Public Use Electric Vehicle Charging Stations

Presented To:	City Council
Meeting Date:	June 10, 2025
Type:	Managers' Reports
Prepared by:	Shawn Turner Energy Initiatives
Recommended by:	General Manager of Corporate Services

Report Summary

This report provides a recommendation regarding the development of an agreement with reputable third-party providers to increase the number of pay-to-use public EV chargers at City-owned parking facilities at little to no additional cost to the City as requested by Council through Resolution CC2024-294.

Resolution

THAT the City of Greater Sudbury directs staff to issue a Request for Proposal for the provision of up to 10 level 2 public facing electric vehicle charging stations, including the capital investment, installation, maintenance and administration at little to no additional cost to the City, as outlined in the report entitled “Public Use Electric Vehicle Charging Stations” from the General Manager of Corporate Services, presented at the City Council meeting of June 10, 2025.

Relationship to the Strategic Plan, Health Impact Assessment and Climate Action Plans

This report pertains to objective 3.2 (Develop and Strengthen Strategies and Policies to Mitigate Impact of Climate Change) under the “Climate Change” strategic priority by outlining a way to improve climate resilience.

Financial Implications

There are no financial implications associated with this report.

Background

The Community Energy and Emissions Plan (CEEP) is the long-term plan to reduce carbon emissions and pollution in Greater Sudbury. It responds to City Council’s Climate Emergency declaration in May 2019, which included a commitment to achieve net-zero emissions by 2050. That means reducing greenhouse gas emissions (GHG) caused by human activity to as close to zero as possible and removing remaining emissions from the atmosphere. Similarly, the Government of Canada’s 2030 Emissions Reductions Plan outlines a target to cut greenhouse gas (GHG) emissions by 40 percent below 2005 levels by 2030 and achieve net-zero emissions by 2050.

On-road transportation accounts for approximately 18 percent of Canada's total GHG emissions. The transition to zero-emission vehicles (ZEVs) plays a prominent role in reducing these emissions. Key barriers to the adoption of ZEVs include public and industry concerns about the charging, charging infrastructure and the operation of electric vehicles. These concerns often stem from gaps in knowledge and first-hand experience with charging infrastructure and/or the availability of accessible charging infrastructure.

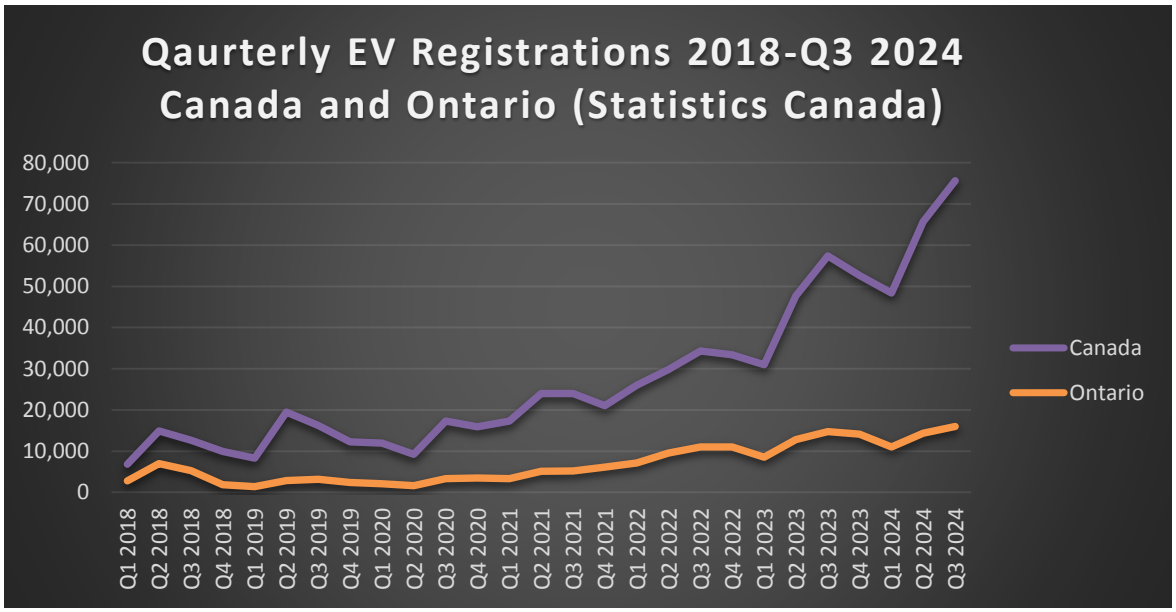
To address these concerns and provide a leadership presence, Canadian cities and provinces are increasing the number of public charging stations. This approach has several benefits including creating awareness of the technology, adding assurance that drivers can charge while taking a variety of trips, and allowing individuals without access to charging infrastructure, to charge their vehicles. Currently, 80-90% of electric vehicle charging occurs at home, during evening hours. The remaining 10-20% is captured via public charging stations.

