

STAFF REPORT

THE CORPORATION OF THE TOWN OF COBOURG



Report to:	Mayor and Council Members	Priority:	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low
Submitted by:	Laurie Wills Director, Public Works lwills@cobourg.ca	Meeting Type: Open Session <input checked="" type="checkbox"/> Closed Session <input type="checkbox"/>	
Meeting Date:	July 19, 2021		
Report No.:	Public Works-053-21		
Submit comments to Council			

Subject/Title: Electric Vehicle Charger Station Information

RECOMMENDATION:

THAT Council receive the enclosed report for information purposes and for future reference during budget deliberations.

1. STRATEGIC PLAN

Continue to work with Sustainable Cobourg and other stakeholders on greening Cobourg initiatives

2. PUBLIC ENGAGEMENT

Sustainability and Climate Change Emergency Advisory Committee

3. PURPOSE

To provide Council with additional information regarding the implementation of electric vehicle charging stations through a Charging as a Service (CaaS) agreement.

4. ORIGIN AND LEGISLATION

- 2021 budget consideration
- Memo from the Sustainability and Climate Change Emergency Advisory Committee (June 21, 2021 Committee of the Whole meeting)
- Committee of the Whole Motion (June 21, 2021) for a staff report on EV Chargers

5. BACKGROUND

IVY is a joint venture between Ontario Power Generation (OPG) and Hydro One who were successful in an application with Natural Resources Canada (NRCan) for the Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative funding. IVY is eligible for 50% of the total project costs or up to a maximum of \$5,000 per connector. There are typically two connectors per charging station. The Town of Cobourg is a third party whereby IVY receives the funding to cover a portion of their upfront costs to supply and install the chargers for the third party ie. Cobourg and other municipalities. IVY then collects an annual maintenance and operating fee that covers costs associated with the supply and installation as well as for the provided software, network services, 24/7 call center for public use, payment processing, cellular service, etc. as well as regular reporting to the Town on usage.

The Town entered into a Memorandum of Understanding with OPG in 2019 for the potential use of Town lands for the purposes of installing, owning, operating and maintaining Level 2 electric vehicle chargers and related equipment. IVY compiled a tender document for the installation of the EV chargers and received the final bids in late 2020. On February 22, 2021 IVY provided the Town with the annual cost per charger of \$1,650 + HST for a 10 year period.

The proposed charging stations are Level 2 with a 7.2 KW/hr charging speed that take approximately 2-4 hours to charge a vehicle or in other terms, they provide an approximate 40 km charge per hour as a typical charge rate.

During budget deliberations for 2021, \$8,000 was included in the Public Works operating budget for four (4) connectors and \$8,000 was included in the Community Services operating budget for four (4) connectors. Ultimately it was determined by Council to not proceed with the chargers until further information was known regarding operating costs and potential usage and parking revenue impacts.

Staff notified IVY that Cobourg would not be participating in this round of funding. It is understood that IVY has since found additional third parties to utilize the remaining funding for 2021. Should IVY apply again for the next round of funding (expected later in 2021), the Town can express interest again in any number of chargers to be installed potentially in late 2022, should IVY apply and be successful again.

6. ANALYSIS

EV Charger Types:

Level 1 (110V, 15amps): This is a typical plug outlet where charging adds about 8 kilometers of range per hour. For owners of plug-in hybrid electric cars this is usually enough. Otherwise for a full electric vehicle it would require an overnight charge.

Level 2 (240V): Typical of a clothes dryer or oven plug outlet and is the most typical for private households and public places. Charging for 2-6 hours adds 30-50 kilometers of range per hour.

Level 3 (480V): Also known as Direct Current Fast Chargers or DCFC. A half hour of charging can add more than 100 kilometres of range per hour (typically 80% of a full charge). These are very expensive units, not suitable for private households, and typically located on commercial properties that are close to the 401.

There are 4,347 connectors located across Ontario and currently there are five locations in Cobourg where level 2 and 3 charging stations exist (sources were inconsistent in number of connectors per location).

Hourly Charge Rates

Within commercially reasonable limits set by IVY, the Town will be permitted to set customer pricing for the commercial use of the EV Infrastructure. Rates range from free up to an Ontario average of \$2/hr. The cost of electricity for 1 hour is approximately \$1.00 for these chargers.

Potential Parking Revenue Implications

The Third Street lot is a permit lot with 2 hours free parking. Electric vehicle owners would have to purchase a day pass at a Town building or online for \$5.00 in advance if they want to charge their vehicle for more than 2 hours.

