



Committee Report

To:	Warden Hicks and Members of Committee of the Whole
Committee Date:	September 22, 2022
Subject / Report No:	Electric Vehicle Charging Network / CAOR-CW-10-22
Title:	Regional EV Network Partnership Study Results and Next Steps
Prepared by:	Linda Swanston
Reviewed by:	Randy Scherzer
Lower Tier(s) Affected:	All municipalities within Grey
Status:	

Recommendation

1. That report CAOR-CW-10-22 be received; and
2. That the County of Grey support the Regional Electric Vehicle (EV) Charging Network implementation; and
3. That the County makes a grant of up to \$9,578, along with in-kind staff resources, to the County of Dufferin for the project, contingent on the other project partners matching grant contributions; and
4. That Grey County's contribution to the Regional EV Charging Network Implementation be funded from the approved 2022 climate action implementation budget.

Executive Summary

Grey County in partnership with the Counties of Bruce, Dufferin, Huron, Perth and Wellington, the City of Guelph, and the Nuclear Innovation Institute (the Partners), worked with Community Energy Association (CEA) to develop a Regional EV Charging Network Strategy (the Strategy) (attached Attachment A). Based on overall network connectivity needs and siting criteria informed by over 1,300 survey responses, 17 Level 3 DC Fast Charger locations across the study area were recommended, including Durham, Flesherton, and Thornbury in Grey County. Staff are now proposing to continue the Partnership into an initiating implementation phase of the project, wherein the Partners will retain a facilitator to advance electric vehicle (EV) charger implementation for a contribution of up to \$9,578. The recommended approach to implementation involves competitively procuring a third-party implementation partner to own, operate and maintain Level 3 Fast Chargers at no cost to the County or local Municipalities. The Facilitator will work with the proposed host Municipalities to finalize the locations before the RFP is issued. This proposed approach enables Grey County to realize the tourism and

environmental benefits of regional EV charging coverage without shouldering the installation costs of upwards of \$150,000 per Level 3 charger and ongoing maintenance costs.

Background

Project Background

Going Green in Grey, adopted in April 2022, identifies accelerating electric vehicle (EV) adoption as one of the five key next steps in reaching Grey County's net-zero greenhouse gas emissions by 2050 goal. Private vehicles are the single largest source of local greenhouse gas pollution in Grey County, accounting for 39% of local emissions. As such, EVs are a major area of opportunity for climate action.

In spring 2021, Council directed Grey County staff to enter into a partnership with Wellington County, Dufferin County, Perth County, Huron County, Bruce County, and the City of Guelph to develop a Regional Electric Vehicle Charging Network Strategy. The Nuclear Innovation Institute participated in an advisory capacity with the Partners. Recognizing the growth of EV use and the Federal mandate that all new light-duty cars and passenger trucks purchased be zero-emissions by 2035, the Partners wanted to understand the current EV charging landscape and identify strategic EV charging locations for a regional network. This network would bridge the gap in charging infrastructure between Highway 401 and Lake Huron and Georgian Bay to the Bruce Peninsula.

There are three types of EV chargers:

Level 1 – This is the slowest level of charging and can be achieved by a standard 120-volt outlet, often called a 'trickle charge'. It can take over 24 hours to complete an 80% battery charge.

Level 2 – This level of charging requires a 240-volt outlet, similar to a dryer or stove, and can achieve an 80% battery charge within 8 hours. These are appropriate for at-home charging or destinations that support dwell times of multiple hours (e.g., tourist attractions, restaurants). These chargers cost approximately \$15,000, including installation.

Level 3 – This charging level, often known as Direct Current Fast Chargers (DCFC), can provide an 80% battery charge within an hour for most vehicles. These chargers require 3-phase power and are appropriate for locations that are 'pit stops' such as ONroutes, where drivers passing through an area might stop for under an hour. These chargers cost approximately \$150,000, including installation, if 3-phase power is available close to the location.

The Regional Strategy focuses on Level 3 chargers and identifies locations for supporting Level 2 chargers.

County of Wellington took on the project management of developing the Strategy with CEA and submitted a successful application to the Federation of Canadian Municipalities Green Municipal Fund on behalf of the Partnership resulting in \$35,150 (50% funding) for the Strategy. Grey County contributed an additional \$3,017 to the project as well as staff time. Community Energy Association (CEA) was hired through a competitive procurement process in the Fall of 2021 to

support the development of the Strategy. CEA has completed several regional EV charging network strategies in western Canada, including the award-winning [Accelerate Kootenays](#) network.

The objectives of the EV Charging Strategy development project were to:

- Undertake a geospatial gap analysis of existing charging stations in the study area.
- Model design of the future regional network to meet current and future EV driver needs.
- Establish criteria for site selection with an emphasis on tourism and economic development and identify proposed charging locations.

Project Process

The project was guided by the Partnership and executed in collaboration with CEA. There were monthly Partnership meetings throughout the project. Two webinars were hosted where staff from local municipalities within the study area were invited to participate in the Strategy development process. Updates were also provided to Grey County Climate Change Community of Practice staff throughout the project.

A technical advisory group was formed, including representatives from local electricity providers and the Independent Electricity Systems Operator (IESO). The technical advisory group provided input into the capacity of the local electrical grid to support future charging infrastructure and site-specific capacity to host Level 3 chargers based on the presence of 3-phase power.

CEA mapped the current Level 2 and Level 3 (DC Fast Chargers) across the study areas to identify gaps in connectivity (Figure 1). Based on the current charger availability, optimal locations of Level 3 DC Fast Chargers were identified to provide charging coverage across the Strategy area (Figure 2).

