



Folder Number	Date (yyyy-mm-dd) 2025-03-04
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Project Information

Street Number 700	Street Name Markham Road	Lot Number	Plan Number
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Describe the variance(s) being applied for:
1. Ground sign with third party advertising displays (2 sides) on CR Sign District; 2. Deficiency for setback to CR, R and I Sign Districts; 3. Deficiency for setback to property line; and 4. Deficiency for setback to ingress/egress.

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	
------------	--	-----------	--

Company Name (if applicable) 1704458 Ontario Inc.		Telephone Number (647) 893-6550	
--	--	------------------------------------	--

Street Number 700	Street Name Markham Road	Suite/Unit Number	Mobile Number
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City/Town Toronto	Province ON	Postal Code M1H 2A7	Fax Number
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Email

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
Street Number of 66	Street Name Wellington St. W	Suite/Unit Number 5300 TD Bank Tow	Mobile Number
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)	2025-03-04 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
700	Markham Road		

Site and Building Data

Lot Area	Lot Frontage	Lot Depth
Number of Building(s) on the lot	Date of Construction of Building(s) if known (yyyy-mm-dd)	
Building Height(s)	Number of Storeys	Building(s) Gross Floor Area
Building Uses(s) Multi Tenant Medical Plaza		

Site Context

Please describe the land uses, buildings and sign districts surrounding the proposal (use additional pages if necessary)	
North	Place of Worship zoned Institutional Sign District
South	Commercial Plaza containing grocery store, bank, hair salon zoned Commercial Residential Sign District
East	Cedar Heights Shopping Plaza zoned Commercial Residential Sign District
West	Residential Sign District (approximately 85 m setback)

Proposal

Please describe in detail what is being proposed (use additional pages if necessary) Jolt Charge is proposing to install a Level 3 fast DC EV Charger on the Premises of 700 Markham 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 Markham Road (display will be oriented North and South). Each display has a surface area of 1.53 square meters fro 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 Rationale provided with this application.](#)

Sign Data Sheet

Date (yyyy-mm-dd) 2025-03-04	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)				
	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: 1797811

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 129167 ZSV 00 ZR	Date & Time:	March 14, 2025 12:43:41 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:	700 MARKHAM RD TORONTO ON M1H 2A7		
Project Description:	Zoning Review; Multiple-Use 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.

LICENCE AGREEMENT

Electric Vehicle Charging Network

THIS AGREEMENT is entered into as of January 27, 2027

BETWEEN:

1704458 Ontario Inc., a corporation incorporated pursuant to the laws of Ontario

Address: **700 Markham Road, Toronto, ON M1H 2A7**

Attention: **Kevin Lam**

Email: 3585lawrence@gmail.com

(the "**Licensor**")

AND

JOLT CHARGE INC., a corporation incorporated pursuant to the laws of the Province of Ontario

Address: 66 Wellington St. W., 5300 TD Bank Tower, Toronto, ON M5K 1E6

Attention: Brendan Dillon, **Country Manager**

Email: **Brendan.Dillon@joltcharge.com**

(the "**Licensee**", and together with the Licensor, the "**Parties**", and either one of them, a "**Party**").

FOR AND 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:

1. COMMENCEMENT DATE AND LICENCE TERM

- 1.1 The term of this Licence is ten (10) years commencing on the Effective Date (the "**Initial Term**"). The Licensee shall have the one-time right to extend the Term, on the same terms and conditions, for an additional period of five (5) years (the "**Option Term**") if mutually agreeable prior to the expiration of the then current Term.
- 1.2 The Licensor shall provide the Licensee and its contractors, agents and representatives access and possession of the Site and the Property from the Commencement Date to enter onto, occupy and access the Site and the Property (including with or without any vehicles, equipment or machinery) for the purposes of undertaking the Works.

IN WITNESS WHEREOF, the parties have executed this Licence as of the day and year first above written.

<i>by the Licensor:</i> 1704458 Ontario Inc. Signed by:  By: _____ Authorized Signatory By: _____ Authorized Signatory	<i>by the Licensee:</i> JOLT CHARGE INC. DocuSigned by:  By: _____ Authorized Signatory By: _____ Authorized Signatory
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SITE PLAN
PROPOSED
TELECOMMUNICATION INSTALLATION
700 MARKHAM ROAD
PART OF LOT 19
CONCESSION 1
CITY OF TORONTO
FORMERLY CITY OF SCARBOROUGH



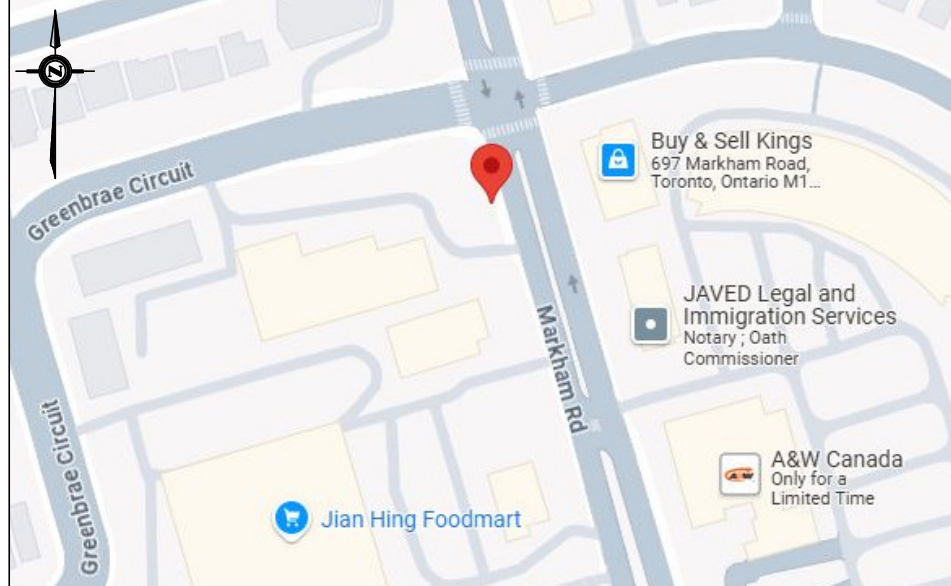
ALEX MARTON LTD.
ONTARIO LAND SURVEYORS

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	CONCESSION	P.I.N.	AREA sq.m
1	PART OF 19	1	06268-0273 (LT)	1
2				0.2

KEY PLAN (NOT TO SCALE)



NOTE

BOUNDARY INFORMATION HAS BEEN COMPILED FROM AVAILABLE RECORDS.

CAUTION

THIS IS NOT A PLAN OF SURVEY.

CERTIFICATE OF COMPLETION

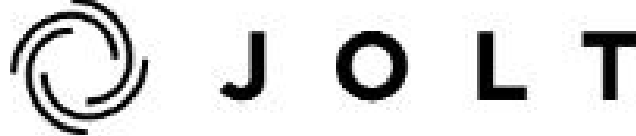
I CERTIFY THAT:
1.THE FIELD WORK WAS COMPLETED ON THE 21ST DAY OF FEBRUARY, 2025.

