble Drive/ Deauville Lane
Attachment 4 – Updated Parking Level Plans
Attachment 5 – Vehicle Trip Distribution Excerpts
Attachment 6 – Traffic Volumes Table
Attachment 7 – TDM Data and Methodologies

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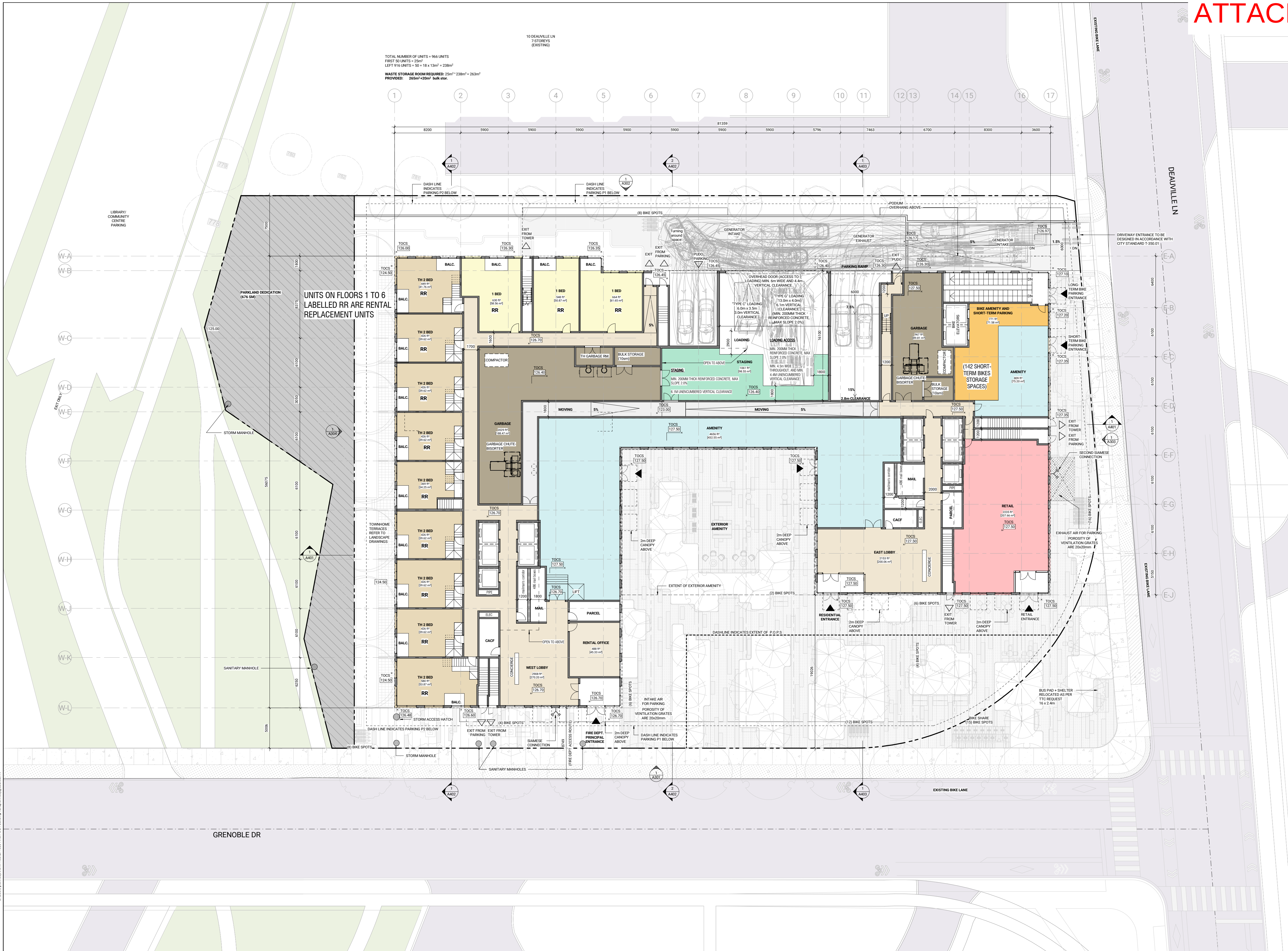
ATTACHMENT 1



ONTARIO ASSOCIATION OF ARCHITECTS
July 10, 2023
ZBA4 SUBMISSION
DONALD R. M. SCHMITT
LICENCE
3170

ISSUED

No.	Date	Description
1	03/18/2022	ISSUED FOR ZBA/SPA
2	02/08/2023	ISSUED FOR ZBA2/SPA2
3	05/11/2023	ISSUED FOR ZBA3
4	07/10/2023	ISSUED FOR ZBA4

NOTES:

1. COLLECTION VEHICLE ACCESS DRIVEWAY TO BE LEVELLED MAX 8%.
2. A TRAINED ON-SITE STAFF MEMBER WILL BE AVAILABLE TO MANOEUVRE BINS FOR THE CITY COLLECTION DRIVER AND ALSO ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT THAT ON-SITE STAFF IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
3. ALL ASPHALT WITHIN THE CITY'S RIGHT OF WAY IS TO BE SUPERPAVE MIX AS PER CITY STANDARDS.
4. BE ADVISED THAT SHOULD ANY PARTY, INCLUDING THE APPLICANT OR ANY SUBSEQUENT OWNER, APPLY FOR MORE THAN ONE CONDOMINIUM CORPORATION ENCOMPASSING ANY OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION, STAFF MAY REQUIRE LEGAL ASSURANCES, INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL.
5. THE OWNER IS REQUIRED TO INSTALL AND MAINTAIN A PREMISE ISOLATION DEVICE FOR ALL APPLICABLE WATER SERVICES IN ACCORDANCE WITH TORONTO MUNICIPAL CODE, CHAPTER 851 WATER SUPPLY, THE BUILDING CODE, AND CSA B64 SERIES STANDARDS.
6. BEFORE SOLID WASTE COLLECTION SERVICES ARE TO BEGIN THE CITY WILL BE PROVIDED WITH A LETTER CERTIFIED BY A PROFESSIONAL ENGINEER THAT IN CASES WHERE A COLLECTION VEHICLE IS REQUIRED TO DRIVE ONTO OR OVER A SUPPORTED STRUCTURE (SUCH AS AN UNDERGROUND PARKING GARAGE) CAN SAFELY SUPPORT A FULLY LOADED COLLECTION VEHICLE (35,000 KILOGRAMS) AND CONFORMS TO THE FOLLOWING:
   (A) DESIGN CODE - ONTARIO BUILDING CODE
   (B) DESIGN LOAD - CITY BULK LIFT VEHICLE IN ADDITION BUILDING CODE REQUIREMENTS
   (C) IMPACT FACTOR - 5% FOR MAXIMUM VEHICULAR SPEEDS TO 15KM/H AND 30% FOR HIGHER SPEEDS
7. PROVIDE AND MAINTAIN A WARNING SYSTEM TO ALERT DRIVERS WHEN EXITING THE UNDERGROUND PARKING GARAGE THAT LARGE TRUCKS ARE MANOEUVERING WITHIN THE DRIVING AISLE.
8. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGN(S) THAT ARE NO LONGER REQUIRED HAVE BEEN REMOVED AND REINSTATE THE CURB, GUTTER AND BOULEVARD WITHIN THE CITY'S RIGHT-OF-WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE CHIEF ENGINEER AND EXECUTIVE DIRECTOR, ENGINEERING AND CONSTRUCTION SERVICES.

CONVEX MIRROR

P1-V DENOTES VISITOR PARKING USE
P1-R DENOTES RESIDENT PARKING USE
P1- -EV DENOTES PARKING STATIONS WITH EVSE

48 Grenoble Drive

211033

LEVEL 1 FLOOR PLAN

As indicated

A101

ATTACHMENT 2

Office Consolidation

CITY OF TORONTO - Zoning By-law

BY-LAW NO. 569-2013

Last Updated: September 30, 2022

****

OLT/LPAT/OMB File: PL130592

This office consolidation includes all Ontario Land Tribunal/Local Planning Appeal Tribunal/Ontario Municipal Board (OLT/LPAT/OMB) decisions issued up to the date of consolidation.

Explanatory Note:

The portions of this By-law that are highlighted bright yellow were originally enacted by City Council May 9, 2013 and are under appeal to the OLT/LPAT/OMB and are not in full force and effect.

The portions of this By-law that are shaded dark yellow identify amendments enacted by City Council after May 9, 2013 which are under appeal to the OLT/LPAT/OMB and are not in full force and effect.

The portions of this By-law that are shaded blue identify amendments enacted by City Council after May 9, 2013 which are not in full force and effect.

****

Part 1 of 3

ORIGINALLY ENACTED BY CITY COUNCIL May 9, 2013

The **interior floor area** of that portion of a **building** used exclusively for heating, cooling, ventilation, electrical, fire emergency stairwells, elevator shafts, atriums, utility areas, storage areas in the **basement**, **parking space**, **loading space**, or a **drive aisle** used to access a **parking space** or **loading space**, is not included in the **gross floor area** for the purpose of calculating **parking space** requirements.

(12) Vehicle Access to Building - Non-residential and Apartment Parking Area

If an **apartment building**, **mixed use building** or a **building** with non-residential uses, has an area for parking two or more **vehicles**:

(A) the **vehicle** entrance and exit for a two-way **driveway** into and out of the **building** must have a minimum width of 5.5 metres;

(B) the **vehicle** entrance or exit for a one-way **driveway** into or out of the **building** must have a minimum width of 3.5 metres; and

(C) in (A) and (B) above, the **vehicle** entrance or exit to the **building** must be at least 6.0 metres from the **lot line** abutting the **street**.