Legend



DCFC Station
Government-owned



DCFC Station
Private-owned



DCFC Station
Private-owned
Limited availability

Figure 1: Existing Level 3 charging stations in Study Area

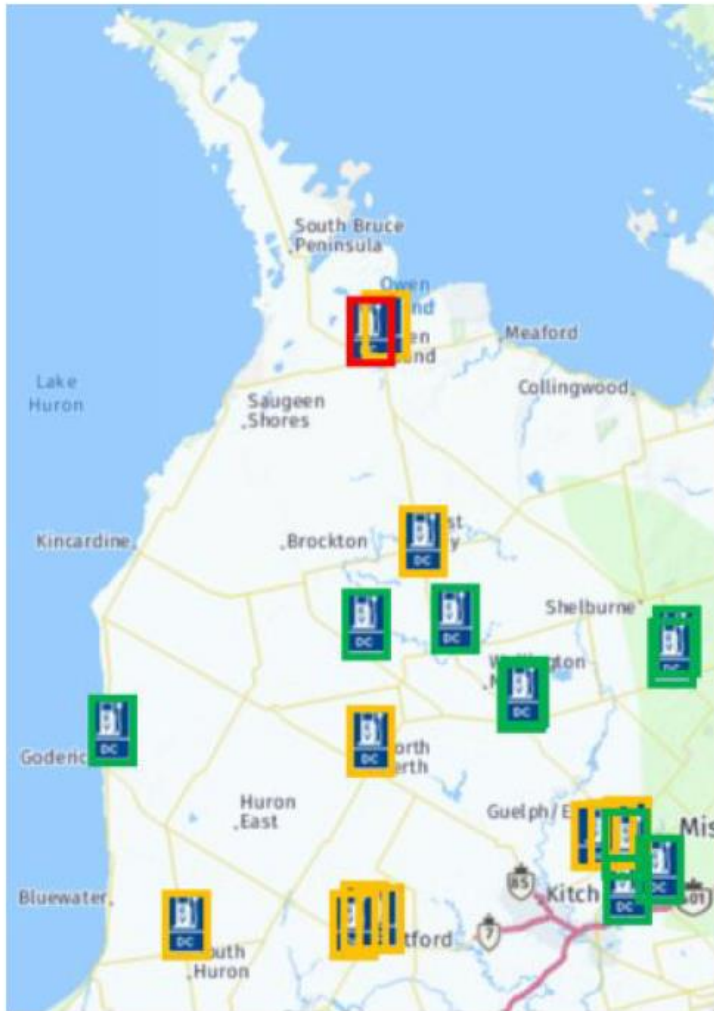


Figure 2: Regional EV charging network (including existing stations) after installation of recommended Level 3 EV charging stations. Blue lines indicate which routes are travelable by an EV without any range limitations.



The Strategy development process involved surveying current EV drivers who live in or visit the study area, and study area residents who are not currently EV drivers. The surveys asked questions to understand driver charging preferences and to project EV adoptions in the area in the coming years. Survey responses showed that 76% of study area resident respondents (659 people) are considering buying an EV in the next two to five years.

Siting criteria were developed, informed by these survey results, and based on best practices including:

- Dedicated parking stall
- Accessibility
- Safety & Lighting
- Contribution to overall network
- Walkability to amenities
- Visibility to motorists and pedestrians
- Available power source
- Appropriate ownership

Discussion

Project Outcomes

The Strategy network plan recommends the installation of an additional 17 Level 3 DC Fast Chargers across the study area based on the siting criteria and overall network connectivity. Three of these are recommended in the following Grey County communities:

- Durham
- Flesherton
- Thornbury

The Strategy also offers a preliminary analysis of possible locations within these communities based on the siting criteria to be further discussed and confirmed with the local municipalities identified.

The Strategy identifies an implementation approach that engages a third party through a competitive procurement process to own, operate and maintain the Level 3 Fast Chargers at no cost to the County or landowners. The approach would be eligible to leverage available federal funding from the NRCAN ZEVIP fund to cover up to 50% of the chargers and installation. The Strategy recommends that small and rural municipalities not own Level 3 Fast Chargers due to the capital and asset management cost burden but rather catalyze EV charger installation by providing access to land for charger installation.

Next Steps

Staff are proposing continuing with the successful regional partnership model through the implementation phase of the Regional EV Charging Strategy. The County of Dufferin will provide project management services for the retention of a facilitator to issue an RFP, developed with the Partners, for a third-party implementation partner. The Partners will enter into a memorandum of understanding (MOU) for this project and commit to funding up to \$9,578 to retain a facilitator. The deliverables from this phase of work will include:

- Hire a facilitator to manage the project.
- Develop an RFP for a third-party implementation partner company to own and operate the network and complete relevant funding applications to support the installation.
- Review RFP Proposals and award to the successful proponent.

- Support capital funding applications as necessary.
- Define agreements with land hosts, and advance implementation and commissioning.
- Define installation and maintenance processes with the successful proponent.
- Develop and implement a communication plan for the public, EV users, and Partnership.
- Support successful proponent with the installation of Level 3 charging network.

Staff will enter into this service agreement as per the Delegation of Duties By-law.

Legal and Legislated Requirements

None.

Financial and Resource Implications

Each Partner will commit to contribute a maximum of \$9578 each, plus staff time, to advance EV Strategy implementation. Grey County's financial contribution is proposed to be funded from the approved climate action implementation budget.

Relevant Consultation

- Internal: Transportation Services, Economic Development and Tourism, CAO, and Finance
- External: Member municipalities, local utilities

Appendices and Attachments

Attachment A: [Regional EV Network Strategy Summary Report](#)