


Hamilton

CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Transportation Planning and Parking Division

TO:	Chair and Members Planning Committee
COMMITTEE DATE:	March 24, 2020
SUBJECT/REPORT NO:	Electric Vehicle Charging Stations Update (PED18250(b)) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Amanda McLveen (905) 546-2424 Ext. 6009
SUBMITTED BY:	Brian Hollingworth Director, Transportation Planning and Parking Planning and Economic Development Department
SIGNATURE:	

RECOMMENDATION(S)

- (a) That the General Manager, Planning and Economic Development, or their designate, be authorized and directed to execute on behalf of the City a contribution agreement between the City and the Department of Natural Resources Canada (NRCan) with content acceptable to the General Manager, Planning and Economic Development and in a form satisfactory to the City Solicitor;
- (b) That Council approve the locations for the installation of up to 20 Electric Vehicle Chargers as listed in Appendix "A" attached to this Report as the target locations subject to confirmation of installation feasibility;
- (c) That the Director, Transportation Planning and Parking, or their designate, be authorized to make minor substitutions to the locations for installation or number of chargers per location, pending installation feasibility assessments;
- (d) That the estimated cost of \$252 K to purchase and install 20 chargers, after the NRCan rebate, be funded from the Parking Reserve 108021 (\$172 K) and through contributions from Ward Reserves on a pro-rated basis where the chargers are installed with the upset limits as follows; Ward 1 Reserve Account

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108051 (\$8 K) , Ward 2 Reserve Account 108052 (\$32 K); Ward 3 Reserve Account 108053 (\$8 K), Ward 4 Reserve Account 108054 (\$8 K); Ward 8 Reserve Account 108058 (\$8 K), and Ward 13 Capital (Reserve) Account 3301609613 (\$16 K);

- (e) That a charge to use the Electric Vehicle stations be set at \$1 per hour for the first four hours, and \$4 for subsequent hours to off-set the operating costs and to encourage turn-over of spaces;
- (f) That the Director, Transportation Planning and Parking, or their designate, be authorized to implement changes to Electric Vehicle charger pricing in municipal parking lots on an annual basis to reflect inflationary or other operating cost increases;
- (g) That the item respecting staff report back to the Planning Committee on locations and pricing structure, including what Hamilton's comparator municipalities are charging for the use of Electric Vehicle chargers be identified as complete and removed from the Planning Committee Outstanding Business List.

EXECUTIVE SUMMARY

On September 3, 2019, Planning Committee received PED18250(a) "EV Chargers in Hamilton Municipal Parking System Lots". The following report is Staff's response to a number of directions from Council that stemmed from Report PED18250(a) and provides a staff recommendation regarding a pay-per-use fee for charging at Electric Vehicle Charging Stations (EVCS).

Following the September 3, 2019 Report, which authorized staff to submit an application to Natural Resources Canada Grant, which funds up to 50% of the cost of Electric Vehicle Charging Stations, the City of Hamilton has been conditionally approved for funding for 20 electric vehicle charging stations, subject to the successful negotiation and execution of a Contribution Agreement.

In addition to seeking Council approval to execute the agreement, this Report provides recommendations on the proposed locations for installing the 20 EV chargers and an analysis of options for charging for the use of these EV chargers.

Alternatives for Consideration – See Page 8

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The estimated cost to install the 20 electric vehicle charging stations is between \$309,500 and \$452,000. The cost range is largely due to

uncertainties in the cost to bring electrical power to the chargers. The NRCan agreement provides a 50% rebate for the chargers, up to a maximum of \$200,000. It is proposed that the estimated cost of \$252 K to purchase and install 20 chargers, after the NRCan rebate, be funded from the Parking Reserve 108021 (\$172 K) and through contributions from Ward Reserves on a pro-rated basis where the chargers are installed with the upset limits as follows; Ward 1 Reserve Account 108051 (\$8 K), Ward 2 Reserve Account 108052 (\$32 K); Ward 3 Reserve Account 108053 (\$8 K), Ward 4 Reserve Account 108054 (\$8 K); Ward 8 Reserve Account 108058 (\$8 K) and Ward 13 Capital (Reserve) Account 3301609613 (\$16 K).

Staffing: N/A

Legal: Legal Services will be engaged to advise on the contribution agreement.

HISTORICAL BACKGROUND

At the Council meeting of September 11, 2019, Council approved Item 6 of Planning Committee Report 19-013 regarding Electric Vehicle Charging Stations with an amendment to sub-section (b) as indicated below in italics.

