



City of Richmond

Report to Committee

To: Public Works & Transportation Committee **Date:** April 14, 2022
From: Peter Russell **File:** 02-0780-01/2022-Vol
 Director, Sustainability and District Energy 01
 Suzanne Bycraft
 Director, Public Works Operations
Re: Public Electric Vehicle Charger Program Update

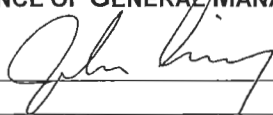

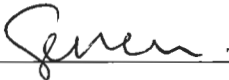
Staff Recommendation

That the report titled “Public Electric Vehicle Charger Program Update”, dated April 14, 2022, from the Director, Sustainability and District Energy and the Director, Public Works Operations, be received for information.

Peter Russell
 Director, Sustainability and District Energy
 (604-276-4130)

Suzanne Bycraft
 Director, Public Works Operations
 (604-233-3338)

Att. 3

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
SENIOR STAFF REPORT REVIEW	INITIALS: 
APPROVED BY CAO - Acting 	

Staff Report

Origin

This report provides an update on the most recent expansion of the City's public electric vehicle charging infrastructure and related matters. Additionally, this report responds to the June 28, 2021 Council referral related to the "Electric Vehicle Adoption – Youth Outreach Initiative" report:

That the report titled "Electric Vehicle Adoption – Youth Outreach Initiative" from the Interim Director, Public Works Operations, dated June 7, 2021, be received for information; and That staff report back on the program in 12 months."

This report supports Council's Strategic Plan 2018-2022 Strategy #2 A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.2 Policies and practices support Richmond's sustainability goals.

This report supports Council's Strategic Plan 2018-2022 Strategy #6 Strategic and Well-Planned Growth:

Leadership in effective and sustainable growth that supports Richmond's physical and social needs.

6.2 "Green" and circular economic growth and practices are emphasized.

This report supports Council's Community Energy & Emissions Plan (CEEP) 2050:

Action 2.1.1 identifies that the City will 'Build out a network of public EV charging stations at civic facilities in Richmond to accelerate rate of local EV adoption' through securing funding for priority 'on the go' EV charging locations identifying optimal locations for the City's public EV charging network as EV ownership expands. Action 2.1.1 is also noted as an equity opportunity.

Analysis

Achievements to Date

The City currently owns and operates 51 public chargers with 7 additional chargers to be installed in Q2 2022 at City Hall, Richmond Animal Shelter and Capstan Park. Included in these figures is the most recent expansion which added 34 chargers at 12 locations across the City. The approved budgets for the expansion was \$1,340,000 with costs to be offset by a \$440,000 contribution from Natural Resources Canada. Attachment 1 provides a summary of current and planned level of service and locations for all public City-owned chargers.

In conjunction with Natural Resources Canada, staff are evaluating opportunities to share this information with the public and promote the City’s continued foresight and progress in creating charging infrastructure in support of community EV adoption. A media event is contemplated upon completion of the installations at City Hall.

Charger Usage

The COVID-19 pandemic and timing of the introduction of user fees in March of 2020 saw a reduction in usage of the public chargers. However, recent usage is showing signs of increasing recovery and is expected to continue growing as COVID-19 restrictions ease and new EV sales continue to grow in the community. Tables 1, 2, and 3 show the gross revenue, charging sessions and energy consumption for Q1 2022.

Monthly revenues in March were double those in January. The number of charging sessions and energy used has increased by 34%, indicating longer visits per session, and supports the charge it and move it motto of increasing fees after longer than a two hour stay.

