TOWN OF TRURO EV FLEET OPTIONS ANALYSIS

Town of Truro - Canadian Urban Institute

EV FLEET OPTIONS ANALYSIS

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REPORT PREPARED FOR	**REPORT SUBMITTED BY**
Town of Truro 695 Prince Street Truro, Nova Scotia B2N 1G5 902.895.4484 | truro.ca	EastPoint Engineering Ltd. EastPoint Architecture Partnership 1801 Hollis Street, Suite 1800 Halifax, Nova Scotia B3J 3N4 902.422.2000 | eastpoint.ca
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EXECUTIVE SUMMARY

Purpose and Objectives

The Town of Truro, as part of its Community Energy and Emissions Plan (CEEP) under the Partners for Climate Protection framework, is pursuing decarbonization of its municipal fleet. This report presents an options analysis for transitioning eligible fleet vehicles to electric models and installing Electric Vehicle Supply Equipment (EVSE) at municipal facilities. The analysis evaluates:

- Fleet composition and usage profiles.
- Electrical capacity and infrastructure readiness at six key facilities.
- Optimal EVSE types, quantities, and locations.
- Potential infrastructure upgrades and opinion of probable cost.
- Potential emissions reduction.

Facilities Assessed

Six municipal sites were reviewed for EVSE readiness through site visits, electrical assessments, and parking layout analysis:

1. Truro Town Hall – 97.4 kW spare capacity; utilize existing power distribution and add branch circuits; space for 6 fleet stalls.
2. Truro Police Service – 127.2 kW spare capacity; add new sub-panel and branch circuits; space for 5 - 6 stalls; potential for one DC Fast Charger.
3. Colchester Legion Stadium – Adequate capacity, but constrained parking within fenced compound.
4. Douglas Street Recreation Centre – Limited spare capacity (17.4 kW) but sufficient for needs; requires panelboard replacement and branch circuits.
5. Water Treatment Facility – Large spare capacity (338.2 kW); utilize existing power distribution and add branch circuits; potential for Level 3 DC Fast Charger.
6. Public Works Facility – 108.6 kW spare capacity; more complex internal bay parking arrangement.

Fleet Analysis

- Scope: Passenger vehicles and light-duty trucks were prioritized; heavy trucks, specialized equipment, fire vehicles, and pursuit-rated police cars were excluded due to lack of suitable EV equivalents.
- Data Sources: April 2025 fleet list, GPS tracking records, site plans, and utility bills.
- Findings:
    - Many vehicles have modest daily travel (often <60 km) and long overnight dwell times (>15 hours), making them ideal for Level 2 charging.
    - Several eligible vehicles are unlinked to GPS trackers, but usage patterns are assumed similar to comparable units.
    - Parking patterns at each facility were mapped to determine optimal EVSE placement.

Recommended Charging Solutions

- General Approach: Use the slowest reliable charger to meet operational needs (mostly Level 2, with some Level 1 for very low-use vehicles). Consider DC Fast Charging only where rapid turnaround is critical.
- Site-Specific Recommendations:
  - Truro Town Hall: 3 dual-port Level 2 chargers (6 stalls).
  - Truro Police Service: 3 dual-port Level 2 chargers (6 stalls); optional 50 kW DC Fast Charger.
  - Colchester Legion Stadium: 1 dual-port Level 2 charger (2 stalls).
  - Douglas Street Recreation Centre: 2 dual-port Level 2 chargers (4 stalls).
  - Water Treatment Facility: 1 dual-port Level 2 charger (2 stalls); optional 50 kW DC Fast Charger.
  - Public Works Facility: 3 dual-port Level 2 chargers (6 stalls).

Infrastructure Considerations

Across all facilities, successful implementation requires:

- Dedicated EVSE panels or panel upgrades.
- Conduit routing and trenching to parking locations.
- Protective bollards to safeguard equipment.
- Futureproofing with spare conduit capacity and breaker space.
- IT integration for networked chargers and load management.

Opinion of Probable Cost

Location	Level 2 Charging Infrastructure	Level 2 & Level 3 Charging Infrastructure Where Applicable
Truro Town Hall	$107,020	-
Truro Police Service	$108,260	$245,520
Colchester Legion Stadium	$47,870	-
Douglas Street Recreation Centre	$65,193	-
Water Treatment Facility	$27,080	$161,360
Public Works Facility	$105,160	-

Potential Emissions Reductions

- Near-term reduction of 35% of currently electrifiable vehicle GHG emissions.
- Long-term reduction of 89% of currently electrifiable vehicle GHG emissions.

Conclusions

Readiness Ranking (highest to lowest):

1. Truro Town Hall.
2. Truro Police Service.
3. Water Treatment Facility.
4. Public Works Facility.
5. Douglas Street Recreation Centre.
6. Colchester Legion Stadium.

All facilities have adequate or achievable electrical capacity for the proposed charging infrastructure. The transition plan prioritizes operational feasibility, cost efficiency, and emissions reduction while allowing for scalable future expansion.

1 INTRODUCTION

1.1 Background

The Town of Truro has recently completed a Community Energy and Emissions Plan (CEEP) as part of the Partners for Climate Protection (PCP) Milestone Framework for taking action on climate change. As part of the CEEP, the Town completed a Greenhouse Gas (GHG) inventory, set GHG reduction targets for both Municipal infrastructure and community-wide emissions, and created an action plan for moving forward with capital projects to mitigate greenhouse gas emissions and improve building resiliency to climate change. One key project identified in Truro's CEEP is to decarbonize the Town's fleet vehicles.

1.2 Client Information

Canadian Urban Institute
30 St. Patrick Street, #500, Toronto, ON
Dan Wassmansdorf
dwassmansdorf@canurb.org

Town of Truro
695 Prince Street, Truro, NS B2N 1G5
Alison Grant
agrant@truro.ca

1.3 Objectives

The objective of this project is to complete an options analysis for transitioning the Town of Truro's fleet to electric vehicles and recommend the best option for proceeding with design and installation of EV charging stations at Municipal facilities. The options analysis presented in this report evaluates potential demand for EV charging at each selected municipal facility, assess existing electrical infrastructure, estimates costs for vehicles and infrastructure upgrades, and estimates GHG emissions reductions from Truro's EV fleet transition.

1.4 Project Drivers

The Town has applied to Nova Scotia's Low Carbon Communities Challenge program to fund the detailed design of charging stations for installation at several municipally owned buildings. As a precursor to detailed design work, the Town of Truro have utilized the Climate Ready Infrastructure Service (CRIS) to engage EastPoint to assess and develop options for installing Electric Vehicles (EV) to support the fleet's transition to the electric vehicles.

