

DECISION/DIRECTION NOTE

Title: Electric Vehicle Infrastructure Funding

Date Prepared: August 17, 2021

Report To: Committee of the Whole

Councillor and Role: Councillor Ian Froude, Transportation and Regulatory Services & Sustainability

Ward: Ward 4

Decision/Direction Required:

For Council to consider a project funded in partnership with the Natural Resources Canada Zero Emissions Vehicle Infrastructure Program (ZEVIP) to ready public works facilities for fleet electrification and increase access to charging for residents.

Discussion – Background and Current Status:

Electric (EV) and Plug-In Hybrid (PHEV) Vehicles are becoming increasingly popular with more models on the market, better battery range, and more drivers switching from gas to electric. They present an opportunity to reduce greenhouse gas emissions, while providing some savings over a vehicle's lifetime (e.g., no oil changes, spark plugs, and reduced brake maintenance). They are a key aspect of the response to climate change as people do their best to use active transportation; while also transitioning to driving less, driving smaller, and driving cleaner vehicles.

We used to talk about electric vehicles like they were “the future.” Something we had to wait for, the future has arrived. EVs are in St. John's, there are currently over 38 different models of electric and plug-in-hybrid electric vehicles available in Canada. Most major manufacturers are working towards making parts or all of their product lines electric by as early as 2024, with significant increases in the number of models available as early as 2022. The availability of charging infrastructure in public spaces has been identified as one of the main barriers to the adoption of electric vehicles. There are over 300 publicly available chargers in Atlantic Canada. There are currently only about 13 publicly available chargers in St. John's.

The Government of Canada set federal targets of zero emission vehicles (ZEVs) reaching 10% of light-duty vehicles sales by 2025, 30% by 2030 and 100% by 2040 and invested over \$750 million to help make ZEVs more affordable and infrastructure more accessible. The Zero Emission Vehicle Infrastructure Program (ZEVIP) is a 5-year \$280 million program ending in 2024 and its objective is to address the lack of charging stations in Canada by increasing the availability of localized charging opportunities where Canadians live, work, and play. The ZEVIP program presents the City with the opportunity to access funding for up to 50% of the project cost (up to \$5,000 per charger head) to increase the density of EV and PHEV chargers

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for residents in the City and prepare City facilities to support electrification of the corporate fleet.

This project would see up to 24 new charges being installed in St. John's. The project would include 10 corporate-use and 14 publicly available chargers. Each charger includes a payment and networking capabilities to be visible through national and international networks.

The project addresses the following limitations in the adoption of EVs and PHEVs:

- Initiates the installation of chargers for use by corporate operations;
- Furthers charging opportunities in public spaces for residents, and;
- Implements an on-street pilot in the commercial downtown area.

Sponsorship Opportunities

Permanent chargers in publicly available spaces would be made eligible for sponsorship, following the City's Sponsorship policy. Each sponsor would be recognized on-site, as well as virtually as each charger is included in popular international charger finding applications. The inclusion of a sponsorship opportunity supports the City in putting forward a greater project at this time and being able to consider more climate action.

Project Areas

Corporate Charging

The St. John's Corporate Energy and Greenhouse Gas Inventory (2018) identified that 24% of the energy used in our corporation is gasoline and diesel for transportation, which generates 48% of the total corporate greenhouse gases. The light-duty fleet specifically accounts for 10% of the greenhouse gas emissions of the corporation. EV charging stations will make procuring an EV or a PHEV a more viable option for operations.

Corporate Operations Chargers:

Location	# Chargers	Supply	Install	Site Total	20% contingency	GST/HST	ZEVIP Grant
City Hall (Second floor)	2	\$11,050	\$5,000	\$16,050	\$3,210	\$826	\$(10,000)
City Depot	4	\$22,100	\$20,000	\$42,100	\$8,420	\$2,166	\$(20,000)
Metrobus	4	\$22,100	\$10,000	\$32,100	\$6,420	\$1,651	\$(20,000)
Sub-Total:		\$55,250	\$35,000	\$90,250	\$18,050	\$4,643	\$(50,000)
Total Project Cost:							\$112,943
City Contribution Total:							\$62,943

Public Charging

The City of St. John's, through the City Strategic Plan 2019-2029 set out to be "A Sustainable City", as well as "A City that Moves", and Council declared a Climate Emergency November 2019.