MARCH 3, 2025
DATE

A. MARTON
ONTARIO LAND SURVEYOR

AMENDMENTS

No.	DESCRIPTION	DATE
1	UPDATED AS PER CLIENT REQUEST	5.03.2025
2	UPDATED AS PER CLIENT REQUEST	10.03.2025
3	UPDATED AS PER CLIENT REQUEST	12.03.2025



SITE: 700 MARKHAM 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

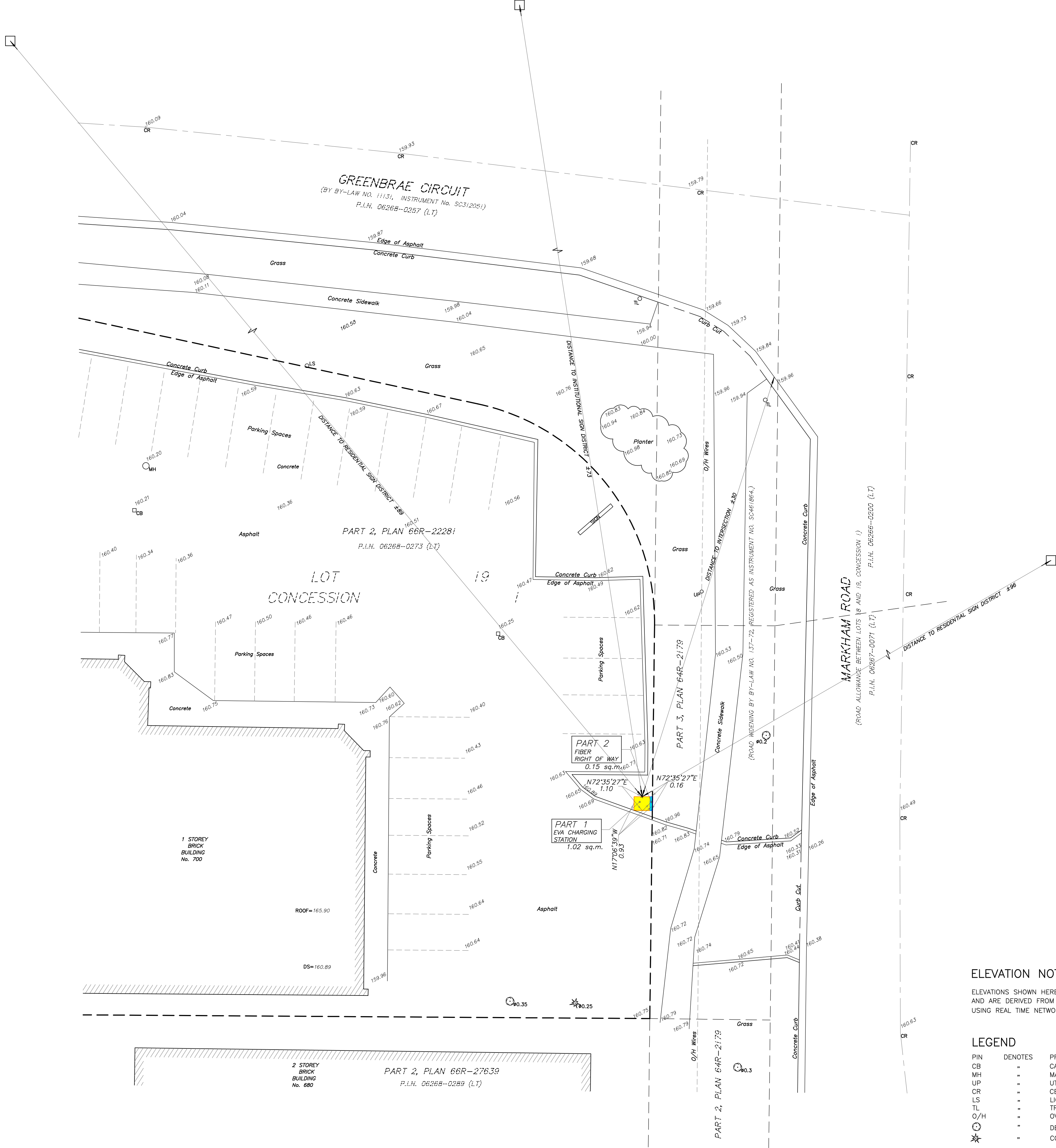
PARTY CHIEF : H.G.	FILE NAME: 2025-026.DWG
DRAWN : X.Z.	PLOT SCALE: 1:150
CHECKED : A.M.	PROJECT No. 2025-026

ELEVATION NOTE

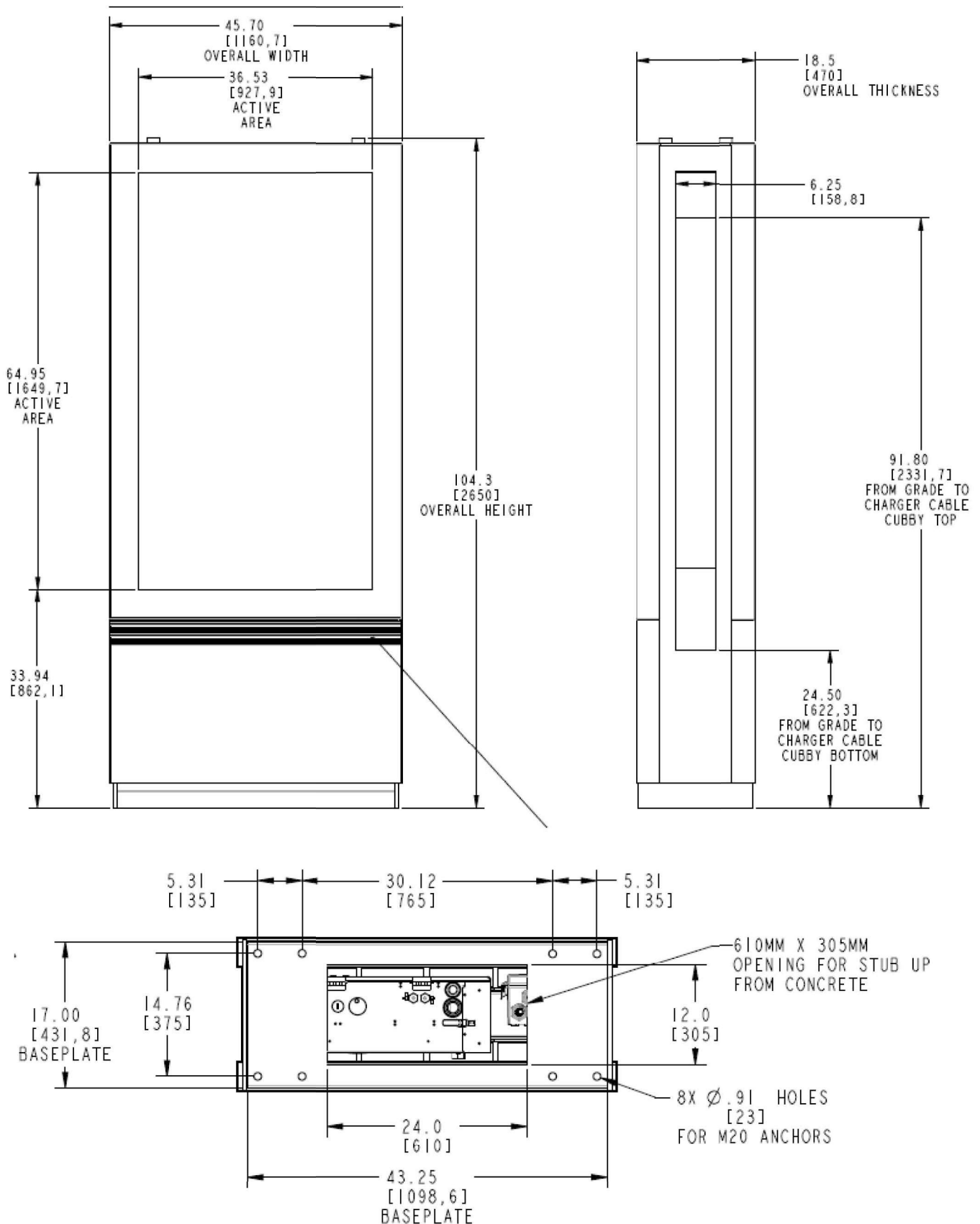
ELEVATIONS SHOWN HEREON ARE GEODETIC
AND ARE DERIVED FROM GPS OBSERVATIONS
USING REAL TIME NETWORK OBSERVATIONS.

