

Report to Council



Date: May 27, 2019
File: 1862-01
To: City Manager
From: Tracy Guidi, Sustainability Coordinator and Dave Duncan, Parking Services Manager
Subject: Electric Vehicle Charging Stations Update

Recommendation:

THAT Council receives, for information, the report from the Sustainability Coordinator and Parking Services Manager, dated May 27, 2019, with respect to Electric Vehicle Charging Stations Update.

Purpose:

To update Council on four new DC Fast Charge electric vehicle (EV) charging stations that will be installed in Kelowna.

To inform Council on the opportunity to expand the EV network with two additional DC Fast Charge charging stations.

Background:

Sales of electric vehicle in Canada continue to rise. While final numbers are not yet available, Canada was set to sell more EVs in 2018 than in the previous four years combined.¹ In BC, this trend is expected to continue as the provincial government announced that all new light-duty car and truck sales will be zero-emission vehicles (ZEVs) by the year 2040.² This spring, provincial legislation will be introduced to phase in targets for the sale of ZEVs, with targets of 10 per cent ZEV sales by 2025, 30 per cent by 2030, and 100 per cent by 2040.³

Locally, transportation accounts for 55 per cent of community greenhouse gas (GHG) emissions. Kelowna's *Community Climate Action Plan* recommends the development of a community wide EV strategy as one way to reduce emissions from the transportation sector. As of August 2017, nearly one

¹ Fleetcarma, Dec. 19, 2018. Electric Vehicle Outlook 2019. <https://www.fleetcarma.com/electric-vehicle-outlook-2019/>

² Province of BC, 2018. CleanBC: Cleaner Transportation. <https://cleanbc.gov.bc.ca/>

³ Province of BC, November 20, 2018. Provincial government puts BC on path to 100% zero-emission vehicle sales by 2040. <https://news.gov.bc.ca/releases/2018PREM0082-002226>

per cent of vehicles insured in Kelowna were hybrid or electric vehicles.⁴ Since BC is one of the leading provinces in Canada for EV sales,⁵ and there are currently up to \$16,000 in incentives available for EV purchases⁶, it is expected that the number of EVs in Kelowna will continue to grow.

A network of electric vehicle charging stations are required to support the transition to EV. There are three levels of charging stations available offering different amounts of power. Level 1, also known as a “trickle charge” is best used when parked overnight or long-term. Level 2 chargers (240 Volt) give an EV battery a full charge within four to six hours. DC Fast Chargers (Level 3), operate on 480V and can top up a battery to 80 per cent within 30 minutes.⁷

To support the growth of EVs in the community, the City of Kelowna entered into its first partnership in 2016 with FortisBC to install two Level 2 charging stations in the parking lot of the Okanagan Heritage Museum. In the agreement, FortisBC purchased, installed and operates the stations. The City provided the location and pays the electrical costs associated with charging, which are recuperated through parking lot fees.

Four New DC Fast Chargers

Last year, FortisBC approached staff with the possibility to expand the EV charging network with DC Fast Chargers through a Natural Resources Canada grant opportunity. The *Electric Vehicle Alternative Fuel Infrastructure Deployment Initiative* provides up to 50 per cent of the total project costs to a maximum of fifty thousand dollars per charging unit.⁸ Further, the provincial government committed an additional 25 per cent of the cost for successful BC applications. FortisBC agreed in principle to fund the cost of the charging stations not covered by the grant, as well as provide the ongoing maintenance and operation of the stations for two locations. The City is responsible for providing the land at both locations: one at the Museum Parking Lot and the other at Rutland Centennial Park. Additionally, the Kelowna International Airport had plans to install two DC Fast Chargers, and FortisBC agreed to include these stations in their application so these stations could also benefit from the grant.

The grant was approved and installation of the four fast chargers is scheduled for later this spring. Total forecast costs, once installation is complete, is \$350,000, and has no impact to taxation. Costs are covered as follows:

Natural Resources Canada	\$150,000
Province of BC	\$ 75,000
FortisBC	\$ 75,000
<u>Kelowna International Airport</u>	<u>\$ 50,000</u>
	\$350,000

Once installed, these stations will provide electric vehicle charging opportunities at three different points of entry/exit to the community.

⁴ ICBC, August 31, 2017. ICBC Data Request by Integrated Transportation that showed as of August 31st, 2017 there were 123 electric vehicles and 764 hybrids insured in Kelowna, equivalent to 0.84% of the 105,200 vehicles insured.

⁵ Fleetcarma, November 6, 2018. Electric Vehicle Sales Update Q3 2018, Canada. <https://www.fleetcarma.com/electric-vehicles-sales-update-q3-2018-canada/>. Ontario, Quebec and BC remain the top adopters of electric vehicles.

⁶ CBC, March 21, 2019. Incentives for new electric vehicle in BC could add up to \$16K.

<https://www.cbc.ca/news/canada/british-columbia/federal-rebate-adds-to-provincial-ev-incentives-1.5065337>

⁷ Plug in BC. EV 101 and Charging Stations. <http://pluginbc.ca/ev101/#charge>

⁸ Natural Resources Canada. Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative.

