



REPORT

Report Date: Dec 7, 2021
Contact: Paul Storer
Contact No.: 604.873.7693
RTS No.: 14506
VanRIMS No.: 08-2000-21
Meeting Date: January 25, 2022

TO: Vancouver City Council
FROM: General Manager of Engineering Services
SUBJECT: Programs to Grow Availability of EV Charging Infrastructure on City Street
(each a "Program")

IN CAMERA RATIONALE

This report is recommended for consideration by Council on the In Camera agenda as it relates to Section 165.2(1) of the *Vancouver Charter*:

(e) the acquisition, disposition or expropriation of land or improvements, if the Council considers that disclosure could reasonably be expected to harm the interests of the city; and

(k) negotiations and related discussions respecting the proposed provision of an activity, work or facility that are at their preliminary stages and that, in the view of the Council, could reasonably be expected to harm the interests of the city if they were held in public.

RECOMMENDATIONS

- A. THAT Council approve, and direct staff to implement, the following programs:
 - a. the continuation of the Curbside EV Charging Program, as summarized in Appendix A, as an ongoing City program, and
 - b. the Commercial Fleet EV Charging Program as summarized in the body of this report.

- B. THAT Council authorize, pursuant to Council's authority under subsections 289A(c) and 291(g)(ii) of the *Vancouver Charter*, the General Manager of Engineering Services and the Director of Legal Services, in consultation with each other, and on such terms and conditions as may be acceptable to each other, to enter into and execute licence agreements (each a "Licence Agreement") on behalf of the City of Vancouver with third party licensees in accordance with the terms of the above programs as summarized in this report for the purposes of allowing a third party licensee to install and operate EV charging infrastructure on City street in order to further the goals of these programs.
- C. THAT no legal rights or obligations will be created or arise by virtue of Council's approval of Recommendations A and B unless and until a Licence Agreement is executed and delivered by the General Manager of Engineering Services and the Director of Legal Services on behalf of the City.

REPORT SUMMARY

The purpose of this report is to seek Council's approval (1) to continue the implementation of the Curbside EV Charging Program, which was approved in Council in 2017 as a pilot program, as an ongoing permanent program, and (2) to commence the implementation of the Commercial Fleet EV Charging Program.

Approval of this report will provide additional options for, and incent, the installation of third party-owned EV charging infrastructure on City streets for EVs ranging from non-commercial personal use vehicles to light, medium and heavy-duty commercial vehicle fleets on City streets. This will further support the private sector to contribute to the wider installation of non-commercial and commercial EV charging infrastructure in the City.

In respect of commercial vehicle fleets, one of the major challenges to broader electrification of such fleets, especially medium-duty and heavy-duty vehicles, such as commercial buses and trucks, is the lack of compatible, convenient EV charging infrastructure. The Commercial Fleet EV Charging Program would allow for third party commercial entities, who may not own or occupy property adjacent to optimal locations for commercial EV charging, to install privately owned EV charging infrastructure on City streets that is compatible with their fleets. This will encourage the electrification of those fleets and will help the City meet its Climate Emergency targets, among other co-benefits.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

In November 2020, Council adopted the Climate Emergency Action Plan (CEAP), which aims to cut emissions to 50% of 2007 levels by 2030. The CEAP's recommendations I, J, K, and L aim to support increased access to EV charging. The recommendations in this report comprise a part of those actions that Council directed staff to implement through Recommendation I of the CEAP.

In April 2019, Council approved the Climate Emergency Response. Accelerated Action 10f stated: "Electric Tour Buses: Provide charging service for electric tour buses as a pilot project at up to three locations in 2019/2020."

In June 2017, Council approved the Curbside Electric Vehicle Charging Program as a pilot program.

In November 2015, Council adopted the Renewable City Strategy, committing to derive 100 percent of all energy used in Vancouver from renewable sources before 2050 and to reduce greenhouse gas emissions by 80 per cent from 2005 levels before 2050. An approved action included: Implement a preferential parking policy to encourage the use of ZEVs in place of fossil fuel vehicles, which included developing overnight parking and charging service for electric tour buses

In October 2012, Council adopted Transportation 2040, which includes actions to support electric vehicle deployment and the provision of charging infrastructure.