LEGEND

PIN	DENOTES	PROPERTY IDENTIFIER NUMBER
CB	"	CATCH BASIN
MH	"	MANHOLE
UP	"	UTILITY POLE
CR	"	CENTERLINE
LS	"	LIGHT STANDARD
TL	"	TRAFFIC LIGHT
O/H	"	OVERHEAD
⊙	"	DECIDUOUS TREE
★	"	CONIFEROUS TREE



Dimensional Drawings



March 10, 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 700 Markham 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 700 Markham Rd. The charger's location shall be on the Eastern edge of the premises fronting onto Markham 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 the roadway to be viewed by vehicular traffic travelling along Markham. 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, 700 Markham Rd. is designated as a Commercial Residential (CR) Sign District, which permits the installation of the sign class but restricts the sign type (ground sign with 2

static electronic copy displays). However, this property does not contain any residential dwellings nor does the entire block. The CR Sign District zoning along Markham contains commercial and employment land uses with no residential component. The Premises, operates as a medical plaza that includes a veterinary clinic, hearing specialist, optometry clinic, walk in family practice, dentist, law office, orthopedic clinic, physiotherapist and cardiologist clinic serving the immediate area. As indicated below on Image #2, there are no residential land use on the premises and is employment in nature.

The applicant requests approval for a ground sign containing 2 electronic third-party display faces as a variance. The commercial property itself has a frontage of approximately 46 meters on Markham Rd. and 70 meters on Greenbrae Circuit. This type of frontage would accommodate an additional first party ground signs if the property ever required it. The proposed is setback from the existing sign by approximately 18 meters which complies with the setback outlined in the Sign By-Law.

The rationale behind 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 display face, which is considerably smaller than traditional billboards (20 meters squared) permitted under the Sign By-Law. The size and format is equal to the transit shelters displaying third party advertising, deployed 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), located in close proximity to residential land use and in front of CR Sign Districts. 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 to the North and West of the proposed location of the charger, the size and light emitted from the displays will not reach these land uses due to orientation and light shed reach. Furthermore, the displays will not be legible from these areas. Technical discussion showing light shed reach in relation to these land uses shall be discussed further in the rationale to alleviate concerns.

To address ground signs, 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.

For all these reasons, placing EV chargers on the ground is often a more user-friendly and versatile option, making it ideal for commercial installations.

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 daily. 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 many factors such as accessibility, economic status and the time it takes to power these vehicles and the convenience in plazas that offer the surrounding community services. This is an excellent opportunity to provide utility to those needing access to fast charging stations in close proximity.

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



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

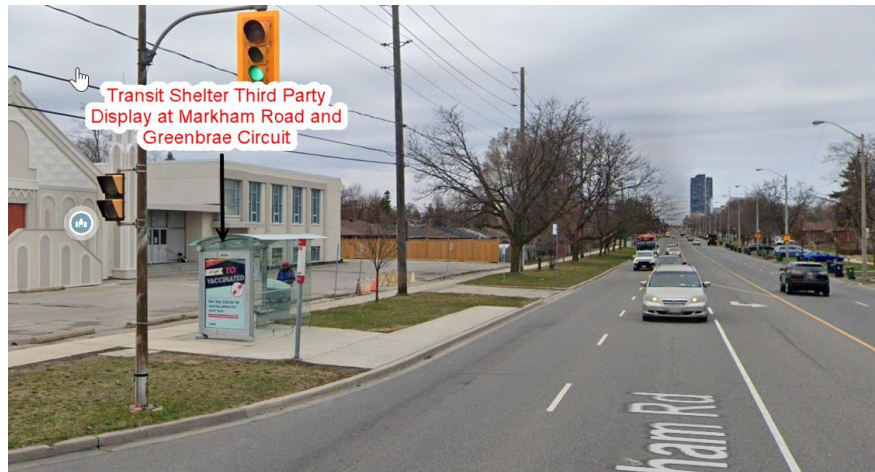
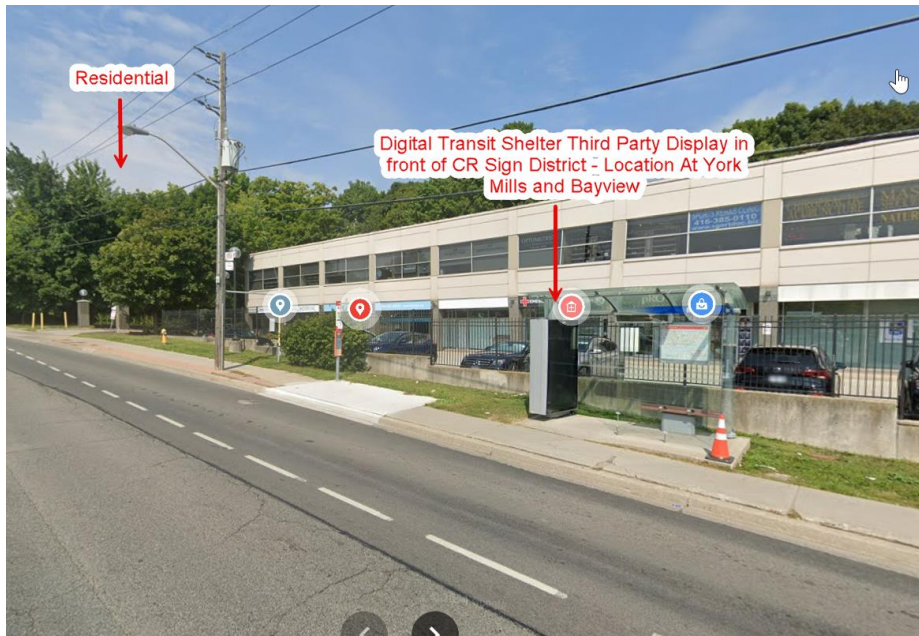


Image #4 A, B and C: *Digital Transit Shelters, Same Make And Model As Proposed EV Charging Displays*





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 additional units due to cost of the chargers. 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 Toronto Sign By-Law unit will be able to reassess renewing the permit every 5-years. This allows them to routinely reevaluate 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 medical centre and the other buildings in the immediate area are utilized as commercial land uses but categorized as CR Sign Districts (Shopping Plaza, Auto Service Centre, TD Bank, Gas Station and Residences to the North and West of the Premises).

The proposed EV charger will be located directly across to the East from another CR Sign District that operates as a shopping plaza containing various commercial business as evidenced in Image #7. 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 30 meters South of the nearest intersection, Markham Rd and Greenbrae/Greenholm Circuit meeting the compatible setback to an intersection and ensuring driver safety in relation to the displays, intended for vehicular traffic travelling North and South along Markham Rd.

All properties located North and South (displays orientation) within a 250 meter distance are zoned CR, Commercial (C) and Institutional (I) and Residential (R) Sign Districts. Although the proposed is not compatible with the Sign By-Law proximity to CR, I and R Sign District regulations, this type of display is ancillary rather than large format. The light shed on the EV charging station displays will not enter any R Sign Districts shown in Image (#12 and #13) and cannot be legible from those areas due to the size and format. The Institutional Sign District operates as a Place of Worship and no light shall enter the land use. To the East is CR Sign Districts that do not contain any sensitive land use and is commercial and employment in nature.

It will ultimately provide utility to EV users in the area, supporting the decarbonized goals in the City. 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 land use illustrating precedence for these types of displays and the negligible impact it has on surrounding land use.

The proposed charger compliments the area that offers a variety of shops, amenities and services that provide to residents in the area. Allowing a Level 3 Charger on the proposed premises can

offer quick charging, convenience and efficiency. 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

