

Folder Number	Date (yyyy-mm-dd)
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Project Information

Street Number	Street Name	Lot Number	Plan Number
3493	Kingston Road		

Describe the variance(s) being applied for:

1. To allow a ground sign with 2 third party displays be installed on a CR Sign District with no residentail land use;

2. Deficient Distance to another CR and R Sign district; and

3. Property line Setback

If it is an application for a variance required for the modification or restoration of an existing sign, please provide the following:

Existing Sign Dimensions	Location
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Please provide the reasons/justification for the request (Attach any supporting documentation or additional pages as required):

Property Owner Information

First Name	Last Name		
Alex	Lazourenko		

Company Name (if applicable)	Telephone Number
------------------------------	------------------

Street Number	Street Name	Suite/Unit Number	Mobile Number
9555	Yonge Street	404	

City/Town	Province	Postal Code	Fax Number
Richmond Hill	Ontario	L4C 9M5	

Email

alexlaz@mac.com

Attachment Required

- Sign Variance Data Sheet
- Copies of any supporting documents
- All necessary plans and specifications required to verify the nature of the Sign By-law Variance(s) requested

Continue on next page

Applicant Information and Declaration

First Name I, Jocelyn		Last Name Wigley	
Company Name Jolt Charge Inc.			Telephone Number (416) 659-8866
Street Number of	Street Name 66 Wellington Street West, TD Bank Tower	Suite/Unit Number 5300	Mobile Number (416) 659-8866
City/Town Toronto	Province ON	Postal Code M5K 1E6	Fax Number
Email Jocelyn.Wigley@joltcharge.com			
Do hereby declare the following: • That I am ☐ the Property Owner as stated above ☐ the owner's authorized agent. ☐ an officer/employee of _____, which is an authorized agent of the owner. ☒ an officer/employee of Jolt Charge Inc., which is the Property Owner's authorized agent. • That statements contained in this application are true and made with full knowledge of all relevant matters and of the circumstances connected with this application. • That the plans and specifications submitted are prepared for the sign variance(s) described and are submitted in compliance with copyright law • That the information included in this application and in the documents filed with this application is correct. Signature Jocelyn Wigley Print Name (First, Last) 2025-02-24 Date (yyyy-mm-dd)			

Continue on next page

Toronto Building collects personal information on this form under the legal authority of the City of Toronto Act, S.O. 2006, Chapter 11, Schedule A, 136(c) and the City of Toronto Municipal Code, Chapter 694, Signs, General and Chapter 771, Taxation, Third Party Sign Tax. The information will be used for processing applications and creating aggregate statistical reports, for enforcement of the City of Toronto Municipal Code Chapter 694, Signs, General, Chapter 771, Taxation, Third Party Sign Tax, and any other applicable sign by-law of the City of Toronto, and for contacting permit holder(s) or authorized agent(s). Questions about this collection can be directed to the Manager, Sign By-law Unit, Toronto Building, 100 Queen Street West, Ground Floor, East Tower, Toronto, Ontario, M5H 2N2 or by telephone at 416-392-4235.



Folder number	Request Date (yyyy-mm-dd)
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This data sheet forms part of an application for a Variance From Chapter 694 of the Toronto Municipal Code, Signs

Project Information

Street Number	Street Name	Lot Number	Plan Number
3492	Kingston Road		

Site and Building Data

Lot Area	Lot Frontage	Lot Depth
13144.99 sq m	157 m	80 m
Number of Building(s) on the lot	Date of Construction of Building(s) if known (yyyy-mm-dd)	
3		
Building Height(s)	Number of Storeys	Building(s) Gross Floor Area
16 m	2	
Building Uses(s)		
Commerical Shopping Plaza, Tim Hortons and Bank		

Site Context

Please describe the land uses, buildings and sign districts surrounding the proposal (use additional pages if necessary)	
North	Shopping Plaza, Banquet Hall and Quick Service Restaurant - zoned CR Sign District
South	Behind The Premises, Residential dwellings (Completely block by Commerical Plaza) zoned as R Sign District
East	Community Centre and Auto Service Centre zoned as CR Sign District
West	Residential buildings - Zoned as RA Sign District

Proposal

Please describe in detail what is being proposed (use additional pages if necessary) Jolt Charge is proposing to install a Level 3 fsat DC EV Charger on the Premises of 3493 Kingston Road in Scarborough. The EV charger is accessible to the public and provides EV Users with fast free charging. The EV charging station incorporates third party messaging that will be visible to vehicular traffic along Kingston Road (2 displays fcaing East and West). Each display has a surface area of 1.53 square meters for an aggregate 3.06 square meters in total surface area.
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Continue on next page

Rationale

Decisions for all Sign Variance Applications are evaluated against criteria listed in Toronto Municipal Code Chapter 694-30 A. A Variance may be granted where it is demonstrated that the proposed sign(s):

- Belong to a sign class permitted in the sign district where the premises is located
- In the case of a third party sign, be of a sign type that is permitted in the sign district, where the premises is located
- Be compatible with the development of the premises and surrounding area
- Support the Official Plan objectives for the subject premises and surrounding area
- Not adversely affect adjacent premises
- Not adversely affect public safety, including traffic and pedestrian safety
- Not be a sign prohibited by Toronto Municipal Code Chapter 694-15B
- Not alter the character of the premises or surrounding area
- Not be, in the opinion of the decision maker, contrary to the public interest

Please describe in detail how the proposal satisfies each of the criteria listed above (use additional pages if necessary)
[Please refer to sign variance rationale.](#)

Sign Data Sheet

Date (yyyy-mm-dd) 2025-02-24	Folder No.
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Sign Information

Sign No.*	Sign Type	Method of Copy Display	Sign Face Dimensions (maximum)			Sign Depth (metres)	Sign Height (metres)	Illumination (Yes/No)	Professional Design Required (Yes/No)
			Length (metres)	Width (metres)	Area (m ²)				
1	Ground Sign	Electronic Static Copy	1.65	0.92	1.00	0.47	2.65	Yes	Yes
					1.00				
					1.00				
					1.00				
					1.00				
					1.00				
					1.00				
					1.00				
					1.00				

* Please ensure that the sign numbers listed in this sheet are indicated on all sign plans

Receipt No: 1795030

Receipt

NOTE: This is not a Permit. Do not construct until a permit is issued.

You will be notified when your permit is ready.

Folder No:	25 121470 ZSV 00 ZR	Date & Time:	February 26, 2025 03:06:37 PM
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Paid By:	JOLT CHARGE INC C/O JOCELYN WIGLEY 66 WELLINGTON ST W 5300 TD TW TORONTO ON M5K 3A4		
Project Location:	3463 KINGSTON RD TORONTO ON		
Project Description:	Zoning Review; Non-Residential Building; Sign		
Fee Description(s):	Cost Center Number:	Value:	
Sign Variance Fee	9010 - BL0014 - PAYMENT	\$1,961.00	
TB-Visa - online	110583 - PAYMENT	-\$1,961.00	
Total:			\$0.00
Paid Amount			\$1,961.00
Paid by :TB-Visa - online			

Payment of these fees accepted through the Toronto Building Payments web application.

MASTER AGREEMENT

OVERVIEW:

Name	Observatory Place Plaza Inc.
Description	Landlord
Address and Notice Details	9555 Yonge St., Unit 404, Richmond Hill, Ontario L4C 9M5; Attention: Alex Lazourenko alexlaz@mac.com

Name	E-Lar Inc.
Description	Landlord
Address and Notice Details	9555 Yonge St., Unit 404, Richmond Hill, Ontario L4C 9M5; Attention: Alex Lazourenko alexlaz@mac.com

Name	3077 Mavis Road Inc.
Description	Landlord
Address and Notice Details	9555 Yonge St., Unit 404, Richmond Hill, Ontario L4C 9M5; Attention: Alex Lazourenko alexlaz@mac.com

together, (the “Landlords”)

Name	Jolt Charge Inc.
Description	Tenant
Address and Notice Details	66 Wellington Street West 5300, Td Bank Tower, Toronto, Ontario, Canada, M5K 1E6 Name: Shahi Abdul shahi.abdul@joltcharge.com

THIS MASTER AGREEMENT (the “**Agreement**”) is made effective as of December ____, 2022 (the “**Effective Date**”) between **Observatory Place Plaza Inc.**, **E-Lar Inc.**, and **3077 Mavis Road Inc.**, (together, the “**Landlords**”) and **Jolt Charge Inc.**, (the “**Tenant**”),

The Landlords and the Tenant are hereinafter collectively referred to as the “Parties”.

WHEREAS:

- A. The Tenant is a corporation whose primary activity is the development, construction, ownership, operation and management of electric vehicle charging stations;
- B. Each Landlord is the registered owner of certain Properties capable of accommodating electric vehicle charging stations as follows:

- (a) Observatory Place Plaza Inc., is the owner of lands municipally described as 9555 Yonge Street, Richmond Hill, Ontario;
- (b) E-Lar Inc., is the owner of lands municipally described as 3465 – 3493 Kingston Rd., Scarborough, Ontario; and
- (c) 3077 Mavis Road Inc., is the owner of lands municipally described as 3077 Mavis Rd., Mississauga, Ontario

and which are more particularly described in the Leases attached as Schedule A; and all of which form the subject matter of this Agreement, (the “Properties” or “Property” when referred to one).

- C. The Landlords have agreed, subject to the terms and conditions set out in this Agreement, to grant the Tenant a lease over certain parts of the Properties described as Dedicated Stalls in the Lease, (the “Leased Premises”) and further outlined in the Site Plans to be provided in accordance with Article 3 herein, for the installation and operation of three (3) electric vehicle chargers to be installed at each Property, on the terms and conditions set out in this Agreement and the form of Lease attached hereto as Schedule “A”.

NOW THEREFORE, in consideration of the premises, the mutual promises, covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

ARTICLE 1 DEFINITIONS AND INTERPRETATION

- 1.1 For the purposes of this Agreement, unless the context otherwise requires, the following capitalized terms will have the following respective meanings:

“Advertisements” means third party advertising on display screens or any other projection in the Leased Premises;

“Agreement” has the meaning given to it in the Overview;

“Annual Fee” has the meaning given to it in Section 4.1;

“Covering Letter” means a letter setting out a request to build an Electric Vehicle Charger on one of the Landlords Properties;

“Effective Date” has the meaning given to it in the Overview to this Agreement;

“Electric Vehicle Charger” means any charger capable of charging electric vehicles, including chargers with integrated advertising displays, and includes any additional structures, hardware, software and equipment such as bollards, metering and electrical connection equipment, displays and display screens and projectors, wheel stops, civil footings and any other ancillary installation, infrastructure or fixture;

“Landlord” has the meaning given to it in the Overview;

ARTICLE 11 GENERAL

- 11.1 This Agreement will be governed in all respects by the laws of the Province of Ontario applicable therein. Each Party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts located in Toronto, Ontario for any action or proceeding relating to or arising out of this Agreement or the transactions contemplated hereby and expressly waives any objection it may have to such jurisdiction or the convenience of such forum.
- 11.2 Each provision of this Agreement is individually severable. If any provision is or becomes illegal, unenforceable or invalid in any jurisdiction it is to be treated as being severed from this Agreement in the relevant jurisdiction, but the rest of this Agreement will not be affected. The legality, validity and enforceability of the provision in any other jurisdiction will not be affected.
- 11.3 No amendment of this Agreement will be of any force or effect unless it is made in accordance with this Agreement and the amendment is in writing and signed by each of the Parties.
- 11.4 A waiver of any right, power or remedy under this Agreement must be in writing signed by the Party granting it. A waiver is only effective in relation to the particular obligation or breach in respect of which it is given. It is not to be taken as an implied waiver of any other obligation or breach or as an implied waiver of that obligation or breach in relation to any other occasion.
- 11.5 This Agreement constitutes the entire agreement between the Parties pertaining to the subject matter of this Agreement. There are no warranties, conditions or representations (including any that may be implied by statute) and there are no agreements in connection with the subject matter of this Agreement, except as specifically set forth or referred to in this Agreement.

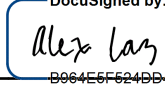
This Agreement may be executed in two or more counterparts, all of which will together be deemed to constitute one and the same Agreement. A Party may enter into this Agreement by signing a counterpart copy and sending it to the other Party, including by email or other electronic means.

IN WITNESS WHEREOF this Agreement has been executed by the Parties as of the Effective Date.

LANDLORD:

OBSERVATORY PLACE PLAZA INC.

DocuSigned by:

Per: 

B064E5F524DD407...

Name: Alexandre Lazourenko

Title: President

I have authority to bind the Corporation

LANDLORD:

E-LAR INC.

DocuSigned by:

Alex Laz

Per: B964E5F524DD497...

Name: Alexandre Lazourenko

Title: President

I have authority to bind the Corporation

LANDLORD:

3077 MAVIS ROAD INC.

DocuSigned by:

Alex Laz

Per: B964E5F524DD497...

Name: Alexandre Lazourenko

Title: President

I have authority to bind the Corporation.

TENANT:

JOLT CHARGE INC.