CITY MANAGER'S COMMENTS

Council approval of the Recommendations in this report will be an important step in implementing the Climate Emergency Action Plan by expanding the EV infrastructure network in Vancouver. In the case of the Curbside EV Charging Program, this program will allow for the continuation of the commercial stream in which a third party commercial entity could apply for permission to install EV infrastructure at the curbside adjacent to their property for public use. In the case of the Commercial Fleet EV Charging Program, this program will enable those operators with commercial fleets comprising medium-duty and heavy-duty electric vehicles, whether or not they own or occupy property adjacent to the City street location, to install compatible commercial vehicle EV charging infrastructure (which is not currently widely available in Vancouver) thus accelerating the adoption of these types of commercial electric vehicles. These efforts, combined with other transportation efforts to promote and facilitate walking, bicycling and use of transit, and accelerating the transition to light-duty EVs, will reduce our dependence on fossil fuels. The City Manager supports the recommendations in this report.

REPORT

Background/Context

Transportation accounts for 39% of total carbon pollution in Vancouver and is a significant source of air pollutants that can harm human health and the environment. The City wants to ensure that all vehicle types are shifting from fossil-fueled vehicles to EVs. With an increase in EV adoption, more EV charging infrastructure is required, including for light, medium and heavy-duty commercial vehicles and delivery vehicles. EV charging infrastructure generally refers to the charging equipment, cables, connectors, devices, apparatus, and fittings installed for the purpose of power transfer and information exchange between the branch circuit and the electric vehicle.

A workshop report in 2018 from West Coast Electric Fleets (WCEF) showed that the lack of convenient and reliable access to EV charging infrastructure, particularly for medium-duty and

heavy-duty vehicles, is a major barrier to switching from fossil-fueled vehicles to EVs. WCEF is an initiative of the Pacific Coast Collaborative (PCC), a joint initiative of California, Oregon, Washington, and British Columbia to accelerate a vibrant, low-carbon economy on the West Coast.

Over the last several years, through investments and building requirements, the City has supported the growth of EV charging infrastructure available for light-duty vehicles. However, reasonable, convenient access to charging infrastructure continues to be a barrier. The City currently has some of the most used EV charging stations in British Columbia. While this usage indicates that the stations are providing utility to the public, those stations may not be available to potential new users since they are already at capacity.

In addition, charging infrastructure that serves commercial medium-duty and heavy-duty vehicles remains a challenge as there are a variety of charging equipment and interfaces used that are often different from those of light-duty vehicles. In order to support adoption of these types of commercial EVs there is a need to provide compatible EV charging infrastructure.

Specifically, various tour bus operators have approached the City, expressing their interest in transitioning to electric vehicles. A significant challenge to greater adoption is that there are limited spaces available for installing commercial vehicle charging infrastructure within the City core. Charging located further away, such as in suburban areas, would require commercial vehicles, including EV tour buses, to expend a considerable portion of their range before they even start their routes.

Strategic Analysis

Existing City Program to incentivize EV charging on City Street

The City launched the Curbside EV Charging Pilot program as a pilot in 2017. This pilot enabled residential and non-residential applicants who own or occupy property adjacent to City street to apply to the City for permission to have EV charging infrastructure installed on the curb adjacent to their property. A key success of the pilot program was that it demonstrated the use of license agreements as an effective means to allow privately-owned infrastructure on the public right-of-way.

Notwithstanding the license agreement, the Curbside EV Charging Pilot program was not proven to be an effective model for enabling at-home residential charging. The installation costs proved too high for most homeowners. Perhaps more importantly, the program does not address the larger need for charging for residents living in multi-family buildings, laneway homes, or in rental suites in single-family homes (under the pilot program, the renter would have to appeal to the owner to initiate, own and maintain the charging infrastructure). The pilot program also required significant staff time relative to the overall benefits. In addition, many areas of the City allow on-street parking for residents even if zoned to have off-street parking. In these areas, requiring residents to park off-street in order to charge vehicles at or near home will likely dissuade them from switching to an EV. As such, the residential stream of the pilot program was terminated at the end of the pilot. Staff instead have been working on a Neighbourhood Charging strategy, the first phase of which is the Cord Cover program which Council recently approved.

On the commercial side however, the use of licensing agreements enabled the installation of two fast-charging stations: one on Homer Street near BC Hydro's head office, and the other near Kerrisdale in a surface parking lot. These stations, both of which were paid for by BC Hydro (through federal grants), were installed on City street using a licence agreement. Without Council's approval to use licence agreements for this purpose, these stations likely would not have gone ahead. There have also been several other commercial third-parties who have since inquired about installing EV infrastructure for public use or in partnership with Modo. However, since the pilot program has ended, there have not been other installations of EV infrastructure by a commercial third party on City street. Turning the commercial stream pilot program into an ongoing permanent one will enable partnerships with third parties, whereby charging stations are installed at little or no cost to the City (aside from the nominal value of the land on which a charger sits for the duration that the City allows a third party licensee to maintain its EV infrastructure there).