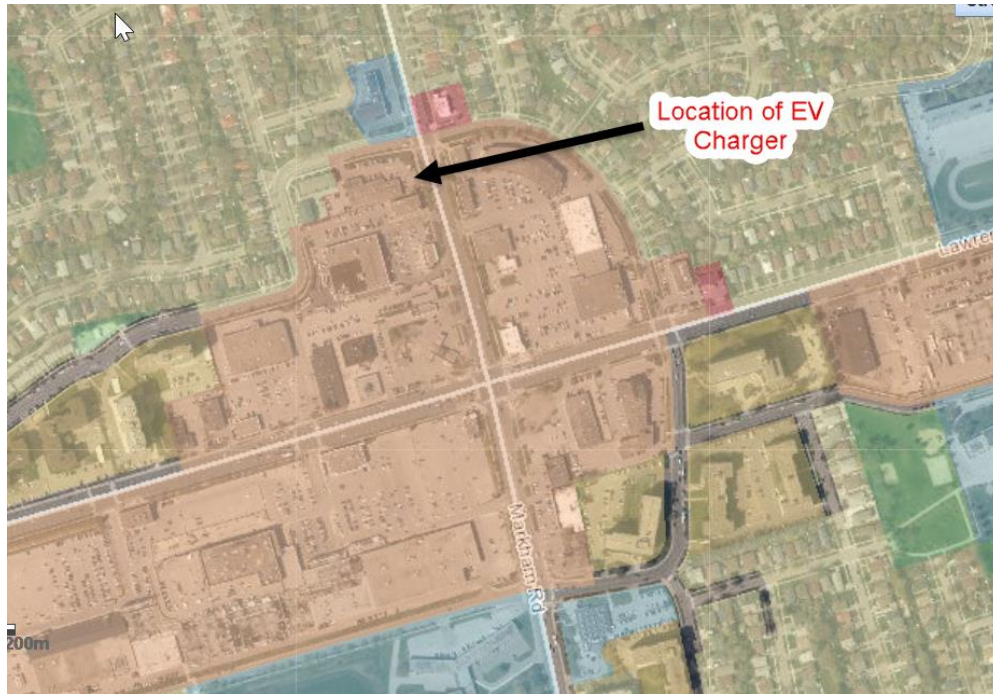


Image #6: A Picture Of The Immediate Adjacent Neighbouring Property To The North, Zoned C, I, and R Sign District, Mixed Use In Nature.



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



Image #8: A Streetview Picture Of The Immediate Adjacent Neighbouring Property To The South, Zoned CR Sign District, Commercial And Employment In Nature.



Image #9: A Streetview Picture Of The Immediate Adjacent Neighbouring Property To The West, Zoned R Sign District, Setback Compatible.



The Displays on the EV charger proposed are setback from Residential by over 60 meters to the West, Northwest and Northeast. The Displays will not be legible from this distance and Jolt's light shed diagrams will alleviate any light trespass concerns into the Northeast and Northwest Sign Districts. While 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 approximately 87 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 but rather enhance it.

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

Electric Vehicle (EV) chargers align with the City of Toronto's Official Plan by supporting the city's commitment to sustainability, environmental protection, and reducing carbon emissions. The Official Plan emphasizes the importance of creating a sustainable, resilient city, and integrating infrastructure like EV chargers is essential to achieving this goal. As Toronto aims to reduce greenhouse gas emissions and transition towards a cleaner, greener future, increasing access to EV chargers supports the adoption of electric vehicles, which are key to reducing reliance on fossil fuels. Additionally, the Official Plan advocates for the development of efficient, sustainable transportation systems, and EV infrastructure contributes to this vision by offering residents and businesses a reliable, clean alternative to traditional gasoline-powered cars.

Furthermore, EV chargers also align with Toronto's objectives of promoting innovation and creating a livable, accessible city. The Plan encourages the development of infrastructure that is adaptable to emerging technologies, and as the adoption of electric vehicles continues to grow, so does the need for widespread charging stations. By integrating EV chargers into new developments and retrofitting existing spaces, the city is actively preparing for future transportation trends. This also ties into the Official Plan's focus on improving urban mobility, ensuring that residents have equitable access to clean energy alternatives across all neighborhoods. Thus, EV chargers play a crucial role in making Toronto a more sustainable and future-ready city.

In Toronto, mixed-use areas are designed to support a combination of residential, commercial, and sometimes industrial uses within the same area. The Official Plan for Toronto aims to create a more sustainable, accessible, and vibrant city while also respecting the needs of its diverse neighborhoods. Small third-party advertising signs can align with these areas when they are thoughtfully integrated to support the city's planning goals, especially regarding urban design, aesthetics, and public safety.

The displays on the charger align with mixed-use areas in Toronto under the Official Plan by encouraging economic activity. Small advertising displays can be beneficial for the local economy by promoting businesses within the mixed-use areas, supporting small enterprises, and increasing foot traffic to retail spaces. The Official Plan encourages the integration of commercial

uses in mixed-use zones, and third-party advertising can play a role in attracting attention to these businesses, helping to create a more dynamic urban environment.

The proposed also considers urban design and aesthetics. The Official Plan stresses the importance of designing public spaces and buildings that are visually appealing and that enhance the pedestrian experience. As Jolt's proposed charger with displays are significantly smaller with state-of-the-art modern aesthetic, it compliments the built environment rather than detracting from it. In mixed-use zones, smaller, more subtle signs that don't overpower the surroundings work best supporting the ancillary displays Jolt is proposing.

In short, the proposed displays can align with Toronto's Official Plan for mixed-use areas as they are appropriately sized, thoughtfully integrated into the streetscape, support local businesses, and comply with regulations designed to protect the city's aesthetic, safety, and sustainability goals.

Additionally, the City of Toronto's TransformTO Net Zero (TTO NZ) Strategy Short Term Implementation Plan (2022-2025) aims to reduce the city's greenhouse gas emissions and achieve net-zero emissions by 2050. It outlines several immediate steps to address the climate crisis, including transitioning to cleaner energy sources, improving energy efficiency, and adopting low-carbon technologies. The proposed Level 3 EV charger play a significant role in supporting Toronto's net-zero goals in several ways, aligning with the strategy's objectives:

1. **Electrification of Transportation:** The TTO NZ plan emphasizes the need to reduce emissions from the transportation sector, which is one of the largest contributors to greenhouse gases in Toronto. Level 3 chargers enable rapid charging of electric vehicles (EVs), making it easier for residents, businesses, and fleets to transition from gasoline-powered vehicles to electric ones. The widespread deployment of Level 3 chargers facilitates the adoption of EVs, helping to meet emissions reduction targets.
2. **Increased EV Adoption:** Fast charging infrastructure is crucial for overcoming "range anxiety," a key barrier to EV adoption. With the ability to charge vehicles in 30-60 minutes (as opposed to several hours with Level 2 chargers), Level 3 chargers support longer trips and make EVs more convenient for urban and regional mobility. This aligns with the goal of promoting sustainable, electric, and shared mobility options as part of the city's climate action plan.
3. **Infrastructure Development and Accessibility:** The strategy highlights the importance of developing green infrastructure in Toronto. Level 3 chargers are a key part of this, particularly in urban areas where fast and reliable charging stations are needed to meet the demand for EVs. Installing these chargers at strategic locations (e.g., public parking lots, transit hubs, and commercial areas) helps ensure equitable access to fast charging for all residents, helping bridge the gap in underserved communities.

By enabling faster EV adoption, reducing fossil fuel dependency, and facilitating cleaner energy use, the proposed directly supports Toronto's goal of reducing its greenhouse gas emissions and works to achieve the city's long-term sustainability and carbon neutrality.

In summary, the proposed is a crucial component in the City of Toronto's effort to meet its climate goals outlined in the TransformTO Net Zero Strategy. It supports the transition to electric transportation, reduce emissions, and foster a cleaner, more sustainable urban environment.

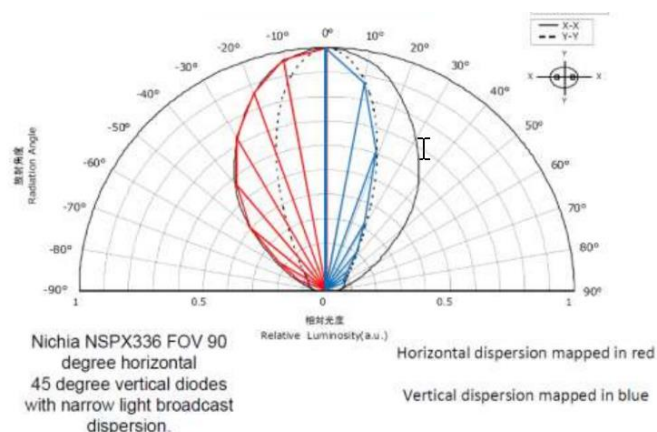
The Proposed Will Not Adversely Affect Adjacent Premises

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. The displays on the EV Charger Station will be oriented North and South, perpendicular to Markham Rd.