DocuSigned by:

Ryan McKeown

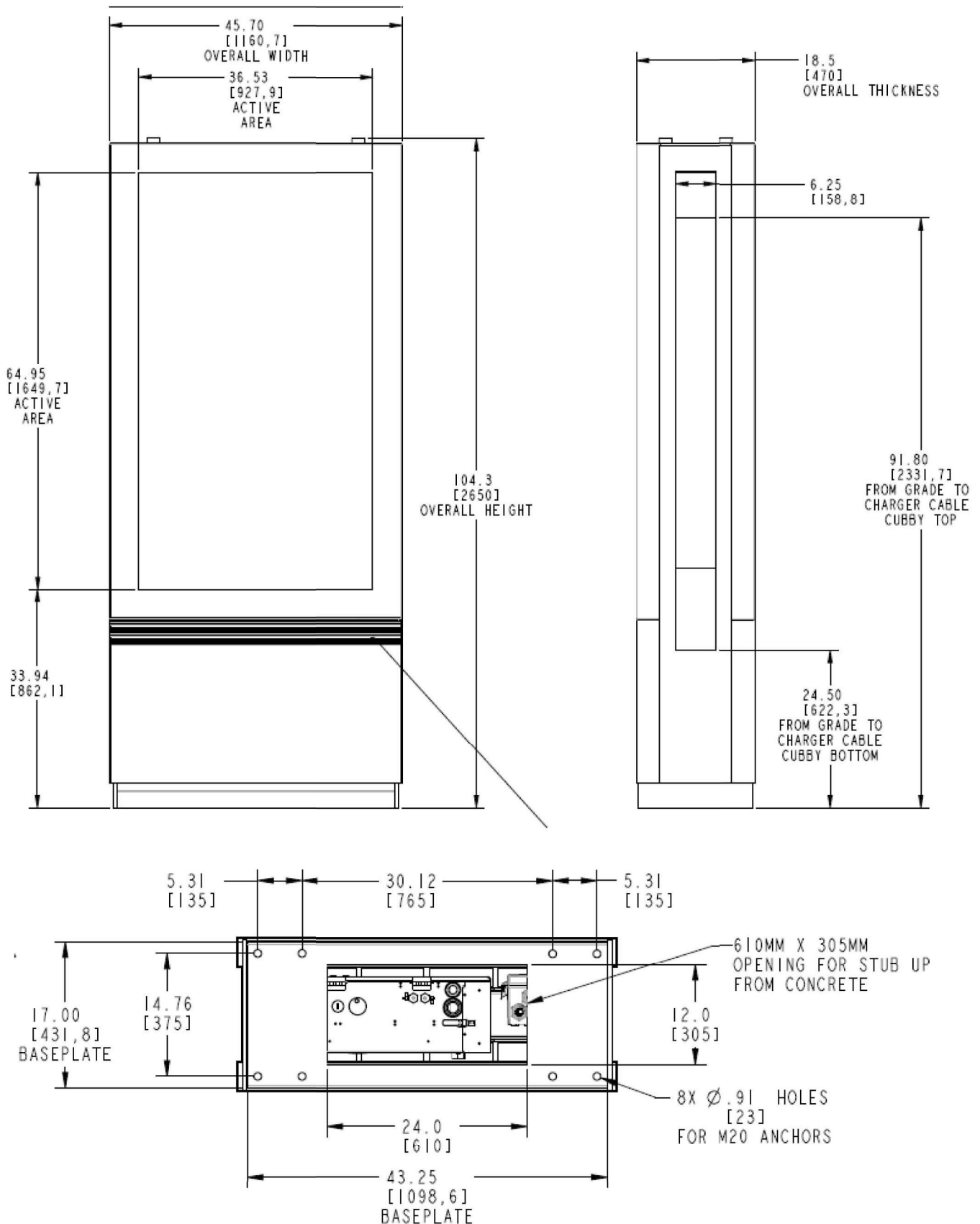
Per: D81516DD72194F2...

Name: Ryan McKeown

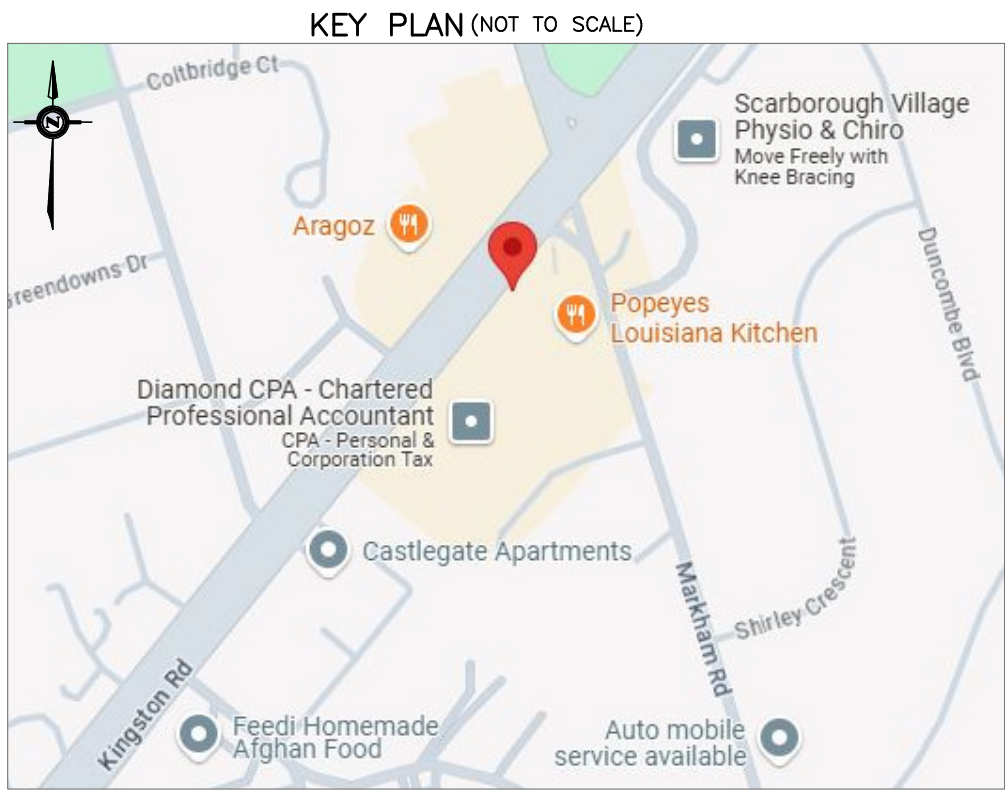
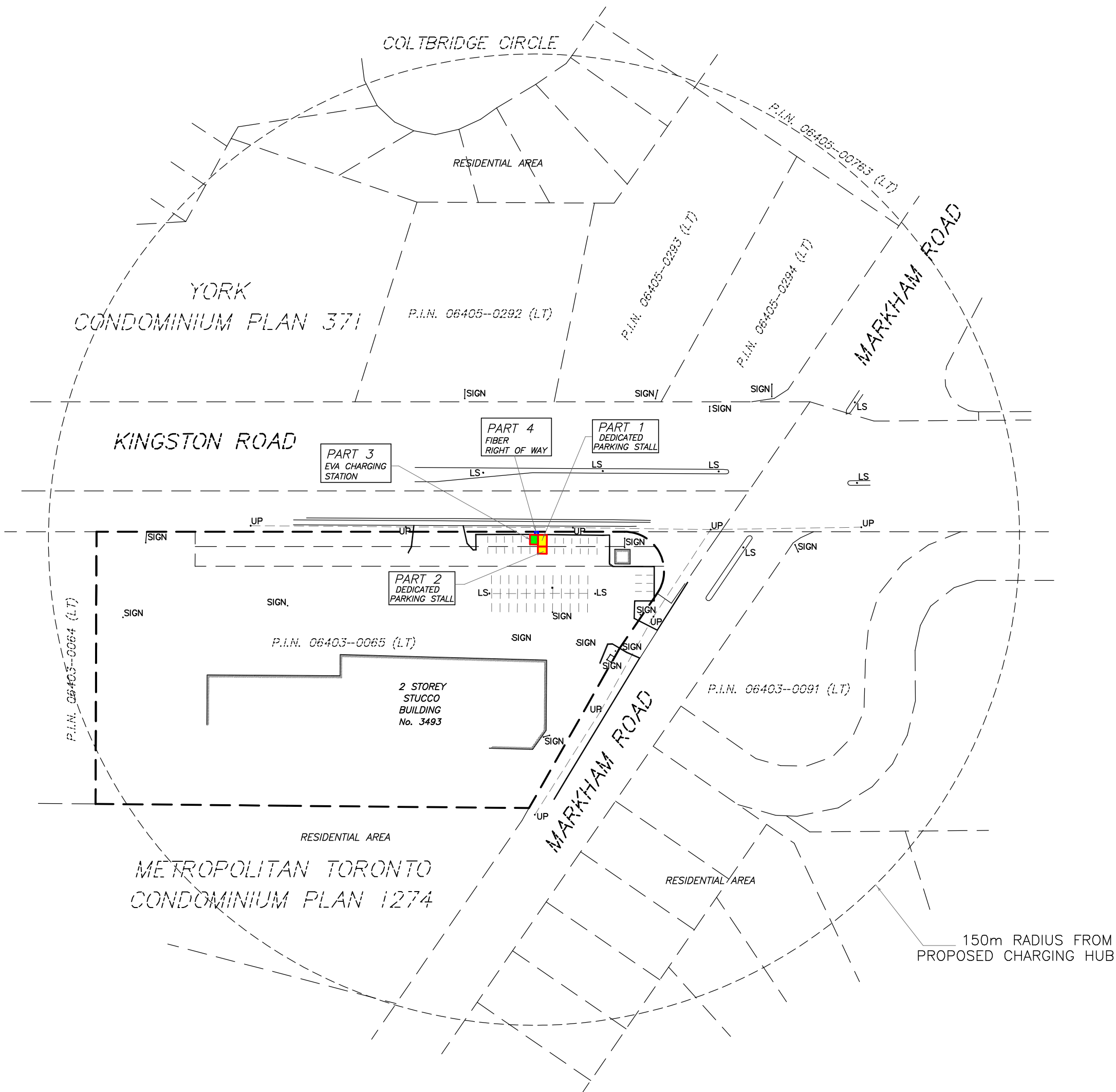
Title: Vice President, Real Estate, GR, Deployment

I have authority to bind the Corporation

Dimensional Drawings



PROPERTY PLAN
SCALE 1:1200



SITE PLAN

PROPOSED
ECOSYSTEM INSTALLATION
3493 KINGSTON ROAD

PART OF LOTS 1, 2, 3, 4 AND 5
REGISTERED PLAN 1734
CITY OF TORONTO
FORMERLY CITY OF SCARBOROUGH

SCALE 1 : 200



ALEX MARTON LTD.
ONTARIO LAND SURVEYORS

METRIC

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN
BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

SCHEDULE

PART	LOT	REGISTERED PLAN	P.I.N.	AREA sq.m
1	PART OF 1	1734	06403-0065 (LT)	10
2				6
3				7
4				1

PARTS 1, 2, 3 AND 4 SUBJECT TO EASEMENT AS IN INSTRUMENT NO. SC328401.

CAUTION

THIS IS NOT A PLAN OF SURVEY.

NOTE

BOUNDARY INFORMATION HAS BEEN COMPILED FROM AVAILABLE RECORDS.

ELEVATION NOTE

ELEVATIONS SHOWN HEREON ARE GEODETIC
AND ARE DERIVED FROM GPS OBSERVATIONS
USING REAL TIME NETWORK OBSERVATIONS.

LEGEND

PIN	DENOTES	PROPERTY IDENTIFIER NUMBER
CB	"	CATCH BASIN
LS	"	LIGHT STANDARD
UP	"	UTILITY POLE
O/H	"	OVERHEAD
⊙	"	DECIDUOUS TREE

CERTIFICATE OF COMPLETION

I CERTIFY THAT:

1. THE FIELD WORK WAS COMPLETED ON THE 14TH DAY OF FEBRUARY, 2025.

FEBRUARY 19, 2025

DATE

A. MARTON
ONTARIO LAND SURVEYOR

AMENDMENTS

No.	DESCRIPTION	DATE
1	UPDATED AS PER CLIENT REQUEST	25.02.2025



SITE: 3493 KINGSTON ROAD

ALEX MARTON LTD.
ONTARIO LAND SURVEYORS
160 APPLEWOOD CRESCENT, UNIT 8,
CONCORD, ONTARIO, L4K 4H2
PHONE: 905-879-9889 FAX: 905-879-0770
E-MAIL: info@amsurveying.ca
WEBSITE: www.amsurveying.ca

PARTY CHIEF : P.C.	FILE NAME: 2025-025.DWG
DRAWN : X.Z.	PLOT SCALE: 1:200
CHECKED : A.M.	PROJECT No. 2025-025

February 25, 2025

City of Toronto Sign By-Law Unit
100 Queen Street West, Floor 1E
Toronto, ON M5H 2N2

Re: Sign Variance Application for a EV Charger Station with Third Party Electronic Sign display located at 3493 Kingston Road, Toronto, ON

The Applicant, Jolt Charge Inc. (Jolt) is applying for (4) variances and the relaxation on the Sign Class in a Sign District that restricts third party signage for the installation of a Level 3 EV Charging Station with incorporated electronic LED third party advertising displays located at 3493 Kingston Rd. The charger's location shall be on the Northern edge of the premises fronting onto Kingston Rd. The dedicated parking stall shall be the closest parking spot on the property in relation to the charger. The proposed structure will be 2.65 meters in height and will contain 2 display faces measuring 1.65 meters and 0.93 meters in width for a total sign face area of 3.06 square meters (individual sign face area, 1.53 square meters). The display faces will be oriented East and West and perpendicular to Kingston Rd to be viewed by vehicular traffic. Below, referenced in Image #1 is a mock up of what the charger will look like on the premises.

Image #1: *A Mock-Up Of The Proposed EV Charger With Electronic Third-Party Display On The Premises.*



The Proposed Sign Belongs To A Sign Class Permitted In The Sign District Where The Premises Is Located

The Premises, 3493 Kingston R is designated as a Commercial Residential (CR) Sign District that allows for the Sign Class. The Sign District, CR does not permit the installation of third-party ground signs with static electronic copy, however as indicated below on Image #2 A and B, the property zoned CR, does not contain any residential dwellings and is commercial in nature. The property operates as a commercial retail plaza. The proposed structure will function as a fast DC Level 3 EV charging unit that is publicly accessible and provides the public with free charging up to 50 km.

