Report to: General Committee Meeting Date: July 13, 2021

**SUBJECT**: Alectra Electric Vehicle Charging Partnership - Multiple Sites
**PREPARED BY:** Jennifer Wong, Sustainability Coordinator, Sustainability & Asset Management
Janet Reid, Community Engagement Program Specialist, Sustainability & Asset Management

**RECOMMENDATION:**

1) That the report entitled, "Alectra Electric Vehicle Charging Partnership – Multiple City Sites" be received; and,

2) That the Mayor and Clerk be authorized to execute an agreement, including any amendments to the agreement, between the City of Markham ("City") and Alectra Energy Services Inc. ("Alectra") for the installation, operation, maintenance and repair of Electric Vehicle Supply Equipment at Markham community facilities for public use, provided the form of such agreement is satisfactory to the Commissioner of Corporate Services and the City Solicitor; and further,

3) That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**PURPOSE:**
The purpose of this report is to obtain Council approval for the execution of an agreement between the City and Alectra for a project funded by Natural Resources Canada's ("NRCan") Zero Emission Vehicle Infrastructure Program ("ZEVIP"), to supply 18 electric vehicle charging stations for paid public use at community facilities. There is no capital or operating cost impact to the City as host of the EV charging stations.

**BACKGROUND:**
Transportation is the second largest source of greenhouse gas emissions ("GHGs") in Canada, accounting for a quarter of Canada's total GHG emissions and almost half of those emissions come from cars and light trucks. One way to reduce transportation emissions is to incorporate more electric vehicles ("EVs") on the road. EVs are becoming more prevalent in Ontario, given technology and market developments, as well as Canada's zero-emission vehicles sales targets of reaching 10% of light-duty vehicles sales per year by 2025, 30% by 2030 and 100% by 2040. There are currently over 57,000 EVs in Ontario, with this number growing annually at 28% (2020). Approximately a third of Ontario's EV fleet (>19,000 as of December 2020) is located within Alectra's service territory.

**Natural Resources Canada's Zero Emissions Vehicle Infrastructure Program**
On June 21, 2019, the Government of Canada, through NRCan, announced $130 million of funding over five years (2019 to 2024) to be committed to the Zero Emission Vehicle Infrastructure Program to address the lack of charging and refueling stations in Canada in

an effort to support ambitious federal targets for adoption of zero emissions vehicles. Alectra invited all municipalities in their service area to participate and successfully put forward an application on behalf of partnered municipalities. The City of Barrie, City of St. Catharines and City of Markham and a retail property in Guelph are moving forward only. Those municipalities that declined participation have their own programs or policies in place, often providing free electricity at the municipalities cost.

EVs require regular charging. While at present 80% of charging occurs at home, there is a growing need to charge while on the go. The installation of Level 2 Electric Vehicle Supply Equipment ("EVSE") at strategic locations will help ensure that EV drivers in Markham can recharge their battery within a few hours, alleviating battery range concerns and helping to support greater EV adoption.

Increased EV uptake will support the City's transition to a low carbon economy. Secondary benefits include improved air quality from increased low-to-zero-emission vehicle use resulting in enhanced livability and potentially lower health risks.
The joint project led by Alectra, will benefit from staff knowledge of the EV sector developed over several years and our experience partnering on emerging technology projects. This project will provide increased services to the community at no cost to the City.

**Markham's Municipal Energy Plan – Getting to Zero**

In 2018, Council endorsed the Markham Municipal Energy Plan – Getting to Zero ("MEP") with the objective of Net zero emissions by 2050. The long term vision to reach net zero by 2050 is guided by three main principles:

1. Decrease overall local energy consumption in all sectors;
2. Switch to low carbon renewable sources of energy; and,
3. Increase local energy generation from renewable sources

A comprehensive GIS-based energy model was developed to calculate Markham's energy consumption and emissions production in all sectors using a 2011 baseline. The results determined that the residential sector consumed the largest amount of overall energy at 34%, followed by the transportation sector at 33%. In terms of emissions production, buildings produced the largest amount at 49% followed by the transportation sector at 37%.

Since developing the MEP, staff have implemented pilot projects, programs and promoted the education of EVs to support the reduction of energy use and emissions in the transportation sector, these include:

- Hosting the first municipally-owned Level 3 EV fast charging station at Markham Civic Centre in 2015;
- Partnering with Alectra to pilot the AlectraDrive @ Work program at Markham Civic Centre in 2018, to optimize and manage Level 2 EV charging in the garage and above ground using demand response technology to balance the electrical draw for the building with vehicle charging requirements;
- Investing in zero emissions vehicles for corporate fleet, there are currently 9 EVs; and,

- Partnering with EV car companies such as Tesla, Hyundai and BMW and non-profit organization, Plug'n Drive to provide test drives of different EV models at events, such as Staff Appreciation Day and the annual Earth Day event.

**OPTIONS/ DISCUSSION:**
The non-exclusive agreement with Alectra includes 18 EVSE for a 10-year installation period as required by Natural Resources Canada.