As the proposed is facing within 250 meters of another CR Sign District to the South (does not contain any residential land use, operates as a shopping plaza, auto service centre and gas station, and are commercial in nature) and R Sign District to the North (87 meters away), Jolt request a second variance. The light shed diagrams below will indicate that no light shall trespass the residential land uses to the North and will not be legible from this sensitive land use. Jolt confirms that the proposed will not adversely affect adjacent premises.

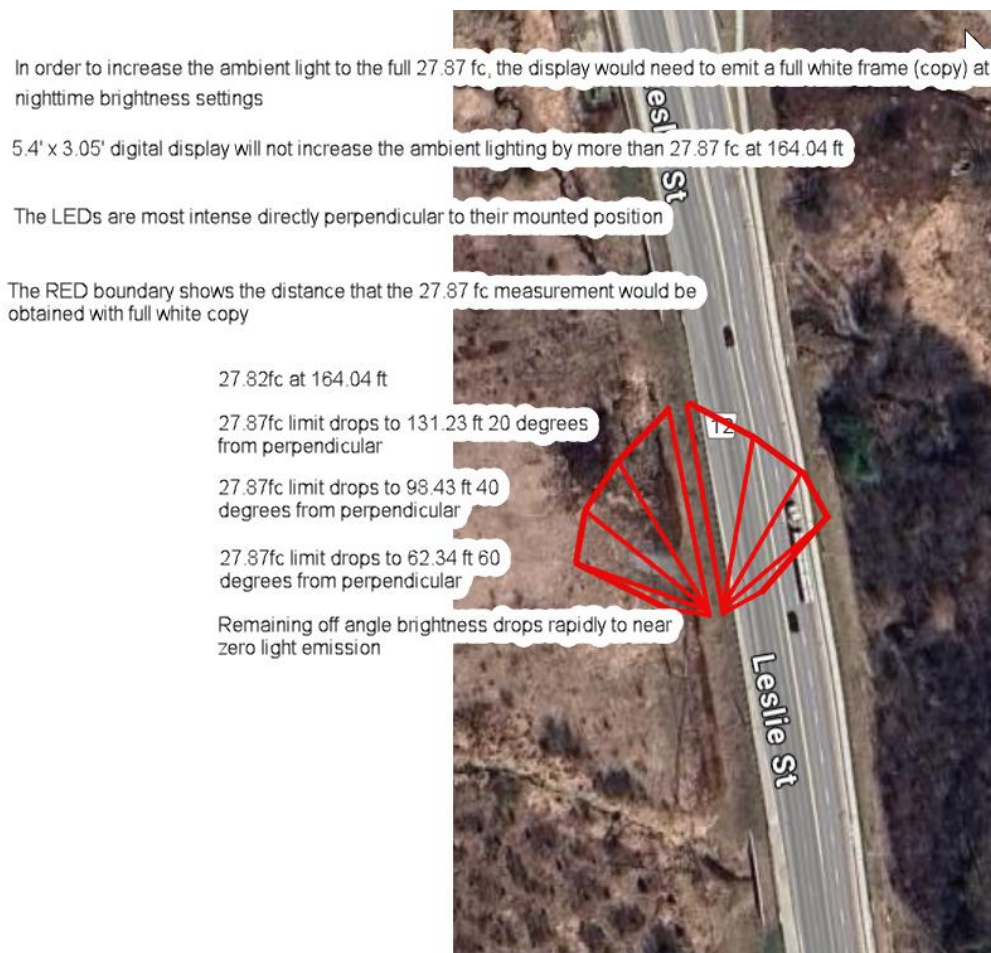
For review, Jolt has included diagrams that illustrate how light is horizontally dispersed from the proposed static electronic displays. The perimeter of the red polygon shapes that are shown in the diagrams below, demonstrate that the distance of light dispersed decreases dramatically when measuring 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.*



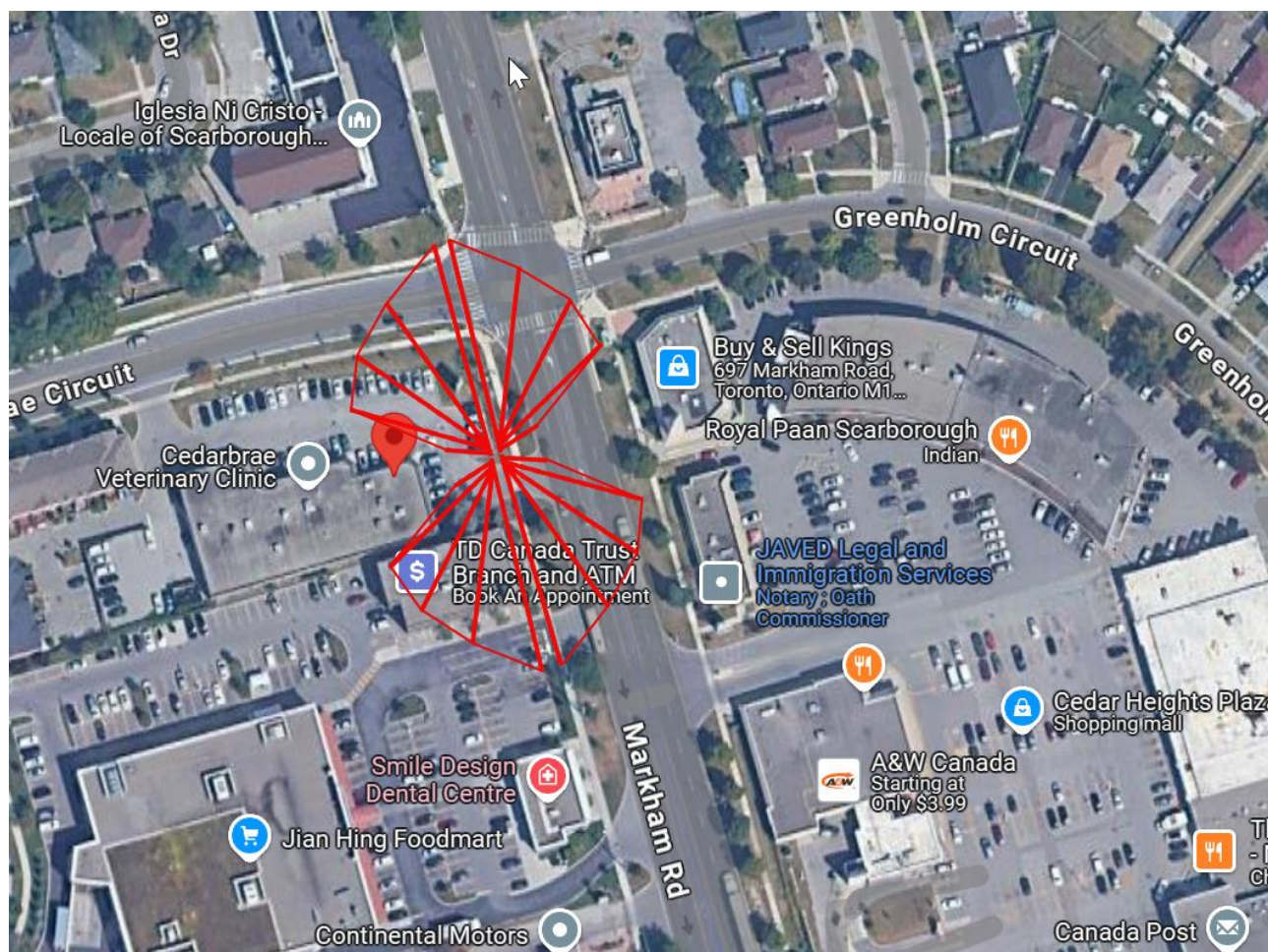
Our goal with this project, is to ensure that no portion of residences to the Northwest and Northeast of the charger is impacted by the light dispersed from the proposed static electronic display. It is an understanding that when the intensity of light emitted from a source reaches a measurement of 27.87 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 onto satellite imagery of 700 Markham Rd., 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 R and I Sign District North of the proposed location. 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 or Institutional (reference Image #12).