Although the property does not meet the zoning criteria/sign district of an electronic third-party advertising ground sign, Jolt believes that the area is appropriate as the property does not function with residential land use and will not adversely impact the CR Sign District.

Jolt requests a variance to allow a ground sign containing 2 electronic third party display faces to be constructed. The commercial property itself has a frontage of over 150 meters on Kingston Rd. and provides ample room to accommodate additional ground signs if the property ever required it. The proposed is setback from the existing sign by approximately 27 meters which complies with the setback outlined in the Sign By-Law.

In addition, justification for the proposed ancillary digital displays lies in its significantly smaller scale compared to the large-format billboards. The proposed charger has an electronic copy display area of 1.53 meters squared per sign face, which is considerably smaller than traditional billboards (20 meters squared) permitted under the signage bylaw. The format is the same size as transit shelters with third party advertising, currently deployed in all types of areas throughout the City of Toronto as referenced in Image #3. The digital transit shelters in Toronto are the same size, make, and model as the proposed EV charging displays (shown in Image #4 A, B and C) and located in areas in front of CR Sign District and in close proximity to residential, creating precedence for this type of display. The smaller format of the proposed digital screens makes the ancillary signage a modest and contextually appropriate addition to the site. Although there is residential in the surrounding area, discussed further in the rationale, the light shed diagrams can confirm that no light shed will enter the residences along Kingston Rd. and further, cannot be legible from those areas.

Much like other EV charging stations that are installed in parking lots of larger commercially zoned properties and mall spaces, it is common practice to install them in the ground rather than on a wall. It is not out of character to place an EV charger in the ground of parking lots, as evidenced by other Charge Point Operators (CPO's) such as FLO or Charge Point. EV chargers are often better placed on the ground rather than mounted on a wall for several practical reasons:

1. **Ease of Use:** Ground-mounted chargers are easier for users to access. When mounted on a wall, the charging port might be too high or too low, making it awkward to plug in the vehicle. A ground-mounted charger allows for more ergonomic access, especially for vehicles of different heights.

2. **Less Risk of Damage:** Wall-mounted chargers are exposed to the risk of accidental damage from vehicles or equipment in tight spaces. A charger on the ground is less likely to be damaged by everyday activities or impacts from objects.
3. **More Space for Cable Management:** Ground-mounted chargers generally offer better cable management options. The cables can be organized and stored easily without the risk of tangling or overstretching, which might be more difficult with wall-mounted setups.
4. **Installation Flexibility:** Ground chargers are often easier and less costly to install, particularly in locations where a wall may not be structurally suited for mounting a charger. Ground units can be placed and connected without as much modification to existing structures.
5. **Improved Accessibility for Different EV Types:** Ground-mounted chargers can accommodate a variety of EV models with different charging port placements, as there is no limitation based on wall height. This can be especially beneficial in shared parking areas.
6. **Reduced Wear and Tear:** Ground-mounted chargers often experience less wear and tear than wall-mounted units because they are not subject to the forces from repeated cable handling or vehicle proximity that could cause issues with wall-mounted systems.

The proposed structure will function primarily as a fast DC Level 3 EV charging station that is publicly accessible and provides the EV users with free charging up to 50 km. The integration of the proposed EV charging station with digital displays supports the city's sustainability goals and enhances the utility of the site. It provides an essential service to the growing population of electric vehicle users while maintaining visual harmony with the surrounding environment.

Providing the public and residents with accessible level 3 charging options considers the time it takes to power these vehicles and the convenience in shopping plazas. This is an excellent opportunity to provide utility to those needing access to fast charging stations in close proximity.

Image #2: *Aerial View Of The Premises To Contain The Proposed EV Charger, Operating As A Shopping Plaza, Commercial In Nature.*



Image #3: *Transit Shelter Format, Same Size As Proposed EV Charging Display*

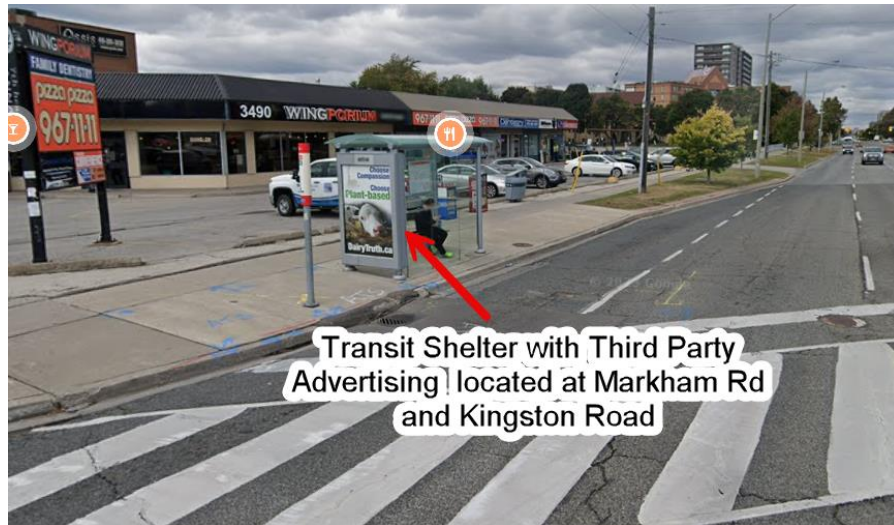
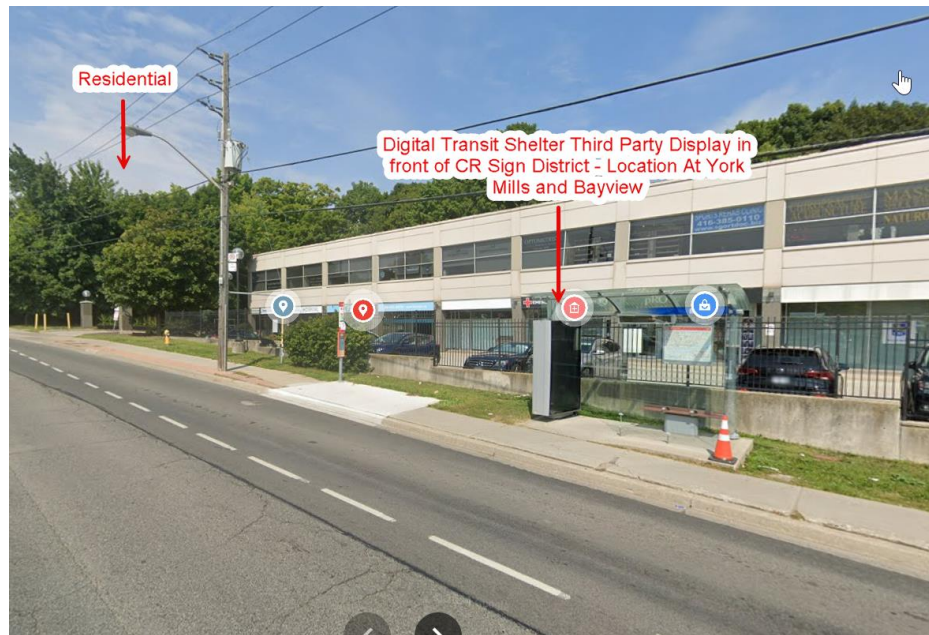


Image #4 A,B and C: Digital Transit Shelter, Same Make And Model As Proposed EV Charging Displays





The Sign Type Is Not Permitted In The Sign District Where The Premises Is Located

The sign type is characterized as a third-party ground sign under the current local Sign By-Law, however it does not operate as a large format billboard (sign face area of 20 square meters) as many third party ground signs are. The proposed structure functions as a publicly accessible Level 3 EV charger with third party advertising incorporated into the sides of the unit. This is a

direct response to the Report For Action released September 16, 2024 from the Executive Director of Environment and Climate re the Approach to Public Electric Vehicle (EV) Charging to 2030 (provided as supplemental material to this application). In the document, the City of Toronto addresses the high demand for Level 3 chargers and the need to work with private enterprises to install further units. This proposal will contribute to the growth and increase of publicly accessible fast Level 3 EV chargers needed in the City of Toronto.

Although the Sign District designation to the Premises is CR there is no residential land use and thus there would be no negative impact to any of the tenants/businesses on site. The property owner has informed Jolt that there are no plans to redevelop or change the use of the property in the future. If in fact this does change, the unit can be repositioned or removed altogether. Additionally, the permit for the proposed is subject to a 5-year sunset provision, such that the city sign by-law unit will be able to reassess renewing the permit every 5-years. This allows them to routinely re evaluate whether the unit is appropriate for the parcel of property and remains compatible with the surrounding area based on future developments.

The Sign Is Compatible With The Development Of The Premises And Surrounding Area

The subject property is utilized as a shopping plaza and the other buildings in the immediate area are utilized as commercial and employment in nature but categorized as CR Sign Districts (Shopping Plaza, Banquet Hall, Auto Service Centre, Community Centre and Residences of varying degree).

The proposed EV charger will be located directly across from another CR Sign District that has a building containing various businesses such as a specialty grocery store, driving school, restaurant, tax service store, shisha bar, beauty shop and other small businesses. There are no residential land uses in this CR Sign District. This is representative of the mixed-use commercial character of the area.

For reference, the proposed EV charger will be placed approximately 49 meters from the Kingston and Markham Rd. Intersection meeting the compatible setback to an intersection and ensuring driver safety in relation to the displays (displays intended for vehicular traffic travelling East and West along Kingston Rd.).

All properties located East and West (displays orientation) within a 250 meter distance are zoned CR, Commercial (C) and Residential Apartment (RA) Sign Districts. Although the proposed is not compatible with the Sign By-Law proximity to CR and RA Sign District regulations, this type of display is ancillary rather than large format. The light shed on the EV charging station will not enter any residences shown in Image (#12 and #13) and cannot be legible from those areas due to the size and format. It will ultimately provide utility to EV users in the area. As shown in Image #4, there are digital transit shelter (same make and model as the proposed) displayed in areas that have a closer distance to Residential illustrating precedence for these types of displays.

The proposed charger compliments the shopping plaza that offers a variety of shops and amenities that service residents in the area. Allowing a Level 3 Charger on the proposed premises can offer quick charging, convenience and efficiency. An EV charge user can utilize the proposed efficiently while they shop for necessities. As mentioned above, the chargers offer the first 50 km of charge for free, this is available due to the third-party advertising cost offset and adds value to the area.

Image #5: Sign District Zoning Map Of Local Area, The Orange Colour Denoting CR Sign District

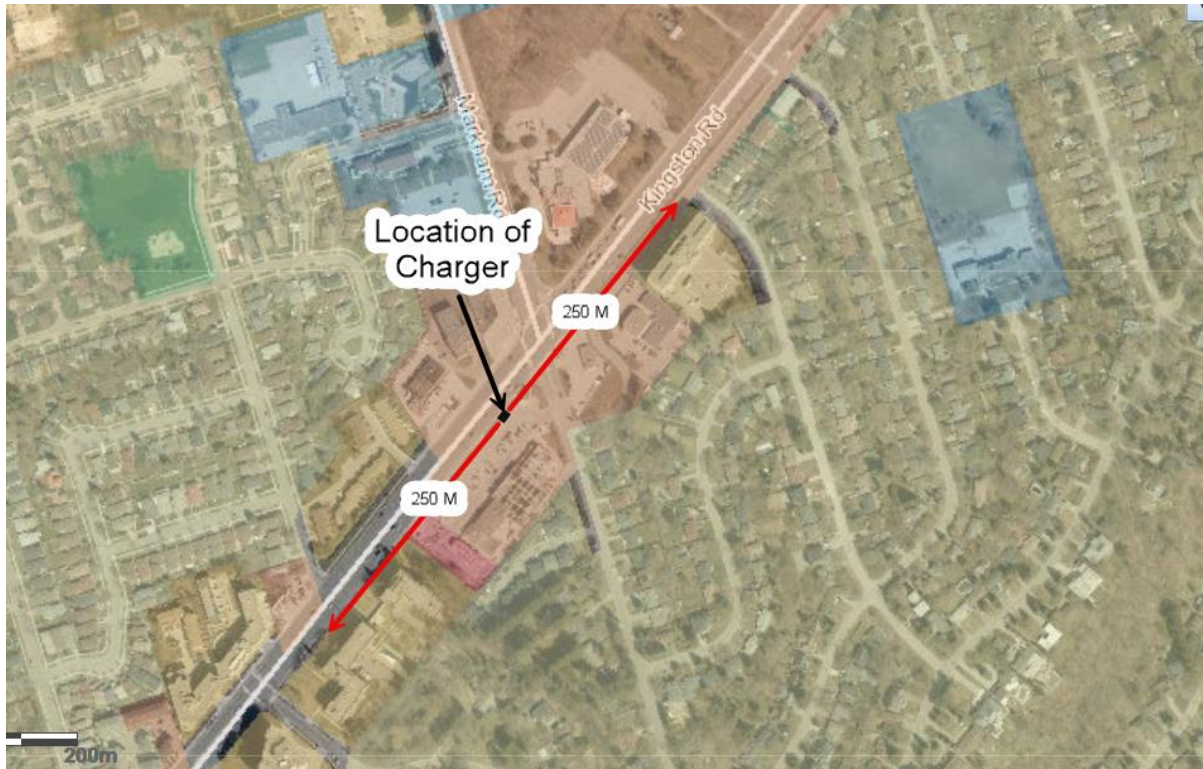


Image #6: A Picture Of The Immediate Adjacent Neighbouring Property To The North, Zoned CR and RA Sign District



Image #7: A Picture Of The Immediate Adjacent Neighbouring Property Directly East Of The Proposed Premises, Zoned CR Sign District



Image #8: A Streetview Picture of The Immediate Adjacent Neighbouring Property to the South, Zoned R Sign District, Behind The Property approximately 100 M Away. The Premises Building Blocks Kingston Road From Being Seen From This Land Use.