2 EV CHARGING INFRASTRUCTURE BACKGROUND

2.1 EV Charging Options

Electric Vehicle Charging Equipment (EVSE) falls into three standardized "levels," differentiated primarily by voltage and power, which drive charge speed, cost, and installation complexity:

- **Level 1 (120 VAC, 1 - 2 kW typical):** This is the slowest option and uses a standard residential-style outlet with a ground-fault interrupter. A typical light-duty EV will gain roughly 5 - 8 km of range per hour of charging. Installation is simple and inexpensive—often limited to adding dedicated receptacles and minor circuit upgrades. Networking and load management are uncommon at this level. Level 1 is suitable for pool cars or other vehicles that sit parked for long periods (12+ hours) and have modest daily mileage. The trade-off is speed; it cannot reliably refill large batteries overnight if they are heavily used.
- **Level 2 (208 - 240 VAC, 6 - 19 kW typical):** Level 2 is the standard for most municipal fleets. It adds on the order of 25 - 45 km of range per hour for light-duty vehicles and can be scaled for medium-duty assets with predictable dwell times. Installation typically requires new branch circuits, panel space, and often trenching or conduit runs. Networked chargers are common to enable access control, data logging, and load management (essential to cap peak demand and avoid costly service upgrades). Capital costs are moderate, and most code/permit requirements are straightforward, though coordination with Facilities and IT is still needed.
- **Level 3/DC Fast Charging (400 - 1,000 VDC, 50 - 350+ kW):** DCFC units bypass the vehicle's onboard AC charger and supply high-voltage DC directly, enabling very rapid charging—often 100 - 400 km of range in 20 - 40 minutes depending on charger power and battery size. These systems demand substantial electrical infrastructure: larger services or dedicated transformers, switchboard, and—critically—utility engagement for capacity and demand charge implications. Networking, advanced controls, and robust communications are mandatory. DCFC is justified for high-utilization or mission-critical vehicles that cannot afford long dwell times but carries the highest capital and operating costs (hardware, construction, demand charges, and service fees).

A good rule of thumb when installing EVSE for fleets is to use the slowest charger that reliably meets operational needs. Overnight dwell and predictable duty cycles generally point to Level 2 (or even Level 1 for very low-use vehicles).

2.2 Additional Infrastructure and Policy Supports

Non-charger elements, including electrical, civil, communications, regulatory, operational, financial, and resilience measures are required to deliver a reliable, scalable EV charging program for municipal fleets. Consideration of the following items will need to be made throughout development of the program:

Electrical & Power Systems

- Verify service/transformer headroom, panel space, and feeder sizes.
- Add breakers, conduits, and switchboard; DCFC may need a dedicated service.
- Specify an energy/load management system (EMS) to schedule, throttle, and prioritize charging (if desired).
- Oversize conduits and leave spare breaker spaces for expansion.

Civil/Site Works

- Trenching routes, conduit sizing, concrete pads, and bollards/curbs.
- Layout for snow clearing, accessibility compliance, and vehicle turning radii.
- Drainage and freeze–thaw considerations; protect cables from ice/salt.

Communications & Software

- Primary (fiber/Ethernet) plus cellular fallback; IT-approved VLAN/firewall rules.
- OCPP-compliant chargers and open APIs to avoid vendor lock-in.
- Platform for authentication, load control, fault alerts, and reporting.

Utility & Regulatory Interface

- Utility capacity checks, tariff/demand charge analysis, and separate EV meters if advantageous.
- Compliance with Canadian Electrical Code/Provincial amendments, permits, and inspections.
- Track incentive eligibility (NRCan, Provincial, and utility) and reporting obligations.

Operations, Policy & Maintenance

- Written SOPs for plugging in, priority rules, after-hours use, and fault response.
- Training for operators and maintenance staff; spare parts inventory (cables and connectors).
- Service-level agreements for uptime, firmware updates, and preventive maintenance.

3 DATA COLLECTION

3.1 Site Visits

Site reviews were completed on June 24, 2025. The existing electrical infrastructure was observed to determine the capability to install EVSE at each of the following locations:

1. **Town Hall,** 695 Prince Street, Truro, NS.



2. **Truro Police Service,** 776 Prince Street, Truro, NS.



3. **Colchester Legion Stadium,** 14 Lorne Street, Truro, NS.



4. **Douglas Street Recreation Centre,** 40 Douglas Street, Truro, NS.



5. **Water Treatment Plant,** 745 Young Street, Truro, NS.



6. **Public Works Facility,** 43 Glassey Avenue, Truro, NS.



3.2 Documents

The following documents were provided by the Town of Truro and used in the preparation of this report:

1. Town of Truro Fleet - April 2025 (June 11th, 2025)
2. Advanced Trips Detail Report_20250619_131825 (June 23rd, 2025)
3. Site Plans (July 7th, 2025)
4. Power Bills (July 14th, 2025)

3.3 Drawings

No drawings pertaining to these locations were provided. Drawings were observed and captured during on-site reviews.

3.4 Assumptions, Clarifications, and Disclaimers

- This analysis was performed based on information provided to EastPoint by the Town of Truro. The required charge to be delivered and the associated dwell times are based on daily averages which are provided by the client and the associated utilization may not represent any particular day's utilization.
- Only passenger vehicles and light duty trucks (Ford F-150, Dodge RAM 1500, Chevrolet Silverado 1500, etc.) were considered for electrification. Heavier class trucks do not have suitable electrified replacement options at this time and therefore were not evaluated in the study.
- Police vehicles with "pursuit" or "police package" in their description were not considered for electrification as it is understood that market options which meet the requirements of a pursuit vehicle are very limited or are still being trialed.
- Vehicles identified in the fleet list as "Pending Surplus" were not considered for electrification.
- As directed, vehicles identified in the fleet list as "Fire" were not considered for electrification.
- Assets identified in the fleet list as "Other/Misc" were not considered for electrification.
- The GPS event data provided contained some records that were deemed to be irrelevant. Most trackers in the data set were assigned a meaningful alias name. However, there were ten (10) GPS tracker names that appeared to be the serial number of the tracker. There was a total of 19 events recorded that are attributed to these serial number type tracker names. These 19 events accounted for 15.8 km of travel and 103 hours of dwell time. It is assumed these trackers were reassigned a more meaningful name and the 19 events associated with the original serial number type names are left over form an initial setup process. Therefore, data from these 19 events was ignored.
- The fleet list and the GPS event data provided did not contain any means to cross reference between the two documents to identify which GPS tracker belonged to which vehicle. EastPoint used a document provided by the Town of Truro in a past project which contained information to link some vehicles with GPS trackers, but not all vehicles:
    - All eight (8) eligible Parks, Recreation, & Culture vehicles were successfully linked to a GPS tracker.
    - Three (3) of ten (10) eligible Public Works vehicles listed in the fleet list remain unlinked with a GPS tracker.
    - Two (2) of six (6) eligible Admin & By-law/Building Inspection vehicles listed in the fleet list remain unlinked with a GPS Tracker.
    - None of the five (5) eligible police vehicles listed in the fleet list were linked with a GPS Tracker.
- The usage profiles of eligible fleet vehicles which were successfully linked to a GPS tracker are relatively consistent. Therefore, the vehicles which were not linked to a tracker will be assumed to follow a similar usage profile as the same vehicles in their categories.
- Average longest daily dwell event duration is determined by taking only the longest duration dwell time recorded for a given day, on a per vehicle basis. If a vehicle was driven multiple times in a given day, there will be a dwell event recorded after each trip. It is assumed that typically, the longest duration

