

**Date:** 2023-06-01

**Subject:** **Implementation of User Fees for Public Access Electric Vehicle Charging Stations & Approval of By-law Amendments for Improper Electric Vehicle Parking**

**Contact:** Rajkaran Singh Chhina, Manager – Facilities Asset / Energy Management & Capital Planning, Facilities Operations & Maintenance  
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**Report Number:** Public Works & Engineering-2023-506

**Recommendations:**

That the report from Rajkaran Singh Chhina, Manager – Facilities Asset / Energy Management & Capital Planning, Facilities Operations & Maintenance to the Committee of Council Meeting of June 21, 2023, re: **Implementation of User Fees for Public Electric Vehicle Charging Stations & Approval of By-law Amendments for Improper Electric Vehicle Parking**, be received;

1. That a user fee of \$1.00/hr for the first 3 hours of use be implemented for all existing 49 networked and all future networked City owned and operated Electric Vehicle (EV) Charging Stations (charging ports) available for public and staff use;
2. That a secondary user fee of \$5.00/hr. be implemented for charging beyond 3 hours;
3. That the 14 non-networked public and staff access EV charging stations (charging ports) be converted to networked EV charging stations as most of these stations are towards the end of their useful life and thereafter the user fees be implemented for the new networked charging stations;
4. That appropriate signage is installed at all City owned/managed public and staff EV charging stations indicating that the EV chargers are available for staff and visitors only for a maximum 3 hour charging limit, and;
5. That the Traffic By-law and Administrative Monetary Penalty System By-law be amended to allow for the enforcement of improper parking in a EV parking space with a penalty of \$125.00.

## Overview:

- **The City of Brampton owns and operates 49 networked EV charging station ports and 14 non-networked charging station ports available for public and/or staff use.**
- **The City does not currently charge a fee for the use of EV charging stations. Implementing user fees will enable the City to recover the City's annual operating costs for our existing stations.**
- **This report seeks Council approval to implement an hourly based charging fee for all networked public EV charging stations to encourage turn over and limit excessive periods of charging, to recover the annual operating costs for these charging stations, and to create an administrative penalty for violations for parking in EV charging stations.**
- **In 2022, the City of Brampton incurred ~\$85,600 in costs to operate and maintain the 49 networked charging stations with \$57,925 towards utility costs (68% of total costs) and ~\$27,680 in operation and maintenance costs (32% of total costs). Total estimated costs are ~\$110,100 accounting for the 14 additional non-networked charging stations as well.**

## Background:

The Government of Canada announced a regulation requiring all new vehicle sales be zero emissions by 2035<sup>1</sup>. This regulation will be phased in with incremental targets over the next 12 years with a goal to promote Electric Vehicle (EV) sales and usage over traditional Internal Combustion Engine (ICE) vehicles. On a provincial level, the Government of Ontario announced an Ontario Driving Prosperity Plan. The plan hopes to grow Ontario's auto sector by building at least 400,000 electric and hybrid vehicles by 2030<sup>2</sup>. These federal and provincial initiatives and programs are expected to rapidly increase EV uptake and usage across the province.

Since 2019, EV adoption in the City of Brampton has increased significantly with 1,209 registered EVs by June 2019 to 4,714 registered EVs by the end of 2022<sup>3</sup>. This represents a 290% growth in EV adoption over a four-year period. With the federal and provincial initiatives to increase EV uptake and the increase in EVs in Brampton to date,

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<sup>1</sup> Source: Proposed regulated sales targets for zero-emission vehicles. Environment and Climate Change Canada (December 2022)

<sup>2</sup> Source: Driving Prosperity: The Future of Ontario's Automotive Sector, Ministry of Economic Development, Job Creation and Trade (September 2022) <https://www.ontario.ca/page/driving-prosperity-future-ontarios-automotive-sector>

<sup>3</sup> Source: Electric Vehicles in Ontario – By Forward Sortation Area - Datasets - Ontario Data Catalogue (2022).

there is a growing strain on the City’s existing EV charging infrastructure and a need for not only additional EV infrastructure but also greater turnover and fair usage occurring at our existing available public EV charging.