Image #9: A Streetview Picture Of The Immediate Adjacent Neighbouring Property To The West, Zoned C, CR and RA Sign District.



As aptly described below in the light shed diagrams, light shed from these displays operating at 300 nits (maximum allowable level regulated by the Sign By-law) the light shed longest reach is 50 meters. The closest residential dwelling is 74.06 meters away. At this distance, no light shed from the proposed displays shall enter the sensitive land use. It will not adversely impact the character of the surrounding area or the development of the premises.

The Proposed Supports The Official Plan Objectives For The Subject Premises And Surrounding Area

The proposed EV Charging Station with third party advertising display supports the Official Plan objectives as the premises and surrounding area is a Mixed-Use Area. Mixed use areas have a broad array of residential uses, offices, retail and services, institutions, entertainment, recreation and cultural activities, parks and open space. Adding utility to mixed use areas in the form of a free accessible EV Charging Station responds to the growing demand of publicly accessible EV charging infrastructure for residents and visitors to the area. This is a clear demonstration of creating a balance between Commercial, Residential, Institutional and Open Space. Investing in mixed use areas in Toronto, creates equity and accessibility for residents as well as promoting EV's rather than traditional gas fueled vehicles. The design is sleek and state of the art (reference Image #14) to align with attractive environments and provides opportunities for energy conservation as each Kw used for charging allows another Kw to be put back into the grid (via our partnership with Bullfrog Power). The charger contributes to integrated energy solutions (free to public and offset by third party advertising) that incorporates renewable energy and contributes to overall green infrastructure development in the City of Toronto.

The proposed can improve air quality by promoting the usage and ownership of EV's and is to be placed in an area visible to Kingston Road. This can help alleviate range anxiety, (which can be a significant barrier for those contemplating purchasing an EV). Adding a Level 3 charger at roadside, easily visible and accessible to an entire network by functional application can help those considering purchasing an EV and ultimately lowering the carbon footprint of Toronto as a whole.

As provided in the Supplementary Materials of this variance application, responding to the TransformTO Net Zero (TTO NZ) Strategy Short Term Implementation Plan (2022-2025), The Report for Action for the Approach to Public EV Charging to 2030, dated September 16, 2024 outlines the critical need for publicly accessible EV charging infrastructure to accommodate the growth of EV ownership and reduce gas fueled vehicle usage. The City of Toronto requires a specific focus on equity through education and public charging station location prioritization to ensure access to public chargers. TTO NZ has a target of a 30 percent increase of registered vehicles be electric by 2030. If this is the goal, the infrastructure to power these vehicles must be accessible and utilized conveniently i.e. Level 3 chargers. As of June 2024, Toronto's amount of registered EV's was 30,505 and there are 2,545 public level 2 chargers and 190 level 3 chargers (as of August 2024), showing a critical need for more infrastructure in public areas.

The City of Toronto states that the need for chargers having advancing charger availability, reliability and cost parity are essential. Level 3 charging stations have been made a priority. The shortfall is that these chargers require a significant amount capital to construct/install, making it more difficult to offset cost and installed by the city. Most public chargers are level 2 which require less capital investment but take a significant amount of time to charge which is a drawback for many. The proposed charger is categorized as a fast DC Level 3 charger, funded by Jolt entirely, providing up to 50 km of free charge daily to a user that takes on an average 25 minutes. Due to the third-party advertising, Jolt has the ability to offset the capital costs of installation and provide free charging to the public in areas that are easily accessible.

Providing free fast charging in accessible places indicates the recognition that Toronto has diverse neighbourhoods with different charging needs influenced by different factors including access to at home parking, housing type and age, household income, proximity to transit and parking allocation. Equity and inclusivity need to be present with many of these chargers to meet needs of diverse communities.

With more accessible, free fast chargers, increased EV ownership can be attainable as the due to more infrastructure associated with these vehicles. This ultimately will reduce the reliance on gas fueled vehicles contributing to low air quality and carbon free goals become more and more achievable.

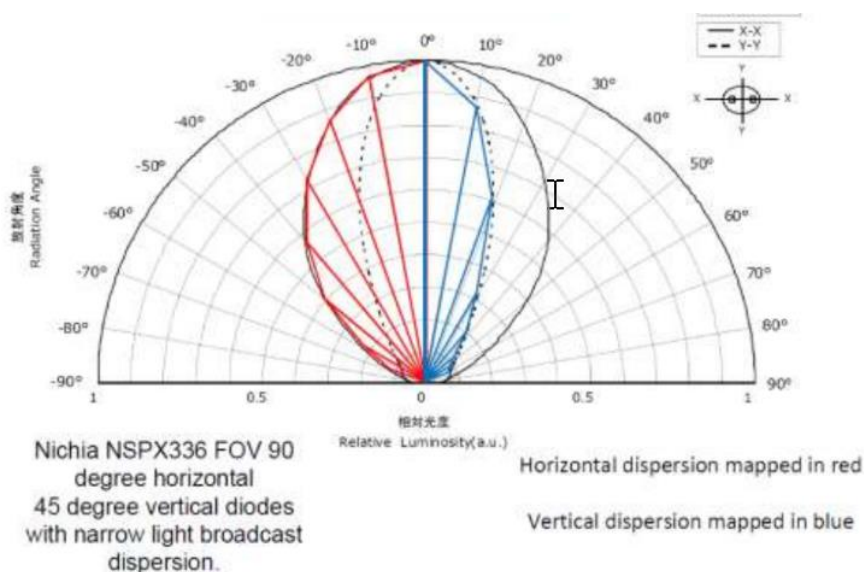
The Proposed Will Not Adversely Affect Adjacent Premises

The proposed will not adversely affect any of the adjacent premises. There are no sensitive land uses within 60 meters, as the CR Sign District within this radius does not contain any residential dwellings on the North side of Kingston Road. The displays on the EV Charger Station will be oriented East and West, perpendicular to Kingston road.

As the proposed is facing within 250 meters of another CR Sign District and RA Sign District, this would require variance. The light shed diagrams below will show that no light shall trespass the residential land uses, will not be legible from those sign districts.

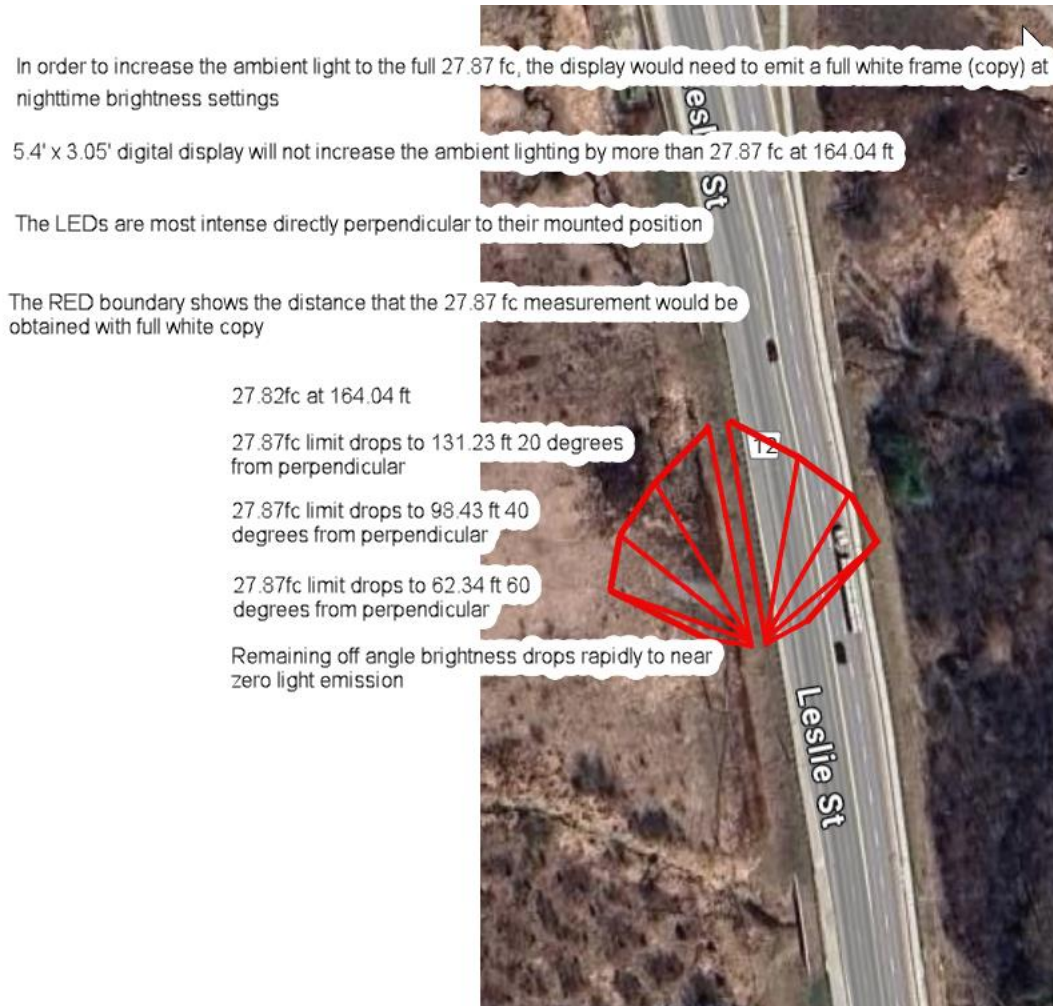
For review, Jolt has included diagrams that illustrate how light is horizontally dispersed from the proposed static electronic displays to be installed. The perimeter of the red polygon shapes that are shown in the diagrams below, demonstrate that the distance of light dispersed decreases dramatically when measuring light distance travelled laterally (when looked at from the side edges of the digital face, examples: 30 degrees, 60 degrees, 90 degrees) compared to light distance travelled measured when looking at the display face dead-on (0 degrees). Light is not dispersed equally in a perfect radial circle, rather, the cone of light emitted looks more like an oval shaped tear drop – it is directional (reference Image #10 and #11).

Image #10: *The Red Polygon Represents How The Horizontal Dispersion Of Light Is Emitted From One Of Electronic Sign Displays. The Dispersion Of Light Is “Directional”. It Is Not Emitted Equally In A Perfect Radial Circle Around The Board.*



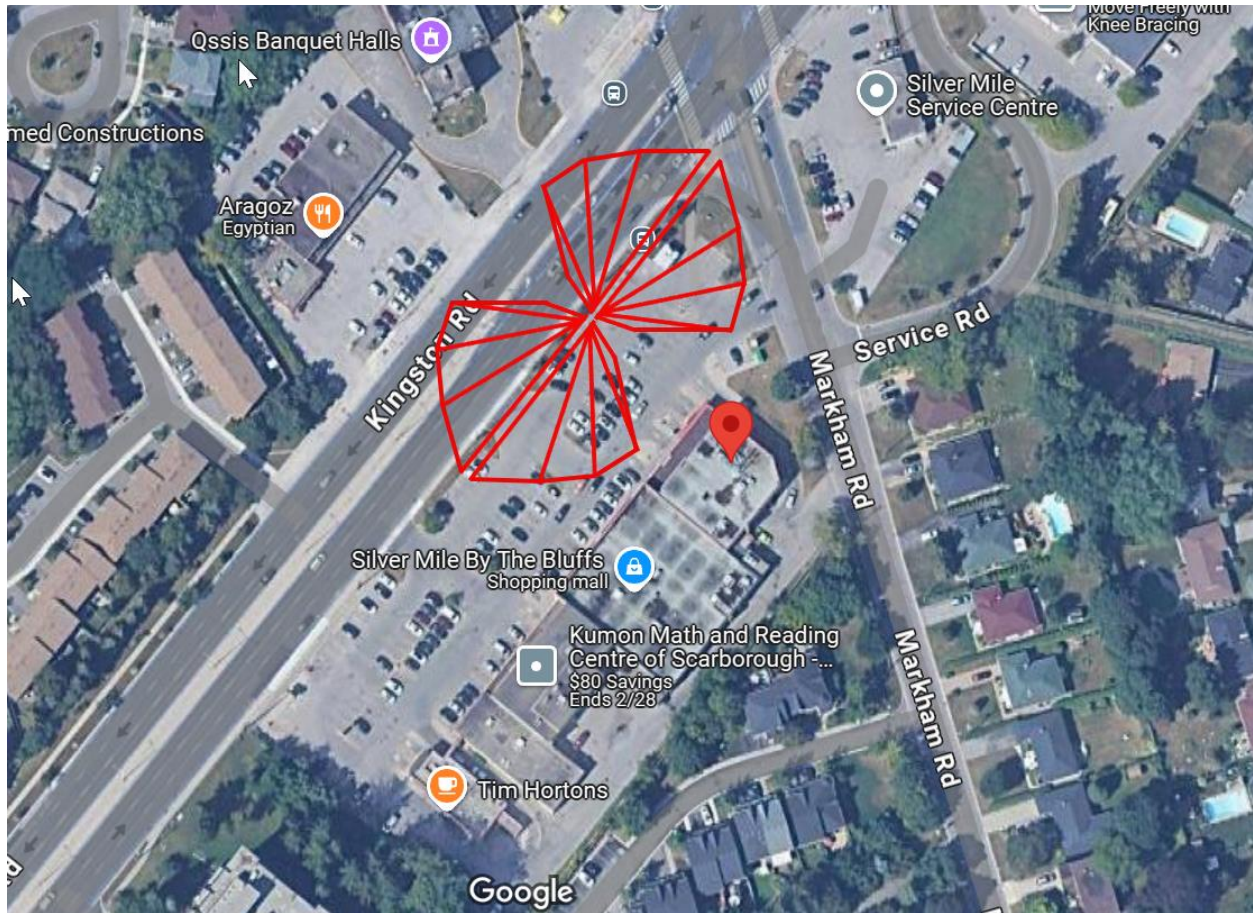
Our goal with this project, is to ensure that no portion of residences to the North of the charger is impacted by the light dispersed from the proposed static electronic display. It is a common understanding that when the intensity of light emitted from a source reaches a measurement of 27.87 Foot Candles (or 0.3 Lux), that said light level equates to that emitted from a full moon, setting a threshold of when emitted light becomes negligible. If Jolt were to operate the proposed display faces at a light level of no more than 300 nits at night (in accordance with the Sign By-Law), the perimeter of dispersed light, where the intensity would equate to 27.87 Foot Candles (negligible levels), would look like what is shown in Image #11 below. When looking at the sign directly perpendicular to the displays (0 degrees), the light would travel a distance of 164.04 feet before dissipating to a 27.87 level of intensity. Conversely, the same dissipation of light intensity is reached at 131.23 feet at 20 degrees of lateral dispersion, 98.43 feet at 40 degrees of lateral dispersion, 62.34 feet at 60 degrees of lateral dispersion, with the remaining light intensity dropping rapidly toward zero light emission as we approach 90 degrees of lateral dispersion.