(13) Parking Space Access

Other than **stacked parking space** and **tandem parking spaces**, all areas used for **parking spaces** must have **driveway** access to a **street** or **lane** that is direct and unobstructed, excluding a gate, moveable barrier or similar security feature. [By-law: 89-2022]

(14) Electric Vehicle Infrastructure

Parking spaces must be equipped with an **energized outlet**, which is clearly marked and identified for electric **vehicle** charging, in accordance with the following:

(A) all residential **parking spaces** provided for **dwelling units** located in an **apartment building**, **mixed use building**, "multiple **dwelling unit building**", **detached house**, **semi-detached house**, **townhouse**, **duplex**, **triplex**, **fourplex**, or for a **secondary suite** or **laneway suite**, excluding visitor **parking spaces**, must include an **energized outlet** capable of providing **Level 2 charging** or higher to the **parking space**; and

(B) in cases other than those set out in (A) above, 25 percent of the residential and non-residential **parking spaces** in a **building** must include an **energized outlet** capable of providing **Level 2** charging or higher. [By-law: 89-2022]

200.5.10 Parking Rates

200.5.10.1 General

(1) Parking Space Rates

Off **street parking spaces** must be provided for every **building** or **structure** erected or enlarged, in compliance with Table 200.5.10.1 - Parking Space Rates below: [By-law: 89-2022]

Table 200.5.10.1

PARKING SPACE RATES

Land Use Category	Parking Rate
Resident Requirement for a **Dwelling unit** in an: **Apartment Building**, Assisted Housing or a **Mixed Use Building**	**Parking spaces** must be provided: (A) in Parking Zone A (PZA) at a maximum rate of: (i) 0.3 for each bachelor **dwelling unit** up to 45 square metres and 1.0 for each bachelor **dwelling unit** greater than 45 square metres; and (ii) 0.5 for each one bedroom **dwelling unit**; and (iii) 0.8 for each two bedroom **dwelling unit**; and (iv) 1.0 for each three or more bedroom **dwelling unit**; and

	(B) in Parking Zone B (PZB) at a maximum rate of: (i) 0.7 for each bachelor **dwelling unit** up to 45 square metres and 1.0 for each bachelor **dwelling unit** greater than 45 square metres; and (ii) 0.8 for each one bedroom **dwelling unit**; and (iii) 0.9 for each two bedroom **dwelling unit**; and (iv) 1.1 for each three or more bedroom **dwelling unit**; and (C) in all other areas of the City, at a maximum rate of: (i) 0.8 for each bachelor **dwelling unit** up to 45 square metres and 1.0 for each bachelor **dwelling unit** greater than 45 square metres; and (ii) 0.9 for each one bedroom **dwelling unit**; and (iii) 1.0 for each two bedroom **dwelling unit**; and (iv) 1.2 for each three or more bedroom **dwelling unit**.
Resident Requirement for a **Dwelling Unit** in a: **Detached House**, **Semi-detached House**, **Townhouse**, **Duplex**, **Triplex** or **Fourplex**	None
Resident Requirement for a **Dwelling Unit** in a Multiple Dwelling Unit Buildings	**Parking spaces** must be provided at a maximum rate of 1.0 for each **dwelling unit**.
Secondary Suite	None
Visitor Requirement: For a **dwelling unit** in an **Apartment Building**, a **Mixed Use Building**, and/or a Multiple Dwelling Unit Building	Parking spaces must be provided: (A) in Parking Zone A (PZA) at a minimum rate of 2.0 plus 0.01 per **dwelling unit**; (B) in Parking Zone B (PZB) and in all other areas of the City, at a minimum rate of 2.0 plus 0.05 per **dwelling unit**; and (C) at a maximum rate of 1.0 per **dwelling unit** for the first five (5) **dwelling units**; and (D) at a maximum rate of 0.1 per **dwelling unit** for the sixth and subsequent **dwelling units**.
Tier 1: Alternative Housing, **Group Home**, **Hospice Care Home**, **Nursing Home**, **Religious Residence**, **Retirement Home, Respite Care Facility** and **Seniors Community House**	**Parking spaces** must be provided at a maximum rate of 0.5 for each **bed-sitting room** or **dwelling unit**.
Tier 2: Adult Education School, **Animal Shelter**, **Art Gallery**, Clinic (medical), **Community Centre**, Court of Law, **Day Nursery**, **Education Use**, **Hospital**, **Hotel**, **Kennel**, **Laboratory**, Motel, **Museum**, Office (Excluding Medical Office), **Performing Arts Studio**, **Post-Secondary School**, **Private School**, **Production Studio**, **Public School**, **Recreation Use**, **Religious Educational Use**, **Self-Storage Warehouse**, **Software Development and Processing**, **Vehicle Dealership**, **Veterinary Hospital**	Parking spaces must be provided: (A) in Parking Zone A (PZA) at a maximum rate of 0.8 for each 100 square metres of **gross floor area**; (B) in Parking Zone B (PZB) at a maximum rate of 1.0 for each 100 square metres of **gross floor area**; and (C) in all other areas of the City, at a maximum rate of 3.5 for each 100 square metres of **gross floor area**.
Tier 3:	**Parking spaces** must be provided at a maximum rate of 1.5 for each 100 square metres of **gross floor**

Crisis Care Shelter, **Municipal Shelter**, **Residential Care Home**	**area**
Tier 4: **Adult Entertainment**, Ambulance Depot, **Amusement Arcade**, **Artist Studio**, Billiard Hall, Bowling Alley, Bus Station, **Cabaret**, **Cemetery**, **Club**, **Contractor's Establishment**, **Eating Establishment**, **Entertainment Place of Assembly**, **Financial Institution**, Fire Hall, **Funeral Home**, **Gaming Establishment**, Golf Course, Grocery Store, **Industrial Sales and Service**, Industrial Skills Training, Library, **Manufacturing Uses**, **Medical Office**, **Nightclub**, **Park**, **Personal Service Shop**, **Pet Services**, **Place of Assembly**, **Place of Worship**, Police Station, Pool Hall, Railway Service and Repair Yard; Railway Station, **Retail Service**, **Retail Store**, **Service Shop**, **Vehicle Depot**, **Vehicle Fuel Station**, **Vehicle Repair Shop**, **Vehicle Service Shop**, **Visitation Centre**, **Warehouse**, **Wholesaling Use**	Parking spaces must be provided: (A) in Parking Zone A (PZA) at a maximum rate of 3.5 for each 100 square metres of **gross floor area**; (B) in Parking Zone B (PZB) at a maximum rate of 4.0 for each 100 square metres of **gross floor area**; and (C) in all other areas of the City, at a maximum rate of 6.0 for each 100 square metres of **gross floor area**.

[By-law: 89-2022]

(2) Provision of Parking Spaces

Parking spaces provided for each use may not be:

(A) less than the required minimum; or

(B) greater than the permitted maximum.

(3) Parking Space Rate Ancillary Uses

A use that is **ancillary** has the same **parking space** rate as the use to which it is **ancillary**.

(4) Parking Space Permission for Uses with No Parking Requirement

If a use is not required to provide **parking spaces** by Table 200.5.10.1 of this By-law, **parking spaces** may be provided for that use if:

(A) the use is not listed on Table 200.5.10.1; [By-law: 1429-2017]

(B) the **parking spaces** are used by the owner, occupant or visitors to the **premises**; and

(C) the number of **parking spaces** is not:

(i) less than the required minimum for all uses on the **lot** by Table 200.5.10.1; and

(ii) greater than the permitted maximum or all uses on the **lot** by Table 200.5.10.1.

(5) Parking Space Rates - Multiple Uses on a Lot

If there are multiple uses on a **lot**, the respective minimum and maximum **parking space** rates for each use on the **lot** apply, and the total number of required **parking spaces** is the cumulative minimum total for all uses and the total number of permitted **parking spaces** is the cumulative maximum total for all uses. [By-law: 89-2022]

(7) Interpretation of Minimum and Maximum Parking Space Requirement

If Table 200.5.10.1 has a minimum and maximum number of **parking spaces** for a use, the number of **parking spaces** for that use listed on the Table may not:

(A) be less than the required minimum;

(B) exceed the permitted maximum; and

(C) if a minimum is not specified for a use, no **parking spaces** are required. [By-law: 89-2022]

(8) Multiple Dwelling Unit Buildings Parking Rates

(C) effective **parking space** rates in Table 200.15.10.5 do not apply as a substitute for the parking rates in Table 200.5.10.1 – Parking Space Rates; and

(D) the quantity of **vehicle parking spaces** provided for a development may not apply as a substitute for the effective **parking space** requirements in the calculation of required accessible parking, except for circumstances set out in regulation 200.15.10.5(2). [By-law: 89-2022]

(2) Determining Effective Parking Spaces for the Purposes of Accessible Parking

The number of effective **parking spaces** to determine accessible **parking space** requirements is the greater of the number of permitted **parking spaces** provided and the number of **parking spaces** calculated using the rates in Table 200.15.10.5. [By-law: 89-2022]

(3) Calculation of Effective Parking Spaces

Regulations 200.5.1.10(7), (8), (9) and (11) apply for the calculation of effective **parking spaces** and interpretation of the rates in Table 200.15.10.5. [By-law: 89-2022]

Table 200.15.10.5

Parking Space Rates for Effective Parking Spaces

Land Use Category	**Rate for Calculating Effective Parking Spaces**
Resident Requirement for a **Dwelling unit** in an: **Apartment Building**, Assisted Housing or a **Mixed Use Building**	The rate for calculating effective **parking spaces** is: (A) in Parking Zone A (PZA) at a rate of: (i) 0.3 for each bachelor **dwelling unit** up to 45 square metres and 1.0 for each bachelor **dwelling unit** greater than 45 square metres; and (ii) 0.5 for each one bedroom **dwelling unit**; and (iii) 0.8 for each two bedroom **dwelling unit**; and (iv) 1.0 for each three or more bedroom **dwelling unit**; and (B) in Parking Zone B (PZB) at a rate of: (i) 0.7 for each bachelor dwelling unit up to 45 square metres and 1.0 for each bachelor **dwelling unit** greater than 45 square metres; and (ii) 0.8 for each one bedroom **dwelling unit**; and (iii) 0.9 for each two bedroom **dwelling unit**; and (iv) 1.1 for each three or more bedroom **dwelling unit**; and (C) in all other areas of the City, at a rate of: (i) 0.8 for each bachelor **dwelling unit** up to 45 square metres and 1.0 for each bachelor **dwelling unit** greater than 45 square metres; and (ii) 0.9 for each one bedroom **dwelling unit**; and (iii) 1.0 for each two bedroom **dwelling unit**; and (iv) 1.2 for each three or more bedroom **dwelling unit**.

Resident Requirement for a **Dwelling Unit** in a: **Detached House**, Semi-**detached House**, **Townhouse**, **Duplex**, **Triplex** or **Fourplex**	None
Resident Requirement for a **Dwelling Unit** in a Multiple Dwelling Unit Buildings	The rate for calculating effective **parking spaces** is 1.0 for each **dwelling unit**.
Secondary Suite	None
Visitor Requirement for a **dwelling unit** in an **Apartment Building**, a **Mixed Use Building**, and/or a Multiple Dwelling Unit Building	The rate for calculating effective **parking spaces** is 0.1 per **dwelling unit**.
Tier 1: Alternative Housing, **Group Home**, **Hospice Care Home**, **Nursing Home**, **Religious Residence**, **Retirement Home**, **Respite Care Facility** and **Seniors Community House**	The rate for calculating effective **parking spaces** is 0.2 **parking spaces** for each **bed-sitting room** or **dwelling unit**
Tier 2: Adult Education School, **Animal Shelter**, **Art Gallery**, Clinic (medical), **Community Centre**, Court of Law, **Day Nursery**, **Education Use**, **Hospital**, **Hotel**, **Kennel**, **Laboratory**, Motel, **Museum**, Office (Excluding Medical Office), **Performing Arts Studio**, **PostSecondary School**, **Private School**, **Production Studio**, **Public School**, **Recreation Use**, **Religious Educational Use**, **Self-Storage Warehouse**, **Software Development and Processing**, **Vehicle Dealership**, **Veterinary Hospital**	The rate for calculating effective parking spaces is: (A) in Parking Zone A (PZA) and Parking Zone B (PZB), 0.4 **parking spaces** for each 100 square metres of **gross floor area**; and (B) in all other areas of the City, 1.0 **parking spaces** for each 100 square metres of **gross floor area**.
Tier 3: **Crisis Care Shelter**, **Municipal Shelter**, **Residential Care Home**	The rate for calculating effective **parking spaces** is 0.2 **parking spaces** for each 100 square metres of **gross floor area**
Tier 4: **Adult Entertainment**, Ambulance Depot, **Amusement Arcade**, **Artist Studio**, Billiard Hall, Bowling Alley, Bus Station, **Cabaret**, **Cemetery**, **Club**, **Contractor's Establishment**, **Eating Establishment**, **Entertainment Place of Assembly**, **Financial Institution**, Fire Hall, **Funeral Home**, **Gaming Establishment**, Golf Course, Grocery Store, **Industrial Sales and Service**, **Industrial Skills Training**, Library, **Manufacturing Uses**, Medical Office, **Nightclub**, Park, **Personal Service Shop**, **Pet Services**, **Place of Assembly**, **Place of Worship**, Police Station, Pool Hall, Railway Service and Repair Yard; Railway Station, **Retail Service**, **Retail Store**, **Service Shop**, **Vehicle Depot**, **Vehicle Fuel Station**, **Vehicle Repair Shop**, **Vehicle Service Shop**, Visitation Centre, **Warehouse**, **Wholesaling Use**	The rate for calculating effective **parking spaces** is: (A) in Parking Zone A (PZA) and Parking Zone B (PZB), 1.0 **parking spaces** for each 100 square metres of **gross floor area**; and (B) in all other areas of the City, 2.0 **parking spaces** for each 100 square metres of **gross floor area**