<https://www.nrcan.gc.ca/energy/alternative-fuels/fuel-facts/ecoenergy/18352>

Users will be charged a rate of \$9 per 30-minute charge by FortisBC, which has been approved by the BC Utilities Commission, and aligns with rates Fortis charges at other stations throughout the province.

Opportunity for Two Additional DC Fast Chargers

Natural Resources Canada *Electric Vehicle and Alternative Fuel Infrastructure Initiative* is accepting applications for another round of funding. FortisBC approached staff to apply for an additional two DC fast chargers – a second one for each the Museum Parking Lot and Rutland Centennial Park. As some of the infrastructure will already be in place, the cost is estimated to be \$150,000, which if the application is successful will be covered by the grants and the remainder by FortisBC. To meet the mid May timeline, staff have already signed an MOU for these two stations to submit with the grant application.

Next Steps

Level 2 charging stations are becoming more affordable to purchase, and additional Level 2 infrastructure could help support the growing EV market. Staff are investigating costs for Level 2 charging stations for the downtown parkades and City Hall parking lot to determine the feasibility of purchasing and installing additional Level 2 infrastructure within the existing parking budget.

Finally, the recently hired Community Energy Specialist will be developing an Electric Vehicle Strategy over the next year. This strategy will:

- Examine standards for City capital and development projects to include EV infrastructure;
- Investigate funding opportunities to expand the public EV network; and
- Investigate options for regulations or incentives to expand the private EV network.

EVs are one component of a broader, comprehensive sustainable transportation strategy. EVs have substantial emissions reduction potential, particularly in BC where 98% of electricity generation is clean power.⁹ Supporting the expansion of the EV charging network contributes to the adoption of EVs thereby taking steps towards reaching the OCP's GHG reduction target. It also directly aligns with two of the newly endorsed Council priorities: 1) environmental protection and 2) transportation and mobility, with the goals of reducing GHG emissions and embracing emerging technologies to make it easier to get around.

Existing Policy:

Official Community Plan

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|-------------------|--|
| OCP Policy 5.11.3 | Preferred Parking. Encourage preferred (e.g., close to entrances) or dedicated parking stalls for electric vehicles, share cars and/or hybrid vehicles and small vehicles for all developments. |
| OCP Objective 6.1 | Improve energy efficiency and reduce community greenhouse gas emissions. |
| OCP Policy 6.2.1 | GHG Reduction Target and Actions. The City of Kelowna will, in partnership with: senior governments; local residents and businesses; NGOs; external |

⁹ BC Hydro and City of Richmond. Residential Electric Vehicle Charging: A Guide for Local Governments. <https://pluginbc.ca/wp/wp-content/uploads/2018/10/Residential-EV-Charging-A-Guide-for-Local-Governments.pdf>

agencies; and utility providers, work towards reducing absolute community greenhouse gas emissions by:

- 4% below 2007 levels by 2023;
- 25% below 2007 levels by 2033; and
- 80% below 2007 levels by 2050.

The City of Kelowna's efforts will be focussed on creating a dynamic community that embraces sustainable transportation options, energy efficient buildings and vibrant urban centres.

The City will support the reduced use of fossil fuels in buildings by encouraging renewable energy supplies, and energy efficient technologies in new and existing buildings.

The City will lead through example and strive to meet the BC Climate Action Charter targets for the reduction of GHG emissions from municipal infrastructure.

Community Climate Action Plan

Action T6 Develop a community wide electric vehicle (EV) strategy. The strategy should include standards for City capital (i.e., parkades, parks, facilities), policies for development projects to include EV technology and infrastructure, and opportunities for other electric transport (e.g. e-bike and e-scooters) to charge.

Airport Master Plan 2045

Recommendation It is recommended that YLW encourage usage of other alternative transportation modes, such as electric vehicles and carpooling through provision of charging stations, dedicated drop-off/pick-up points and other incentives.

Financial/Budgetary Considerations:

This project is being managed by FortisBC. There will be no impact to taxation for the installation and ongoing maintenance and operations of the four new EV charging stations. Nearly 86 per cent of the purchase cost and installation (approximately \$350,000) of the four new DC fast chargers to be installed this spring is funded by provincial/federal grants and FortisBC (\$225,000 by grant, \$75,000 by FortisBC). The remainder of the cost (\$50,000) is funded as part of the existing Airport Development budget. The inclusion of the airports EV charging station project in the FortisBC grant application significantly lowered the anticipated cost for their project.

The cost to have an additional charging station at both the Museum Parking Lot and the Rutland Centennial Park is estimated to be \$150,000, which if the FortisBC application is successful, will be covered entirely by the a provincial/federal grant and FortisBC. The City has provided the land at both locations but all ongoing maintenance and operations of the stations will be funded by FortisBC. There will be no impact to taxation.

Submitted by:

T. Guidi, Sustainability Coordinator and D. Duncan, Parking Services Manager

Approved for inclusion:



Danielle Noble-Brandt, Policy & Planning Department Manager

cc:

Community Planning and Development Divisional Director (RS)

Community Planning and Development Divisional Director (DE)

Airport Operations Manager

Strategic Transportation Planning Manager

Energy Program Manager

Grants and Special Projects Manager

Fleet Services Manager

Active Transportation Coordinator

Community Energy Specialist

Communications Coordinator

FortisBC, Manager Innovative Initiatives