EVs recharge their batteries using electricity provided by charging stations. There are three ‘Levels’ of charging reflecting power output and the speed at which a battery can be charged.

Table 1 - Levels of EV Charging<sup>4</sup>

Charging Level	Power Delivery	Driving Range Added	Time to Charge 60 kWh EV (from 10% to 80%)
Level 1	1-1.4 kilowatts (kW)	5-8 km per hour	30 - 40 hours
Level 2	3.9-19.2 kilowatts (kW)	20-130 km per hour	2 - 10 hours
Level 3	24-350 kilowatts (kW)	2-28 km per minute	8 minutes - 2 hours

### Current Situation:

#### Progress to Date

The City of Brampton owns and operates 49 networked Level 2 EV charging station ports and 14 non-networked Level 2 EV charging station ports available for public and/or staff use<sup>5</sup>. These stations have been installed from 2015 onwards across City of Brampton community centers, facilities and administrative buildings.

All City public and staff EV charging stations currently provide Level 2 charging free-of-charge. The intent of providing Level 2 charging stations at City owned and managed sites is that this is the most suitable charging level option for the typical length of a visit to a City facility and to provide charging for top-up purposes, with one hour of charging providing approximately 35 km of driving range. This allows the majority of visitors to a City site to have the range needed to reach their final stop/destination.

Brampton has received the support of multiple grant applications and funding from the federal and provincial governments, most recently including the Zero Emission Vehicle Infrastructure Program (ZEVIP) funding from Natural Resources Canada.

Brampton was also involved in the development of the Peel ZEV Strategy with the objective to support the community in transitioning to ZEVs. This strategy was presented to the Committee of Council Meeting of April 26 2023 (*Report Number Planning, Bld & Growth Mgt-2023-330*).

<sup>4</sup> Source: Forbes Wheels: What are the different levels of electric vehicle charging? <https://www.forbes.com/wheels/advice/ev-charging-levels/>

<sup>5</sup> The reference to Public and Staff use EV charging stations in this report is in reference to public and staff owned personal use EV vehicles and charging only. This does not refer to staff EV charging for City provided EV vehicles.

## Rationale for User Fees Implementation

The City has been offering free of use charging since 2015 when chargers were first installed by the City. The initial reason for offering free charging was to encourage early adoption and uptake of EVs within the City which up until recent years were not widely owned by City residents. By continuing to offer free charging in the current climate with expanded EV ownership, the City is facing issues of excessive usage and EV charging station misuse.

In 2022, the City of Brampton incurred ~\$85,600 in costs to operate and maintain the 49 networked charging stations with ~\$57,925 towards utility (68% of total costs) and ~\$27,680 in operation and maintenance costs (32% of total costs). Utility costs for the 14 non-networked stations are not available as these stations are unable to connect online to allow for utility tracking. However, it can be roughly estimated these stations cost the City up to an additional ~\$24,500 to operate based on the costing for the networked stations. Therefore, the City is paying an estimated ~\$110,100 annually for the provision of both networked and non-networked EV charging stations for the public.

Historical usage data shows that there has been an increasing number of heavy length charging sessions. In addition to the high number of recorded session lengths there have also been an increase in user complaints regarding EV users that have been parked overnight, and in some cases users are leaving their EVs plugged in for upwards of 16-18 hours in an EV parking spot. This has significantly impacted the turnover and fair usage of these spots for other visitors and staff.

To tackle this unfair usage, it is recommended that the City introduce a fee-based charging structure across all public EV charging stations. This will encourage user turn over and to recover a portion of annual operating costs.

A 3 hour charging limit is recommended as this provides plenty of time for EV drivers to top-up on vehicle charging. Most level 2 chargers will be capable of delivering, depending on vehicle make and battery size, anywhere from 20 KM to 130 KM of range per hour. This will allow users to recharge their batteries to a drivable amount that will allow them to continue on with their day.