[By-law: 89-2022]

200.15.10.10 Parking Rate - Accessible Parking Spaces

(1) Accessible Parking Rates – General

In accordance with Table 200.15.10.5, if the number of **parking spaces** associated with **dwelling units** is 5 or more, or if the number of **parking spaces** associated with uses in Tiers 1, 2, 3, or 4, excluding medical offices and clinics, is 1 or more, clearly identified off **street** accessible **parking spaces** must be provided on the same **lot** as every **building** or **structure** erected or enlarged, as follows:

(A) if the number of effective **parking spaces** is less than 13, a minimum of 1 **parking space** must comply with all regulations for an accessible **parking space** in Section 200.15;

(B) if the number of effective **parking spaces** is 13 to 100, a minimum of 1 **parking space** for every 25 effective **parking spaces** or part thereof must comply with all regulations for an accessible **parking space** in Section 200.15; and

(C) if the number of effective **parking spaces** is more than 100, a minimum of 5 **parking spaces** plus 1 **parking space** for every 50 effective **parking spaces** or part thereof in excess of 100 **parking spaces** must comply with all regulations for an accessible **parking space** in Section 200.15. [By-law: 1048-2022]

(2) Accessible Parking Rates – Medical Offices and Clinics

In accordance with Table 200.15.10.5, if the number of **parking spaces** associated with medical offices and clinics is 1 or more, **parking spaces** which comply with all regulations for an accessible **parking space** in Section 200.15 must be provided, as follows:

(A) the minimum number of accessible **parking spaces** is 10 percent of the number of effective **parking spaces**, rounded up; and

(B) any accessible **parking spaces lawfully existing** on the **lot** must be retained. [By-law: 1048-2022]

200.15.15 Transition: Accessible Parking Spaces

(1) Accessible Parking Spaces

An application submitted before May 26, 2017 that is eligible to proceed under clauses 200.15.15.1 through 200.15.15.3, must provide accessible **parking spaces** in compliance with 200.15.15.4 and 200.15.15.5. [By-law: 579-2017]

200.15.15.1 Transition: Building Permit Applications

(1) Building Permit Applications

Nothing in Articles 200.15.1, 200.15.5 and 200.15.10 will prevent the erection or use of a **building** or **structure** for which an application for a building permit was filed on or prior to May 26, 2017, if the project in question complies, or the building permit application for the project is amended to comply, with the provisions of regulations 200.15.15.4 and 200.15.15.5 below, and all finally approved minor variances. [By-law: 579-2017]

(2) Building Permit Applications

For the purposes of regulation 200.15.15 (1), an "application for a building permit" means an application for a building permit that satisfies the requirements set out in Article I, Building Permits of Chapter 363, Building Construction and Demolition of the City of Toronto Municipal Code. [By-law: 579-2017]

200.15.15.2 Transition: Zoning Certificate Applications

(1) Zoning Certificate Applications

Nothing in Articles 200.15.1, 200.15.5 and 200.15.10 will prevent the erection or use of a **building** or **structure**, in the circumstances set out in regulation 200.15.15.2 (2) for a project for which a request for a zoning certificate was filed on or prior to May 26, 2017. [By-law: 579-2017]

(2) Zoning Certificate Applications

After a zoning certificate has been issued for a project that qualifies under regulation 200.15.15 (1), a building permit for that project may be issued if:

(A) the building permit plans for the project are substantially in compliance with the plans approved with the zoning certificate referred to in regulation 200.15.15(3) and issued pursuant to Section 363-10.1 of Chapter 363, Building Construction and Demolition of the City of Toronto Municipal Code; and

(B) the project in question complies, or the building permit application for the project is amended to comply, with the provisions of regulations 200.15.15.4 and 200.15.15.5 below, and all finally approved minor variances. [By-law: 579-2017]

(3) Zoning Certificate Applications

(i) minimum length of 6.0 metres;
(ii) minimum width of 3.5 metres; and
(iii) minimum vertical clearance of 3.0 metres; and

(D) a Type "G" **loading space** must have a:

(i) minimum length of 13.0 metres;
(ii) minimum width of 4.0 metres; and
(iii) minimum vertical clearance of 6.1 metres.

220.5.10 Loading Space Rates

220.5.10.1 General

(1) Loading Space Requirements

Loading spaces must be provided in compliance with regulations 220.5.10.1(2) to (9).

(2) Loading Space Requirements - Building Containing Dwelling Units

A **building** with **dwelling units** must provide **loading spaces** as follows:

Number of Units	Minimum Number of **Loading Spaces** Required
0 to 30 **dwelling units**	None required
31 to 399 **dwelling units**	1 Type "G"
400 **dwelling units** or more	1 Type "G" and 1 - Type "C"

(3) Loading Space Requirements - Retail Store, Eating Establishment, or Personal Service Shop

A **building** with a **retail store**, **eating establishment**, or **personal service shop** must provide **loading spaces** as follows:

Gross Floor Area	Minimum Number of **Loading Spaces** Required
0 to 499 square metres	None required
500 to 1,999 square metres	1 Type "B"
2,000 to 4,999 square metres	2 Type "B"
5,000 to 9,999 square metres	3 Type "B"
10,000 to 19,999 square metres	1 Type "A" and 3 Type "B"
20,000 to 29,999 square metres	1 Type "A", 3 Type "B" and 1 Type "C"
30,000 square metres or greater	1 Type "A", 3 Type "B" and 1 Type "C"

(4) Loading Space Requirements - Grocery stores/supermarket

A **building** with a grocery stores or supermarket must provide **loading spaces** as follows:

Gross Floor Area	Minimum Number of **Loading Spaces** Required
0 to 499 square metres	None required
500 to 999 square metres	1 Type "B"
1,000 to 1,999 square metres	1 Type "A"
2,000 to 4,999 square metres	1 Type "A" and 1 Type "B"
5,000 to 9,999 square metres	1 Type "A" and 2 Type "B"
10,000 to 19,999 square metres	2 Type "A" and 2 Type "B"
20,000 square metres and greater	2 Type "A" and 3 Type "B"

(5) Loading Space Requirements - Office

	(B) in Bicycle Zone 2 is 3 plus 0.18 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for **post-secondary school** offices and classrooms. [By-law: 559-2014 Under Appeal]	**secondary school** offices and classrooms. [By-law: 559-2014 Under Appeal]
Private School	the minimum number of short-term **bicycle parking spaces** to be provided: (A) in Bicycle Zone 1 is 3 plus 0.1 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for a **public school** or **private school**; and (B) in Bicycle Zone 2 is 3 plus 0.06 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for a **public school** or **private school**.	the minimum number of long-term **bicycle parking spaces** to be provided: (A) in Bicycle Zone 1 is 0.1 for each 100 square metres of **interior floor area** used for a **public school** or **private school**; and (B) in Bicycle Zone 2 is 0.06 for each 100 square metres of **interior floor area** used for a **public school** or **private school**.
Public School	the minimum number of short-term **bicycle parking spaces** to be provided: (A) in Bicycle Zone 1 is 3 plus 0.1 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for a **public school** or **private school**; and (B) in Bicycle Zone 2 is 3 plus 0.06 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for a **public school** or **private school**.	the minimum number of long-term **bicycle parking spaces** to be provided: (A) in Bicycle Zone 1 is 0.1 for each 100 square metres of **interior floor area** used for a **public school** or **private school**; and (B) in Bicycle Zone 2 is 0.06 for each 100 square metres of **interior floor area** used for a **public school** or **private school**.
Retail Store	the minimum number of short-term **bicycle parking spaces** to be provided: (A) in Bicycle Zone 1 is 3 plus 0.3 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for a **retail store**; and (B) in Bicycle Zone 2 is 3 plus 0.25 **bicycle parking spaces** for each 100 square metres of **interior floor area** used for a **retail store**.	the minimum number of long-term **bicycle parking spaces** to be provided: (A) in Bicycle Zone 1 is 0.2 for each 100 square metres of **interior floor area** used for a **retail store;** and (B) in Bicycle Zone 2 is 0.13 for each 100 square metres of **interior floor area** used for a **retail store**.

(3) Use With Interior Floor Area of 2000 Square Metres or Less

Despite the **bicycle parking space** rates set out in regulations 230.5.10.1(1) and 230.5.10.1(5) and (6), if a **bicycle parking space** is required for uses on a **lot**, other than a **dwelling unit**, and the total **interior floor area** of all such uses on the **lot** is 2000 square metres or less, then no **bicycle parking space** is required.

(4) Multiple uses on a lot

If Table 230.5 10.1(1) Bicycle Parking Space Rates, requires a **bicycle parking space** for one or more uses on a **lot**, the total number of **bicycle parking spaces** required is equal to the cumulative total of all **bicycle parking spaces** required for each use on the **lot**.

(5) Bicycle Parking Space Requirements for Dwelling Units

Bicycle parking space requirements for **dwelling units** in an **apartment building** or a **mixed use building** are:

(A) in Bicycle Zone 1, a minimum of 1.1 **bicycle parking spaces** for each **dwelling unit**, allocated as 0.9 "long-term" **bicycle parking space** per **dwelling unit** and 0.2 "short-term" **bicycle parking space** per **dwelling unit**; and [By-law: 839-2022]

(B) in Bicycle Zone 2, a minimum of 0.75 **bicycle parking spaces** for each **dwelling unit**, allocated as 0.68 "long-term" **bicycle parking space** per **dwelling unit** and 0.07 "short-term" **bicycle parking space** per **dwelling unit**.