Image #12: *The Red Polygon, Representing The Horizontal Dispersion Of Light, Over Laid On Top Of 700 Markham Road And Adjacent Properties, Illustrating That Light Shed Emitted (Operating at 300 Nits) From The Proposed EV Charger With Displays Would Not Impact The R and I 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 adverse 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 third variance for setback to property line as the charger will be placed 0.16 meters to the property line. This puts the proposed charger beside the dedicated parking stall and will not take up an additional parking space that is needed for the medical plaza. From the property line to the roadway, there is a setback of 10 meters. With this buffer from property line to the roadway, illustrates no adverse affect to public safety, including traffic and pedestrian safety. The deficiency of 1.84 meters is minor in nature given the larger setback to Markham Road from the property line.

The proposed meets all other 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 Markham Rd. The location is 30 meters away from the closest traffic-controlled intersection, Markham Rd and Greenbrae and Greenholm Circuit. The sign does not obstruct any sight triangles for vehicular traffic.

There are no digital signs within 500 meters, or static paper sign within 150 meters, meeting the required setback to other 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 are 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 image #3A and B).

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 it will be approximately 18 meter setback from the existing first party sign. We believe that this will ensure that the Premises does not promote sign clutter on the Premises. The first party sign is located at the intersection of Markham Rd. and Greenbrae Circuit and sufficiently setback from the proposed. The location was carefully selected to indicate to EV users available publicly accessible charging infrastructure and positioned on the Premises for easy access. It is also the most appropriate spot on the Premises that will ensure

no light trespass or legibility of the displays to be seen from Residential and Institutional land uses.

Additionally, the design of the proposed EV charger is sleek and state of the art that will blend in with the area to compliment and improve the man-made environment and ensuring that it will not become a source of visual clutter, aligning with Official Plan objectives as referenced in Image #13.

Toronto, like many major cities, is actively working toward reducing carbon emissions and promoting sustainable practices. Electric vehicles (EVs) and its charging infrastructure are a key part of this initiative. With the increasing adoption of electric vehicles, drivers need easily accessible locations to charge their cars. By allowing the additional ground sign on the property, this increases EV infrastructure and improves the visibility of EV charging stations, ensuring that users can find them without unnecessary difficulty. For these reasons, 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

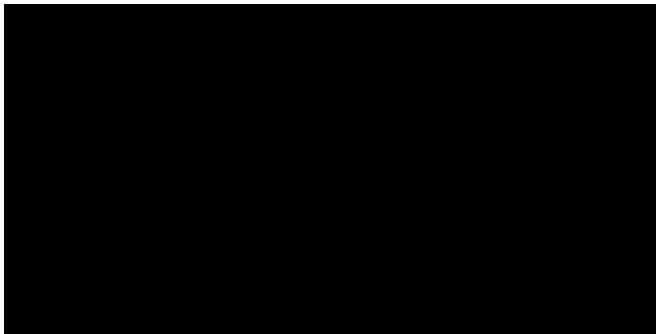
appropriate and that the general public is not exposed to any offensive, explicit, or indecent forms of advertising.

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 with dwell times of 10 seconds and an instantaneous transition time. The illumination of the proposed displays shall not exceed illumination levels of 300 nits during the period between sunset and sunrise.

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,



Jocelyn Wigley
Development Manager for Jolt Charge
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May 20, 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 700 Markham Road, Toronto, ON

The Applicant, JOLT Charge Inc. (JOLT) has applied for 4 variances with respect to the installation of a Level 3 EV Charging Station with incorporated electronic LED third party advertising displays located at 700 Markham Road. City staff reviewed the application and has identified one additional variance, to be addressed.

JOLT is addressing and requesting a variance from § 694-14 (R) of the City of Toronto Sign By-Law, which restricts signage placement within a “visibility zone”—defined as the area within 3 m of the outermost points of a vehicle ingress/egress where it intersects with a street. This regulation is intended to preserve clear sightlines, for vehicles exiting the property, to scan for oncoming traffic along Markham Road, or for pedestrians traversing the adjacent sidewalk. The spirit of the regulation is to ensure there is at least a 3 m setback from said sidewalk or main roadway to ensure that site triangles are not obstructed. In the case of the proposed sign and its large setback from the roadway and sidewalk, the intention of the regulation has been upheld, providing clear visibility to both the oncoming road and adjacent sidewalk.

The property line is situated approximately 10 meters from the roadway (the proposed structure is contained within the property and setback from the property boundary by 0.16 meters.) Subsequently, as per Image #1, the leading edge of the proposed sign is greater than 10.0 meters from Markham Road, providing safe visibility to oncoming traffic for anyone exiting the driveway. Further to this, as per Image #2, the leading edge of the proposed sign is approximately 4.0m setback from the adjacent sidewalk, again providing safe and adequate visibility to pedestrians utilizing the sidewalk.

Per Image #3, the extremely wide 10 meter City Right-of-Way, directly in front of the proposed sign, forms a natural and effectively buffered clear visibility zone. This significant setback ensures that visibility for drivers and pedestrians is not impaired yet allows the public to be able to identify the structure and its use. The proposed structure shall be adjacent to the ingress/egress raised from the parking lot on the grass. Beside the charger, in the closest parking spot will be the dedicated charging stall allowing an EV charging user to identify and re-charge with ease.

The sign was selectively and strategically located beside the ingress/egress point ensuring that it does not obstruct any actual throughways needed for safe vehicle movement. This placement will not block or effect traffic flow on the property due to its placement on the raised grass bed on which it will be placed.

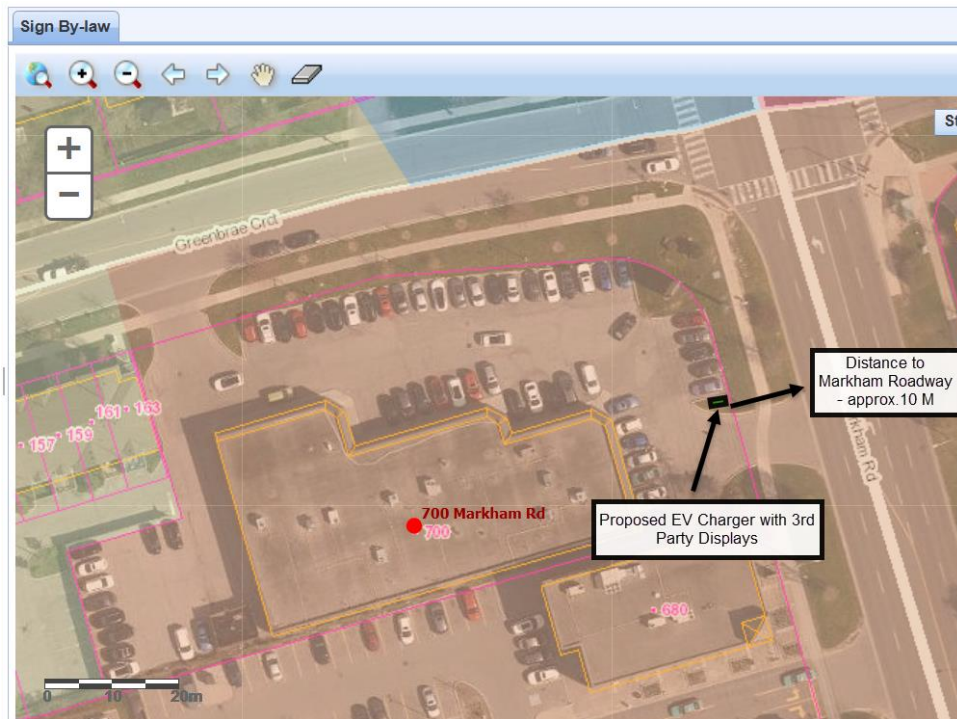


Image #1: A Picture From Sign View, Depicting The Setback of The Proposed Sign From Markham Rd. (Approximately 10.0m).