dwell event for the day will occur when the vehicle has been parked for the day and will not be used until the following day. This dwell event is most useful in assessing the battery charging time. For each vehicle, the arithmetic mean was calculated using these longest daily dwell durations.

- Information on the electrical services at the Douglas Street Recreation Centre is only partially known. It is understood that there are two services that will soon be combined into one. The rating of the main switch is unknown. For the purposes of this report, the service is assumed to be 200 A, 240/120 V, 1Ø, 3W.

4 TECHNICAL READINESS ASSESSMENTS

The purpose of this report is to assess the readiness of six (6) Town of Truro facilities, located in Truro, Nova Scotia for the Electric Vehicle Supply Equipment (EVSE) required to transition the Town of Truro fleet to a 100% Zero-Emission Vehicle (ZEV) scenario.

4.1 Truro Town Hall

4.1.1 EXISTING ELECTRICAL INFRASTRUCTURE

The Truro Town Hall building is equipped with a 200 A, 600 Y/347 V, 3Ø, 4W electrical service. The main electrical room was observed in the basement of the building, on the South end of the building, opposite to the parking lot. A 200 A, 600 Y/347 V, 3Ø, 4W main disconnect feeds a 225 A, 600 Y/347 V, 3Ø, 4W, 24-circuit distribution panel 'Panel D1'. A 112.5 kVA, step-down transformer feeds a 208 Y/120 V distribution panel. The distribution panel supplies 208 Y/120 V branch circuit panels located on each level.



Figure 1. Truro Town Hall Main Electrical Room.

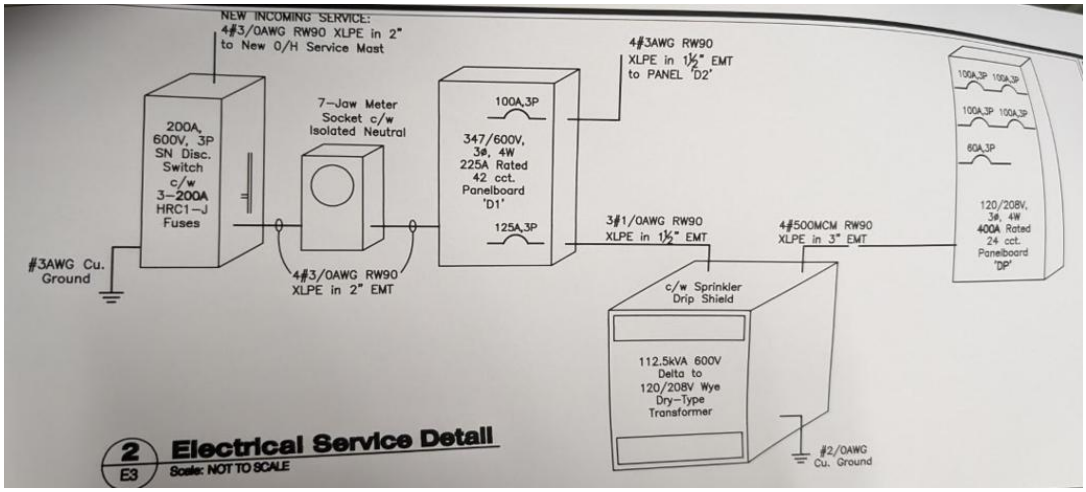


Figure 2. Truro Town Hall Riser Diagram.

4.1.2 EXISTING ELECTRICAL CAPACITY

The existing 200 A, 600 Y/347 V service can accommodate a total continuous load of 166.3 kW. The historical peak demand on the service was recorded at 68.9 kW. Therefore, the service has a remaining spare capacity of **97.4 kW** for accommodating future added loads.

4.1.3 FLEET PARKING OPTIONS

Fleet vehicles for this building currently park at the parking lot on the north side, in the parking row nearest the building. It was stated by facilities that 6 fleet vehicles are typically parked here. During the site visit, it was determined these existing spaces are the most suitable for the EVSE with their proximity to the building. The proposed spaces for fleet EVSE are as indicated in **Figure 3**.



Figure 3. Truro Town Hall Site Plan.

4.2 Truro Police Service

4.2.1 EXISTING ELECTRICAL INFRASTRUCTURE

The Truro Police Service building is equipped with an 800 A, 208 Y/120 V, 3Ø, 4W electrical service, fused at 600 A. The main electrical room was observed in the basement of the building, on the South end of the building, slightly east of the middle. A 208 Y/120 V distribution section is located within the main switchboard, and feeds six (6) branch circuit panel boards.



Figure 4. Truro Police Service Main Switchboard & Distribution Panel.