(6) Interior Floor Area Exclusions for Bicycle Parking Space Calculations

To calculate **bicycle parking space** requirements for other than **dwelling units**, the **interior floor area** of a **building** is reduced by the area in the **building** used for:

(A) parking, loading and bicycle parking below-ground;

(B) required **loading spaces** at the ground level and required **bicycle parking spaces** at or above-ground;

(C) storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms in the **basement**;

(D) shower and change facilities and **bicycle maintenance facilities** required by this By-law for required **bicycle parking spaces**; [By-law: 839-2022]

(E) elevator shafts;

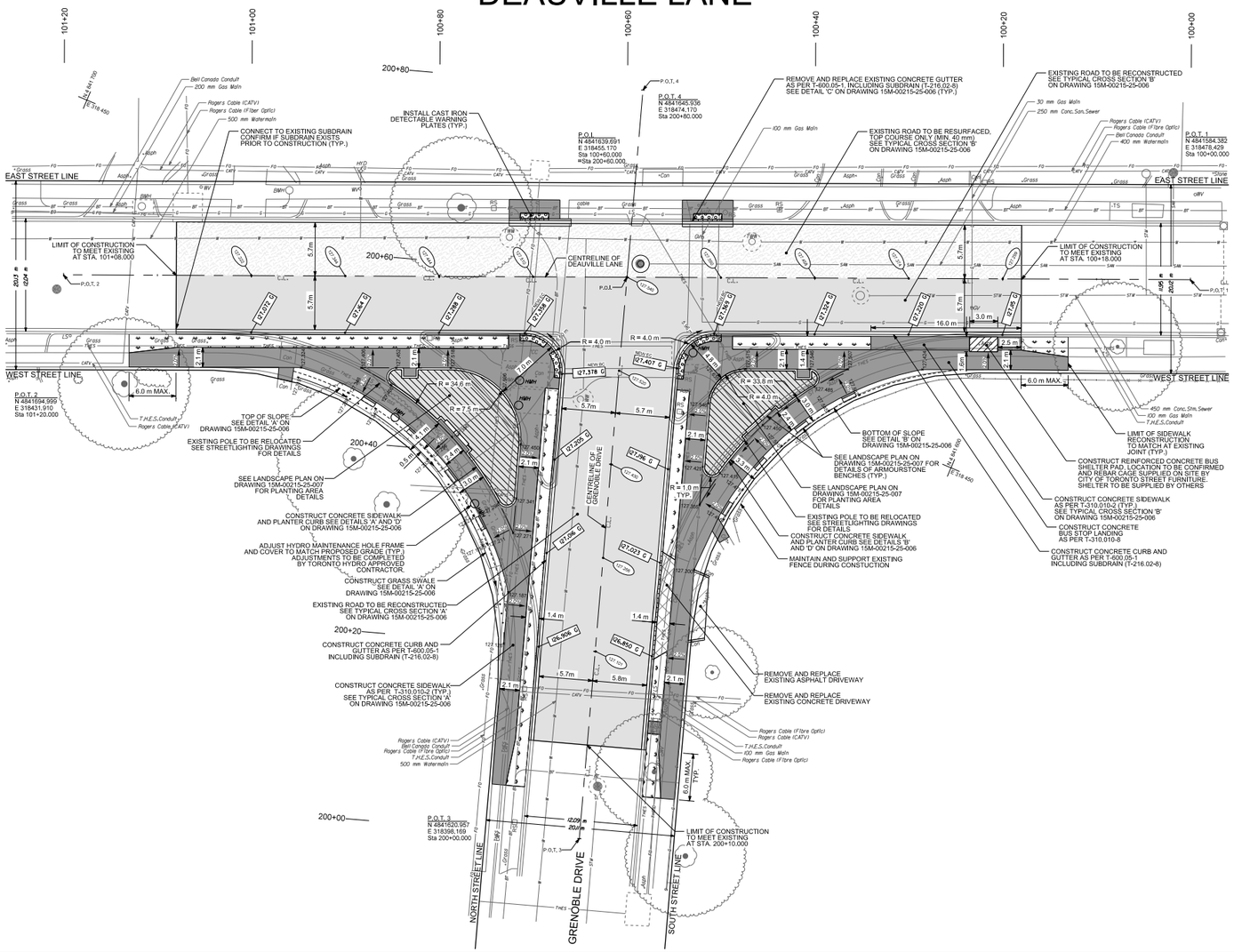
(F) mechanical penthouse; or

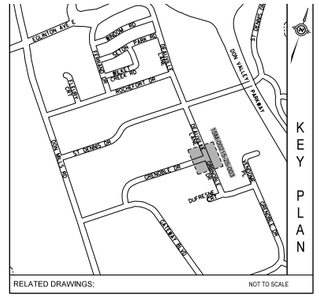
(G) exit stairwells in the **building**. [By-law: 1774-2019]

230.5.10.11 Bicycle Parking Rate Exemptions

ATTACHMENT 3

DEAUVILLE LANE





LEGEND:

EXISTING ELEVATIONS — ON DRAWING as (131.073 G) or

PROPOSED SPOT ELEVATIONS — or or

PAVEMENT TO BE RECONSTRUCTED, FULL DEPTH

PAVEMENT TO BE RESURFACED, SURFACE COURSE ONLY

SIDEWALK TO BE CONSTRUCTED

ASPHALT DRIVEWAY TO BE RECONSTRUCTED

PLANTING AREA

CONCRETE DRIVEWAY TO BE RECONSTRUCTED

SUPPLY AND INSTALL TOPSOIL AND SOD

CAST IRON TACTILE WALKING SURFACE INDICATORS TO BE INSTALLED

PROPOSED DROP CURB

PROPOSED BOTTOM OF SWALE

PLANIMETRIC MAPPING DATA OBTAINED FROM AERIAL PHOTOGRAPHY DATED "APRIL, 2005"
SURVEY DATA UPDATED "NOVEMBER 13, 2018"
LEGAL LIMIT OBTAINED FROM SURVEYS & MAPPING SSARA "NOVEMBER 13, 2018"
UNDERGROUND UTILITIES OBTAINED FROM CITY "PUCC" FILES, CITY PLANS,
SUB-SURFACE UNDERGROUND ENGINEERING INVESTIGATION (SUE) OR MODIFIED TO MEET SURVEY UPDATE.
PROPOSED IN PLACE GAS AND HYDRO LOCATIONS ARE TAKEN FROM AS-BUILT NOTES PROVIDED BY EACH RESPECTIVE UTILITY STAKEHOLDER.
ALL EXISTING UTILITIES SHOWN ON DRAWINGS (PLAN AND PROFILE) ARE FOR REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE ACTUAL LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION, OR ANY DAMAGES, EXCAVATIONS TYPICALLY SHOW THE INSIDE DIAMETER OF PIPE. FOR CLEARANCES BETWEEN UTILITIES THE WALL THICKNESS MAY NOT BE INDICATED.
INFORMATION REGARDING DEPTHS AND LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE CONSTRUCTION.

wsp

SURVEY(2018)	15M-00215-25_2D-svy.dgn	
DESIGN	15M-00215-25_pd .dgn, 15M-00215-25_sh.dgn	
UTILITY	15M-00215-25_ugs.dgn	
MAPPING		
STREETLINE	15M-00215-25_psl.dgn	

DIGITAL INFORMATION

No.	DATE	REVISIONS	INITIAL	SIGNED
1	JULY 2019	ISSUED FOR TENDER		

TORONTO Cycling Infrastructure and Programs

DEAUVILLE LANE
AT GRENOBLE DRIVE
ROAD RECONSTRUCTION PLAN

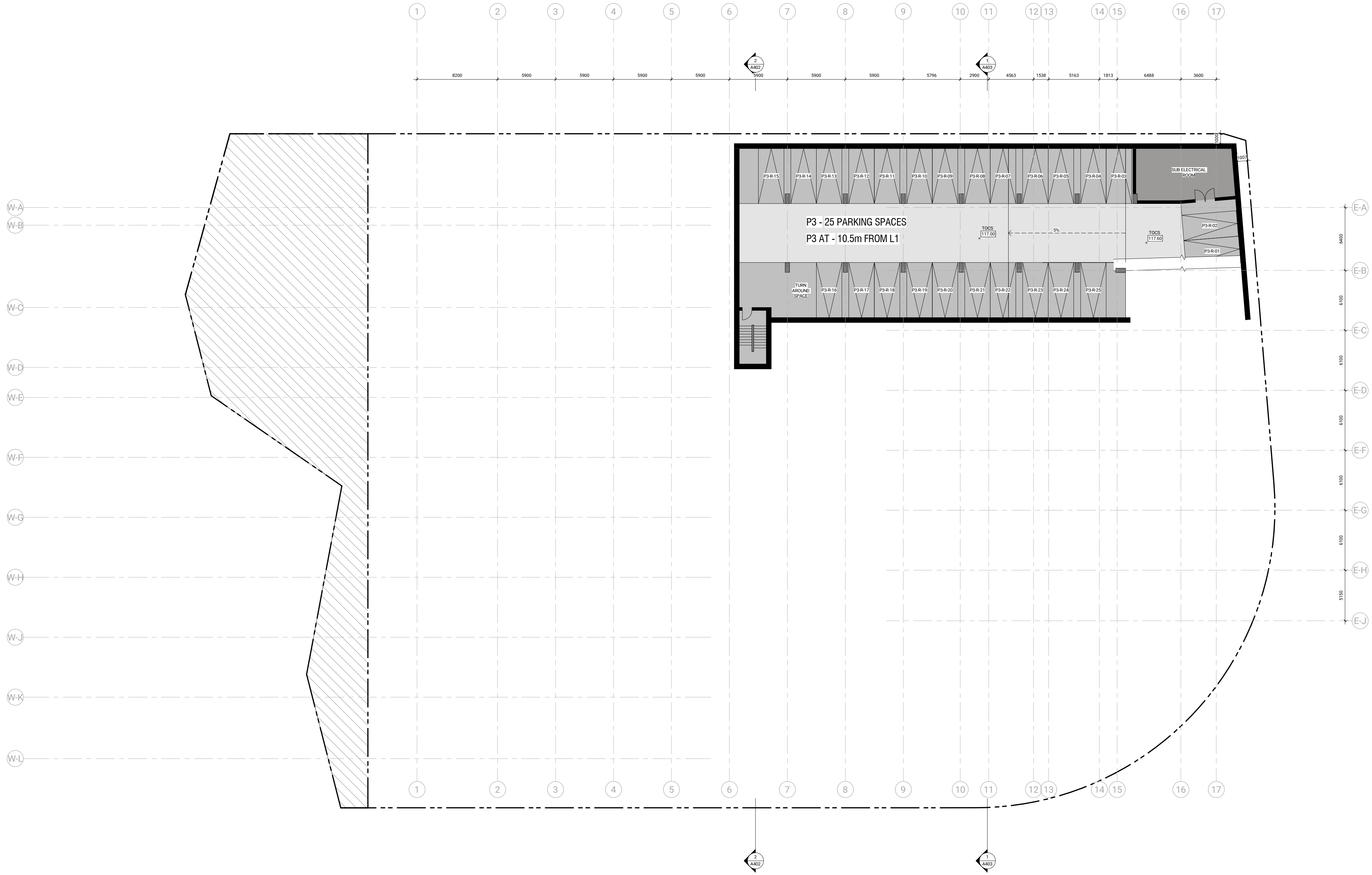
DESIGN	B.P.Q.	DRAWN	A.K.S.	CHECKED	D.S.W.
SCALE	HORIZONTAL 1:200				
DATE	JULY, 2019				

CONTRACT No. 19TRA-TIM-01CIP

DRAWING NUMBER 15M-00215-25-003

SHEET 3 OF 9

ATTACHMENT 4



ISSUED

No.	Date	Description
4	07/10/2023	ISSUED FOR ZBA4

PARKING SUMMARY

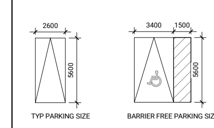
All Parking stalls are 2.6m x 5.6m unless otherwise noted
Accessible Parking stalls are 3.4m x 5.6m + 1.5m barrier free aisle