Zero Emission Vehicle Market

The adoption rate of battery powered electric vehicles is climbing locally, provincially, and nationally. According to S&P Global Mobility, electric vehicles accounted for 15.4% of all vehicle registrations in Canada during 2024.

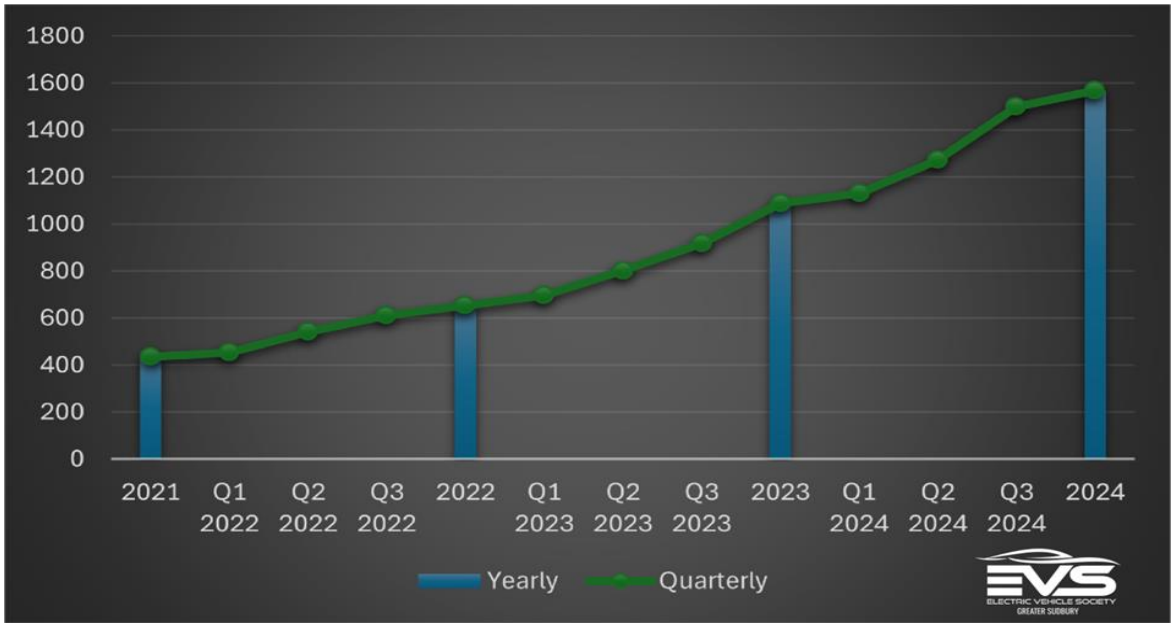
Figure 1 below depicts national and provincial new registrations of electric vehicles on a quarterly basis commencing in 2018. On a national scale new E.V. registrations have increased from 6,800 in Q1, 2018 to over 75,000 in Q3, 2024. Provincially, the increase is slightly less dramatic with registrations increasing from approximately 2,700 to 15,000 over the same time frame.