Appendix A describes this program and Appendix B sets out the key principles and terms to be covered in a Licence Agreement to be entered into by the City and a third party licensee under the permanent program.

Staff have incorporated lessons-learned from the pilot into the Commercial Fleet EV Charging Program and, as a result, both programs share some of the same principles.

Commercial Fleet EV Charging Program

Staff propose to carry out the Commercial Fleet EV Charging Program in accordance with the following principles and goals:

1. The overall goal of the Program is to support the City's Climate Emergency Action Plan by incentivizing private sector commercial vehicle operators (in particular, operators that operate medium to heavy-duty commercial vehicles) to build more EV charging infrastructure in Vancouver that will in turn support their transition to commercial EVs;
2. The intent of the Program is to award a licence for use of City street to a third party licensee acceptable to the City, where the third party project and agreed City street location optimizes the balance among various objectives, risks and benefits including the following:
 - a. Meeting the City's goals under this Program and the Climate Emergency Action Plan and the City's obligations under the *Vancouver Charter*,
 - b. Filling a gap where commercial vehicle operators do not have a viable location to use for EV charging,
 - c. Securing sufficient investment and commitments from third parties, including commercial vehicle operators to make the project viable and sustainable at minimal cost/risk to the City,
 - d. Minimizing disruptions to City street or major works while retaining some flexibility to relocate infrastructure under exceptional circumstances, and
 - e. Ensuring the trade-offs, such as the opportunity cost of occupying City street that could be used for other City purposes, are acceptable to the City;

3. City staff will assess the amount of street space required and the opportunity cost associated with dedicating such space for this purpose, taking into consideration, among other factors, the size of a commercial operator's fleet, the amount of space it needs, other potential City uses for a location, the duration of a particular License Agreement and other relevant factors;
4. City staff will engage Supply Chain Management and follow the City's Procurement Policy in selecting and awarding Licence Agreements under the Program to prospective third parties including commercial vehicle operators;
5. In addition to engaging Supply Chain Management, staff will engage and seek the input of other departments such as Engineering, Finance, Risk Management and Legal Services as necessary depending on the impacts to City street, risk, financial, legal and other implications of each proposed project;
6. A key goal of the Program is to secure the commitment of a third party to pay for all or a sufficient portion of the project costs to ensure the City is receiving sufficient consideration and other benefits in exchange for the use of City street including, the following:
 - a. City ownership of all underground EV charging infrastructure once installed;
 - b. The third party being responsible for all operating and maintenance obligations of the EV charging infrastructure including compliance with all applicable laws, safety requirements and similar obligations; and
 - c. An indemnity from the third party in favour of the City against any harm or loss that may be suffered by the City in connection with the use of City street and the Licence Agreement;
7. Licence Agreements will comply with *Vancouver Charter* section 291(g)(ii) (which allows a third party licensee to encroach upon or under a street for a specified length of time – i.e. the installation and operation of EV charging infrastructure) and be satisfactory to the General Manager of Engineering Services and the Director of Legal Services; and
8. The authority used to allow a third party licensee to stop its vehicles at the agreed street location for EV charging purposes will be section 4 of the City's Street and Traffic By-law however depending on the circumstances of a particular project staff will seek the advice of Legal Services as to whether other sections of such By-law may be relied upon for this purpose; and
9. If a particular project requires the use of one or more different legal authorities under the *Vancouver Charter*, staff will seek the advice of Legal Services and, if necessary, the approval of Council at such time for the approval to use such legal authorities to enable the project.

Staff believe that the Program will provide more options for third parties such as commercial fleet operators, especially those of medium-duty and heavy-duty EVs who currently have no viable non-City locations for compatible EV charging infrastructure in Vancouver, to install such infrastructure within Vancouver, thus incentivizing their adoption of EVs.