L1 - 2 spaces (pick-up/drop-off)
P1 - 62 spaces (11 Visitors + 51 Res spaces)
P2 - 138 spaces

Total 202 Spaces

PARKING LEVEL NOTES:

1. All parking stalls shall have a minimum clear height of 2100mm
2. All resident parking spaces and 25% of visitor parking spaces to be provided with energized outlet capable of providing Level 2 charging or higher, as per By-law 89-2022. Level 2 EVSE is being provided as defined by SAE International's J1772 standard, as amended (208V to 240V single-phase power, with maximum current of 80A). EVEMS will be used.
3. All doors leading to bicycle parking rooms have automatic door openers (ado)
4. Caution signage will be provided at parking ramp exit of heavy vehicles at loading area for motorists leaving parking garage



CONVEX MIRROR

P1-V DENOTES VISITOR PARKING USE
P1-R DENOTES RESIDENT PARKING USE
P1- -EV DENOTES PARKING STATIONS WITH EVSE

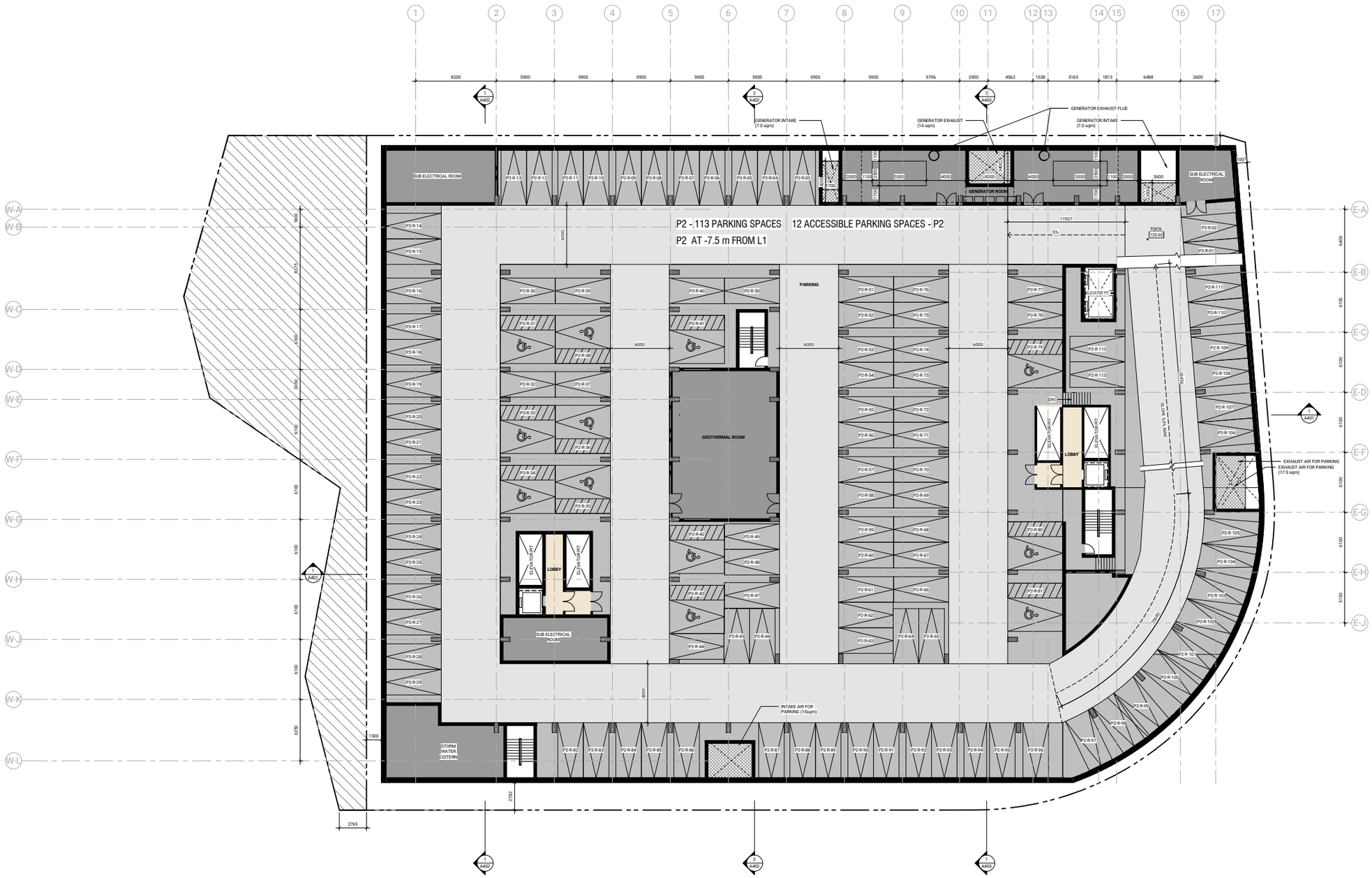
48 Grenoble Drive

211033

LEVEL P3 FLOOR PLAN

As indicated

A097



diamond schmitt

ONTARIO ASSOCIATION OF ARCHITECTS
July 10, 2023
Project # 211033 - 48 Grenoble Dr
ZBA4 SUBMISSION
DONALD R. M. SCHMITT
LICENCE
3170

ISSUED

No.	Date	Description
1	03/18/2022	ISSUED FOR ZBA/SPA
2	03/08/2023	ISSUED FOR ZBA2/SPA2
3	05/11/2023	ISSUED FOR ZBA3
4	07/10/2023	ISSUED FOR ZBA4

PARKING SUMMARY

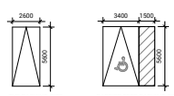
All Parking stalls are 2.6m x 5.6m unless otherwise noted
Accessible Parking stalls are 3.4m x 5.6m + 1.5m barrier free aisle

L1 - 2 spaces (pick-up/drop-off)
P1 - 62 spaces (11 Visitors + 51 Res spaces)
P2 - 138 spaces

Total 202 Spaces

PARKING LEVEL NOTES:

1. All parking stalls shall have a minimum clear height of 2100mm
2. All resident parking spaces and 25% of visitor parking spaces to be provided with energized outlet capable of providing Level 2 charging or higher, as per By-law 89-2022. Level 2 EVSE is being provided as defined by SAE International's J1772 standard, as amended (208V to 240V single-phase power, with maximum current of 80A). EVEMS will be used.
3. All doors leading to bicycle parking rooms have automatic door openers (ado)
4. Caution signage will be provided at parking ramp exit of heavy vehicles at loading area for motorists leaving parking garage



CONVEX MIRROR

P1-V DENOTES VISITOR PARKING USE
P1-R DENOTES RESIDENT PARKING USE
P1-..EV DENOTES PARKING STATIONS WITH EVSE

48 Grenoble Drive

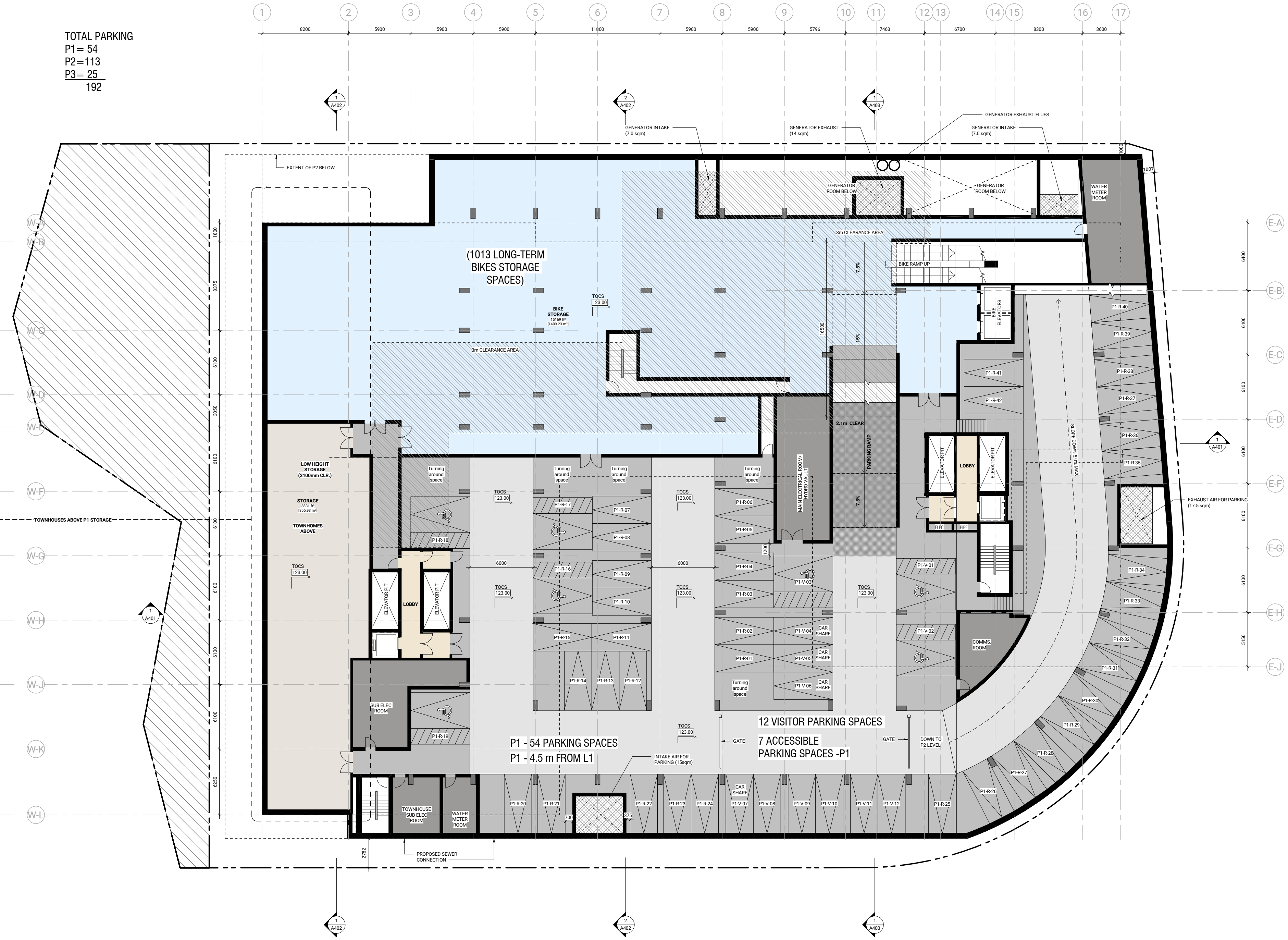
211033

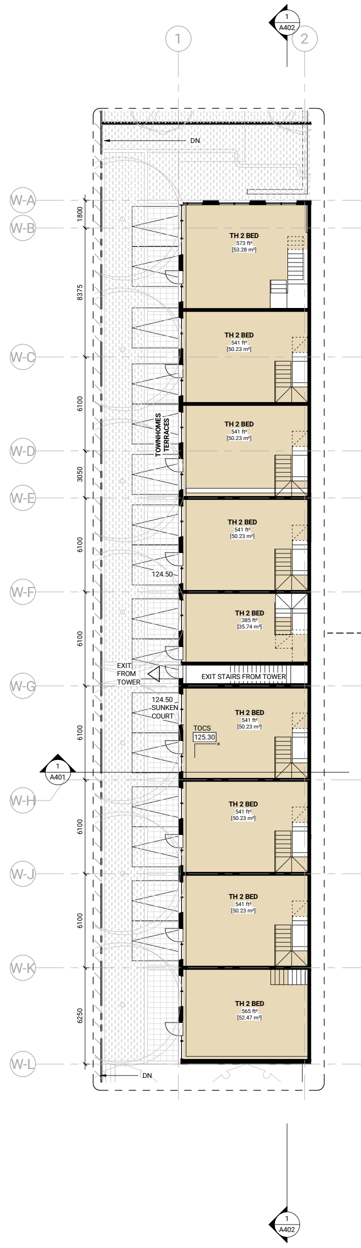
LEVEL P2 FLOOR PLAN

As indicated

A098

diamond schmitt





TOWNHOME LOWER LEVEL PLAN
1 : 150

A-Level P1
1 : 150

ONTARIO ASSOCIATION OF ARCHITECTS
DONALD R. M. SCHMITT
LICENCE
3170
ZBA4 SUBMISSION

ISSUED

No.	Date	Description
1	03/18/2022	ISSUED FOR ZBA/SPA
2	02/08/2023	ISSUED FOR ZBA2/SPA2
3	05/11/2023	ISSUED FOR ZBA3
4	07/10/2023	ISSUED FOR ZBA4