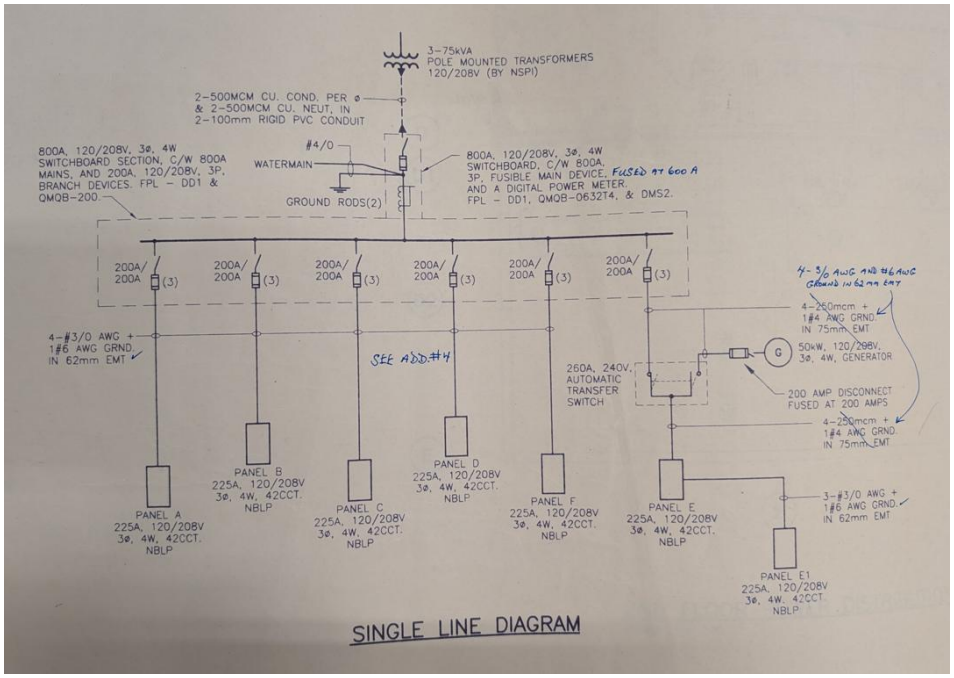


Figure 5. Truro Police Service Partial Single Line Diagram.

4.2.2 EXISTING ELECTRICAL CAPACITY

The existing 600 A, 208 Y/120 V service can accommodate a total continuous load of 172.9 kW. The historical peak demand on the service was recorded at 45.7 kW. Therefore, the service has a remaining spare capacity of **127.2 kW** for accommodating future added loads.

4.2.3 FLEET PARKING OPTIONS

The fleet parking is currently located at the southwest corner of the building. It was stated by facilities that 5 fleet vehicles are typically parked there. The proposed spaces for fleet EVSE are as indicated in **Figure 6**.



Figure 6. Truro Police Service - Site Plan.



Figure 7. Truro Police Service - Proposed EVSE Locations.

4.3 Colchester Legion Stadium

4.3.1 EXISTING ELECTRICAL INFRASTRUCTURE

The Colchester Legion Stadium was observed with two incoming services: a 400 A, 600 Y/347 V, 3Ø, 4W service and a 200 A, 208 Y/120 V, 3Ø, 4W service. Both services enter the building at the west side of the building from overhead pole-top transformers located within the compound. The existing infrastructure on both services is dated, with the exception of a newer 100 A panelboard on the 208 Y/120 V, 3Ø, 4W service. This panel is called panel 'EH'.

It was stated on site that the building is going to be undergoing some electrical service upgrades this year. The extent of the work involved is not known at the time of this report. However, a padmount transformer is planned for the stadium and will be located at the rear of the building, within the fenced compound, replacing the existing overhead pole-top transformers.



Figure 8. Colchester Legion Stadium - 208 Y/120 V Service Disconnect and Distribution.

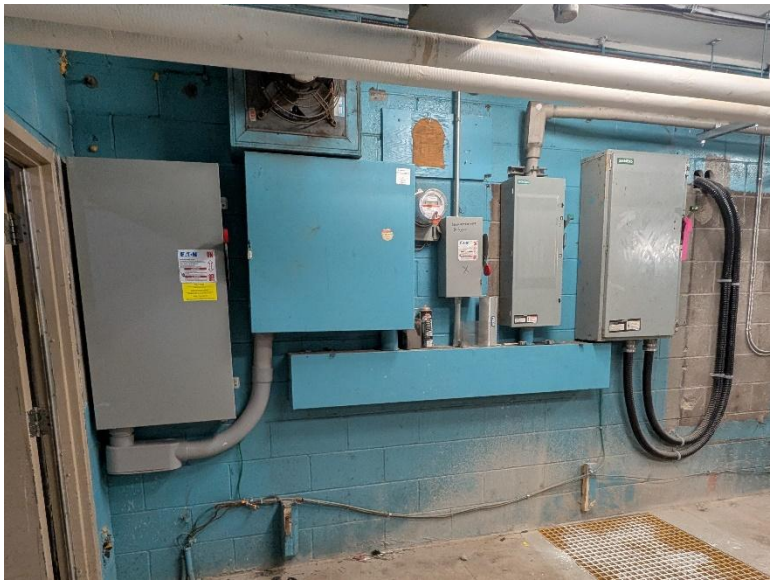


Figure 9. Colchester Legion Stadium - 600 Y/347 V Service Disconnect and Distribution.

4.3.2 EXISTING ELECTRICAL CAPACITY

The existing 400 A, 600 Y/347 V service can accommodate a total continuous load of 332.6 kW. The historical peak demand on that service was recorded at 57.9 kW. Therefore, the service has a remaining spare capacity of **247.7 kW** for accommodating future added loads.

The existing 200 A, 208 Y/210 V service can accommodate a total continuous load of 57.6 kW. The historical peak demand on that service was recorded at 18.9 kW. Therefore, the service has a remaining spare capacity of **38.7 kW** for accommodating future added loads.

4.3.3 FLEET PARKING OPTIONS

The fleet parking options are located at the west side of the building. It was stated by facilities that 4 - 5 fleet vehicles are typically parked here. The vehicles that would be located at this facility are fleet trucks. The proposed spaces would be located within an existing fenced compound. It was indicated that there are times these fleet vehicles could have a trailer attached. With the limited space within the compound, the locations for the EVSE are limited to along the perimeter fence. The proposed spaces for fleet EVSE are as indicated in **Figure 10**.



Figure 10. Colchester Legion Stadium - Site Plan.



Figure 11. Colchester Legion Stadium - Proposed EVSE Locations.

4.4 Douglas Street Recreation Centre

4.4.1 EXISTING ELECTRICAL INFRASTRUCTURE

The Douglas Street Recreation Centre was observed with two incoming overhead services: Although labelling is unclear, they are believed to be a 200 A, 240/120 V, 1Ø, 3W service and a 200 A, 208 Y/120 V, 3Ø, 4W service, both fed from overhead pole-mounted transformers, which are located across Douglas Street. It was stated on site that the building is going to be undergoing some electrical upgrades this year which include a generator replacement. The full extent of the work at the time of this report is unknown. However, for the purposes of our EV assessment, the 240/120 V, 1Ø service is what is being commented on. Currently, there is no physical breaker capacity to accommodate the required breakers for the EVSE in the existing panelboard.