One potential example of a project under this Program is for the installation of commercial EV charging infrastructure on City street space under the south end of the Granville Street Bridge at 2nd Ave and Anderson. Discussions relating to this potential project are underway pursuant to a Supply Chain Management-led procurement for an EV tour bus operator to use that location for the purposes of installing and operating EV tour bus and other commercial EV charging infrastructure. The completion of this project, and the resulting Licence Agreement, remains subject to Council's approval of the recommendations in this report. If completed, this project would enable a private sector tour bus operator to contribute to the installation of EV charging infrastructure compatible to service EV tour buses in addition to standard charging infrastructure, thus accelerating the adoption of EV tour buses and potentially enabling other commercial fleet operators to use this charging equipment to adopt electric vehicles in their fleets. It is expected that this project will showcase electric mobility as well as grow the EV charging infrastructure for medium-duty vehicles. This project is estimated to reduce emissions by 22 tonnes of carbon emissions per bus per year, with the project helping to potentially enable the conversion of an entire tour bus operator's fleet of 80 buses.

Related Issues

Financial

As stated above, a common goal of the two programs is to encourage third parties to build more EV charging infrastructure in Vancouver. This will enable a faster shift to electric vehicles which will ultimately reduce carbon pollution in the City.

Under the Curbside EV Charging Program, the goal is to secure the commitment of a third party, non-residential entity, who owns or occupies property adjacent to City street, to pay for all or a sufficient portion of the project costs to ensure the City is receiving sufficient consideration and other benefits in exchange for the use of City street. There is a nominal licensing fee associated with the licensing agreement under this Program. The City and public will benefit from the contribution of publicly available EV infrastructure.

Under the Commercial Fleet EV Charging Program, the goal is to secure the commitment of a third party, including commercial vehicle operators, whether or not they own or occupy property adjacent to City street, to pay for all or a sufficient portion of the project costs to ensure the City is receiving sufficient consideration and other benefits in exchange for the use of City street. Given that the intent of this Program is to incent the installation of commercial EV charging infrastructure for medium-duty and heavy-duty vehicles in Vancouver, it is not contemplated at this time that the City will charge a specific fee under a License Agreement and will instead look at the totality of the benefits being provided by a prospective licensee to ensure the City is receiving sufficient consideration and other benefits in exchange for the use of City street.

The question of consideration and other benefits flowing to the City may depend in part on certain unique circumstances of a particular project and staff will ensure that, for every project under either of the Programs, the City will receive sufficient consideration and benefits to comply with the Program and to justify the trade-offs being made by the City for a given project. For example, the City undertook an RFP process for the EV tour bus project described above and responses from the market indicated that the market is not able to pay significant rental costs for this type of project at this time.

However, given that commercial fleet operators that switch from internal combustion engine vehicles to EVs are expected to actualize financial savings from fewer operational and maintenance costs over the life of their vehicle, which will help offset the higher capital costs of EVs and EV charging infrastructure, staff will bear in mind opportunities to ensure the City will receive adequate consideration.

Environmental

This work is an important component of the Climate Emergency Action Plan. Incenting the installation and operation of more EV charging infrastructure will enable a faster shift to electric vehicles, which will ultimately reduce carbon pollution. Additionally, nitrogen oxides and particulate matter have significant impacts on air quality: reducing tailpipe emissions will reduce these pollutants and positively affect air quality. As an example, converting a regular 49-seat diesel tour bus to electric can save up to 22 tonnes of carbon emissions per bus per year.

Legal

As described above, a Licence Agreement will be the legal mechanism by which an acceptable third party licensee under either Program will be allowed to install and operate EV charging infrastructure on City street. Every Licence Agreement to be entered into under either Program will comply with the terms of the applicable Program. If a particular project requires a different legal authority under the *Vancouver Charter* than is currently contemplated under each Program, staff will seek the advice of Legal Services and, if necessary, seek Council approval for the legal authority proposed to be used for that project.

Staff will also engage Legal Services as necessary for the purposes described above to ensure a project, and the resulting Licence Agreement, complies with the City's Procurement Policy and the *Vancouver Charter*.

CONCLUSION

One of the major challenges to broader electrification is access to charging, especially for commercial fleet operators who may have medium-duty and heavy-duty vehicles that are incompatible with current infrastructure available. The Commercial Fleet EV Charging Program would allow for third party commercial entities, who may not own property adjacent to optimal locations for commercial EV charging, to install privately owned EV charging infrastructure on City streets. In addition, the Curbside EV Charging program would allow for third party commercial entities who own or occupy property adjacent to the curb to install EVSE for public use. Both programs will contribute to growing EV charging infrastructure in the City, thereby encouraging the electrification of private vehicles and commercial fleets, and will help the City meet its Climate Emergency targets, among other co-benefits.