Alternatively, meters could be installed for just the EV charger spaces. It is also understood that there may be an opportunity to combine the hourly charge rate for electricity as well as an hourly parking rate in the same transaction.

A monthly parking pass is \$15 and would cost \$360 per year for two spaces. Since there is not a pre-determined 'limit' of pass holders per lot, it would be a more fair statement to make that the Town would be reducing the parking level of service for this lot by limiting the use of two spaces for a particular type of vehicle.

The proposed Division Street parking spaces are considered to be Waterfront parking and are metered on-street spaces. Fare collection is between May and October or approximately 145 days. Potential income for a vehicle to be parked all day in these two spots is ~ \$16/day each for a total of \$4,640 per year.

EV Charging Station Availability

Since a vehicle can take up to 2-4 hours to charge, ideally the vehicle is moved after it is charged to make the station available for others. A maximum parking time of 4 hours could be implemented.

Fines for Non-Electric Vehicle Usage

As of January 1, 2021, the Highway Traffic Act now includes a section involving the improper use of an electric vehicle charging station:

Improper use

30.2 No person shall park a vehicle in an electric vehicle charging station that is identified by a sign that satisfies the prescribed requirements unless the vehicle is an electric vehicle and the vehicle is attached to the station's charging equipment.

Penalty

30.3 A person who contravenes section 30.2 is guilty of an offence and on conviction is liable to a fine of \$125.

Marketing

Ivy provides all the necessary signage for each charger and Ivy will register the chargers on PlugShare, ChargeHub, NREL/NRCan database, and the Ivy app so that anyone who is searching for EV charger locations will be able to easily locate them in Cobourg through these applications.

7. FINANCIAL IMPLICATIONS/BUDGET IMPACTS

There are no upfront expenses for the Town for installation and supply. The ten (10) year maintenance contract includes the network services and software to collect payment as well as a 24/7 call center for the public to utilize. The annual cost per station is \$1,650 plus tax which is subject to potential annual market inflation rates. Revenues are transferred to the municipality and Ivy retains 4% of all revenue to cover credit card transaction fees.

Should the Town determine that a lesser number of chargers should be installed, the annual cost per station will increase. The cost per station will depend on the bids received for the installation and supply costs.

The utilization rate of the charging stations is entirely unknown so assumptions must be made in order to best estimate the cost of operations and opportunity to recover any costs from revenue. Council will have to determine if the ultimate goal is to recover costs or provide a service to support climate change initiatives.

Staff have discussed with Lakefront Utilities Inc. in order to better understand the electricity costs associated with the chargers. The typical hourly cost for a Level 2 charger is approximately \$1.00.

To consider a range of expected costs per hour and per connector, there are two usage rates being assumed:

- 1% usage = 87.6 hours (ie. one charger is utilized for ~ 2 hours per week)
- 10% usage = 876 hours (ie. one charger is utilized for ~ 17 hours per week or ~2.5 hours per day)

There are 8760 hours in one year. In order to break even for the electricity costs as well as the annual maintenance costs, the following charge rates would have to be applied for each of the assumed usages:

- 1% usage = \$20.26/hour

- 10% usage = \$2.99/hour

Understandably, Ivy's goal is to make sure that site hosts do not charge unreasonable prices and damage the reputation of the network for all other site hosts. It is understood that the Town could be capped at a maximum charge rate of \$3.50/hour which is \$1.50 higher than the average rate across the province.

Should Council decide to pursue the installation of electric vehicle charging stations in Cobourg the following will be required:

1. a minimum of \$2,000 per connector should be carried in the operating budget.
2. the number of connectors needs to be confirmed before committing to entering an agreement with a supplier.
3. the charge out rate needs to be determined:
 - a. provide a free service (subsidized by the tax levy)
 - b. partial cost recovery (recover at least electricity costs)
 - c. full cost recovery (assumes that all connectors have a fairly high utilization rate of at least 10%)

8. CONCLUSION

THAT Council receive the enclosed report for information purposes and for future reference during budget deliberations.

Report Approval Details

Document Title:	EV Charger Information - Public Works-053-21.docx
Attachments:	
Final Approval Date:	Jul 8, 2021

This report and all of its attachments were approved and signed as outlined below:

No Signature - Task assigned to Tracey Vaughan, Chief Administrative Officer was completed by delegate Ian Davey, Treasurer / Director of Corporate Services

Tracey Vaughan, Chief Administrative Officer - Jul 8, 2021 - 2:35 PM