Figure 12. Douglas Street Recreation Centre - Main Service.

4.4.2 EXISTING ELECTRICAL CAPACITY

The existing 200 A, 240/120 V service can accommodate a total continuous load of 38.4 kW. The historical peak demand on the service was recorded at 21.0 kW. Therefore, the service has a remaining spare capacity of **17.4 kW** for accommodating future added loads.

4.4.3 FLEET PARKING OPTIONS

The proposed parking spaces for the fleet EVSE are located on the west side of the centre. It was stated by facilities that 2 fleet vehicles are typically parked there, with the potential to house more. The proposed spaces for fleet EVSE are as indicated in **Figure 13**.

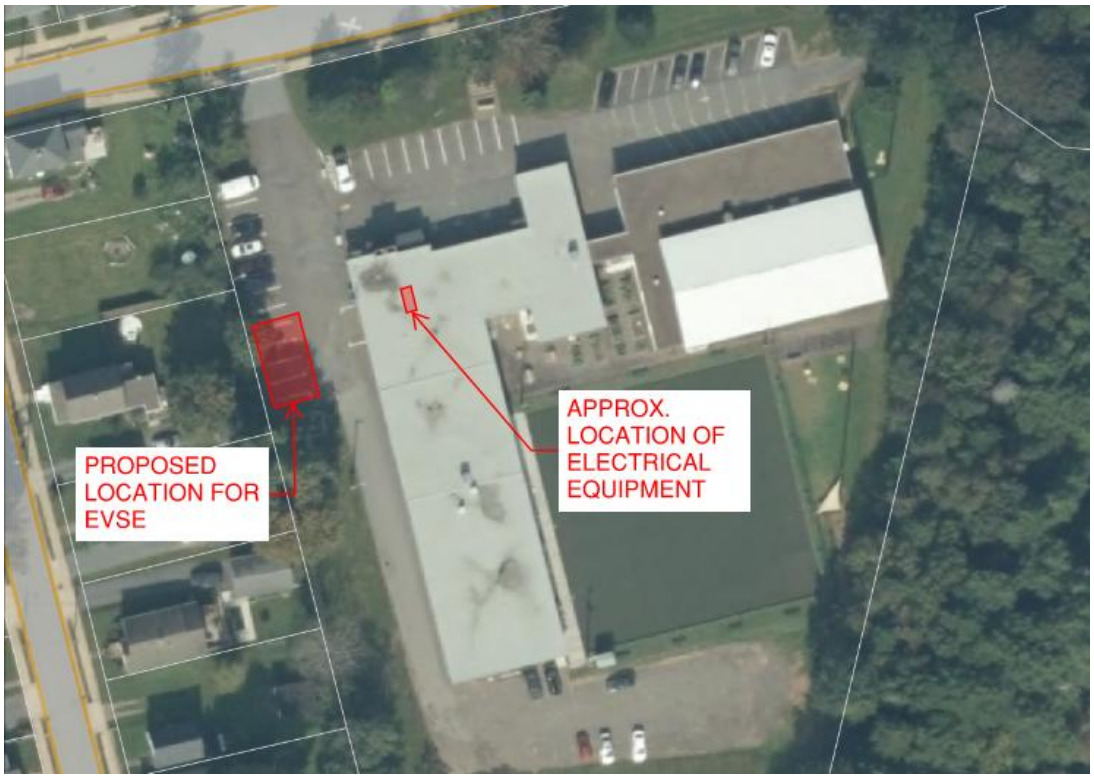


Figure 13. Douglas Street Recreation Centre - Site Plan.

4.5 Water Treatment Facility

4.5.1 EXISTING ELECTRICAL INFRASTRUCTURE

The Water treatment facility was observed with an 800 A, 600Y/347 V, 3Ø, 4W service from a 500 kVA pad-mounted transformer, located across the parking lot, to the southeast of the building. The service entrance equipment is an 800 A Westinghouse Switchboard Unit, shown in **Figure 14**. Cell #2 of the Switchboard unit houses the 600Y/347 V normal power distribution. Cell #3 contains a lower transformer section which steps the voltage down to 208 Y/120 V for feeding a distribution section, located above the transformer. The 250 A, 208 Y/120 V, 3Ø, 4W distribution section feeds four (4) branch circuit panelboards. The branch panelboards are located in an electrical closet on the main level, near the office and washrooms.



Figure 14. Water Treatment Plant - Service Entrance Switchboard.

4.5.2 EXISTING ELECTRICAL CAPACITY

The existing 800 A, 600 Y/347 V service can accommodate a total continuous load of 665.1 kW. The historical peak demand on the service was recorded at 326.9 kW. Therefore, the service has a remaining spare capacity of **338.2 kW** for accommodating future added loads.

4.5.3 FLEET PARKING OPTIONS

The fleet parking options are located at the north-east side of the building, near where staff currently access the building. It was stated by facilities that 1 - 2 fleet vehicles are typically parked there. The proposed spaces for fleet EVSE are as indicated in **Figure 15**.

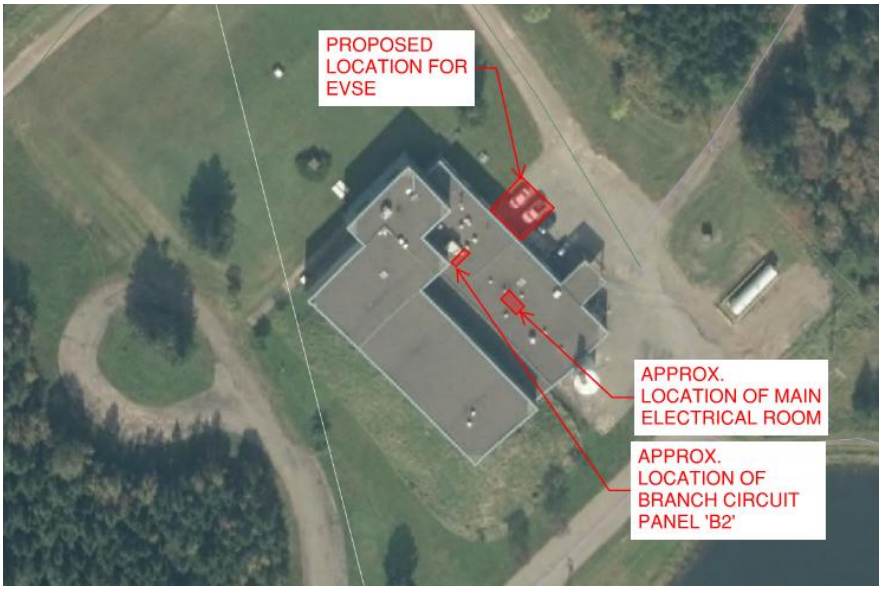


Figure 15. Water Treatment Plant - Site Plan.