It is also recommended that appropriate signage is installed at all City owned/managed public and staff EV charging stations indicating that the EV chargers are available for staff and visitors only for a 3-hour limit. This will help promote user turnover and allow for more drivers to use the charging stations.

## Proposed User Fees

Many factors were accounted for in determining an appropriate user fee for City owned charging stations. A comparison of user fees in municipalities across Canada was

considered along with an analysis of costs and potential returns for operating and maintaining the stations with a fee in place.

A comparison of user fees for Level 2 Charging Stations in 14 municipalities is presented in the following table:

*Table 2 - User Fees for Electric Vehicle Charging Stations in Canadian Municipalities*

Province	Municipality	Charger Type	User Fee per Hour	Secondary Price
ON	City of Toronto (Toronto Hydro)	Level 2	\$2.00	\$3.00 Flat rate @ night
ON	Town of Oakville	Level 2	\$1.50	\$5.00/hr. after 3 hrs.
ON	Town of Caledon	Level 2	\$0.00	N/A
ON	City of Mississauga	Level 2	\$0.00	N/A
ON	Region of Peel	Level 2	\$1.00	N/A
ON	City of Guelph	Level 2	\$1.50	N/A
ON	City of Hamilton	Level 2	\$1.00	\$4.00/hr. after 4 hrs.
ON	Town of Orangeville	Level 2	\$2.50	N/A
ON	City of Barrie	Level 2	\$2.50	N/A
ON	City of Ottawa	Level 2	\$2.00	N/A
BC	City of Vancouver	Level 2	\$2.00	N/A
AB	City of Edmonton	Level 2	\$3.00	N/A
MB	City of Winnipeg	Level 2	\$0.00	N/A
QC	Montreal	Level 2	\$1.00	N/A

To keep in line with user fees in neighboring municipalities and to limit excessive charging, this report recommends following a \$1.00/hr. user fee for charging for the first 3 hours and a secondary fee of \$5.00/hr. beyond that.

The user fees will be collected through the EV charging station vendors' mobile app depending on which station the user has initiated a session at. The EV driver inputs their payment information in the mobile app and is then linked to the stations management network. The EV charging station vendor will collect and process payments through their management software. The EV Vendors the City currently work with charge holdbacks of 10-15% of net revenues.<sup>6</sup>

For 49 networked stations and 14 non-networked stations, with an average of 1,908 hours connected per station from 2022, a potential cost recovery estimate is ~\$102,200 (assuming a charge of only \$1.00/hr, 15% paid in holdback to the EV vendors, and no

<sup>6</sup> The hold-backs are kept by these vendors and used towards payment processing fees, credit card transaction fees, and administrative fees. These holdbacks are not returned to the City.

change in charging behavior/time with fees in place). With a combined \$110,100 in utility and O&M costs to operate the stations, the proposed fee would partially recover ~93% of the annual expenses to operate these stations. It is to be noted that the recovery of capital costs for EV charging station installation and installation costs for signage is not included in this cost recovery calculation.

*Table 3 - Proposed User Fees for City Provided Level 2 EV Charging Stations*

<b>Description of Service/Activity for Imposed Fee</b>	<b>Service Unit</b>	<b>Fee</b>	<b>HST (+ of n/a)</b>	<b>Fee Inclusive of Applicable Taxes</b>
<b>Base Fee for Session Length of 3 Hours or Less</b>	Per Hour Plugged-In	\$0.885	+	\$1.00
<b>Increased Fee for Session Length Greater Than 3 Hours</b>	Per Hour Plugged-In	\$4.425	+	\$5.00

### Non-Networked EV Charging Stations

Along with the 49 networked stations the City currently owns and operates, there are 14 non-networked stations approaching the end of their useful life at the following sites:

- Williams Parkway Operations Centre – 8 charging wands (4 dual stations)
- Sandalwood Transit – 4 charging wands (2 dual stations)
- Flower City Community Campus – 2 charging wands (1 dual station)