- (a) That staff be directed to apply for a Natural Resources Canada Grant which funds up to 50% of the cost of Electric Vehicle Charging Stations, conditional on a minimum of 20 chargers being purchased;
- (b) That, if successful on the application, staff be directed to install 20 Electric Vehicle Chargers in selected Hamilton Municipal Parking System lots or other suitable locations; ***and that prior to installation, staff report back to the Planning Committee on locations and pricing structure, including what Hamilton's comparator municipalities are charging for the use of Electric Vehicle chargers; and,***
- (c) That the estimated cost of \$252,000 for 20 chargers, after the 50% rebate, be funded through a combination of Ward Reserve funds and the Parking Reserve Account No. 108021.

In addition, Council at its meeting on September 25, 2019 approved Item 12 of Planning Committee Report 19-014 as follows:

(i) Electric Vehicle Charging Stations in New Developments (Item 12.1)

WHEREAS, the City of Hamilton has declared a Climate Emergency and is moving towards a zero-carbon economy;

THEREFORE BE IT RESOLVED:

- (a) That staff be directed to investigate options available through the planning approvals process to require an appropriate number of Electric Vehicle Charging Stations to be included as part of the parking requirement for new development, and report back to the Planning Committee; and,
- (b) That staff be directed to review the City's by-laws, including the Municipal and Private Property By-law and On-Street Parking By-law, and report back with recommendations for ensuring that the City has appropriate tools and mechanisms in place to prohibit and enforce the parking of non-electric vehicles at Electric Vehicle Charging Stations in municipal parking lots and on-street parking spaces.

Item (i) (a) will be addressed through a separate report to Planning Committee while item (i) (b) is addressed as part of this report.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

- Energy Initiatives; and,
- Policy Planning and Zoning By-law Reform.

ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)

Department of Natural Resources Canada (NRCan) - Zero Emissions Vehicles Infrastructure Program (ZEVIP)

The ZEVIP objective is to address the lack of charging and refuelling stations in Canada by increasing the availability of localized charging opportunities where Canadians live, work, and play. In order to be considered for funding, the submitted project must meet several requirements. Noted below are some of the key requisites:

- Increase localized charging opportunities in Public Places and On-Street;
- Include a minimum of 20 charging stations;
- Charging infrastructure must be installed in a parking space clearly identified for the purpose of charging electric vehicles (EVs);
- Be a permanent installation (mounted or fixed models);
- Be new and purchased equipment (not leased);

- Be for a new installation or expansion of an existing installation (not for the replacement of an existing installation); and,
- To be eligible for the funding amount, each connector must be able to charge a vehicle and support a dedicated parking space simultaneously.

Transportation Planning and Parking staff have recently received notification that the City's application for the Zero-Emission Vehicle Infrastructure Program has been conditionally approved for funding consideration. The next steps involve negotiation with NRCan of a contribution agreement.

Potential EVCS Locations and Estimated Costs

In preparation of the funding application to NRCan, several potential locations for the installation of EVCS were identified. All the potential locations identified are parking facilities under the management of the Hamilton Municipal Parking System (HMPS). The current proposed locations are identified as Appendix "A" attached to this Report. These selected locations are based upon a staff assessment of several factors including the following:

- Lot size/number of spaces;
- Occupancy data collected as part of the Parking Master Plan (PMP);
- Proximity of publicly accessible EVCS as shown on Chargehub and Plugshare (online resources);
- Proximity to other parking lots (both HMPS lots and private lots); and,
- Subjective knowledge of the City's trip generation (concentration of workforce, BIA's, entertainment, etc.).

However, the locations identified in Appendix "A" attached to this Report can be amended or removed depending on operational and installation costs, including but not limited to:

- Material;
- Labour;
- Permit fees; and,
- Installation costs (conduit, wiring, trenching and capacity of existing power supply).

If, after the detailed feasibility studies to install hydro for a particular charger location results in a cost which exceeds the maximum estimated cost or would result in the overall project cost being exceeded, alternative locations within the target ward will be discussed with the Ward Councillor.

Cost estimates for the EV chargers is based on quotes received for a recent installation of EV chargers in Ward 5. Based on these costs, staff have developed a low and high range estimate per location. The estimates by Ward reflect the upper end of the cost estimates; however, it should be noted there is a high degree of uncertainty until quotes for electrical work are received.

Pricing Structure for Use of EVCS

Many municipalities across Canada that installed EVCS undertook initial and subsequent installations with the strategy of no cost for public charging, other than applicable parking fees required at each location, during the initial years of operation in order to build awareness and increase usage. This, in combination with supportive government policies and various Provincial and Federal purchase rebate programs, expanded model availability and increased consumer familiarity and interest in the technology, were key factors that contributed to strong growth in EV sales in Canada.

Examples of municipalities that current do not implement fees for use of the EV chargers include the following:

- In the City of Burlington, there is no fee to charge a vehicle at stations in municipal lots, however the City's parking rates apply; and,
- In the City of Mississauga there is no charge for use of EV chargers in municipal parking lots beyond the base parking rate.