In our Community, transportation generates 59% of the greenhouse gas emissions. More specifically, gasoline (mostly associated with personal vehicles) is responsible for 56% of our community's greenhouse gas emissions. The installation of electric vehicle charging stations at public spaces in City-owned facilities would progress the feasibility of use for plug-in-hybrid electric vehicles (PHEVs) and electric vehicles (EVs) within St. John's for residents and visitors.

The locations best suited for installation (based on the regional network of chargers, accessibility to electric power, and ease of installation) are:

- City Hall
- Paul Reynolds Community Centre
- The H.G.R. Mews Community Centre Replacement
- Churchill Square
- 245 Freshwater Road
- Southlands Community Centre

Publicly Available Chargers:

Location	# Chargers	Supply	Install	Sub-Total	20% Contingency	GST/HST	ZEVIP Grant
City hall (First floor)	2	\$11,050	\$10,000	\$21,050	\$4,210	\$ 1,083	\$ (10,000)
New Mews	2	\$12,450	Included in construction	\$12,450	\$2,490	\$ 640	\$ (10,000)
Paul Reynolds	2	\$12,450	\$10,000	\$22,450	\$4,490	\$ 1,155	\$ (7,790)
Churchill Square	2	\$12,450	\$15,000	\$27,450	\$5,490	\$ 2,878	\$ (10,000)
245 Freshwater	2	\$12,450	\$10,000	\$22,450	\$4,490	\$ 4,674	\$ (10,000)
Southlands Community Centre	2	\$12,450	\$10,000	\$22,450	\$4,490	\$ 8,707	\$ (10,000)
Sub-total		\$ 73,300	\$55,000	\$128,300	\$25,660	\$ 19,137	\$ (57,790)
Project Total							\$ 173,097
City Contribution Total							\$ 115,307

The sponsorship opportunity would be of up to \$60,000. This would be broken down by 5-year sponsorship of \$5,000 per charger head, or a sole sponsor for the location at \$10,000. Each device is expected to have a 10 year lifetime in outdoor installations. There would be up to 12 sponsorship opportunities, this may support the City in reducing the upfront cost.

Public Charging: Downtown Pilot

EV Charging is a challenge for off-street parking locations in the downtown area. Policy measures are being explored by City staff. Following the lead of other jurisdictions, making public charging available in areas of business improves daily access to chargers. A pilot in downtown area is included in the proposal. The specific location will be selected in partnership with Newfoundland Power, Downtwon St. John's, City Staff and a public meeting.

Downtown On-Street Charging Pilot:

Location	# Chargers	Supply	Install	Site Total	20% Contingency	GST/HST	ZEVIP Grant
Downtown (On-street)	2	\$ 12,450	\$ 10,000	\$ 22,450	\$ 4,490	\$ 1,154	\$ (10,000)
Project Total							28,094
City Contribution Total							\$ 18,095

As this is a pilot, it is recommended that sponsorship opportunities not be included.

Implementation Schedule and ZEVIP Funding Decision

Project Costs & Grants Summary:

Project Total Cost:	\$ 314,135
ZEVIP Grant Total:	- \$ 117,790
City Total:	\$ 196,345
Sponsorships (potential):	- \$ 60,000
City Total (after sponsorship):	\$ 136,345

Upon finalization of a grant agreement, it is anticipated installations would take place between October 2021 to March 2023, with public spaces being the first to receive the units.