Image #11: The Red Polygon Represents The Perimeter/Distance At Which Emitted Light Would Become Negligible, When The Digital Displays On The EV Charging Station Is Operated At An Intensity Of 300 Nits Or 27.87 Footcandles.



When we overlay this directly on to satellite imagery of 3493 Kingston Road, illustrating the orientation/angling of our proposed display faces, we can observe that the longest distance of light travelled while operating at 300 nits will show no negative light trespass that would breach the RA Sign District to the West. The outer perimeter represents where the light equates to that emitted by a full moon. There is no significant light shed that goes beyond what it would already be subjected to from a full moon. Within the light shed perimeter there is no sensitive land use that would be impacted by the illumination. We are confident that there is no opportunity for light trespass to impact Residential (reference Image #12).

Image #12: The Red Polygon, Representing The Horizontal Dispersion Of Light, Over Laid On Top Of 3493 Kingston Road And Adjacent Properties, Illustrating That Light Shed Emitted (Operating at 300 Nits) From The Proposed EV Charger With Displays Would Not Impact Any RA Sign District In The Immediate Area.



To summarize, the electronic static displays on the proposed structure will have a light reach of 50 meters operating at 300 nits. At this light reach distance, Jolt can confidently confirm that there will be no light shed trespass into residences and will not adversely impact both sensitive land uses as indicated in the image #12 illustrating the light shed reach.

The Proposed Does Not Adversely Affect Public Safety, Including Traffic And Pedestrian Safety

Jolt requests a further variance for setback to property line as the charger will be placed 1 meter to the property line. This puts the proposed charger in a parking stall and we believe the deficiency of 1 meter is minor in nature.

The proposed meets all safety setback requirements outlined in Chapter 694 of the Toronto Municipal Code for third party electronic ground signs. Per the designated location of the electronic displays, the sign faces shall not interfere or obstruct visibility of vehicular traffic along Kingston Road. The location is over 30 meters away from the closest traffic-controlled intersection. The sign does not obstruct any sight triangles for vehicular traffic. Furthermore, the proposed displays will not interfere or obstruct the visibility of traffic entering or exiting the

subject site, as it is the location meets the required setback of 3 meters to the ingress/egress into the property.

There are no digital signs within 500 meters, meeting the required setback to other digital third-party advertising ground signs.

The Proposed Will Not Be A Sign Prohibited By S694-15B Of Chapter 694

Ground Signs with Static Electronic Copy allowable under the City of Toronto is 20 square meters in surface area. The proposed will have a surface area display of overall 3.06 square meters (2 sides). This is roughly 15% of the allowable display size and thus compatible with third party display size.

The Proposed Will Not Alter The Character Of The Premises Or Surrounding Area

The premises and surrounding area have buildings that range in height and mixed use in nature. Along with the buildings in and around the area, there are transit shelters that are the same size and format of the proposed displays on the EV charger in the immediate area. The proposed will not alter the character of the premises or area as there is already third-party signage in the area (transit shelters).

The City of Toronto's Sign By-Law permits only 1 ground sign on a property, and we request a fourth variance for the proposed as this will increase the ground signs on the property. The proposed will be approximately 24 meter setback from the existing first party sign. We believe that this setback will alleviate concerns on sign clutter. The existing first party ground sign is located at the intersection of Kingston and Markham Road, while the proposed charger will be located on Kingston Rd. The location of the charger was carefully selected to ensure a greater distance of 15 meters from the existing ground sign and the residential to the West of the Premises. There are no other signs close to the proposed and will not contribute to sign clutter on the Premises.

The design of the proposed EV charger is sleek and state of the art (aligning with the Official Plan objectives) that will blend in with the area to compliment and improve the man-made environment ensuring that it does not overwhelm the environment or become a source of visual clutter while still serving their function of providing essential utility, referenced in Image #13.

An additional ground sign operating as an EV charger on the premises can act as a landmark for drivers, making it easier for them to identify the EV charger at roadside. This will help Toronto build a stronger EV infrastructure network easily identifiable and prepare the city for the future transition to electric vehicles. Due to the above, we believe that the proposed will not alter the character of the premises or area.

Image #13: Design Of The Proposed EV Charger With Display



The Proposed Will Not Be Contrary To The Public Interest

The EV charger provides utility to the area by providing accessible fast free (up to 50km) EV charging daily for EV users. Not only does this align with the Report for Action and the goals the City of Toronto has to expand and increase efficient EV charging infrastructure, but it considers EV users time. Providing Level 3 charging expedites the charge time and allows users to charge in less than an hour.

The EV charger displays will not have any negative social impacts. The third-party advertisements published on the proposed display faces will abide by the Canadian Code of Advertising Standards (<https://adstandards.ca/code/the-code-online/>). This will ensure that all messaging is appropriate and that the general public is not exposed to any offensive, explicit, or indecent forms of advertising.

Furthermore, the electricity required to operate the proposed sign shall be provided by and in conjunction with a distributor recognized and licensed by the Ontario Energy Boards and shall be governed by an agreement to purchase renewable energy (Distributor: Bullfrog Power).

Regarding illumination, the proposed sign will only be operated between the hours of 7am and 11pm. The illumination of the proposed displays shall not exceed illumination levels of 300 nits during the period between sunset and sunrise. The displays will have a 10 second dwell time with an instantaneous transition time, with no flashing or animation of any kind.

We thank you for taking the time to evaluate our application and we would encourage you to contact us for further discussion should you have any questions regarding our variance application.



Yours truly,



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Approach to Public Electric Vehicle (EV) Charging to 2030

Date: September 16, 2024

To: Infrastructure & Environment Committee

From: Executive Director, Environment and Climate

Wards: All

SUMMARY

Decarbonizing the transportation sector to meet the ambitious goals outlined in Toronto's TransformTO Net Zero Strategy (TTO NZS) will require a robust, convenient, and reliable public electric vehicle (EV) charging network that supports other established city-wide sustainable transportation initiatives.

The Approach to Public EV Charging presented in this report responds to the TransformTO Net Zero Strategy Short-term Implementation Plan (2022-2025) action: "The City will develop a strategy and plans to meet the 2025 targets in the EV Strategy for public charging infrastructure, and to ensure that sufficient public charging infrastructure will be in place to accommodate growth in EV ownership to 30 per cent of registered personal vehicles by 2030."

Toronto has started laying a foundation for its network by establishing zoning rules, parking regulations, and bylaws that help define the appropriate use of public space in relation to EV charging. Additionally, Toronto has installed EV charging stations at on-street parking spaces, in Green P parking lots, and at City facilities. The City also provides financing support to encourage charging in existing residential buildings through its BetterHomesTO program while requiring new residential and commercial buildings to install EV charging through the Toronto Green Standard (TGS).

In 2021, Environment and Climate (E&C) began work to understand how to increase EV uptake by directing its focus on identifying where publicly owned and operated EV charging would be needed to complement the existing privately operated and publicly accessible EV charging network and private at-home EV charging spots.

As of June 2024, Toronto had 30,505 registered EVs, roughly 2.8 per cent of the estimated 1.1 million registered passenger vehicles. With a goal of 5 per cent of all registered vehicles being EVs by 2025, the City will need to take a more proactive role in encouraging EV ownership.

This report presents an approach to growing Toronto's existing public charging network by the City through its Divisions, Agencies and Corporations (DACs), drawing from extensive research, data analysis, and stakeholder engagement completed in collaboration with several DACs to prepare for Toronto's public charging needs.

The Approach proposes a model of cross-corporate coordination to advance EV infrastructure asset planning until the year 2030 and clarifies the City's role with respect to EV infrastructure provision based on initial technical analysis.

The Approach to Public EV Charging to 2030 includes:

- A City governance structure that optimizes City-owned assets (in the form of properties including lands and buildings) through a centralized approach led by the Environment and Climate Division (E&C), including financial planning of EV infrastructure assets.
- A technical projection of future needs from a “demand- and utilization-driven perspective” using currently established public charging network information at a ward level to determine the placement of EV chargers.
- A specific focus on equity through education and public charging station location prioritization of vehicle-for-hire (VFH) vehicles to ensure adequate and convenient access to public chargers for this industry.

While the City alone cannot be solely responsible for the robustness of the public EV charging network, nor can the City financially incentivize residents to purchase EVs, it can ensure that Toronto residents have reasonable access to charging with a consistent user experience. Relatedly, clear processes and communication on how residents can 'connect' to the EV charger whether a resident is a homeowner, renter, or condo dweller will also be critical for seamless operability. This includes minimizing barriers to access chargers by providing clear signage and wayfinding, advancing charger availability and reliability, and cost parity.

Government-led public EV charging programs around the world demonstrate that success in building robust and effective EV charging networks is achieved when collaboration with diverse stakeholders is at the core of this type of infrastructure development, saving time, money, and avoiding unnecessary duplication and stranded assets. Key international examples showcase partnerships with private businesses who supply charging infrastructure and the technology to support it, commercial businesses who allocate spots for their customers and employees to charge their vehicles either at or near their businesses, local utility companies who are a first contact and can provide reliable advice and orientation to what would work best for residents' needs, and intergovernmental alignment on goals and incentives. The City can also, through its processes, policies, and incentives, encourage private sector investment in growing the EV charging network. A robust public EV charging network must include investments from both the private and public sectors.

The City has a wide range of other transportation, city building, land use policies, programs, and infrastructure initiatives. These initiatives are either underway or planned to encourage and support the transition away from the use of fossil fuels and increase the use of more sustainable transportation modes such as public transit, walking and cycling, and zero emission vehicles, where required. This proposed approach supports the multiple options available to residents to travel carbon-free around the city now and into the future.

RECOMMENDATIONS

The Executive Director, Environment and Climate (E&C) recommends that:

1. City Council adopt the proposed governance approach as described on pages 9 through 11 of this staff report from the Executive Director, Environment and Climate.
2. City Council direct the Executive Director, Environment and Climate to develop and submit an annual public EV charging implementation and funding outlook for consideration as part of the annual City of Toronto Budget process.
3. City Council direct the Executive Director, Environment and Climate to establish and coordinate a City Asset Delivery Group which will include the President, Toronto Parking Authority, the General Manager of Fleet Services, the CEO of Toronto Transit Commission, and the President, Toronto Hydro, and other Divisions, Agencies and Corporations as appropriate to support the development of an annual three-year rolling public EV charging installation and funding plan, and to monitor the availability of home, workplace, and public charging in Toronto in order to coordinate the distribution of complementary public charging infrastructure and identify opportunities to coordinate bulk purchases of EV charging equipment and technology.
4. City Council direct the Executive Director, Environment and Climate to work with City DACs who manage City property, including Corporate Real Estate Management (CREM), Parks, Forestry & Recreation (PFR), the Toronto Transit Commission (TTC), the Toronto Public Library (TPL), CreateTO, Toronto Community Housing Corporation (TCHC), Exhibition Place, Toronto Zoo, and TOLive, in collaboration with Toronto Parking Authority (TPA) and Toronto Hydro, to identify opportunities to install EV chargers on City-owned public facing properties.
5. City Council direct the Executive Director, Environment & Climate Division and request the President, Toronto Parking Authority to establish a working group to share best practices and promote operational consistencies between how the City of Toronto and the Toronto Parking Authority operate and maintain their

publicly accessible EV charging infrastructure, including with respect to branding, payment, wayfinding, and availability.

6. City Council direct the Executive Director, Environment & Climate Division to provide information to Toronto Hydro to help support Toronto Hydro's development of a communication plan that directs building owners, including homeowners, and tenants in Toronto to only contact Toronto Hydro for information and guidance on the installation of a private EV charger.
7. City Council direct the Executive Director, Environment and Climate to request The Atmospheric Fund (TAF) to take the lead on engaging with public and private stakeholders and the development of an integrated, actionable, and resourced plan that complements the City-operated charging network to accelerate the rollout of public EV charging on non-City public and private sector properties and share information with TAF to support the development of the plan.
8. City Council direct the Executive Director, Environment and Climate to provide information to the Toronto Parking Authority regarding City priorities for EV parking and charging, including information that could support the coordination of investments to meet city-wide needs.
9. City Council direct the Executive Director, Environment and Climate to work with the General Manager, Transportation Services to investigate use of the established Transportation Innovation Zones and Transportation Innovation Challenge Program for trialing emerging EV charging technologies and processes, to advance understanding of the feasibility and effectiveness of different EV charging technologies in the city.