Figure 1 – Quarterly E.V. Registrations Canada and Ontario



Similarly, Figure 2 depicts new registrations per quarter for the City of Greater Sudbury commencing in Q4, 2021. Locally, E.V. registrations have seen a 360% increase from Q4, 2021 to Q4, 2024. The last quarter witnessed 1,568 E.V. registrations in the city.

Figure 2- Quarterly E.V. Registrations City of Greater Sudbury [(1)]



(1) National and provincial registration data sourced from Statistics Canada. City of Greater Sudbury data provided by the E.V. Society of Sudbury.

The growth in E.V. registrations has been striking on all levels. EVs can be incorporated into urban environments in ways that internal combustion engine vehicles (ICEVs) cannot. They can be charged at home, at work, or even while running errands. EV infrastructure can also be strategically located so that it ensures a continued shift to walking, cycling, and using public transit, aligning it to active transportation objectives.

EV Charging Station Landscape

As of September 2024, there were 192,000 EVs registered in Ontario, and over 2,900 public charging stations with over 8,000 charging ports, including 6,600 Level 2 ports and 1,300 Level 3 fast charging ports (Government of Ontario). The growth in EVs aligns with the Government of Canada announcement in 2021 to require 100% of car and passenger truck sales be zero emission by 2035 in Canada (Government of Canada, 2021).

There are 3 types of charging stations that are utilized to charge E.V.s. Figure 3 below outlines details of each.

Figure 3 – Tyes of Charging Stations and Relevant Attributes

	Level 1	Level 2	Level 3
Typical Output	1.5 kW (120 Volts)	7.2-20 kW (240 Volts)	50 kW – 350 kW (400 – 800 Volts)
Range Add Per Hour (Approximate)	8 km	50 km	300 km +
Equipment & Installation Costs	$500 - $1,500	$5,000 - $10,000	$120,000 - $200,000
Typical Use Locations	Homes, Workplaces	Homes, Workplaces, Public Spaces	Workplaces, Public Spaces

Ensuring sufficient public charging infrastructure availability is key to the electric vehicle transition. While a significant portion of charging is typically done at home overnight, public charging infrastructure provides additional flexibility for EV drivers covering longer distances, such as tourists, and provides an alternative for those without access to charging at home. Numerous studies have emphasized the importance of public

charging infrastructure and assessed the overall need for charging infrastructure as a function of the size of the EV population (National Renewable Energy Lab, 2017). Figure 4 below details the charging station and electric vehicle populations for a set of Ontario municipalities. At 115 population per EV, City of Greater Sudbury's is in the middle of the range of the selected cities. However, the City of Greater Sudbury has the lowest number of public charging stations per person at 1 for every 5,624 people.

Figure 4 – Charging Station and Electric Vehicle Populations

Municipality	Population	Charging Stations	Population per Charging Station	EV's	Population per E.V.
Thunder Bay	133,000	77	1727	645	206
Sudbury	179,965	32	5624	1568	115
North Bay	58,872	36	1635	295	200
Sault Ste. Marie	78,574	19	4135	330	238
Barrie	153,153	148	1035	1895	81
London	488,640	318	1537	4264	115
Windsor	237,484	176	1349	2384	100
Kingston	137,987	256	539	1580	87

Locations

Review of best practices by other municipalities indicates two paths to pursue for public charging deployment, including:

1. Attributes that should be considered, and
2. Locations. A set of five key attributes for location consideration are listed below in Figure 5. Similarly, Figure 6 below outlines 5 location considerations and the criteria that should be prevalent for a successful location.