Table 1: Gross Revenue

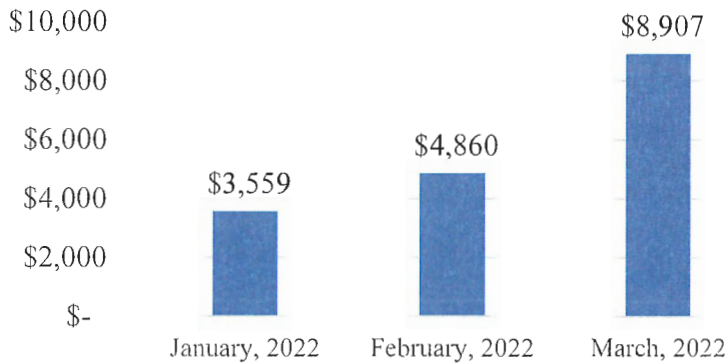


Table 2: Monthly Charging Sessions

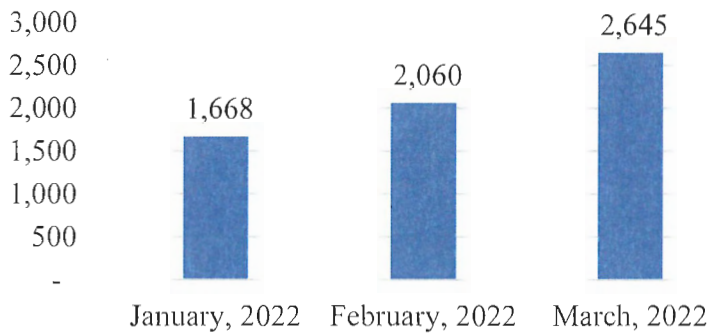
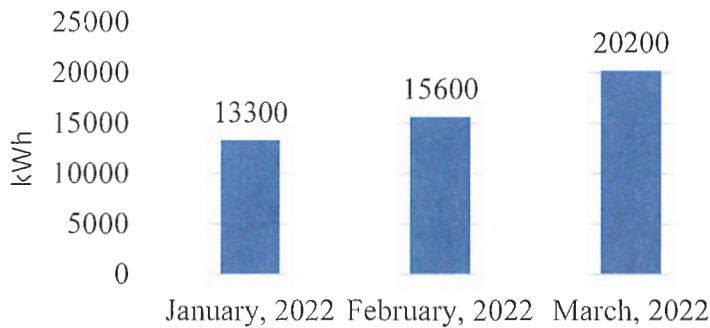


Table 3: Energy Distributed



Future Considerations

Below is an update on current work that is under development:

- Staffing:** Council endorsed staff recommendations for the ‘Parking Stall Fees at City-Owned Electric Vehicle Charging Stations’ report at the December 18, 2019, Council meeting which included a recommendation to create a regular full-time position following analysis of operational demand in 2020. Due to reduced usage and revenue caused by the pandemic, staff have not brought forward the request to date. Staff will continue to monitor the current growth trend and bring forward recommendations for consideration in the 2023 budget cycle.
- Rates:** Currently, a time-based rate is applied and charged per minute. See Attachment 2 for current rates and the principles behind the rate design. Rates can also be applied by electricity consumption.

Effective March 22, 2019, BC’s Ministry of Energy Mines and Petroleum Resources provided exemptions under the Utilities Commission Act for the resale of electricity for the purposes of EV charging. Prior to this, there was concern that charging user fees for electricity for EV charging would require the seller to be regulated as a utility. Additionally, under Canada’s Electricity and Gas Inspection Act, Measurement Canada has the mandate to protect the right of consumers to accurate and reliable measurement when they make a purchase based on measurement. Measurement Canada has initiated a process to allow chargers that meet established technical standards to charge directly for energy consumption. Staff will continue to monitor these developments and will bring forward rate structure options for Council consideration as appropriate.

Update on Fleet EV Chargers

The City’s corporate electric vehicle charging infrastructure continues to expand as part of the Green Fleet Action Plan. The approved budgets for the current expansion is \$2,629,700 with costs to be offset by a \$420,000 contribution from Natural Resources Canada. The City recently joined

the West Coast Electric Fleets Diamond Lane pledge, which sets out a commitment to replace above 10% of all new corporate passenger fleet vehicle procurements as zero emission vehicles. To date, the City has installed 24 chargers to support growth in its corporate EV fleet. Current approved projects will increase this to 81 chargers. Attachment 3 provides a summary of the level of service and locations for all corporate chargers.

Update on Electric Vehicle Adoption – Youth Outreach Initiative

An outreach initiative to promote EV adoption among youth was developed for elementary-aged school children. The Richmond EVie Lesson Toolkit (RELT) was created with the assistance of the City Green Ambassadors, a group of volunteers with a keen interest in supporting City EV outreach events. Plug-In BC, Plug-In Richmond and the Richmond School District were partners in the development of this outreach initiative.

City staff worked with the Richmond School District 38 to launch the EVie Lesson Toolkit in preparation for program roll out starting in September 2021. Implementation has been slowed by COVID-19 restrictions and resource limitations requiring the Richmond School District to allocate resources to other school programs of importance. The RELT website had 40 visits, the challenge posters website had 30 visits, the introductory videos were viewed over 100 times, and a group of students are currently submitting design and video challenges as part of the program.

Staff will continue to promote the toolkit as COVID-19 restrictions ease and expect broader uptake in the program moving forward with a strong launch focus in the fall of 2022. Several promotional activities are in progress to support the adoption of the RELT program. These include launch of RELT program to all school principals in Richmond, three virtual information sessions on the program and the future of transportation, and a 10 week campaign to drive Richmond students to participate in a design or video challenges which concludes on Earth Day.

Additionally, Emotive and the Fraser Basin Council, who helped fund the development of this Richmond-based initiative, will make the toolkit available to other school districts in British Columbia to help further promote adoption of electric vehicles.