* * * * *

Appendix A – Vancouver’s Curbside EV Charging Stream

The Curbside EV Charging stream

An applicant may apply to the City for the right to install an EV charger on City street adjacent to the property owned or occupied by the applicant. Accepted applicants would be required to enter into a licence agreement with the City governing the use of City street and the EV charger. Each installation will be permitted under a licensing agreement for a term of 5-9 years depending on City’s discretion. The general framework of this Program are as follows subject to any changes the City may make in a particular project in light of the circumstances of such project:

<i>Commercial Curbside EV Charging Stream</i>	Commercial Applicants
Level of Charger Allowed	Dual port Level 2 and DC Fast Charging Station
Duration of installation term	5-9 years
Licensing Agreement With	Property owner/occupier
Licence Fee	\$200 one-time payment
Parking Restrictions	Restricted to electric vehicles and will be metered
EV Charger Access	Public access
Costs for Charging	Third-party may charge fee for charging
Notifications	BIA notification prior to installations
Installation Costs	Third party pays
Ownership and Maintenance	Third party owns and maintains
Insurance Requirements	Min. \$2M Commercial liability insurance, naming the City of Vancouver as Additional Insured

Appendix B – List of Key Principles and Terms to be covered in a Licence Agreement

1. *Costs of EV Charger:* Applicant will be responsible for the costs of the EV charger, installation of the EV charger, all electricity costs and all costs and expenses to maintain or repair the EV charger for the duration of the term of the pilot.
2. *City approval of EV Charger:* Applicant will obtain the approval of the City in respect of the type of EV charger proposed to be installed.
3. *Use of EV Charger:* Commercial third-party entities cannot designate stalls for the exclusive use of their customers/staff. In all cases, the charger does not provide exclusive access to the parking stall, however you should be actively charging if parked at the charger.
4. *Parking in front of EV charger:* Any parking restrictions at the site will continue, and anyone parking at the site should be actively charging.
5. *Safe operation of EV Charger:* Applicant must comply with all requirements of the City and all applicable laws to ensure the safe operation of the EV charger.
6. *Payment of City Licence Fee:* Applicant will be required to pay the City's licence fee.
7. *Installation of EV Charger:* Applicant must comply with all applicable laws, including all City by-laws and inspections, in respect of the installation of the EV charger and shall provide to the City copies of any plans, designs, drawings or other information reasonably requested by the City for approval or other City purposes.
8. *Liability caused by EV Charger:* Applicant will be liable for any property damage or injury caused by the EV charger to a third party and will indemnify the City against any legal claims against the City by such third parties.
9. *Requirement for Insurance:* Applicant will be required to add third party liability insurance to its property insurance policy and to add the City as an additional insured party under such policy. The City may determine additional insurance requirements as the circumstances may warrant.
10. *No Advertisements.* The City intends to place information on the EV Charger relating to the Program. No advertising or other markings in any form are allowed on the EV Charger or in the Licence Area or the Lands except those placed by the City.
11. *Upkeep of EV Charger:* Applicant will be required to maintain and repair the EV charger to a reasonable standard set out in the licence agreement.
12. *Use of City street:* There will be terms governing the use of the City street upon which the EV charger will be installed.
13. *Security to ensure compliance with licence agreement:* The City will require appropriate security to ensure the Applicant complies with their obligations under the licence agreement. If the Applicant defaults on any requirements of the licence agreement the City will have appropriate remedies against such security.

14. *If Applicant sells business:* If Applicant sells their business or property before the expiry of the licence agreement, the City may, in its sole discretion, permit any one of the following:
- a. if Applicant moves to another property in the City of Vancouver, the City may permit the Applicant to move the EV charger to a street location that is adjacent to the new location provided it is at Applicant's expense and Applicant otherwise complies with all other terms of the licence agreement;
 - b. if the buyer of Applicant's property wishes to assume ownership of the EV charger and is otherwise capable of complying with all other terms of the licence agreement as determined by the City, the City may allow the licence agreement to be assigned to the new owner; or
 - c. if neither of the above scenarios is applicable, the City may permit Applicant to terminate the licence agreement provided terms relating to restoration of City street and other applicable terms are complied with.
15. *Term of licence agreement:* The term of the licence agreement will be for 5-9 years. The City will have the right to terminate the licence agreement if Applicant does not comply with its terms.
16. *Responsibility at the end of the licence agreement term:* Applicant will be responsible for removing the EV charger from City street at its expense and comply with all terms of the licence agreement.
17. *Right of City to require removal or relocation:* The licence agreement will include a term whereby the City may require the Applicant to remove or relocate its EV charging infrastructure under certain circumstances on terms and conditions to be determined by the City.