PARKING SUMMARY

All Parking stalls are 2.6m x 5.6m unless otherwise noted
Accessible Parking stalls are 3.4m x 5.6m + 1.5m barrier free aisle

L1 - 2 spaces (pick-up/drop-off)
P1 - 62 spaces (11 Visitors + 51 Res spaces)
P2 - 138 spaces

Total 202 Spaces

PARKING LEVEL NOTES:

1. All parking stalls shall have a minimum clear height of 2100mm
2. All resident parking spaces and 25% of visitor parking spaces to be provided with energized outlet capable of providing Level 2 charging or higher, as per By-law 89-2022. Level 2 EVSE is being provided as defined by SAE International's J1772 standard, as amended (208V to 240V single-phase power, with maximum current of 80A). EVEMS will be used.
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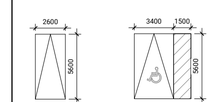


TYP PARKING SIZE BARRIER FREE PARKING SIZE

CONVEX MIRROR

P1-V DENOTES VISITOR PARKING USE
P1-R DENOTES RESIDENT PARKING USE
P1- -EV DENOTES PARKING STATIONS WITH EVSE

48 Grenoble Drive

211033

LEVEL P1 FLOOR PLAN
As indicated

A099

projected addition of 9 to 13 cyclists and 42 and 31 pedestrians during the AM and PM peak hours, respectively, can be adequately accommodated.

4.2 Vehicle Trip Distribution & Assignment

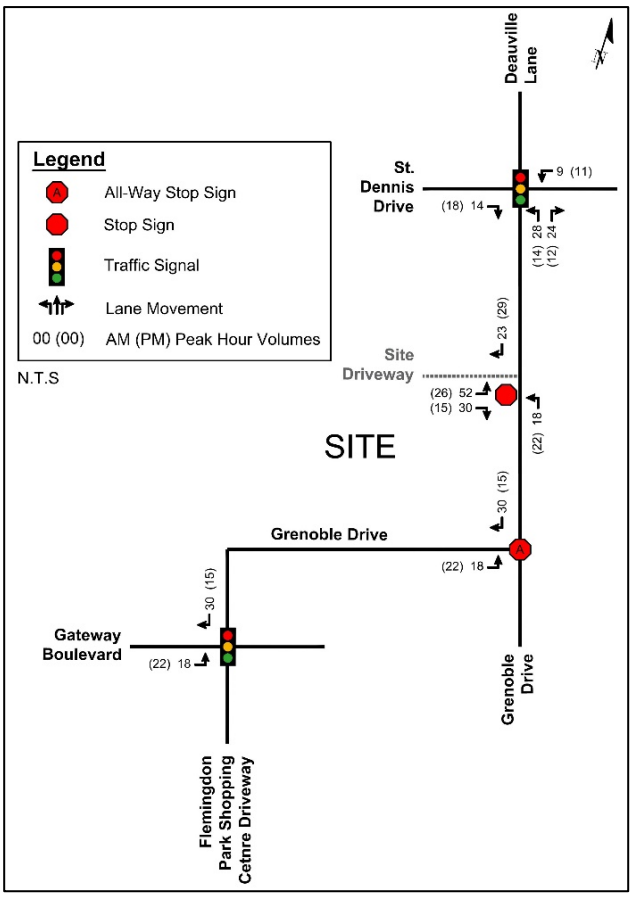
The trip distribution and assignment of new vehicle trips were based upon existing traffic patterns, the available road network, 2016 Transportation Tomorrow Survey data and findings from the Don Mill Crossing Study. The estimated distribution of site trips on the greater road network is shown in Table 6 and the vehicular trip assignment is illustrated in Figure 11.

Table 6: Vehicle Trip Distribution

To/From	Via	Distribution
North	Don Mills Road	25%
South		30%
East	Eglinton Avenue	30%[1]
West		15%
	Total	**100%**

Note: 1. With direct access to Eglinton Avenue from St. Dennis, it was assumed that 80% will utilize St. Dennis.

Figure 11: Site Generated Vehicle Traffic



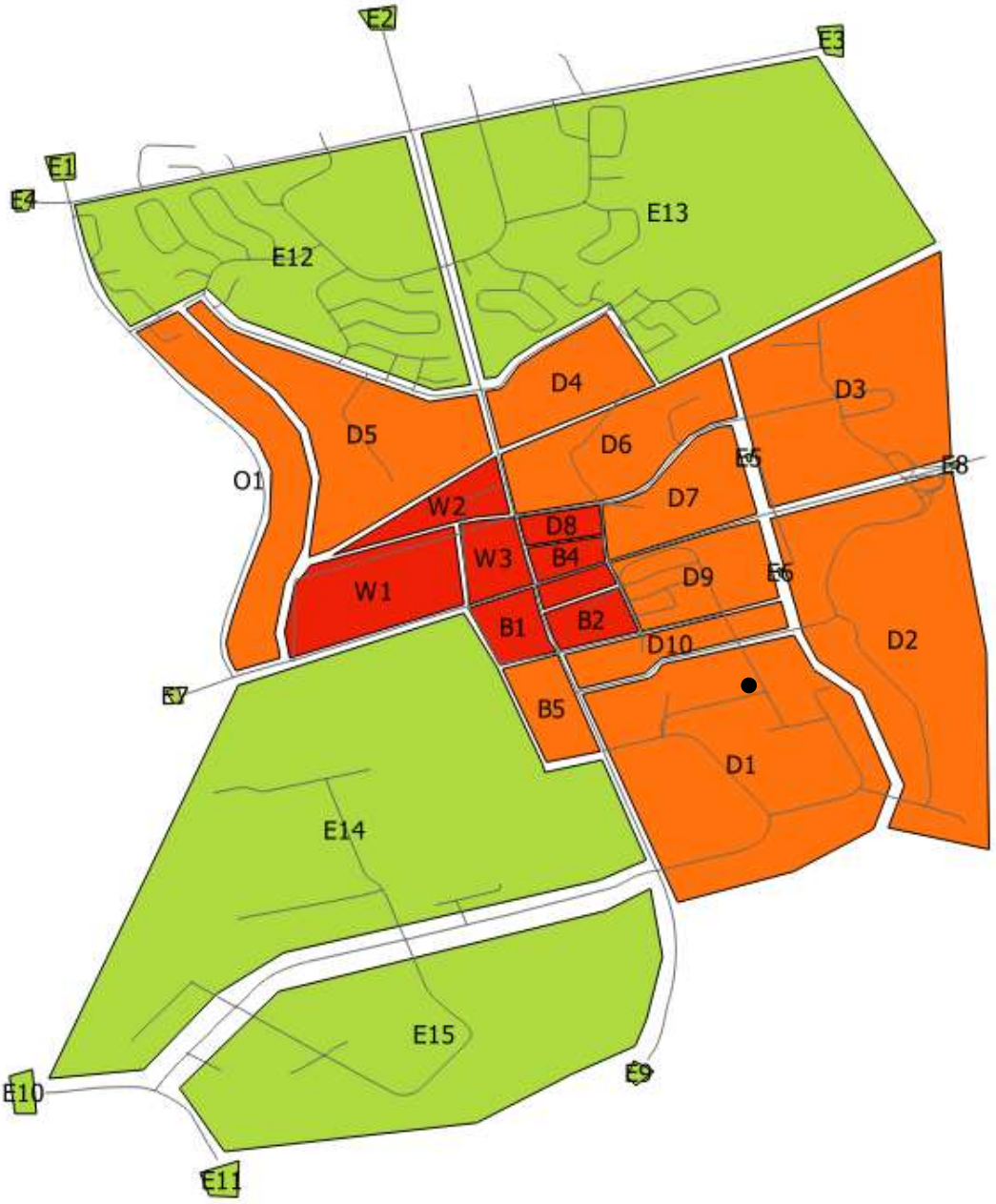


Exhibit 1-1: Zone System and Base Future Road Network

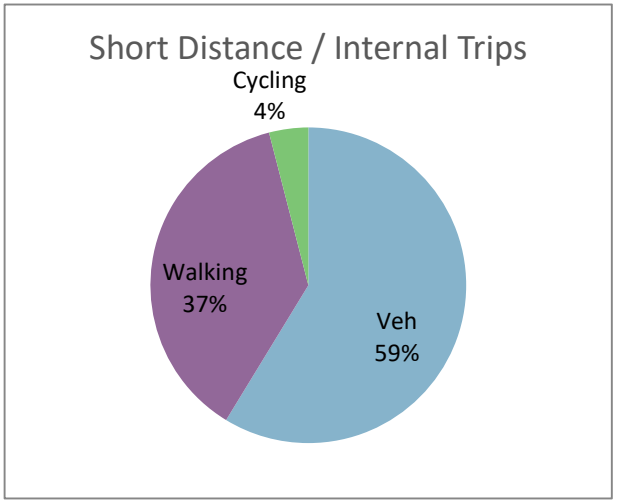
To determine the trips to and from the study area blocks, versus destined to or from external zones, the "*National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*" methodology was used. Generated trips were inputted into this tool, which resulted in a matrix of travel demands between internal trip uses.

Internal to Internal	Internal to External
External to Internal	External to External

Exhibit 1-4 Typical Trip Distribution Matrix

1.5.1 Internal – Internal Trips

Internal trips from the internal trip capture methodology were distributed based on the proportion of trips each development block produces for each trip purpose. TTS data for the area shows that for short distance trips (2.5 km or less) followed a mode split of 63% auto, 37% walking and 0% cycling with transit trips removed. However, given the objective to increase cycling demand, it was assumed that 4% of internal trips would be by cycling. It was assumed that in the context of the study area boundaries, there would be limited availability and opportunity for transit trips in between the development blocks.



1.5.2 Internal – External / External - Internal Trips

The total number of trips from and to each development block is outputted from the internal trip capture methodology. These were then distributed to each development block by the proportion of trips per mode each block generated. The external zone distribution was derived using recent GPS data, this is shown in the table below.