FINANCIAL IMPACT

With a mandate that has grown to include responsibility for the operation, maintenance and continued expansion of EV infrastructure, TPA has invested \$21.2 million in expanding EV charging opportunities in the City since 2021. This investment was funded through a combination of TPA's retained earnings of \$19.0 million and \$2.2 million in funding provided by NRCan through the ZEVIP.

On June 26, 2024, City Council approved a Net Income Share Agreement between the City of Toronto and the Toronto Parking Authority (TPA). Through this agreement, the City is providing capital funding of \$33.9 M over three years (2024-2026) directly to TPA to fund the capital expansion of its off-street EV charging program.

Currently the TPA receives approximately \$0.5 million in revenue from EV charging. This revenue will be used for the state of good repair, maintenance, repairs, and upgrades to existing EV infrastructure owned and maintained by TPA.

It is expected that with the roll out of EV charging infrastructure described in this report that the Toronto Parking Authority will need to identify in its future year budget submissions, any operating requirements, including staffing needed to support additional responsibilities of the delivery, operation, and maintenance of publicly accessible EV chargers outside of TPA off-street facilities, for consideration.

To reflect future additional responsibilities identified in the governance structure detailed in this report as it pertains to public EV charging infrastructure, it will also be necessary for the City Manager to work with the President, Toronto Parking Authority, to report back to City Council any necessary updates to the City of Toronto – Toronto Parking Authority Relationship Framework and authorities delegated by Council under Chapter 179, Parking Authority.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

EQUITY IMPACT STATEMENT

Toronto has many diverse neighbourhoods with different charging needs influenced by many factors including access to at-home parking, housing type and age, household income, proximity to transit, and parking allocation, all of which inform public charging infrastructure needs across the city.

Feedback from internal and public consultations, and lessons learned from existing EV infrastructure programs indicate that the leading barriers to EV adoption include:

- Cost (vehicle purchase price, cost of installing charger if applicable).
- The availability of charging infrastructure (accessibility, and convenience or proximity to EV charging).
- User experience (reliability, ease of use, and safety/amenities).

To match the speed and level of ambition outlined in the TTO NZ target of “30 per cent of registered vehicles be electric by 2030” and Toronto’s goal of “100 per cent zero emission vehicle-for-hire by 2030”, favours a pathway for EV infrastructure which focuses in areas where EV adoption is certain to grow. Currently, the highest EV ownership in the city is found in neighbourhoods with above the median Toronto household income and the highest levels of home ownership.

Cost of an EV: EV ownership will result in a lower total cost over the lifespan of a vehicle through fuel savings and reduced maintenance costs and therefore, identifying pathways for equity deserving groups to benefit from these long-term cost savings is critical. Opportunities to reduce costs in any part of the EV purchase price, including infrastructure installation, should be a consideration as the Approach to Public EV Charging is implemented.

Availability of Charging Infrastructure: Approximately 40 per cent of available chargers are presently located in two wards – Spadina-Fort York and Toronto Centre, Approach to Public Electric Vehicle Charging to 2030

both in the city's downtown area. Many equity deserving groups especially those of low income may not live in these areas. Furthermore, low-income residents may also live in older building stock and therefore will face challenges finding available charging within or near their residences as the buildings' electrical system may not be sufficiently powerful or because they may be located far from other amenities (shopping complexes) that could supply opportune charging. Locating public EV charging close to older multi-unit residential buildings (MURBs) where charging is not currently abundant, should be a key consideration to encourage uptake in these neighbourhoods.

City-provided chargers can also be provided 24/7, while some non-City provided chargers have limited hours of operation.

Equity and inclusivity can be supported through continuously monitoring EV sale trends throughout the wards, particularly in the Neighbourhood Improvement Areas (NIAs), and identifying how to meet the needs of diverse communities.

User Experience: Equity is also linked to cost, safety, and user experience by reducing charger access barriers through approaches such as:

- Defining standards of charger equipment, adequate room in parking spaces, good lighting, and clear signage to ensure that residents of all abilities can access charging.
- Ensuring a seamless and consistent user experience including type of chargers, method of payment, and easy to use apps which can be used to locate chargers and purchase charging sessions.
- Ensuring cost parity across public chargers.
- Ensuring adequate customer service is offered to support the users especially when chargers may be out of order.
- Ensuring chargers are installed in highly visible, well-lit areas where users feel safe charging and leaving their vehicle.
- Reducing opportunities for theft and vandalism of charging equipment.

Air Quality Impacts: In 2017, Toronto Public Health found that levels of traffic-related air pollution (TRAP) were higher along the inner-city highways and major arterial roads in Toronto. People who live, work, learn, or play near these roads are at greatest risk of adverse health outcomes associated with TRAP. Residents who live close to these traffic corridors are predominantly low income or racialized groups. Increased EV uptake will reduce transportation-related tailpipe emissions, thus improving local and city-wide air quality.

DECISION HISTORY

On October 11 and 12, 2023, City Council adopted the Transitioning the Vehicle-for-Hire Industry to Net Zero Emission by 2030 report.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.EC6.6>

On May 10, 11, and 12, 2023 City Council received report on installing private EV charging on public streets to meet the needs of residents without access to at-home charging.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE3.6>

On March 29, 30, and 31, 2023, City Council adopted the Relationship Framework of the City with Toronto Parking Authority, amending to include that the Executive Director, Housing Secretariat and Chief Executive Officer, CreateTO to identify underutilized parking facilities and parking facilities within Protected Major Transit Station Areas for the purpose of redevelopment and supporting plans for redevelopment of parking facilities that prioritize the provision of new affordable housing. An additional amended directions detailed the Toronto Parking Authority should do everything practicable to assist the City to reach net-zero climate pollution by 2040, in a manner consistent with TransformTO.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.EX3.4>

On March 3, 2023, a presentation was provided to the Board of Directors of Toronto Parking Authority on the 2023 On-street EV Charging Station Program, which included details on current and planned future deployment of public EV charging infrastructure at on-street and off-street locations.

<https://www.toronto.ca/legdocs/mmis/2023/pa/bgrd/backgroundfile-234724.pdf>

On January 30, 2023, the Infrastructure and Environment Committee requested the Director, Environment and Energy, in collaboration with Transportation Services, Toronto Hydro, and the Toronto Parking Authority, to report back to the April 26, 2023 meeting of the Infrastructure and Environment Committee on options, if any, for permitting private installation of EV charging infrastructure on public streets, including any necessary conditions to protect the public interest.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE1.12>

On December 12, 2022, the Toronto Parking Authority presented their Electric Vehicle Charging Deployment Update 2022-2024 to the Toronto Parking Authority Board of Directors including Councillor Bradford and Councillor Moise, both appointed on November 2022.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.PA1.7>

On July 19, 20, 21, and 22, 2022, City Council adopted an update to the EV Strategy directed the General Manager of Transportation Services to review planned locations for EV charger installation, considering current and future cycling infrastructure. Council also directed the General Manager of Transportation Services to ensure that electric micromobility was considered by the EV Working Group.

<https://secure.toronto.ca/council/agenda-item.do?item=2022.IE31.17>

On June 15 and 16, 2022, City Council adopted the staff report On-street EV Charging Stations - Pilot Conclusion and Next Steps, which provided details on the pilot and noted that 32 additional on-street public EV charging stations will be installed in 2022. City Council directed the Toronto Parking Authority to work with the General Manager, Transportation Services, Toronto Hydro, and relevant stakeholders to install a minimum

of 50 on-street EV chargers by the end of 2023.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2022.IE30.11>

On February 2 and 3, 2022, City Council directed Transportation Services in consultation with Toronto Hydro and the Toronto Parking Authority to commence the expansion of the City's On-street EV Charging Program, including siting criteria, costs, and any other requirements to ensure a successful roll-out and future expansion. Existing and future charging stations to be transferred to the responsibility of TPA in 2023. City Council also approved the extension of the Downtown and Residential EV Charging Station pilots by eight months until May 31, 2022.

<https://secure.toronto.ca/council/agenda-item.do?item=2022.IE27.7>

On December 15, 16, and 17, 2021, City Council endorsed the targets and actions outlined in the TransformTO Net Zero Strategy and approved a target to reach net zero GHGs by 2040. The Net Zero Strategy includes a target that by 2030, 30 per cent of registered vehicles in Toronto are electric. The Net Zero Strategy's Short-Term Implementation Plan (2022-2025) includes actions to help ensure that Toronto is on track to meeting its 2030 and 2040 targets for EV adoption.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.IE26.16>

January 29, 2020, City Council approved the EV Strategy which highlights 10 actions organized under four areas of opportunity: charging availability, cost and convenience, education and advocacy and economic opportunities. Council directed Environment and Climate to work with the EV Working Group to oversee effective engagement, implementation, and evaluation of widescale EV rollout, including the On-street Charging Pilot and Residential On-street Charging Station Pilots.

<https://secure.toronto.ca/council/agenda-item.do?item=2020.IE11.17>

On October 2, 2019, City Council declared the Climate Emergency and Accelerating Toronto's Climate Action Plan.

<https://www.toronto.ca/legdocs/mmis/2019/mm/bgrd/backgroundfile-138112.pdf>

On July 4, 5, 6, and 7, 2017, City Council unanimously adopted TransformTO. TransformTO aims to reduce city-wide emissions by 80 per cent by 2050. TransformTO detailed three acceleration campaigns, including a Prepare for Electric Mobility campaign which focused on developing an EV transition strategy for Toronto.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PE19.4>

On November 7, 8, and 9, 2017, City Council approved the Prepare for Electric Mobility Campaign to support the implementation of Residential On-street EV Charge Station pilot, a collaboration between Toronto Hydro and the City.

<https://secure.toronto.ca/council/agenda-item.do?item=2017.PW24.7>

On September 27, 2016, the Public Works and Infrastructure Committee requested the Transportation Services and Environment & Energy Divisions report back on expanding EV charging stations in Toronto.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW15.9>

On September 11, 2012, City Council approved the designation of five EV charging station parking areas for the exclusive use of EV charging for a one-year pilot project, on Ed Mirvish Way, Elizabeth Street, and Wellington Street West.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.TE18.68>

On July 11, 12 and 13, 2012, City Council approved a one-year pilot project to provide curbside charging stations for EV.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.PW16.4>

COMMENTS

The City of Toronto has set ambitious targets to decarbonize the transportation sector as part of the work to achieve its TTO NZS targets. A key act in decarbonization is to replace internal combustion engine (ICE) vehicles with zero emission vehicles (ZEV) at their point of replacement. Electrification of fuels is aligned with the long-term direction of the TTO NZS. Conversion of ICE vehicles to ZEVs requires supporting the growth of charging infrastructure.

This Approach draws from extensive research, data analysis, and stakeholder engagement completed in collaboration with several City DACs. It proposes a model of cross-corporate coordination which will advance continued planning and growth activities to support Toronto's EV charging network.

The Public EV Charging Approach includes:

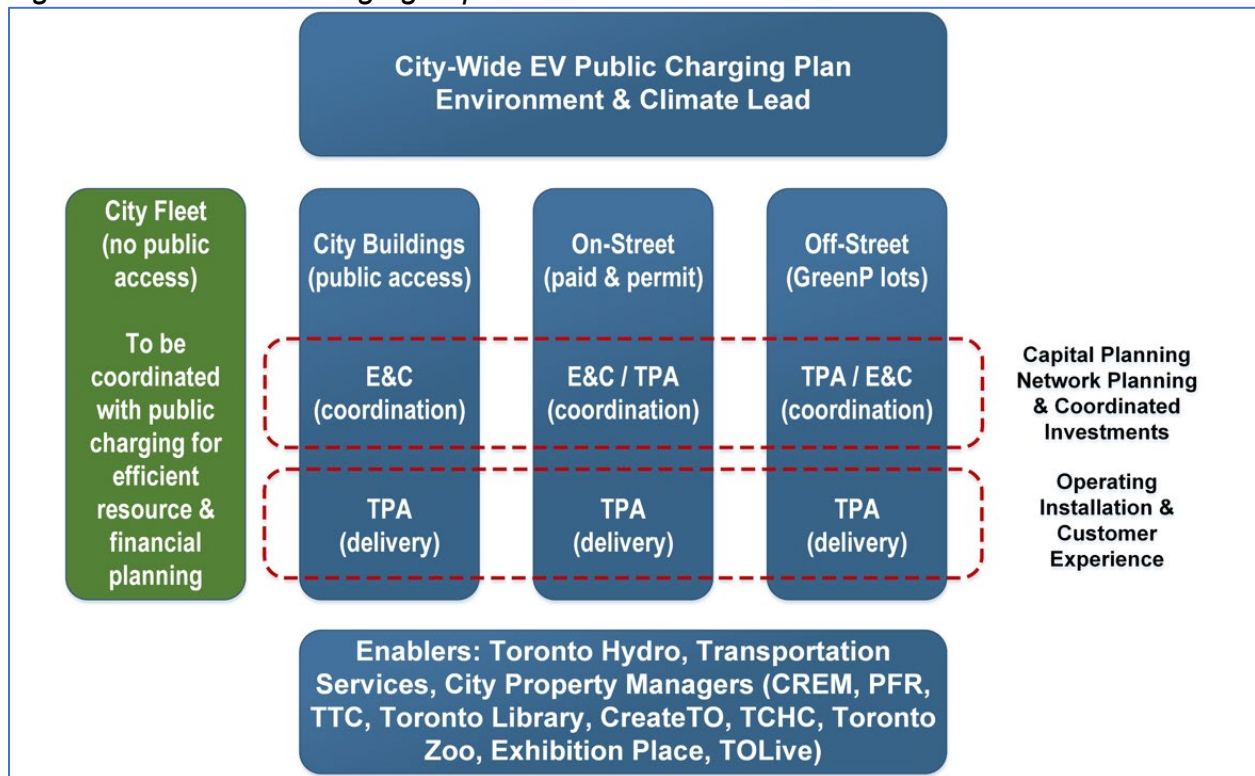
- A City governance structure that optimizes City-owned assets (in the form of properties including lands and buildings) through a centralized approach led by the Environment and Climate Division (E&C), including financial planning of EV infrastructure assets.
- A technical projection of future needs from a “demand- and utilization-driven perspective” using currently established public charging network information at a ward level which considers multiple transportation emission reduction initiatives already underway in each ward.
- A specific focus on equity through education and public charging station location prioritization of vehicle-for-hire (VFH) vehicles to ensure adequate and convenient access to public chargers for this industry.