In Kingston, EV chargers installed by the municipality were initially free to use for the first two years of operation. This program ended in December 2019 and the City now charges for use. It was estimated that the cost of electricity for the Level-Two chargers over the two-year period was \$12 K for 21 locations.

The emerging trend across Canada is to require the EV owner to remit payment based on the fees imposed by the charging station owner. Typically, these fees are set up to recover all or a portion of the costs. Through the introduction of user fees, EV owners are encouraged to charge only as required, mitigating congestion/unfair parking space usage and increasing turnover and access by others at the station.

Examples of different rate structures are as follows for “smart” Level-Two charging stations (four-hour maximum stay at EVCS):

- \$2 per hour for the first two hours and \$5 for subsequent hours (City of Richmond);
- \$2 per hour for each hour (City of Vancouver);
- \$1 per hour for the first two hours, and \$5 for subsequent hours (City of Coquitlam);

SUBJECT: Electric Vehicle Charging Stations Update (PED18250(b)) (City Wide)
Page 7 of 9

- \$1.50 per hour for each hour (Cities of Kingston, Waterloo, St. Catharine's, Oakville);
- \$0.50 per hour for each hour (City of Kitchener); and,
- \$2.50 per hour for each hour (Town of Orangeville).

In summary, although there are many municipalities that do not require payment for charging at EVCS currently, the emerging trend in municipal sectors is to charge a pay-per-use fee ranging from \$1.00 per hour upwards or a flat fee of \$2.50 upwards per charge.

Pay-to-use chargers or "smart" Level-Two meters are equipped with technology that create numerous benefits:

- Discoverable from smart phones. Availability status of charging station can be monitored;
- Accept electronic forms of payment, enabling the City of Hamilton to set rates that will recover operating costs, but which are also affordable to encourage the transition to EVs;
- Through the introduction of user fees, EV owners are encouraged to charge only as required, mitigating congestion/unfair parking space usage and increasing turnover and access by others at the station;
- Create metrics and related data regarding numbers of unique and return visits, lengths of stays, etc. This data can then be used to monitor uptake of EVs locally and to evaluate and support the need for future EVCS installations that could help the City of Hamilton with future EV program expansion decisions; and,
- Provide opportunities to promote local events and activities via electronic messaging available at the site.

It should be noted, that if electricity costs \$0.11 per kilowatt-hour, charging an all-electric vehicle with a 120 km range (assuming a fully depleted 24 kWh battery) will cost approximately \$2.64 to reach a full charge. This cost is about the same as operating an average central air conditioner for about six hours.

Municipal By-laws

Staff have reviewed the Municipal By-laws that would be utilized in the enforcing use of EVCS and are satisfied that no revisions are required at this time given the proposed locations are in off-street parking facilities. However, if, in the future on-street charging stations are implemented, a new schedule and signage would need to be created within By-law 01-218 to ensure on street spaces can be enforced adequately. For off-street locations, the current parking fines that would be applicable for offences to misuse of signed EVCS range from \$33 to \$50 for each offense.

It is also noted that in 2019, as part of Bill 123, Bill 123 (Chapter 18 of the Statutes of Ontario, 2019) the province created an Act to amend the *Highway Traffic Act* respecting electric vehicle charging stations. Section 30.2 of this act states that “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.” A person who contravenes section 30.2 is guilty of an offence and on conviction is liable to a fine of \$125. Although this violation is administered as a Provincial Offence under the bill, the intent of this bill could be replicated in the City of Hamilton Administrative Penalties By-law (By-law 17-225) and will be considered as a future update to such by-law.

ALTERNATIVES FOR CONSIDERATION

1. Not implement any pay per use fee for Level-Two electric charging stations in municipal parking facilities;
2. Implement free charging for a period of 24-months, following which prices would be set at \$1 per hour for the first four hours, and \$4 for subsequent hours; and,
3. Implement a flat fee of \$2.50 per charge (maximum four-hour charge) at all existing and new Level-Two EVCS. The flat fee per charge will fund the approximate electricity cost to the municipality for a full charging vehicle (maximum four-hours).

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

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OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Culture and Diversity

Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" – Proposed Electric Vehicle Charger Station Locations

AM:cr

Proposed Electric Vehicle Charger Station Locations

Name of Facility	Facility Number	Proposed Number of EVCS	Number of Parking Spaces to be Chargeable	Ward Number
City Hall	40	3	6	2
York Parkade	68	3	6	2
Convention Centre	37	4	8	2
Ottawa Street North	2B	1	2	4
Vine Street	62	1	2	2
King Street	8	1	2	2
Dundas	7DU	1	2	13
Main Street East	7	1	2	2
Dundas	4DU	1	2	13
Barton Street East	82	1	2	3
Upper James	33	1	2	8
Mulberry	36	1	2	2
Westdale on-street	-	1	2	1