External Zone	AM		PM		
	From (Ext to Int)	To (Int to Ext)	From (Ext to Int)	To (Int to Ext)	
E1	10%	8%	6%	9%	North Don Mills
E2	13%	9%	11%	3%	
E3	6%	4%	3%	0%	
E4	3%	4%	3%	4%	
E5	12%	11%	10%	1%	East Don Mills
E6	10%	11%	5%	1%	
E7	15%	18%	21%	1%	West Don Mills
E8	9%	6%	13%	9%	East Don Mills

External Zone	AM		PM		
	From (Ext to Int)	To (Int to Ext)	From (Ext to Int)	To (Int to Ext)	
E9	13%	23%	18%	8%	South Don Mills
E10	2%	2%	2%	6%	
E11	1%	1%	2%	17%	
E12	3%	2%	5%	7%	
E13	1%	1%	1%	16%	North Don Mills
E14	0%	1%	1%	8%	
E15	0%	1%	1%	11%	South Don Mills

Transit trips are not subject to this distribution as they start from each development block, assumed to travel using an active mode share to the transit stop/station before continuing on the transit route. Existing route passenger volumes along Don Mills, and the projected ECLRT demand were compared to determine the percentage of trips to each transit route. Transit trips can be assigned to the pedestrian and cycling networks and layered with the pedestrian and cycling trips, but also be used to assess capacities required on the Don Mills bus and at the ECLRT station. Due to limited available data, the table below shows the AM transit trip distributions, PM transit trips were assumed to be the opposite, where users that went to westbound in the AM, would return going eastbound in the PM.

Transit Line/Stop	From LRT/Bus to Zone	From Zone to LRT/Bus	Route/Type
L1	45%	79%	LRT to and from West
L2	32%	11%	LRT to and from East
B1	12%	5%	Don Mills to and from North
B2	11%	5%	Don Mills to and from South

Active trip distribution was considered using existing travel behaviors for short distance trips. It is assumed that existing travellers within the study area making an internal trip would likely follow similar characteristics and they reflect a willingness to drive, walk and/or cycle. It should be noted, that this process does not consider actual travel distances between the different development blocks as it relates to mode share. As a result, these values reflect the study area as a whole, but individual zones and developments may vary in reality.

External Zone	Active Transportation Trips	
	From (Ext to Int)	To (Int to Ext)
E1	0%	0%
E2	32%	30%
E3	5%	7%
E4	0%	2%
E5	6%	1%
E6	6%	3%
E7	0%	4%
E8	0%	0%

Don Mills Crossing - Mobility Planning Study, February 2019, by Steer Davies Gleave

Appendix I, Section 1.5.2

External Zones	AM		PM	
	In	Out	In	Out
E1	10%	8%	6%	9%
E2	13%	9%	11%	3%
E3	6%	4%	3%	0%
E4	3%	4%	3%	4%
E5	12%	11%	10%	1%
E6	10%	11%	5%	1%
E7	15%	18%	21%	1%
E8	9%	6%	13%	9%
E9	13%	23%	18%	8%
E10	2%	2%	2%	6%
E11	1%	1%	2%	17%
E12	3%	2%	5%	7%
E13	1%	1%	1%	16%
E14	0%	1%	1%	8%
E15	0%	1%	1%	11%

South
North
East
West

Summary of distribution

		Trips				
		East Eglinton	West Eglinton	North Don Mills	South Don Mills	Total
AM	In	31%	17%	36%	16%	100%
	Out	26%	18%	28%	28%	100%
PM	In	28%	21%	29%	22%	100%
	Out	11%	1%	39%	49%	100%
% Used in TIS		**30%**	**15%**	**25%**	**30%**	**100%**

ATTACHMENT 6

Table 1: Existing and Future Traffic Volumes

Intersection & Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Existing 2022	Background 2028	Total 2028	Existing 2022	Background 2028	Total 2028
Deauville Lane / St. Dennis Drive						
EBL	35	55	55	14	53	53
EBT	65	85	85	117	122	122
EBR	40	40	54	29	29	47
WBL	215	215	224	169	169	180
WBT	135	140	140	94	104	104
WBR	198	198	198	75	75	75
NBL	41	41	69	88	88	102
NBT	55	55	55	103	103	103
NBR	170	170	194	291	291	303
SBL	31	31	31	154	154	154
SBT	72	72	72	79	79	79
SBR	42	80	80	142	157	157
Deauville Lane / Grenoble Drive						
EBL	215	215	233	289	289	311
EBR	40	40	40	51	51	51
NBL	30	30	30	23	23	23
NBT	86	86	86	107	107	107
SBT	93	93	93	72	72	72
SBR	267	267	297	164	164	179
Grenoble Drive / Gateway Boulevard / Commercial Driveway						
EBL	84	89	107	143	158	180
EBT	87	87	87	61	61	61
EBR	71	81	81	52	52	52
WBL	14	14	14	15	15	15
WBT	73	73	73	59	59	59
WBR	54	54	54	128	128	128
NBL	105	105	105	70	70	70
NBT	40	40	40	81	81	81
NBR	11	11	11	9	9	9
SBL	89	89	89	22	22	22
SBT	61	61	61	80	80	80
SBR	183	188	218	168	173	188
Deauville Lane / Site Driveway						
EBL	N/A		52	N/A		26
EBR			30			15
NBL			18			22
NBT			301			396
SBT			360			236
SBR			23			29

in auto trips could be anticipated with an effective, well planned and coordinated TDM program. This is intended for illustrative purpose and reflects the implementation of some basic TDM measures.

Table 2: Summary of TDM Auto Trip Reduction Potential (Exclusive of Transit)

TDM Measure	Short Trips (<10km)		Long Trips (>10km)	
	2021 Short to medium term	2031 Long term	2021 Short to medium term	2031 Long term
	Reduction in Number of Automobile Trips			
Improved land use and transportation integration	1%	2.5%	1%	2.5%
Ridesharing (numbers reflect potential for overlap with transit)	2%	2%	3%	3%
Walking/cycling	4%	5% - 8%	Minimal	
Telecommuting	0.5%	0.5%	1%	1.5%

As discussed above it is difficult to quantify benefits associated with the implementation of TDM strategies. Until additional work on the RTMP has been completed (network development and analysis, travel demand forecasting, parking and transit strategic plans, etc.), it is not possible to establish targets for reducing auto trips within the Region as a result of the implementation of TDM strategies or measures for long and short distance trips. Such targets will be identified following the development of future system networks for 2021 and 2031 and establishment of transportation operational strategies including levels of transit service.

4.0 Allowable Trip Reductions for TDM

4.1 Trip Reduction Credits by TDM Measure and Area Type

Table 4.1 shows recommended allowable trip reduction credits for TDM measures in Vermont. These credits are expressed as a percentage of PM peak period vehicle trips as estimated for the corresponding land use(s) using the latest version of the ITE Trip Generation manual. The resulting number of vehicle trips should be rounded to the nearest trip for the purpose of calculating an impact fee.

The credits may be adjusted at the discretion of the District Commission (with input from VTrans) if the developer provides evidence supporting a higher effectiveness estimate or if VTrans or the District Commission has reason to believe that a higher or lower trip reduction would be achieved. Lower amounts of credits may be assigned, for example, for partial implementation of a measure (e.g., if only half the workers at the site are expected to be eligible for telecommuting or compressed work schedules). Maximum combined credit levels for different types of measures are also provided. Finally, rather than (or in addition to) accounting for credits from individual TDM measures, a developer may also join a transportation management association and take credit for the services provided by the TMA, as discussed in Section 4.2.

Table 4.1 also shows for which land use types the measure may receive credits. In some cases, credits may only be applied to the fraction of trips generated by workers (for example, commute-focused measures at a retail or lodging site). Finally, Table 4.1 suggests whether the measure is likely to be appropriate at any site or at larger sites only.

Different trip reduction credits are recommended for three different area types. These area types are:

1. **Mixed-Use / Moderate Transit –** Mixed-use downtown, neighborhood, or college campus (see mixed-use definition below) with peak-hour transit headways of 30 minutes or less on a single route.

2. **Mixed-Use / Low Transit –** Mixed-use downtown, neighborhood, or college campus with peak-hour transit headways greater than 30 minutes.

3. **Other –** Single-use environment.

A proposed development site is considered to be in a **mixed-use** area if it meets **at least one** of the following criteria:

- Located in an "urban area" as defined by the U.S. Census Bureau for the 2010 Census and having a Walk Score greater than 60;

- Located in an "urban area" as defined by the U.S. Census Bureau for the 2010 Census and at least 10 destinations (restaurants, coffee shops, bars, grocery stores, parks, schools,

Table 4.1 Allowable Trip Reductions

Percent of PM Peak

TDM Measure	Percent Trip Reduction			Applicable Land Uses					Applicable Sites[a]		Notes
	Mixed-Use / Moderate Transit	Mixed-Use / Low Transit	Other	Office – Medical – Institutional	Industrial	Residential	Retail	Lodging	Any Site	Larger Sites	
Physical											
Bus stop with shelter	2%	1%	0.5%	✓	✓	✓	✓	[b]	✓	✓	Provided on-site or within 600-foot walk of building entrance
Design site to support transit and walk access	4%	2%	1%	✓	✓	✓	✓	✓	✓	✓	Front setback <20 feet from street, main entrance fronting on street with transit service, direct pedestrian connection to bus stop
Secure bicycle parking	1%	1%	1%	✓	✓	✓	[b]	[b]	✓	✓	Lockers or indoor parking (in addition to racks for short-term parking)
Bicycle racks only	0.5%	0.5%	0.5%	✓	✓	✓	✓	[b]	✓	✓	
Showers and lockers	1%	1%	1%	✓	✓		[b]	[b]	✓	✓	
Sidewalk or shared-use path improvements	2%	2%	1%	✓	✓	✓	✓	✓	✓	✓	On-site sidewalk improvements might be considered a basic requirement
Parking supply management (provide <min or requirements met through shared parking)	5%	4%	3%	✓	✓	✓	✓	✓	✓	✓	Alternatively, trips may be reduced in proportion to reduction parking provided below minimum requirements
On-site amenities	1%	1%	1%	✓	✓	✓		✓		✓	Café/convenience store, business center, ATM, wiring for ease of telework, etc.