Year	2021	2022-2023
Locations:	City Hall, Paul Reynolds, 245 Freshwater, Southlands Comm. Ctr.	Corporate Sites, Mundy Pond Comm. Ctr., Churchill Sqr., Downtown Pilot
Costs to the City:	\$81,698 (\$40,000 sponsorships potential)	\$114,646 (\$20,000 sponsorship potential)



Charger with cable management example

Ongoing Costs

The Clean Air Partnership’s review for “Creating an Effective Workplace Electric Vehicle Charging Policy” shared lessons learned from municipalities across Canada who have made charging publicly available. Experience has indicated there are benefits to having the devices networked and that a paid structure contributes to the improvement of equitable aspects of the initiatives. As well, this operating model generates a return on investment that supports adequate maintenance, replacement and expansion of the system.

A nominal charging fee of \$1.5/hour of plug-in-time at the charging stations could be incorporated with the proposed devices. Residents would still benefit from paying 60-70% less per kilometer traveled when compared to the cheapest gasoline in the City, and where relevant discounted parking.

The devices can process the payments through a mobile application or a physical card that can be requested by the user directly from the manufacturer. The devices will be able to handle potential future changes in fees. This would result in charging and eventual replacement being cost-neutral and near cost-neutral to the City. Year 2 and forward, annual operating costs for the network are expected to be:

Per charger/year	Description	# Chargers	Total/year
\$150	Online Connectivity 24/7 end user support Payment system Transaction disputes support	24	\$3,600

These costs are expected to overtime become cost natural to the City. Some sample scenarios of revenue from usage would result in the following revenues:

- **Low Use:** 6hrs/day of charging across all locations would generate approximately \$667 per year (assuming electricity costs of \$0.147/kWh).
- **Heavy Use:** 72hrs/day of charging across all locations would generate approximately \$8,010 per year (assuming electricity rate of \$0.147/kWh).

Key Considerations/Implications:

1. Budget/Financial Implications:

Upfront Costs - funding requires the City to cover the non-grant portion of the project's total cost. The \$196,345 cost share would be covered within the annual Sustainability Operating budget throughout 2021 and 2022, split as outlined in the implementation schedule above.

There are no additional operating costs on year 1, and approximately \$3,600 expected on year 2 for the full network. This expense is expected to be offset through the user fees of the public chargers. Any shortfall in the first couple of years would be allocated to the Sustainability Operating Budget.

Networking fees are included in the device's purchase cost for the first 2 years. After the first 2 years, and if a fee structure is in place, the devices will have a \$150/year/station networking fee in order to support payment and other customer service functions.

Payment processing of public devices will be funded by the device charging a 15% fee on each payment.

2. Partners or Other Stakeholders: Newfoundland Power has been consulted and is collaborating in assessing the proposed sites, and the implementation.

3. Alignment with Strategic Directions/Adopted Plans:

A Sustainable City, A City That Moves, An Effective City, Corporate Climate Plan

4. Legal or Policy Implications: N/A
5. Human Resource Implications: City Buildings staff and Metrobus staff would be involved in the implementation to build internal capacity.

Engagement and Communications Considerations: The devices will be placed in visible locations or signage will be put in place, the chargers will also be mapped in national databases (e.g., Plugshare, and the Flo network) to enable drivers to locate the stations with ease across North America.

6. Privacy Implications: A Privacy Impact Assessment has been initiated to identify and mitigate any privacy risks.
7. Procurement Implications: The Department of Finance and Administration will be involved in the purchase of the equipment.
8. Information Technology Implications: The devices are networked through (cellular), costs associated with the networking of these devices are included in the estimates provided above.
9. Other Implications: N/A

Recommendation:

That Council approves the locations and funds to implement the proposed EV charging network with the proposed fee structure for publicly available chargers.

Prepared by: Edmundo Fausto, Sustainability Coordinator

Approved by:

Report Approval Details

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

Brian Head - Aug 18, 2021 - 11:36 AM

Lynnann Winsor - Aug 18, 2021 - 4:17 PM