These Level 2 stations were installed to provide free charging for public and staff use and have no means to track, monitor, and/or report on station use/status. There is no feasible way to connect the existing stations to an EV Charging Station Management Software to track station use/status and implement a payment terminal to process the proposed user fees. Therefore, it is recommended that the 14 non-networked Public EV charging stations be converted to networked EV charging stations as most of these stations are towards the end of their useful life. Once these stations are replaced, user fees can be implemented for the new networked charging stations. An RFP process has been initiated for the replacement of these chargers, thus these chargers can be networked for payment upon project completion which is expected by Q1 2024.

### Traffic and AMPs By-law Amendments

In September 2020, Energy Management submitted a report to council for by-law amendments to the Traffic By-law and AMPs by-law. The *Highway Traffic Act* was amended by the *Reserved Parking for Electric Vehicles Charging Act*, to require that

only EVs that are plugged in and actively charging may park in EV spots, and any parking in contravention of this would result in a \$125 fine. As parking is enforced in Brampton by administrative penalties, amendments to the Traffic By-law and AMPs By-law are required in order to enforce EV parking contraventions. This was approved by council and the draft by-laws were to be submitted for passing at a future Council Meeting. The draft by-laws are attached as appendices to this report.

**Corporate Implications:**

Financial Implications:

*Operating Revenues & Expenditures:*

The collection of \$1.00 per hour fee for use of the public charging stations, including 14 additional EV stations, is expected to generate net revenues of approximately \$88,350 annually and would partially offset the associated annual operating costs (utility, maintenance, and allocated labor) of approximately \$149,100.

*Capital Expenditures:*

Funding required for the replacement and conversion of 14 non-networked EV charging stations to networked EV charging stations and the installation of signage is approximately \$102,000, which is available from the following sources:

<b>Project</b>	<b>Balance Available</b>
192971-002	\$ 63,954
211520-005	\$158,718

Other Implications:

*Communications Implications:*

Staff will work with Strategic Communications on a plan to inform residents, businesses, City staff and other impacted stakeholders in advance of fee implementation.

**Term of Council Priorities:**

The recommended changes to City owned EV Charging stations supports the “Brampton is a Green City” Term of Council direction as the charging fees would offset the costs needed to support the continued operation and maintenance of the charging stations and allow for additional funds to be re-invested into future EV charging infrastructure,

The proposed changes to the City owned Charging stations also supports the “Brampton is a Well-Run City” Term of Council direction through the cost recovery initiative by demonstrating economic recovery and reducing the misuse and wait time for EV charging which provides better customer service to the public.

## Conclusion:

As outlined through this report, it is recommended that all 49 networked City owned and operated EV charging stations implement a \$1.00/hr. user fee for the first three hours of charging, and a \$5.00/hr. beyond three hours. The City paid an estimated \$110,100 in 2022 for the provision of 49 networked and 14 non-networked EV charging stations free of charge, and the implementation of these fees has the potential to create a \$102,200 cost recovery in utility and maintenance fees. Additionally, less excessive use of charging stations by users staying plugged in for long periods of time is expected. This will resolve complaints from users on this issue and recover a portion of operating costs.

In addition to implementing fees for the 49 networked EV charging stations, it is also recommended that the remaining 14 non-networked stations be replaced with new networked charging stations. As these charging stations are approaching the end of their useful life and have no means of tracking useful data on station use or payment processing, replacing these stations is the best next step to allow for charging of fees.

For all EV charging sites, it is also recommended that signage be posted indicating a 3 hour charging limit for staff and visitors. Additionally, \$125 fines for improper parking, in line with the EV charging Act under the Highway Act should be implemented.

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## Attachments:

- Appendix I - EV Charging Stations Inventory Table
- Appendix II – EV Charging Station Operating Costs
- Appendix III – EV Parking Amendment to Traffic and AMPs By-Laws