Proposed Governance Structure

Because of the critical role that Divisions, Agencies and Corporations (DACs) play in the future deployment of EV infrastructure, a clearly defined governance structure should be in place to support their involvement in infrastructure planning.

The below *Public EV Charging Implementation Plan Governance Structure (Figure 1)* reflects many elements of stakeholder feedback (internal and external) that will advance the planning and management of City-owned EV charging assets.

Figure 1: Public EV Charging Implementation Plan Governance Structure



As shown in Figure 1, this report recommends that E&C be responsible for defining the strategy for the continued expansion of public EV charging and that funding (both capital and operating) for this expanded city-wide network be secured by E&C through the annual budget process. This approach will also apply to EV chargers at City facilities.

TPA is a self-sustaining agency of the City of Toronto that provides on and off-street parking, EV charging and bike sharing services. Revenues generated by TPA are used to fund TPA's operating and capital expenses with the remainder provided to the City through a net revenue sharing agreement to fund other municipal programs and services. The organization has taken a leadership role in the EV charging space and operates a City-wide network of EV charging stations at its off-street and on-street parking facilities. TPA's focus has been on its off-street Green P facilities, where charging hubs drive incremental charging and parking revenues.

To date, 407 EV chargers have been deployed by the TPA . TPA's off-street EV implementation approach is consistent with its mandate and supports continued growth and improved productivity of its off-street commercial parking assets.

Fleet Services is responsible for the development and management of the City's corporate EV charging network that will enable and support accelerated transition of

City Fleets to zero emission vehicles. The network will also enable the expansion of the City's workplace charging program and where feasible, may be made available for public EV charging purposes.

CREM is the City's major building asset holder who will work alongside other DACs to install EV charging at City buildings.

As the overall lead, E&C will:

- Establish and coordinate a City Asset Delivery Group to monitor the availability of home, workplace, and public charging in Toronto and ensure equitable distribution of public charging equipment, coordinate bulk purchases of EV charging equipment and technology, and submit bundled annual budget requests on behalf of DACs commensurate with the City's goals for EV uptake.
- Work with TPA and City DACs who are currently property managers, in collaboration with Toronto Hydro, to install EV chargers on City-managed public facing properties by establishing partnerships that ensure consistency of user experience including signage, wayfinding, availability, reliability, and cost parity across the City.
- As part of forthcoming TransformTO report, provide status updates on implementation, technology trends, relevant market factors, as well as external influences and barriers.
- Work with Toronto Hydro to establish a clear process whereby homeowners, apartment/condo dwellers, and residents without access to at-home parking will be directed to Toronto Hydro as the first and single contact organization that will orient, advise, and provide education on the best options for Toronto residents to plug in their EVs at home or workplace.
- Support Toronto Hydro in the development of their system-wide mapping tool which will help Toronto Hydro customers check the capacity to connect their solar, storage, or electrification project. This visualization of available capacity will assist customers in planning their electricity-based projects while allowing the utility to optimize planning, costs, and lead time for renewables and load growth. Toronto Hydro is planning to launch an initial hosting capacity address lookup tool in Q1 2025.
- Design policies that encourage and where feasible require or incentivize the private sector to provide public EV charging.
- Collect and share data, information, and tools that facilitate public EV charging planning and deployment.

It should also be noted that the City is not the only actor whose contributions are key to a successful and robust EV charging network. The City must continue to plan, involve, and lay the groundwork for other actors, such as the private sector who are keenly interested in contributing their own capital investments to the EV network.

In a separate but complementary process, The Atmospheric Fund (TAF) will seek the input of other non-City public and private stakeholders to develop a specific, actionable and resourced plan to align with the City's activities on public EV charging in Toronto. TAF will lead a series of bilateral engagement and multilateral convening exercises with private sector entities (e.g., charging network operators, automakers, vehicle-for-hire

companies, financiers) and public sector entities (e.g., key City Divisions, Agencies and Corporations, other major public landowners such as school boards).

Guiding Considerations

The identified City roles and investment in the provision of public charging will also be guided by the following:

Public charging in Toronto should:

- Not encourage, support, or prioritize the use of personal vehicles above active transportation or transit;
- Increase equitable access to affordable low-carbon transportation options;
- Be deployed at charging hubs where installation costs per charger can be reduced through economies of scale;
- Be deployed with flexibility to easily relocate where there is potential for redevelopment of the site within the next five years;
- Be safe, accessible, convenient, and reliable; and
- Not be deployed at on-street locations where there is planned or potential implementation of transit or active transportation infrastructure or routes within the next five years.

The City-provided network of chargers should:

- Be assessed against other key City's corporate priorities of financial sustainability and administering a well-run city, and other City's key strategies and initiatives;
- Deliver higher social value than alternative investments with specific attention to City's policy objectives of reducing carbon emissions through sustainable transportation, walking, cycling and public transit;
- Complement commercially and privately provided charging networks
- Act as an amenity for clients, and/or residents of sites and facilities managed by the City, including its DACs.

Key Considerations for EV Purchase and Corresponding Projection of Infrastructure Needs and Interests

Expected Range of an EV

Range anxiety is one of the most significant barriers to EV adoption. Range anxiety is the concern that an EV will not have sufficient battery charge to complete its trip. It is important that Toronto residents be adequately informed on the charging capabilities of EVs to put into perspective how much charging an EV might need on any given trip on any given day.

Like internal combustion (ICE) vehicles, EVs do not need to be fueled/charged daily. When fully charged, an average EV has a range of 200 to 400 km depending on the weather conditions, varying battery models, and battery degradation (Plug n' Drive,

2024). With range optimizing features, such as regenerative braking systems and localized heating options, range can be extended, even while the vehicle is being driven. The average daily distance traveled by light-duty vehicles in Toronto is 45 km or less (Clean Air Partnership, 2021). Therefore, charging a vehicle daily is not required.

Charging Options

Level 1: Level 1 charging, or a 120-volt outlet, can be readily used in most homes depending on the location of the outlet. All EVs available on the current market are sold with a 120-volt adapter to charge their vehicle at a slow or “trickle charge” rate, which takes approximately 24 hours for a full charge (110 volts/15 amps) with approximately 8 km range per hour of charging. A certified electrician is recommended to inspect electrical wiring before beginning to charge a vehicle.

Level 2: Level 2 charging is suitable for residents with high-speed charging needs and those with a parking spot at home. Level 2 chargers use a 240-volt outlet, like the outlet that stoves and dryers use and require a licensed electrician to install this wall-mounted charger. Level 2 chargers will charge a vehicle in approximately 8 hours (240 volts/30 amps) with approximately 35 km range per hour of charging. With respect to public charging, this type of charging can be affixed to hydro poles.

Level 3: Generally, Level 3 chargers also referred to as direct current fast chargers (DCFC) can only be found at commercial or public charging stations because of the size, high load, safety requirements, and significant infrastructure upgrades required to install these chargers, resulting in a high price tag for installation. Level 3 fast charging is most suitable for commercial vehicles, VFH drivers, visitors, and ‘top up’ charging. Level 3 chargers are best suited in high-traffic areas like parking lots that are subject to parking restrictions and parking intended for short-term stays.

For most EV users, at-home charging will be the most convenient form of charging. However, at-home charging is not an option for the 65 per cent of Toronto households who live in MURBs and 2 per cent of Toronto residents who rely on on-street parking for their vehicles (2021, Census Data).

Under the Toronto Green Standard (2022), new-build residential units are required to build 100 per cent of dwelling units with a residential parking spot to have an energized outlet or equipped with an EV charger and 25 per cent of new non-residential parking spaces are required to have energized outlets intended for EV chargers or EV chargers installed and ready for use. Existing buildings, especially MURBs, pose a variety of challenges when it comes to upgrades which may prove difficult and expensive to equip for EV charging.

There is no one-size-fits-all approach to EV charging in Toronto, therefore, a combined approach that considers the unique makeup and needs of the neighbourhoods, as well as existing private and public EV charging options will ensure that residents who cannot charge at home can feel comfortable relying on the network of public EV chargers to meet their daily needs.

Current and Projected State of EVs

In 2023, 7.73 per cent of new vehicle registrations in Ontario were EVs, slightly lower than the 11 per cent average nationwide which is primarily driven by higher uptake in British and Quebec, with 22.91 and 20.44 per cent respectively. British Columbia and Quebec are the only two Canadian provinces to offer a subsidy currently.

EV adoption in Toronto has been rising rapidly from 6,345 vehicles in 2018 to 30,505 registered EVs in 2024 due to the declining purchase price of EVs and the increase of EV driving ranges due to improvements in battery and charging technologies.

While the number of EVs has increased each year, EVs remain a small fraction (2.8 per cent) of total passenger vehicles registered in Toronto (1.1 million). With a goal of 5 per cent of registered vehicles being EVs by 2025, the City will need to take a more proactive role in encouraging EV ownership

To inform the Approach to Public EV Charging, E&C worked with a consultant to forecast future uptake of EVs by ward based on current and forecasted trends of EV purchase. Table 1 below shows these projections through to 2030.

To reach TTO NZS 2030 goal of having 30 per cent of all registered vehicles in Toronto as EVs, total of 343,789 EVs would need to be registered.

Table 1: Current and Forecasted EV Registrations to 2030

Registered Electric Vehicles (EV)	Current: June 2024	2025 Projection		2030 Projection	
		Low	High	Low	High
Beaches-East York	1,233	1,522	2,577	3,198	14,730
Davenport	483	523	885	1,099	5,064
Don Valley East	1,045	1,114	1,887	2,341	10,786
Don Valley North	1,410	1,515	2,565	3,182	14,659
Don Valley West	2,678	3,505	5,935	7,364	33,921
Eglinton-Lawrence	1,574	2,009	3,401	4,220	19,439
Etobicoke Centre	1,701	2,010	3,404	4,224	19,456
Etobicoke North	1,864	1,882	3,186	3,954	18,213
Etobicoke-Lakeshore	2,028	2,501	4,234	5,254	24,201
Humber River-Black Creek	399	413	700	868	3,999
Parkdale-High Park	1,449	1,841	3,118	3,869	17,821
Scarborough Centre	668	630	1,066	1,323	6,095
Scarborough North	953	923	1,563	1,940	8,937
Scarborough Southwest	888	962	1,629	2,021	9,311
Scarborough-Agincourt	552	551	933	1,157	5,331
Scarborough-Guildwood	338	363	615	764	3,518
Scarborough-Rouge Park	1,367	1,586	2,686	3,333	15,352

Spadina-Fort York	1,672	1,944	3,291	4,085	18,817
Toronto Centre	1,060	1,025	1,735	2,152	9,915
Toronto-Danforth	1,050	1,212	2,052	2,546	11,727
Toronto-St. Paul's	1,094	1,485	2,515	3,120	14,374
University-Rosedale	1,713	2,317	3,923	4,868	22,425
Willowdale	1,609	1,794	3,037	3,769	17,360
York Centre	1,117	1,273	2,156	2,677	12,332
York South-Weston	560	620	1,050	1,304	6,006
Total	30,505	35,520	60,143	74,632	343,789

*More detailed ward profile information is included in “Appendix 5: Ward Profiles”.

Source: MTO, June 2024 / AECOM, 2021

As of June 2024, Don Valley West ward accounts for the largest number of registered EVs in Toronto, representing 8.8 per cent of all registered EVs. This is followed by Etobicoke-Lakeshore at 6.6 per cent, and Etobicoke North at 6.1 per cent. These wards and University-Rosedale ward are projected to lead the EV adoption in Toronto to 2030.

Although the number of EVs are projected to increase at different rates across the city, public charging will be determined by the utilization of public charging and not necessarily by the projected number of EVs. For instance, in Don Valley West, many people will have home access to charging and therefore, public charging will be strategically located to augment other private charging.

Toronto's Current Public EV Charging Network

As of August 2024, there were a total of 2,545 public Level 2 chargers and 190 public Level 3 chargers in Toronto, located at shopping malls, grocery stores, car dealerships, commercial parking facilities, office buildings, gas stations, health care centres, colleges and universities, recreation facilities, tourist attractions, on-street parking spaces, and other locations. Of these, 407 chargers are City-owned and operated by the TPA. The City of Toronto, through the TPA, is the largest municipally owned operator of EV chargers in Canada.

Between 2019 and 2023, Toronto's public charging network rapidly expanded with Level 2 and Level 3 chargers, with the number of Level 2 chargers growing by 43 per cent and the number of Level 3 chargers 24 per cent per year on average, respectively. These chargers are installed and operated by a wide range of private and public sector organizations including the City of Toronto and are publicly accessible. Often, a property owner will contract with an EV charging provider to provide public charging on their property. Currently, 16 different EV charging networks operate in Toronto with some networks having only few charging stations in operation while others have hundreds of public charging stations in operation.