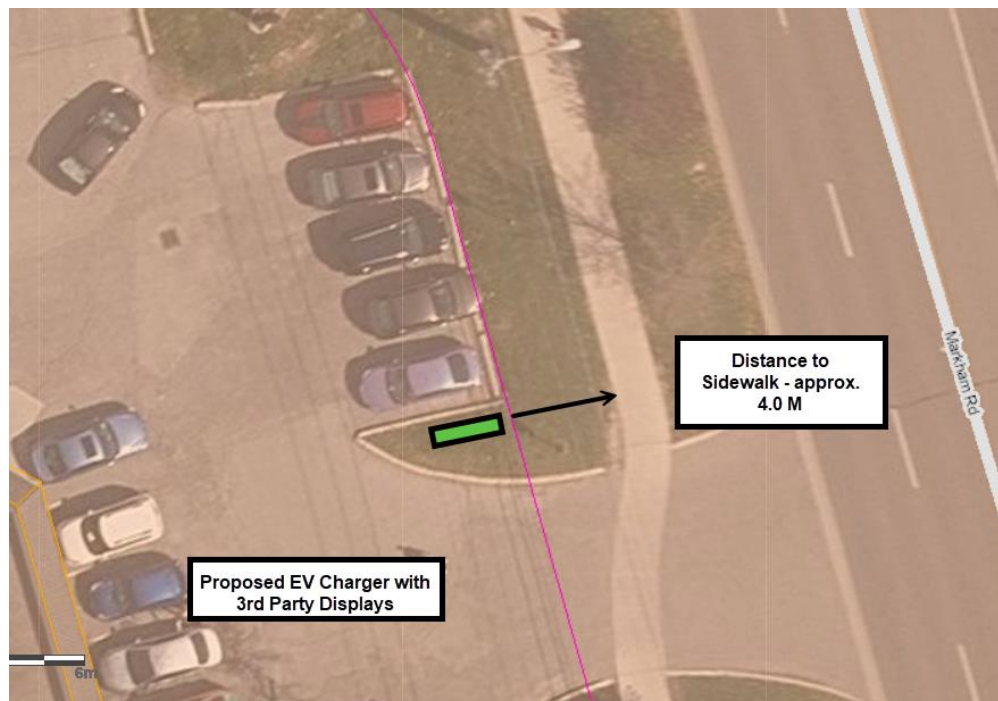


Image #2: A Picture From Sign View, Depicting The Setback of the Proposed Sign From The Adjacent Sidewalk (Approximately 4.0m).

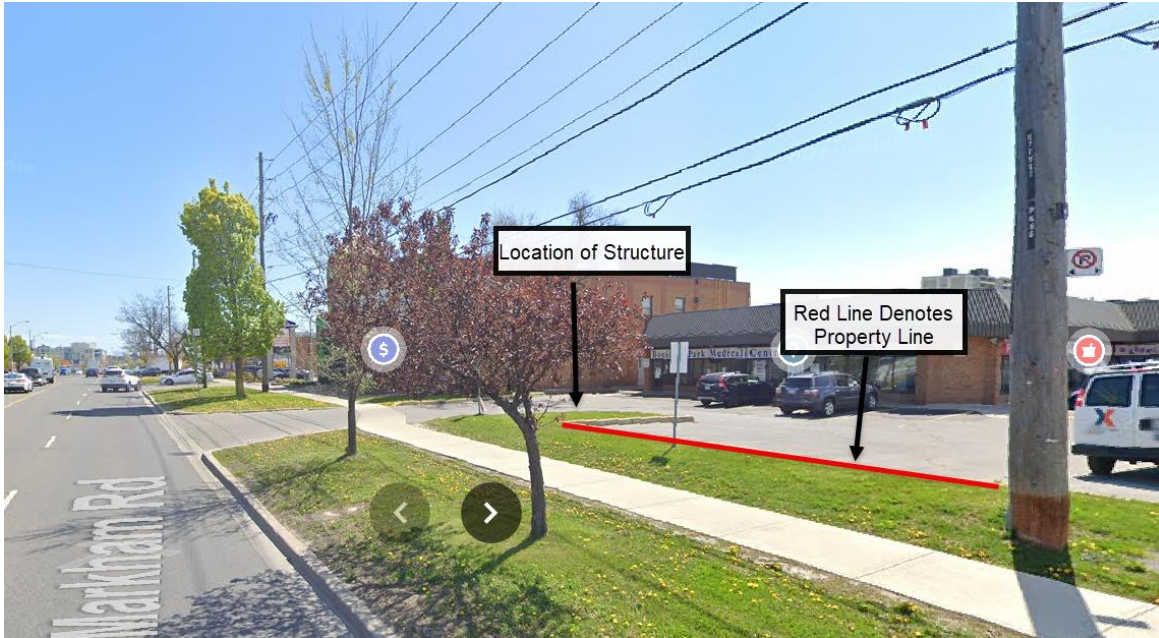


Image #3: A Streetview Picture of The Proposed Location of The Structure In Relation To The Property Line and The 10.0m Wide City ROW Buffer.

The structure also maintains a 30-meter setback from the nearest intersection, complying with requirements associated with traffic safety regulations. This combined with a deliberate setback from the roadway and sidewalk, reflects a deliberate approach to respect safety while still allowing effective site identification and communication. The intent of § 694-14 (R) is upheld allowing for clear visibility zones to be effectively maintained.

There are multiple examples, in near proximity to 700 Markham Rd., where signs have been approved and installed with comparable setbacks and/or under similar conditions, most of which are much larger than the proposed sign:

- 3570 Lawrence Ave E (Cedar Heights Mall): Hosts a significantly larger first-party sign located adjacent to the property's south ingress/egress and is just 7.5 meters from the roadway, 2.7 meters to the adjacent sidewalk, and 1.4 meters from the property line. Referenced in Image #4.
- 3495 Lawrence Ave E. (Cedarbrae Mall): Hosts a significantly larger first-party sign, adjacent to the East ingress/egress and is positioned at the property line, just 9.0 meters from the roadway, and 3.0 meters to the adjacent sidewalk. Referenced in Image #5.
- 640 Markham Rd (Shell Gas Station): Hosts a significantly larger first party sign located adjacent to the property's south ingress/egress and is just 6.70 meters from the roadway, 1.0 meter from the sidewalk, and 0.75 meters from the property line. Referenced in Image #6.
- 3583 Lawrence Ave E (One Stop Medical Pharmacy) Host a significantly large first party sign located adjacent to the property's North ingress/egress and is just 7.25 meters away

from roadway, 2.3 meters away from the sidewalk, and 1.3 meters from the property line. Referenced in Image #7.