4.6 Public Works Facility

4.6.1 EXISTING ELECTRICAL INFRASTRUCTURE

The Public Works facility was observed with a 200 A, 600 Y/347 V, 3Ø, 4W service from 3 x 25 kVA pole-mounted transformers, located at Glassey Avenue. A splitter located in the main service entrance closet feeds the lower level via a splitter supplying 600 Y/347 V equipment loads as well as a 75 kVA step-down transformer. The transformer supplies a 208 Y/120 V splitter which then feeds a few branch circuit panel boards.

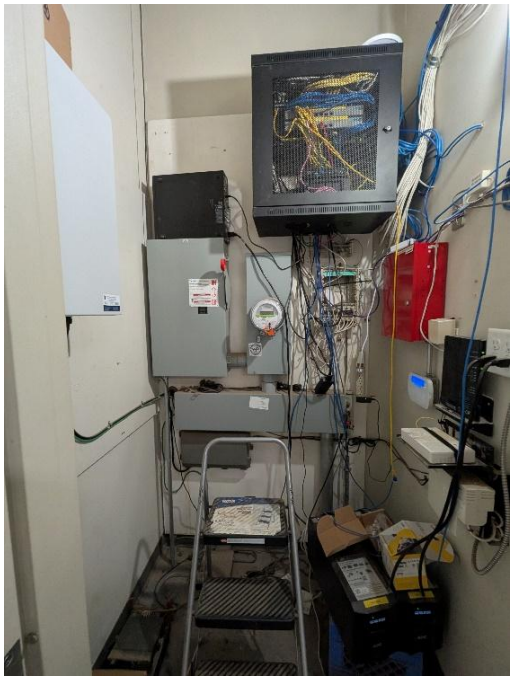


Figure 16. Public Works Facility - Service Entrance Equipment.



Figure 17. Public Works Facility - Lower-Level Electrical Room.

4.6.2 EXISTING ELECTRICAL CAPACITY

The existing 200 A, 600 Y/347 V service can accommodate a total continuous load of 166.3 kW. The historical peak demand on the service was recorded at 57.7 kW. Therefore, the service has a remaining spare capacity of **108.6 kW** for accommodating future added loads.

4.6.3 FLEET PARKING OPTIONS

It was indicated during the site visit that the majority of the fleet vehicles at this location park inside the facility. These vehicles included sidewalk plows and ½ tonne – ¾ tonne trucks. Currently, only the ½ tonne trucks would qualify for a comparable EV option.

At the time of the site visit, it was unclear of typical parking within the bays as fleet vehicles were in use, however, intermediate columns would be the best option for mounting the chargers.

EVSE mounting within the bays would be coordinated with site personnel as to which columns would be most suited to ensure equipment/vehicle parking is not obstructed and proper EVSE protection can be provided by means of bollards or guard rails.

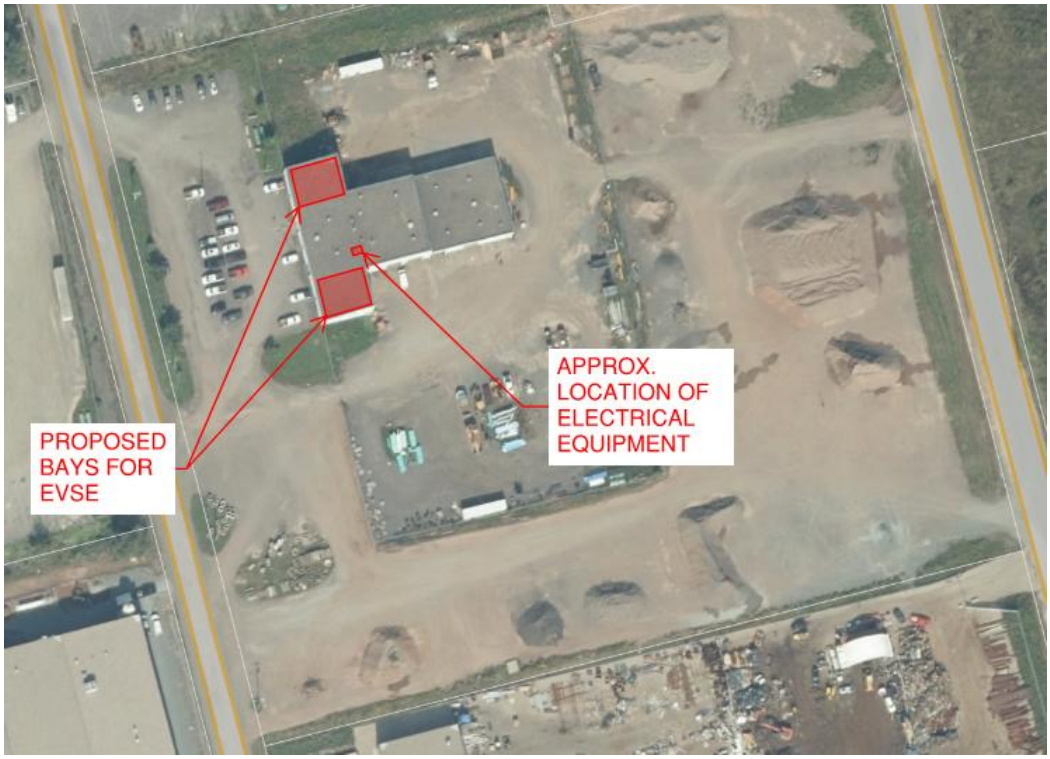


Figure 18. Public Works Facility - Site Plan.