Table 2: Current and Future Projected Number of Level 2 and Level 3 Chargers through 2030

Public EV Chargers (all providers)	Current		2025				2030			
	L2 Charg ers	L3 Charg ers	L2 Chargers		L3 Chargers		L2 Chargers		L3 Chargers	
			Low	High	Low	High	Low	High	Low	High
Beaches-East York	72	0	91	155	5	9	192	884	13	59
Davenport	30	4	31	53	2	3	66	304	4	20
Don Valley East	42	18	67	113	5	8	140	647	9	42
Don Valley North	87	31	91	154	6	10	191	880	13	59
Don Valley West	71	2	210	356	13	22	441	2,036	30	137
Eglinton-Lawrence	16	0	120	203	8	14	253	1,165	17	77
Etobicoke Centre	34	21	120	204	8	14	253	1,167	17	77
Etobicoke North	114	10	113	191	8	13	237	1,093	16	72
Etobicoke-Lakeshore	139	4	150	254	10	17	315	1,452	21	96
Humber River-Black Creek	6	0	24	41	2	4	52	240	3	15
Parkdale-High Park	109	15	111	188	8	13	232	1,069	15	71
Scarborough Centre	17	2	37	63	2	4	79	366	5	23
Scarborough North	18	4	55	94	3	5	116	536	8	36
Scarborough Southwest	17	2	57	97	4	6	121	558	8	37
Scarborough-Agincourt	2	0	33	56	2	4	69	320	5	21
Scarborough-Guildwood	32	0	22	37	2	3	46	211	3	14
Scarborough-Rouge Park	83	10	95	161	6	10	200	921	13	62
Spadina-Fort York	675	24	116	197	8	13	245	1,128	17	76
Toronto Centre	273	21	62	105	5	9	129	595	8	39
Toronto-Danforth	64	12	73	123	5	9	153	704	10	47
Toronto-St. Paul's	86	2	89	151	6	10	187	863	13	58
University-Rosedale	347	5	140	237	9	16	292	1,347	20	90
Willowdale	116	1	107	182	7	12	226	1,041	15	69
York Centre	76	0	77	130	5	9	161	741	11	50
York South-Weston	19	2	37	63	2	4	78	360	5	24
Toronto	2,545	190	2,128	3,608	141	241	4,474	20,628	299	1,371

Source: NRCan, August 2024 / AECOM

*More information on how the above estimates were derived can be found in “Appendix 2: Highlights of Modelling Methodology – EV Infrastructure Planning”.

The range of building types and higher levels of permit parking will require a variety of approaches to EV infrastructure placement, including off and on street EV charging, to serve both low rise residential and MURB residents.

407 of all Toronto public chargers are City-owned and operated by the TPA, the largest municipally owned operator of EV chargers in Canada.

Table 3 below shows the number of public EV chargers currently owned and operated by the TPA by ward. TPA is also undertaking site selection of over 100 potential on-street EV charging locations with design and implementation subject to further definition of on-street EV charging prioritization through the Approach to Public EV Charging to 2030.

Table 3: TPA Managed Infrastructure (updated as of July 2024)

Public EV Chargers (Provided by City/TPA)	Off-Street			On-Street		Total		
	Sites	L2	L3	Sites	L2	Sites	L2	L3
Beaches-East York	3	14	0	12	21	15	35	0
Davenport	2	24	4	1	2	3	26	4
Don Valley North	1	10	0	0	0	1	10	0
Etobicoke North	1	4	1	0	0	1	4	1
Etobicoke-Lakeshore	1	6	1	3	4	4	10	1
Humber River-Black Creek	0	0	0	1	2	1	2	0
Parkdale-High Park	2	14	3	7	14	9	28	3
Spadina-Fort York	9	109	8	4	8	13	117	8
Toronto Centre	3	26	4	2	2	5	28	4
Toronto Danforth	2	12	6	12	24	14	36	6
Toronto St. Paul's	5	49	1	1	2	6	51	1
University-Rosedale	5	50	2	4	8	9	58	2
Willowdale	0	0	0	3	6	3	6	0
York South-Weston	0	0	0	2	2	2	2	0
Total	34	318	30	52	95	86	413	30

Source: Toronto Parking Authority (July 2024)

Demand- and Utilization-driven Technical Projections

In the early years of establishing EV networks, public charging requirements are broadly shaped by EV owners’ ability to charge at home (Natural Resources Canada). Toronto’s

model uses this assumption to forecast EV uptake in areas where home charging is challenging with the view that changes in EV adoption will take place over time as the market matures and vehicle and charger technologies evolve. While EV early adopters will likely have access to at-home charging, as EV markets mature, it is anticipated that increasing number of EV owners will not have access to home charging infrastructure (Natural Resources Canada). This method of planning for EV infrastructure is sometimes referred to as a “demand- and utilization-driven projection”.

The methodology (see Appendix 2 Highlights of Modelling Methodology – EV Infrastructure Planning) projects numbers of EVs from 2025-2040 in two scenarios – a “business as usual” scenario which uses current sales rates and a “100 per cent EV Sales by 2035” rate which matches the [federal government's EV sales mandate](#). The quantitative examination of public EV charging demand in Toronto has been developed through a staged process that has utilized existing baseline data to forecast adoption, public charging demand and subsequent charging infrastructure needs.

The results show that in the most ambitious scenario (100 per cent of EV Sales by 2035) by 2030, that 30 per cent of registered vehicles in Toronto would equate to 343,794 EVs. The projections also anticipate that 87 per cent vehicle sales will be electric by 2030 which is about 66,184 EVs.

Table 4: Forecasted EV Registrations and Charging Infrastructure

Business as Usual	2025	2030
EV Sales	6,280 (8 per cent)	8,760 (11 per cent)
EV Pop.	35,520 (3 per cent)	74,630 (6 per cent)
Public Level 3 Charging Ports	142	298
Public Level 2 Charging Ports	2,128	4,472
100 per cent EV Sales 2035	2025	2030
EV Sales	24,676 (32 per cent)	66,184 (87 per cent)
EV Pop.	60,144 (5 per cent)	343,794 (30 per cent)
Public Level 3 Charging Ports	241	1,371
Public Level 2 Charging Ports	3,608	20,628

Source: AECOM, 2021

Estimates of the volumes of chargers needed to ensure there is a network of chargers to support the above number of EVs in 2030, suggest that 20,689 public Level 2 chargers and 1,379 Level 3 chargers will be required. More detailed analysis will be undertaken on an annual basis alongside monitoring EV purchase at a ward level basis as part of the Approach implementation following adoption of this report.

Jurisdictional Scan

Municipalities play a crucial role in public charging development because they manage the built environment and deliver public infrastructure. Municipalities have the challenging task of facilitating economic activity and supporting community development in an equitable and fiscally responsible manner. While upholding these responsibilities, City-provided charging should not expect a profit or a complete return on investment in their charging networks.

With specific reference to EVs, some key functions include:

- **Building codes and regulations:** Implement bylaws that mandate new buildings (residential and commercial) to support EV charging and adoption.
- **Permitting and approvals:** Streamline the permitting process for anyone looking to install charging stations. This reduces barriers to EV adoption and encourages investment in public charging infrastructure. Permitting processes should be examined to determine if it creates any barriers EV adoption.
- **Strategic placement on municipally owned properties:** Identify and invest in installing charging stations in select strategic public locations such as public parking lots, parks, and community centres. This expands accessibility and encourages residents who do not have private parking to consider EVs.
- **Leading by example:** Transition City fleet vehicles to electric models sends a strong message of commitment to sustainability and reduces local emissions directly. It can also help stimulate increased private sector participation over time (C40, 2023).
- **Creating financial and non-financial incentives:** Incentives to catalyze growth of the EV charging infrastructure for private and public operation and use will benefit all EV users. Boston and Vancouver, for example, encourage and ease the process for commercial businesses, organizations, and residents to install EV chargers in front or near their property. Other examples include incentivizing charger installation along major corridors, including gas stations.
- **Public education and awareness:** Play a role in educating residents on the benefits of EVs, charging options, and available rebates and incentives. Addressing misinformation, such as range anxiety and the need for exclusive at-home charging through educational campaigns and strategic partnerships.

To complement the city-provided network of public EV chargers, major cities have created public-private programs that allow third-party licensees to install and operate EV charging infrastructure on city streets: New York City (Plug NYC), Boston (License the Right-of-Way approach), Vancouver (The Commercial Curbside Electric Vehicle Charging Program), and Washington D.C. (The EV Charging Station Program). The

approach increases EV charging infrastructure through a cost-offsetting or a “no-cost to the city” model that de-risks local government and shifts the capital costs for installation and maintenance onto an external partner.

The approach increases EV charging infrastructure through a cost-offsetting or a no-cost to the city model, aside from the use of public right-of-way.

Common to all cities is the positive effect that collaboration with a diverse group of stakeholders has on building a robust and effective network. Examples of key stakeholders include utility companies, other levels of government, internal municipal departments, and commercial businesses however, consistently, the most important relationship has been with the local utility company or electricity provider.

Of the cities reviewed, charging networks initiated by local governments that had strong relationships with their utility provider appeared the most advanced in establishing their networks. Cities such as Montreal (Hydro Quebec), Vancouver (BC Hydro), Chicago (ComEd), and New York City (Con Edison) saw close cooperation and in some cases, co-delivery of programs:

- **New York:** Con Edison provided funding to New York City’s Curbside Level 2 Charging Project.
- **Vancouver:** The City of Vancouver better integrated their permitting process with their utility provider and lowered permitting costs. The impact of the more integrated and connected permitting process will have a positive impact for business owners, contractors, and reducing the City of Vancouver’s overhead costs. BC Hydro operates public chargers in Vancouver.
- **Montreal:** Hydro Quebec owns the EV charger network called the Electric Circuit and owns Level 3 chargers, some of which have been installed on City of Montreal properties. Hydro Quebec shares its contract for EV chargers with the City of Montreal, with uniform branding and infrastructure these chargers become a part of the Electric Circuit network.

However, it should be noted that in the examples cited above, the utilities are managed differently than in Toronto. For instance, Montreal and Vancouver have provincially owned utilities and New York City have utility companies that serve larger regions beyond the subject cities. Larger utility providers that are managed at the province- or state-level typically have more resources to contribute to a municipal-managed EV charging network.

Other successful partnerships have helped to address inequities. Some cities have formed partnerships with carshare services to promote the use of EVs. Carshares and rentals tend to be a more affordable option for low- and medium-income households who cannot afford a car nor have a dedicated parking spot. The City of Denver and County of Denver partnered up with a non-profit carsharing organization and the local housing authority to bring electric carshare vehicles to low- and medium-income multifamily public housing properties (Joint Office of Energy and Transportation, 2024).

Stakeholder and Public Consultation

Stakeholder engagement was a key component that informed the direction of the Approach to Public EV Charging. From April 2022 to March 2024, Environment & Climate undertook a multi-phase stakeholder engagement consultation process. A diverse group of stakeholders were consulted, including gas station operators, residential properties, commercial and retail property sector, EV charging companies, NGOs, healthcare institutions, municipalities, fleets, and vehicle-for-hire operators. Internal consultation with over 18 City DACs were held, along with an inter-divisional working group and meetings to provide input on the development of the pathway forward and to coordinate roles and responsibilities.

The public consultations took place in September 2023 and were comprised of four in-person public meetings, two virtual public meetings, and an online survey that was open from September 1 to 30 (2,728 surveys were completed). The focus was on understanding the links between geographic location of respondents, the respondents' relationship to EVs (owner, prospective owner, or car share), housing type (apartment, townhouse, detached, etc.), and whether the respondent lives in a co-op, co-housing, rental property, or owned property.

More details on stakeholder engagement process is included in Appendix 4.

Public Charging Prioritization for the Vehicle-For-Hire Industry

In October 2023, the City adopted a net zero by 2030 requirement for the vehicle-for-hire (VFH) industry except for wheelchair accessible vehicles and stretch limousines. The VFH industry consists of taxis, limos, and private transportation companies (PTCs), such as Uber and Lyft. The VFH industry contributes 4 to 6 per cent of the city's total transportation emissions and VFH operators travel three to four times more than passenger vehicles annually.

A substantial proportion of the VFH industry consists of lower-income individuals, and individuals who identify with equity-seeking groups.

Shifting to ZEVs creates a unique opportunity for the VFH industry to be highly visible leaders in working towards Toronto's climate action goals. Thus, the Approach to Public EV Charging to 2030 will consider the charging needs of the VFH industry as it moves to ZEVs by 2030. Key considerations that will be included for consideration will be the prioritization of Level 3 charging in the downtown area as approximately 60 per cent of VFH drivers do not live in the Toronto, which means drivers will be relying on fast chargers to minimize driver downtime.

Through the new governance structure proposed in this report staff from the City will have a dedicated focus to support the VFH industry shift to ZEVs.

CONCLUSION

This Approach presents a governance structure and detailed information regarding the amount and type of EV charging that is projected to meet the needs of Toronto

residents until 2030. E&C will lead the overall strategy for continued expansion of Toronto's public EV charging network in collaboration with DACs and external partners as outlined in the *Public EV Charging Implementation Plan Governance Structure* discussed in this report.

Pending approval, E&C will initiate discussions with DACs to advance the next stages of implementing the Approach using the projections derived from technical modelling. Included as part of these discussions will be an evaluation of the costs of different levels and types of chargers corresponding to a neighbourhood's needs.

The City has a wide range of transportation, city building, land use policies, programs, and infrastructure initiatives. These initiatives are either underway or planned to encourage and support the transition away from the use of fossil fuels and increase the use of more sustainable transportation modes such as public transit, walking and cycling, and zero emission vehicles, where required. This proposed Approach supports the multiple options available to residents to travel carbon-free around the city now and into the future.

To ensure the Approach remains flexible and adaptable to constantly evolving technology and market conditions, updates will be highlighted as part of annual implementation updates.

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ATTACHMENTS

Appendix 1: Overview of City of Toronto Strategies, Policies, Programs, and Initiatives
Appendix 2: Highlights of Modelling Methodology – EV Infrastructure Planning
Appendix 3: Electric Vehicle Strategy Objectives (adopted 2020)
Appendix 4: Stakeholder and Public Engagement
Appendix 5: Ward Level Profiles