Figure 5 – Location Attributes

Attribute	Reasoning
Equitable Accessibility	Ensure fair distribution based on population density.
Amenities and Convenience	Consider access to amenities, especially for fast-charging stations
Proximity to Services	Locate charging stations near businesses, transit routes, and essential services.
Residential Factors	Prioritize areas with multi-unit residential buildings (MURBs) to accommodate EV owners who may not have private charging options
Community & Infrastructure Support	Consider destinations for longer trips, community input, and ensure sufficient electrical grid capacity, especially for fast-charging stations

Figure 6 – Location Considerations

Location	Criteria
High Traffic Area	Install charging stations in areas with high foot traffic and commercial activity, such as shopping and community centers, downtown areas, and including tourist spots and key attractions.
Workplaces	Encourage businesses and employers to install EV charging stations at workplaces to support employees who drive electric vehicles
Public Institutions	Install charging stations at government offices, libraries, museums, parks, public buildings, schools, and universities to promote EV adoption and sustainability.
Future Development Areas	Anticipate future growth and development in the city and plan for charging infrastructure accordingly
Public Parking Facilities	Install charging stations in public parking lots and garages to encourage EV use in urban areas.

Agreements/Options

There are 2 methods that municipalities have taken to provide for public charging stations. They are 1) Purchase and Operate and 2) Lease Land to Service Provider. In a purchase and operate scenario, the municipality is the service provider and incurs all risks, costs and benefits. Alternatively, leasing land to a service provider for a nominal fee transfers all risk, cost and benefit to the service provider. Figure 7 below outlines some of the major differences in the approach related to each method.

Figure 7- Methods of Service Provision

Service Delivery Option	Risk	Revenue	Expense	Administration	Location
Purchase and Operate	Risk of not getting a return on investment or return of investment is borne by municipality	Rate setting and revenue generation is at the discretion of the municipality and the municipality will be the sole beneficiary	Capital Cost and maintenance will be borne by the municipality	Administration is the responsibility of the Municipality	Location determined exclusively by the Municipality
Lease Land to Service Provider	Risk is transferred to the service provider who invests capital and performs all maintenance	Revenue and associate rates are determined by and for the benefit of the service provider	The service provider will incur all maintenance costs	The service provider is responsible for administration of the service	Locations determined jointly between the service provider and the municipality

Staff have had discussions with various service providers who have engaged with other municipalities in a scenario whereby the service provider has purchased, installed and is operating the public charging stations on municipal property. The service providers expressed some concerns as to the viability of the business case for stations in a less EV commuter centric geographic area than they are accustomed to. For example, the volume of E.V.'s registered and traveling in the Greater Toronto Area provide for a more predictable demand and in turn a more secure return on investment. As a result, they indicated that a base amount or subsidy may be required to make the business case. Alternatively, funding for the capital purchase via a government grant would also be a suitable subsidy that could make the business case positive.

All providers indicated that the in a land lease scenario, a 10-year lease, which coincides with 10-year lifespan of the equipment with an option to renew after 10 years would be required. The locations of the charging stations will need to be confirmed with the selected provider.

Federal Funding for Public Charging Infrastructure
The main funding program for public facing charging infrastructure has been the Zero Emission Vehicle Infrastructure Program (ZEVIP). This program provides funding towards the deployment of electric vehicle (EV) chargers across Canada. ZEVIP aims to address a key barrier to the adoption of zero-emission vehicles (ZEV)—the lack of charging stations in Canada—by increasing the availability of localized charging opportunities where Canadians live, work, travel, and play. Unfortunately, the latest intake is closed and there has been no announcement of a subsequent intake. Staff will continue to monitor this program and/or any other funding opportunities that become available.

Provincial Funding for Public Charging Infrastructure
The EV ChargeON program provides funding for the installation of public electric vehicle (EV) chargers in Ontario communities outside of major cities. The program aims to increase the number of public EV charging stations throughout Ontario to build a more connected network. The Province delivered the 2025 Ontario Budget on May 15, 2025. The budget included $92 million for this program.

Recommendation
That staff issue a Request for Proposal for the provision of up to 10 level 2 public facing electric vehicle charging stations on municipally owned property including the capital investment, installation, maintenance and administration at little to no additional cost to the city. Staff will continue to monitor and seek funding opportunities that become available for the procurement of public facing electric vehicle charging stations that would lower any potential City investment. Staff will report back to Council on the results of the procurement and the recommended award.

Resources Cited