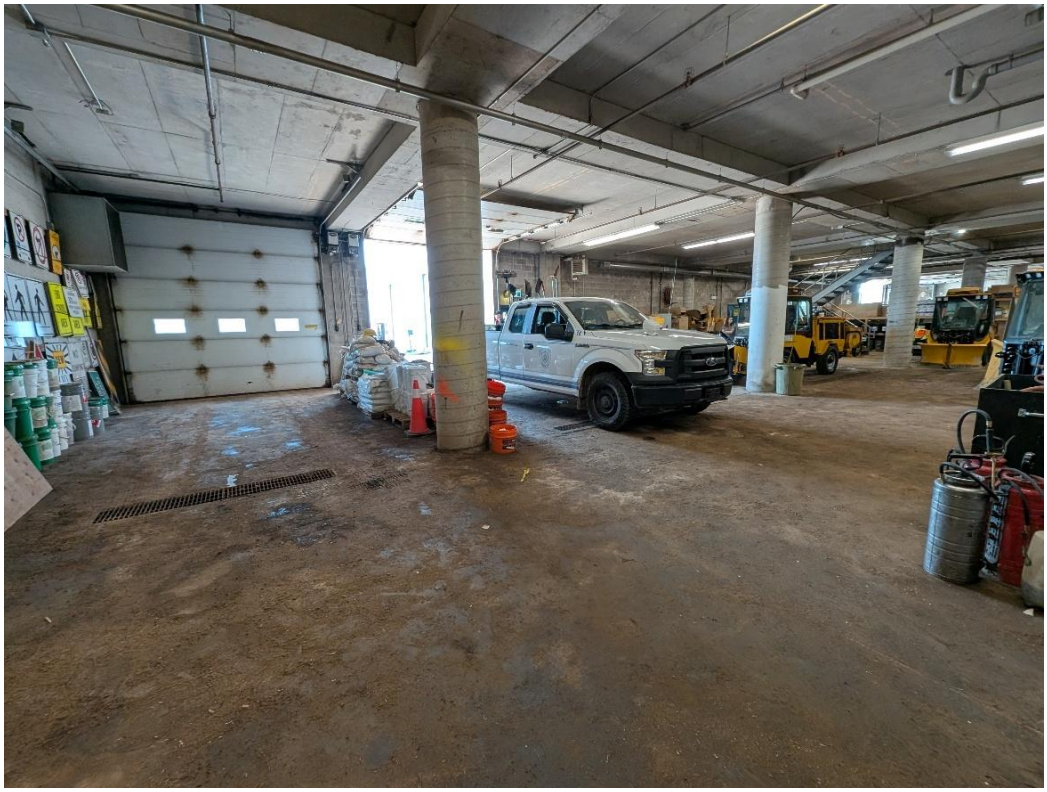


Figure 19. Public Works Facility - Typical Bay Parking Spaces.

5 FLEET CHARACTERIZATION

The Town of Truro provided GPS tracking data for their fleet as well as a list of Internal Combustion Engine (ICE) fleet vehicles to be considered for electrification. The following subsections summarize the analyzed data.

5.1 GPS Tracking Data

The data set provided included events for 54 GPS trackers. For each tracker, this data was used to identify the following:

- Main parking (dwell) location.
- Average daily kilometers travelled.
- Average longest daily dwell event duration.

5.1.1 TRURO TOWN HALL AS MAIN PARKING LOCATION

The following GPS Trackers were found to spend most their longest dwell times within 150 metres of the Truro Town Hall building.

Table 1. Truro Town Hall as Main Parking Location.

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
Corp Services 1 - RAV4	16.4 km	15.3 hours	Yes	Yes
Corp Services 2 - Pilot	9.6 km	16.7 hours	Yes	Yes
Planning - Building Inspector	42.1 km	17.4 hours	Yes	Yes
Planning - By-Law	40.7 km	18.2 hours	Yes	Yes
Planning 2 - Building Inspector	41.2 km	16.7 hours	No	Assumed Yes

5.1.2 TRURO POLICE SERVICE AS MAIN PARKING LOCATION

No GPS trackers were found to have any significant dwell time at the Truro Police Service building.

5.1.3 COLCHESTER LEGION STADIUM AS MAIN PARKING LOCATION

The following GPS Trackers were found to spend most their longest dwell times within 150 metres of the Colchester Legion Stadium building.

Table 2. Colchester Legion Stadium as Main Parking Location.

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
PRC-3 *(See Note 1)*	18.1 km	16.0 hours	Yes	Yes
PRC-8 *(See Note 2)*	30.7 km	16.4 hours	Yes	Yes
Note 1: PRC-3 only spent roughly one third of its dwell time parked at the Colchester Legion Stadium. The remaining two thirds of its dwell time was spent in other locations not assessed by this study.				
Note 2: PRC-8 was found to spend most of its dwell time either at the Colchester Legion Stadium or at the Douglas Street Recreation Centre, with the former slightly edging out the latter.				

5.1.4 DOUGLAS STREET RECREATION CENTRE AS MAIN PARKING LOCATION

The following GPS Trackers were found to spend most their longest dwell times within 150 metres of the Douglas Street Recreation Centre building.

Table 3. Douglas Street Recreation Centre as Main Parking Location.

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
PRC-1	28.3 km	16.9 hours	Yes	Yes
PRC-5	20.5 km	16.2 hours	Yes	No
PRC-7	28.2 km	17.8 hours	Yes	Yes

5.1.5 WATER TREATMENT PLANT AS MAIN PARKING LOCATION

The following GPS Trackers were found to spend most their longest dwell times within 150 metres of the Water Treatment Plant building.

Table 4. Water Treatment Plant as Main Parking Location.

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
WTP-19 *(See Note 1)*	58.7 km	14.9 hours	Yes	Yes
Note 1: WTP-19 only spent roughly one third of its dwell time parked at the water treatment plant. The remaining two thirds of its dwell time was spent in other locations not assessed by this study.				

5.1.6 PUBLIC WORKS FACILITY AS MAIN PARKING LOCATION

The following GPS Trackers were found to spend most their longest dwell times within 150 metres of the Public Works Facility building.

Table 5. Public Works Facility as Main Parking Location.

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
BACKHOE	8.7 km	16.6 hours	No	Assumed No
GRADER	24.7 km	16.4 hours	No	Assumed No
HVAC-900	20.6 km	16.7 hours	Yes	No
LDR-270	15.8 km	16.0 hours	No	Assumed No
LDR-621G	13.7 km	16.0 hours	No	Assumed No
M3-SWP	24.0 km	18.0 hours	No	Assumed No
PWT-11	55.6 km	16.7 hours	Yes	No
PWT-12	27.2 km	18.1 hours	Yes	Yes
PWT-14	49.1 km	17.5 hours	Yes	Yes
PWT-18	51.9 km	16.6 hours	Yes	No
PWT-20	49.2 km	16.0 hours	Yes	No
PWT-21	53.0 km	15.4 hours	Yes	No
PWT-22	57.1 km	15.8 hours	Yes	No
PWT-23	75.2 km	13.9 hours	Yes	No
PWT-24	62.0 km	16.0 hours	Yes	No
PWT-25	41.6 km	17.2 hours	Yes	No