Financial Impact

None.

Conclusion

Council has established a strategic vision, backed by policies and funding, which have facilitated accelerated growth in EV charging infrastructure. This rapid deployment of chargers in Richmond has spurred growth in both community and corporate EV adoption. As COVID-19 restrictions ease, the use of chargers is beginning to spike, which correlates well with the pending completion of new City charger installations.

A media launch is contemplated to share the City's progress in completing these important community initiatives. The City also continues to raise awareness and promote EV adoption

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through initiatives such as its RELT youth outreach initiative, being launched in cooperation with the Richmond School District.



Peter Russell
Director, Sustainability and District Energy
(604-276-4130)



Dinos Ramos
Public Works Operations Coordinator
(604-233-3302)

- Att. 1: Public Chargers Current and Planned
- 2: Current Rates and Principals of Charging Fees
- 3: Corporate Chargers Current and Planned

Public Chargers Current and Planned

Station Location	Address	No. of Ports	Type of Station		Type of Stall
			Level 2	Level 3	Accessible Stall
Existing Public EV Charging Stations					
Blundell Park	6468 Blundell Rd	2	✓		✓
Britannia Heritage Ship Yards	5180 Westwater Dr	2	✓		
Cambie Community Centre	12800 Cambie Rd	2	✓		
City Hall	6911 No. 3 Rd	2	✓		
City Works Yard	5599 Lynas Ln	2	✓		
Firehall 1	6960 Gilbert Rd	2	✓		
Firehall 3	9660 Cambie Rd	2	✓		
Garden City Park	6620 Garden City Rd	2	✓		✓
Hamilton Community Centre	5140 Smith Dr	2	✓		✓
King George Park	4100 No 5 Rd	1		✓	✓
King George Park	4100 No 5 Rd	2	✓		✓
Minoru Park (Arenas)	7551 Minoru Gate	4	✓		✓
Minoru Centre for Active Living	7191 Granville Ave	4	✓		
RCMP City Centre Community Police Office	6931 Granville Ave	2	✓		
Richmond Ice Centre	14140 Triangle Rd	1		✓	✓
Richmond Ice Centre	14140 Triangle Rd	2	✓		✓
Richmond Oval	6111 River Rd	1		✓	✓
Richmond Oval	6111 River Rd	4	✓		
South Arm Community Centre	8880 Williams Rd	2	✓		✓
Steveston Community Centre	4111 Moncton St	2	✓		
Steveston Tennis Courts	4151 Chatham St	2	✓		✓
Thompson Community Centre	5151 Granville Ave	2	✓		
West Richmond Community Centre	9180 No 1 Rd	4	✓		✓
SUBTOTAL		51			
Planned Public EV Charging Stations					
Capstan Park (On Street Parking)	3311 Carscallen Rd	2	✓		
City Hall	6911 No. 3 Rd	1		✓	✓
City Hall	6911 No. 3 Rd	2	✓		✓
Richmond Animal Shelter	12071 No. 5 Rd.	2	✓		
SUBTOTAL		7			
TOTAL CURRENT & PLANNED		58			

Current Rates and Principals of Charging Fees

Type of Charger	Charging Rate
Level 2	\$2.00/hour first 2 hours, \$5.00/hour thereafter
Level 3 (DCFC) 25kW	\$8.00/hour
Level 3 (DCFC) 50kW	\$16.00/hour

Fees have been set with the intention of increasing turnover, reducing average idle time at stations and encouraging EV drivers to preferentially charge at home or in the workplace, if that option is available. Rates are comparable to regional pricing in surrounding municipalities and BC Hydro stations.

Corporate Chargers Current and Planned

Station Location	Address	No. of Ports	Type of Station	
			Level 2	Level 3
Existing Corporate EV Charging Stations				
City Hall	6911 No. 3 Rd	2	✓	
City Works Yard	5599 Lynas Ln	6	✓	
City Hall Annex	6900 Minoru Blvd	12	✓	
RCMP City Centre Community Police Office	6931 Granville Ave	2	✓	
RCMP Headquarters	11411 No. 5 Rd	2	✓	
SUBTOTAL		24		
Planned Corporate EV Charging Stations				
City Hall	6911 No. 3 Rd	1		✓
City Works Yard	5599 Lynas Ln	2		✓
City Works Yard	5599 Lynas Ln	20	✓	
City Hall Annex	6900 Minoru Blvd	22	✓	
Firehall 1	6960 Gilbert Rd	4	✓	
Firehall 2	11011 No. 2 Rd	2	✓	
Firehall 3	9660 Cambie Rd	4	✓	
RCMP Headquarters	11411 No. 5 Rd	2	✓	
SUBTOTAL		57		
TOTAL CURRENT & PLANNED		81		