The recommended locations for the equipment are as follows, Appendix A provides an aerial view for each site:

- 4 EVSE at Angus Glen Community Centre;
- 2 EVSE at Crosby Community Centre;
- 2 EVSE at Markham Museum;
- 4 EVSE at Pan Am Centre;
- 2 EVSE at Thornhill Community Centre;
- 2 EVSE at Aaniin Community Centre; and,
- 2 EVSE at Markham Village Community Centre

Many City locations were evaluated; however, the above are recommended by City staff (Recreation, Culture, Operations and Sustainability and Asset Management) and Alectra to ensure that they will be accessible to the public and best suited operationally for the host facility. There is a significant cost to move the EVSE once installed. Near future and current capital projects at Milliken Mills Community Centre and Cornell Community Centre meant they could not be addressed due to possible construction conflicts.

Installation of the 18 EVSE is to begin in the third quarter of 2021. Once installed, users will be required to pay on an hourly basis to charge their vehicles and Alectra will set fees in line with market rates. Revenue from charging will be used to reimburse the City for electricity used, support equipment maintenance over the installation period, support capital costs for installation and project administration. A portion of the revenue will also reimburse NRCan for their contribution to the project (approximately $5,000 per unit), if and when the project becomes profitable.

**Access to Site**
Sustainability & Asset Management will coordinate the installation work and support ongoing maintenance by Alectra and their contractors with the facility operators for each site during the 10-year term of the agreement.

**Electric Vehicle Supply Equipment Technology**
Alectra has built experience working with various emerging green technologies as part of current and past pilot programs and EVSE deployments at several office locations including the City of Markham. Alectra will install networked EVSE which allows for high level data collection that will help the City measure GHG reduction targets. Currently, FLO, Canada's largest electric vehicle charging network supplies the current public charging stations at the Civic Centre. FLO will supply the charging equipment and customer billing system for the 18 EVSE.

Staff recommend that the City and Alectra enter into an agreement for the provision of ESVE equipment to Markham residents and visitors at the public City locations mentioned above. A written agreement would clarify the roles and responsibilities of each party and would assist in long term management of service delivery. The proposed agreement will address the following matters:

- Project Obligations, Business Model & Project Ownership
- Roles and Responsibilities
- Payments, Insurance and Termination Fees
- Representation and Warranty

This project is unique in partnership with Alectra and external support from NRCan at no cost to the City. Staff will evaluate the project agreement after the 10-year term.

## FINANCIAL CONSIDERATIONS

### Capital Budget

The City of Markham is not required to provide any capital funding for the procurement and installation of the EVSE. Alectra has secured $5,000 per EVSE (approximately 30% of the project cost) in funding from NRCan to assist with offsetting the upfront capital cost of the project.

### Operational Budget

The City will also not be required to pay for the operation and maintenance of the EVSE for the 10-year term. Public use of the EVSE are metered by FLO and charged at current market rates that Alectra sets. The fees collected by Alectra for the electricity consumed and will be reimbursed to the City. The City of Markham will assume the nominal costs associated with maintaining the parking areas (e.g. snow removal, security and signage), performing & reporting on inspections of the area & equipment and enforcing parking restrictions. Minor costs will be incurred for initial installation and ongoing maintenance of identification signage and EVSE symbols marking the parking spots that the Sustainability an Asset Management department will absorb.

### Project Termination

At the conclusion of this 10-year agreement, Alectra and the City will review the project outcomes and determine if the program should be extended, renewed or closed. Alectra will remove the equipment and restore the site conditions at their cost at the end of the agreement period if directed by the City.

### Potential Project Risk

Upon early termination of the agreement or the removal of EVSE at any site at the request of the City, Alectra will remove the EVSE and the electrical infrastructure it installed, returning the site to its previous state. The City will be required to pay Alectra a termination fee to cover the repayment fee for NRCan's project contribution, as required by NRCan's contract with Alectra, as well as the cost of decommissioning the site. Alectra will also recoup, on a declining basis, costs associated with infrastructure upgrades and equipment installation, extended warranty and a portion of project administration costs.

The likelihood of the City exercising the termination clause and paying the cancellation cost is very low. Alectra and their partner FLO have provided excellent service and support in the past and we expect that to continue.

**HUMAN RESOURCES CONSIDERATIONS**
Not applicable as no staffing impacts are anticipated for this project.

**ALIGNMENT WITH STRATEGIC PRIORITIES:**
Supports the BMFT Safe, Sustainable & Complete Community priority, the Greenprint, Markham's Community Sustainability Plan and Municipal Energy Plan goal of Net Zero Energy Emissions by 2050.

**BUSINESS UNITS CONSULTED AND AFFECTED:**
Comments from Legal, Finance, Culture, Recreation and Operations have been incorporated into this report.

**RECOMMENDED BY:**

| | |
|---|---|
| Graham Seaman | Trinela Cane |
| Director of Sustainability & Asset Management | Commissioner, Corporate Services |

**ATTACHMENTS:**
Appendix A – Photographs of the Proposed 18 EVSE Locations