TDM Measure	Percent Trip Reduction: Mixed-Use / Moderate Transit	Percent Trip Reduction: Mixed-Use / Low Transit	Percent Trip Reduction: Other	Applicable Land Uses: Office – Medical – Institutional	Applicable Land Uses: Industrial	Applicable Land Uses: Residential	Applicable Land Uses: Retail	Applicable Land Uses: Lodging	Applicable Sites[a]: Any Site	Applicable Sites[a]: Larger Sites	Notes
Operational											
Flextime	4%	4%	4%	✓	✓				✓	✓	
Compressed work week	2%	2%	2%	✓	✓				✓	✓	
Telecommuting	3%	3%	3%	✓					✓	✓	
Preferential parking	0.5%	0.5%	0.5%	✓	✓					✓	
Participation in ridematching program with GRH option	1-2%	1-2%	1-2%	✓	✓		[b]	[b]		✓	1% for <100 workers at site 2% for >100 workers at site
Participation in vanpool or shuttle program with GRH option	1-2%	1-2%	1-2%	✓	✓					✓	1% for 100-250 workers at site 2% for >250 workers at site
On-site carsharing	1%	1%	--	✓	✓	✓		✓		✓	
On-site bikesharing	1%	1%	--	✓	✓	✓	✓	✓		✓	
Financial											
Financial incentive/rewards programs	3%	2%	1%	✓	✓	✓	[b]	[b]	✓	✓	
Parking pricing or cash-out, <$5 per day or $75 per month	5%	3%	1%	✓	✓	✓	[b]	✓	✓	✓	
Parking pricing or cash-out, >$5 per day or $75 per month	10%	5%	3%	✓	✓	✓	[b]	✓	✓	✓	

TDM Measure	Percent Trip Reduction			Applicable Land Uses					Applicable Sites[a]		Notes
	Mixed-Use/ Moderate Transit	Mixed-Use/ Low Transit	Other	Office – Medical – Institutional	Industrial	Residential	Retail	Lodging	Any Site	Larger Sites	
Transit subsidies/discounts, <50% of fare	2.5%	1%	0.5%	✓	✓		[b]	[b]	✓	✓	Only if local transit service exists within quarter-mile walk of building entrance with sidewalk/pathway access
Transit subsidies/discounts, >50% of fare	5%	2%	1%	✓	✓		[b]	[b]	✓	✓	
Organizational											
Marketing/information program	3%	2%	1%	✓	✓	✓	✓	✓	✓	✓	TDM plan should describe proposed program elements
Join a TMA (small site, <100 workers)	13%	10%	7%	✓	✓	✓	✓	✓	✓		Do not take additional credit for any measures included in TMA services[c]
Join a TMA (large site, >100 workers)	15%	12%	9%	✓	✓	✓	✓	✓		✓	
Maximum Combined Reductions											
Physical measures only	6%	4%	3%								
Physical and operational and organizational	15%	12%	9%								
Including financial incentives	20%	15%	12%								

[a] "Larger sites" are typically at least 25,000 to 50,000 square feet of commercial space, 50 to 100 workers, or 30 to 50 dwelling units.

[b] Only applies to trips generated by workers.

[c] TMA services are assumed to include: Ridematching, vanpool support, guaranteed ride home, financial incentive/rewards programs, transit subsidies/discounts <50% of fare, marketing/information.

Appendix A. Trip Reductions from the Literature and Other Practice Examples

Table A.1 presents a summary of trip reductions assigned by other states and municipalities, as well as evidence on reductions in vehicle-trips and/or vehicle miles of travel (VMT) from a variety of TDM measures, as taken from literature sources. Table A.1 is the basis for the recommended trip reduction percentages provided in Table 4.1, with adjustments for local considerations.

Some sources provide ranges of effectiveness, recognizing that the effectiveness of individual strategies can vary widely depending on factors such as the geographic context, site characteristics, and level of application. Exhibits A through D provide additional detail from the sources referenced in Table A.1.

The following sources are referenced in Table A.1 and its Exhibits.

Berkeley = Wilbur Smith Associates (2008). *West Berkeley Circulation Master Plan*. Prepared for City of Berkeley, California.

> This plan provides estimated vehicle trip reductions from TDM measures as drawn from other sources, including the Transit Cooperative Research Program (TCRP) Report 95 series.

CAPCOA = California Air Pollution Control Officers Association (2010). *Quantifying GHG Mitigation Measures*.

> Chapter 7, Section 3 of the report provides ranges of expected effects of project-level TDM strategies on VMT reduction. The quantification data are drawn from other sources, including Cambridge Systematics' *Moving Cooler*, the Victoria Transportation Policy Institute TDM Encyclopedia, and TCRP Report 95, among others. The research referenced in this report spans a time period of at least three decades.
>
> This source reports impacts in terms of VMT reductions, not trip reductions. It is included because it provides a recent comprehensive review of the literature on VMT impacts of TDM, transit, land use, and other transportation measures. The VMT reductions are often – but not always – proportional to trip reductions. For example, VMT reductions associated with compact land use are due to shorter trip lengths as well as non-auto trips. Walk and bike improvements will give proportionally smaller VMT reductions than trip reductions, since walk and bike trips are typically shorter than driving trips. VMT reductions for ridesharing and vanpooling may exceed trip reductions on a percentage basis, since these trips tend to be longer than average.

DelDOT = Delaware Department of Transportation and Wilmington Area Planning Commission, *Trip Reduction/Transportation Demand Management (TDM) Measures Selection Form*.

This is an example of another state agency that provides quantitative trip reduction estimates for individual TDM measures.

Fairfax = Cambridge Systematics, Inc., UrbanTrans, and ESTC (2010). *Increasing the Integration of TDM into the Land Use and Development Process: Task 2 – Best Practices Report (Working Paper No. 1)*. Prepared for Fairfax County (Virginia) Department of Transportation.

This report includes listings and definitions of TDM measures, as well as a "meta-analysis" using expert judgment to estimate ranges of trip reductions for groups of TDM measures (information/marketing, services, financial incentives) by level of transit service (high, moderate, low).

Moving Cooler = Cambridge Systematics, Inc. (2009). *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Urban Land Institute.

This document is a comprehensive examination of the nationwide VMT and GHG reduction impacts of about 50 transportation strategies, including demand management. Estimates are prepared for seven area types – three metro area sizes each with low and high transit service, and other areas.

N\N = Nelson\Nygaard Consulting Associates Inc. (2013). *Transportation Demand Management State of the Practice*. Prepared for Michigan Sustainable Communities and Smart Growth America.

Table 7 of this report provides values of trip reductions for some TDM measures as drawn from other sources.

ORDEQ = Oregon Department of Environmental Quality (1996). *Guidance for Estimating Trip Reductions from Commute Options*, as cited in Richland (Washington) Transportation Plan, Table 10-1. http://www.ci.richland.wa.us/DocumentCenter/View/6240. Also found in *Employee Commute Options Sample Trip Reduction Plan*, 2006, http://www.deq.state.or.us/nwr/eco/docs/SamplePlan.pdf.

This guidance provides estimated ranges of trip reductions for a variety of TDM measures.

Sacramento = City of Sacramento, Sacramento City Code: 17.700.080, *Transportation Management Plan – Evaluation Criteria for Trip Reduction Credits*.

The Sacramento City Code is another example of a policy document providing quantitative trip reduction credits for TDM measures.

TCRP 95 = Kuzmyak, J.R., et al. (2010). *Traveler Response to Transportation System Changes: Chapter 19, Employer and Institutional TDM Strategies*. Transit Cooperative Research Program Report 95.

The TCRP Report 95 series provides a comprehensive review of evidence on the impacts of transportation strategies that affect traveler behavior. Chapter 19 focuses on employer TDM but other chapters address other TDM-related strategies such as parking pricing (Chapter 13), parking management (Chapter 18), vanpools and buspools (Chapter 5), land use and nonmotorized travel (Chapters 15-17), and transit facilities, services, and operations (Chapters 4-11).

VTPI = Victoria Transportation Policy Institute. *On-Line TDM Encyclopedia*. http://www.vtpi.org/tdm/.

This web site presents an extensive review of information drawn from other sources on the definitions and impacts of TDM strategies.

Table A.1 Trip or VMT Reductions from the Literature and Other Practice Examples

TDM Measure	Source	Percent Trip or VMT Reduction	Comments
Physical			
Increase local/neighborhood density	CAPCOA	0.8-30%	
Increase location efficiency (CBD or infill site)	CAPCOA	10-65%	
Increase diversity (mixed-use area)	CAPCOA	9-30%	
Improve design of development	CAPCOA	3-21%	
Bus stop/shelter/improvements	DelDOT	0.5-1%	
Transit shelter	Sacramento	2%	
Design site to support transit	DelDOT	1-2%	
Bicycle storage	DelDOT	0.5%	
Bicycle showers and lockers	Sacramento	2-5%	
Bicycle paths	DelDOT	0.5-1%	
All bike facilities	CAPCOA	1-5%	
All bike facilities	ORDEQ	0-10%	
Pedestrian pathways	DelDOT	0.5%	
Pedestrian network improvements	CAPCOA	0-2%	
Parking management (charging, limiting, cash-out)	DelDOT	2-5%	
Limit parking supply	CAPCOA	5-12%	
On-site amenities	DelDOT	0.5-2%	
Operational			
Flextime	Berkeley	<4%	
Compressed work week	CAPCOA	0.1-3.8%	see Exhibit A
Telecommuting	CAPCOA	0.2-5.5%	see Exhibit A
Meeting guidelines to support CP/VP and transit	DelDOT	0.5%	
Preferential parking for carpools and vanpools	DelDOT	0.5-1%	
Preferential parking	Sacramento	5%	10% in CBD
Ridesharing programs	CAPCOA	1-15%	
On-site ridematching	ORDEQ	1-2%	
Guaranteed ride home	Berkeley	<1%	
Guaranteed ride home	ORDEQ	1-3%	
Provide or contribute to shuttle service	DelDOT	1.0-3.5%	
Vanpool or shuttle service	CAPCOA	0.3-13%	
Vanpool or shuttle service	Sacramento	10%	
On-site carsharing	Berkeley	<2%	
On-site carsharing	CAPCOA	0.4-0.7%	
Combined voluntary trip reduction programs	CAPCOA	1.0-6.2%	

TDM Measure	Source	Percent Trip or VMT Reduction	Comments
Operational (continued)			
Combined services	Fairfax	1-10%	1-3% in low transit area, 5-10% in moderate transit area
Combined services	N/N	8.5%	
Financial			
Provide value incentive/disincentive	DelDOT	0.5-2%	
Gifts/awards for alternative mode use	ORDEQ	0-3%	
Parking pricing (office), unbundle parking costs (residential)	Berkeley	5-40%	
Parking pricing ($1-$6 per day)	CAPCOA	0.5-20%	Varies by area type and price (see Exhibit C)
Parking pricing	N/N	20-30%	
Parking pricing	Sacramento	10%	
Parking management program (charging, limiting spaces, cash-out)	DelDOT	2-5%	
Parking cash-out	CAPCOA	0.6-7.7%	Varies by area type (Exhibit D)
Parking cash-out	ORDEQ	2-9%	2-4% low transit, 5-9% med transit
Unbundle parking costs	CAPCOA	2.6-13%	
Subsidized/discounted transit	CAPCOA	0.3-20%	Varies by level of subsidy and location type (Exhibit B)
Combined financial incentives	Fairfax	1-15%	1-5% in low transit area, 5-15% in moderate transit area
Combined financial incentives	N/N	8-18%	
Organizational			
Marketing/information program	DelDOT	1-3%	
Marketing/information program	CAPCOA	0.8-4%	
Join a TMA	DelDOT	2%	
Join a TMA	Sacramento	5-10%	5% for TMA with demonstrated 15% reduction, 10% for TMA with 30% reduction
Coordinate with other employers	DelDOT	1-2%	
Conduct surveys/data collection			
Combined information/support	Fairfax	<3%	<1% in low transit area, 1-3% in moderate transit area
Combined information/support	N/N	1.4%	
Maximum Combined Reductions			
With free parking – moderate transit	Fairfax	10-15%	
With free parking – low transit	Fairfax	3-7%	
With paid parking – moderate transit	Fairfax	15-20%	
With paid parking – low transit	Fairfax	N/A	Unlikely to occur