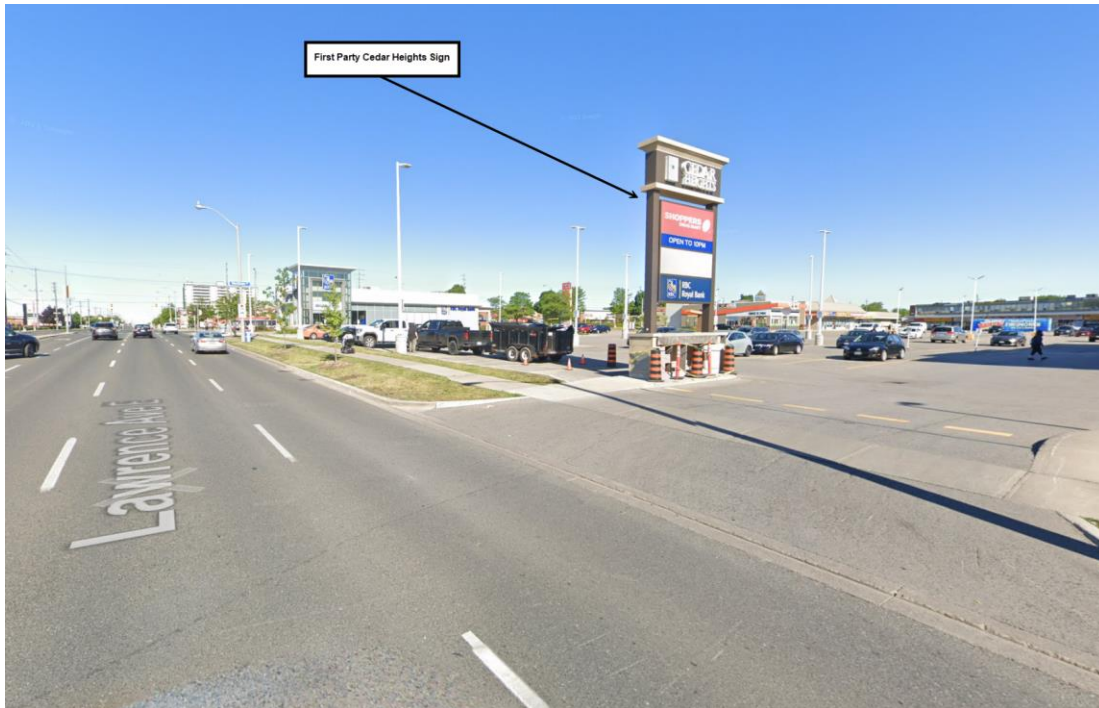


Image #4: A Streetview Picture Of 3570 Lawrence Ave E's First Party Sign

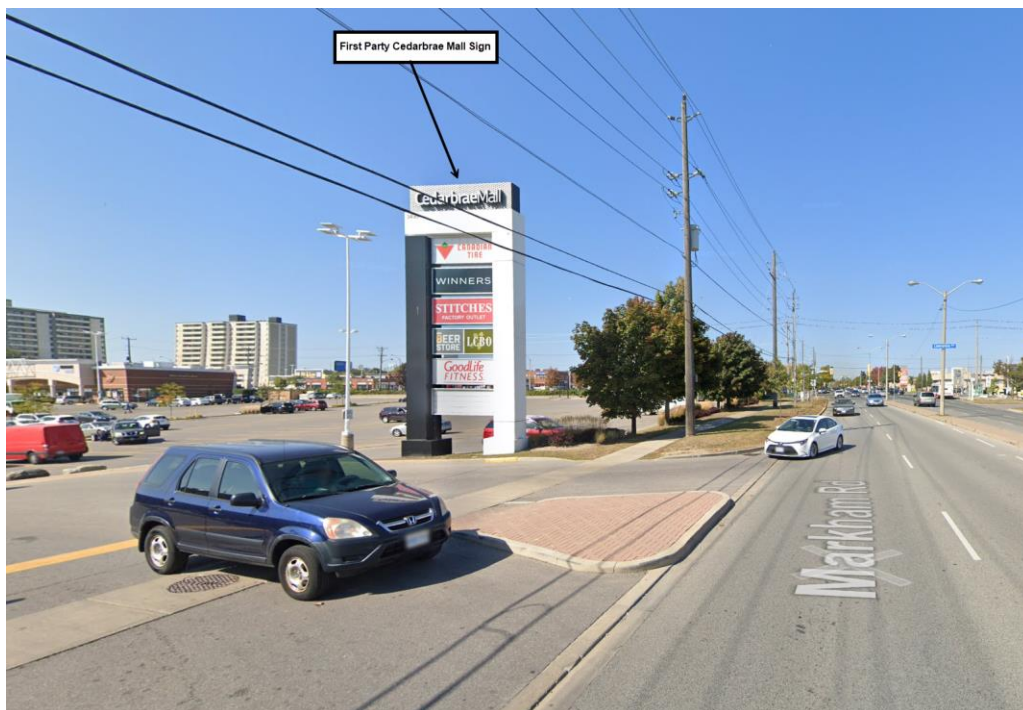


Image #5: A Streetview Picture Of 3495 Lawrence Ave E's First Party Sign



Image #6: A Streetview Picture Of 3495 Lawrence Ave E's First Party Sign



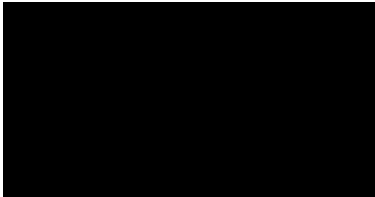
Image #7: A Streetview Picture Of 3585 Lawrence Ave E's First Party Sign

The above local precedents show that it is not atypical for signage (of similar or larger size to the proposed) to be allowed placement next to a property's ingress/egress, so long as clear visibility zones conditions can be established on a site-by-site basis. These setups are typically permissible where sign placement is established next to large adjacent city-right of ways, which naturally allow for a buffered clear lines-of-site to traffic on surrounding roadways (i.e. Markham Road). The examples above reinforce the importance of assessing the visibility zones of sign applications on a case-by-case basis.

Given the significant setback of the proposed sign from the roadway and adjacent sidewalk, its location beside the ingress/egress, and its compliance with broader transportation safety principles, we respectfully submit that this request for variance is both reasonable and minor in nature. There is no demonstrable risk to driver or pedestrian safety, and clear precedent supports our request.

We request the City to consider the context of this application and approve the proposed sign placement due to their being no effects to the visibility zones of vehicles entering/exiting the premise.

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:

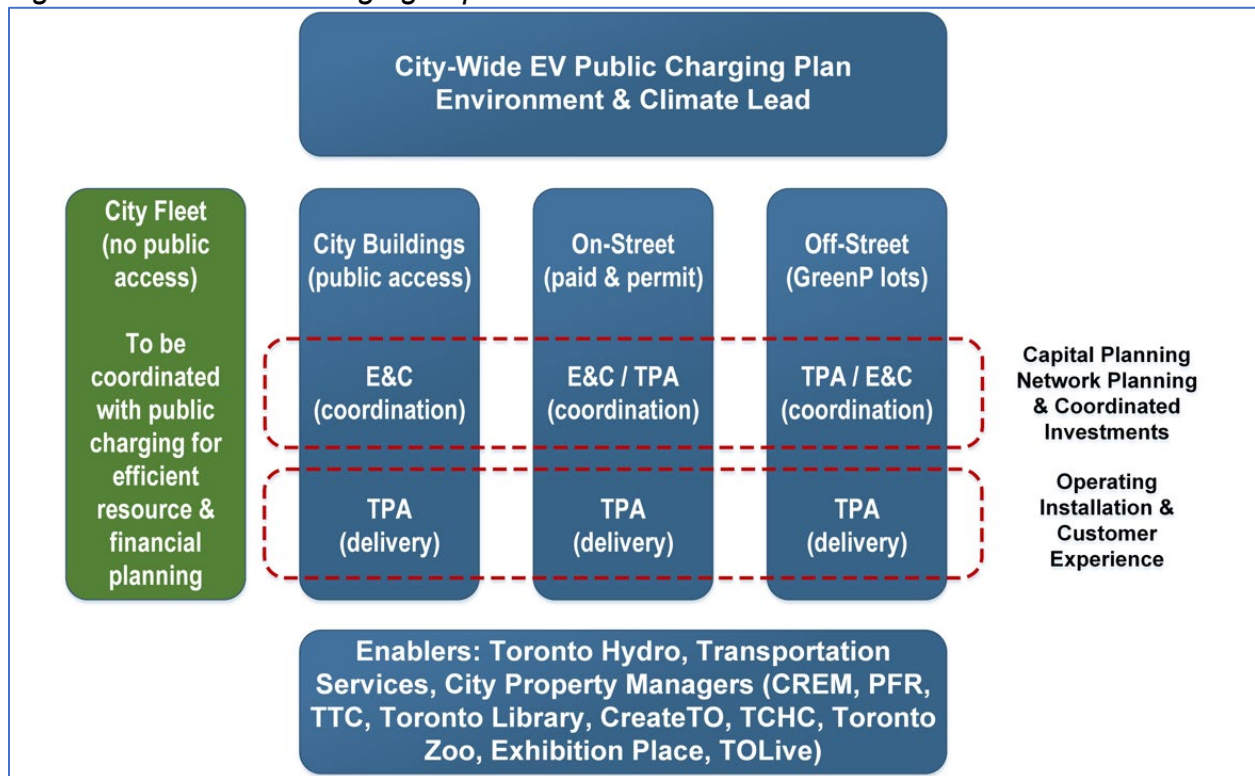
- A City governance structure that optimizes City-owned assets (in the form of properties including lands and buildings) through a centralized approach led by the Environment and Climate Division (E&C), including financial planning of EV infrastructure assets.
- A technical projection of future needs 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