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
PWT-26	35.4 km	17.1 hours	Yes	No
PWT-28	20.5 km	15.8 hours	Yes	No
PWT-36	60.5 km	16.8 hours	Yes	No
PWT-37	36.1 km	17.3 hours	Yes	No
PWW-15	71.8 km	16.3 hours	No	Unknown
PWW-15.15	38.1 km	17.4 hours	No	Unknown
PWW-27	37.3 km	16.6 hours	No	Unknown
PWW-29	40.8 km	16.3 hours	Yes	No
PWW-31	81.4 km	17.0 hours	Yes	Yes
SWT-1	20.3 km	16.4 hours	No	Assumed No
SWT-3	31.7 km	15.4 hours	No	Assumed No
SWT-5	26.6 km	13.7 hours	Yes	No
SWT-7	27.1 km	16.4 hours	No	Assumed No
SWT-9	30.6 km	12.3 hours	No	Assumed No
SWT-MV2	27.6 km	16.9 hours	No	Assumed No
V65-SWP	23.8 km	16.6 hours	No	Assumed No

5.1.7 OTHER AS MAIN PARKING LOCATION

The following GPS Trackers were not found to spend any significant amount of their longest dwell times within 150 metres of any of the locations assessed by this study.

Table 6. Other as Main Parking Location.

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
PRC-2	36.0 km	16.7 hours	Yes	Yes
PRC-4	26.5 km	16.9 hours	Yes	Yes
PRC-6	24.5 km	17.0 hours	Yes	Yes
PRC-9	30.0 km	17.5 hours	Yes	No
PRC-10	29.5 km	17.2 hours	Yes	Yes
PRC-Out of commission	30.4 km	16.7 hours	No	Unknown
PWT-17	169.7 km	13.4 hours	No	Unknown

GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Tracker Successfully Linked To Vehicle In Fleet List?	Electrified Option Available For Linked Vehicle?
PWT-35	70.0 km	13.8 hours	Yes	Yes
PWW-16	61.4 km	14.7 hours	Yes	Yes
PWW-30	58.2 km	14.9 hours	Yes	No
PWW-34	60.9 km	13.4 hours	Yes	Yes

5.2 Fleet List

The following tables outline the fleet list that was provided for the study. For completeness, all vehicles in the supplied fleet list are present in these tables, irrespective of whether the Town of Truro wishes to consider them for electrification. Vehicle identification numbers have not been included. Additional columns have been added to note:

- Whether an equivalent fully electric vehicle is readily available on the market to replace the vehicle. Vehicles have been sorted in each table to show electrifiable vehicles first.
- The associated GPS tracker name identified through crosslinking supplied data. Instances where the GPS Tracker name is not known, but the vehicle meets the requirements for electrification have been noted as “TBD” (to be determined).
- The average daily kilometers travelled and the average longest daily dwell event duration for the linked GPS tracker name. Note that data points provided for a “TBD” GPS Tracker Name are averages calculated from vehicles with known data in the same group.
- The main parking location linked to the GPS tracker name. Note that locations provided for “TBD” GPS Tracker Name are based on additional information. Specifically, all five (5) eligible Police vehicles are assumed to park at the Truro Police Station. The two eligible Admin & By-law/Building Inspection are assumed to park at Truro Town Hall. There are also two (2) eligible vehicles in the Public Works - Light Trucks group and one (1) eligible vehicle in the Public Works – Water group that do not have an assumed main parking location and thus have “TBD” (to be determined) listed for the location. Initialisms are used in the columns as follows:
    - TTH = Truro Town Hall.
    - TPS = Truro Police Service.
    - CLS = Colchester Legion Stadium.
    - DSRC = Douglas Street Recreation Centre.
    - WTF = Water Treatment Facility.
    - PWF = Public Works Facility.
    - Other = None of the above locations are considered to be the main parking location.

5.2.1 PUBLIC WORKS - LIGHT TRUCKS

Table 7. Public Works - Light Trucks Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2016	CHEV	ExpressVan	Maint. Shop Van	Yes	PWT-12	27.2 km	18.1 h	PWF
2015	Ford	F150 4x4	1/2 Ton Pick Up	Yes	PWT-14	49.1 km	17.5 h	PWF
2022	CHEV	1500 LT	1/2 Ton Crew Cab	Yes	PWT-35	70.0 km	13.8 h	Other
2024	FORD	F150	3/4 Ton CC Super duty pick up	Yes	TBD	48.8 km	16.5 h	TBD
2023	FORD	F-150	Half Ton	Yes	TBD	48.8 km	16.5 h	TBD
2023	Ram	3500	1-ton w/plow	No	PWT-11.	55.6 km	16.7 h	PWF
2018	DODGE	Ram 2500	3/4-ton Crew Cab	No	PWT-18	51.9 km	16.6 h	PWF
2015	FORD	F-250	3/4 Ton 2x4	No	PWT-36	60.5 km	16.8 h	PWF
2022	CHEV	C-3500	1-Ton with Dump Body	No	PWT-37	36.1 km	17.3 h	PWF

5.2.2 PUBLIC WORKS - HEAVY TRUCKS

This complete group is not being considered for electrification.

Table 8. Public Works - Heavy Trucks Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2009	FRHT	M2	Jet/Vac Combo	No	HVAC-900	20.6 km	16.7 h	PWF
2020	INTL	HV607	Tandem Plow/Salt/ Dump	No	PWT-20.	49.2 km	16.0 h	PWF
2023	FRHT	M2	Tandem Plow/Salt/ Dump	No	PWT-21.	53.0 km	15.4 h	PWF

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2019	MACK	42FR	S/A Plow/Salt/ Dump	No	PWT-22	57.1 km	15.8 h	PWF
2012	FRHT	M2	S/A Plow/Salt/ Dump	No	PWT-24	62.0 km	16.0 h	PWF
2013	INTL	7000SERIES	S/A CrewCab Dump	No	PWT-25	41.6 km	17.2 h	PWF
2016	FRHT	M2	S/A CrewCab Dump	No	PWT-26	35.4 km	17.1 h	PWF
2007	INTL	MA025	S/A Dump/ KnuckleBoom	No	PWT-28	20.5 km	15.8 h	PWF
2024	FRHT	SD	Jet/Vac Combo	No	-	-	-	-

5.2.3 PUBLIC WORKS EQUIPMENT

This complete group is not being considered for electrification.

Table 9. Public Works Equipment Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
1972	NELSO	Nelso	Farm Tractor	No	-	-	-	-
1989	HMD	Flatbed	Tandem Trailer	No	-	-	-	-
1992	HMD	Utility	Tandem Trailer	No	-	-	-	-
2012	Express	T71265	Van Trailer	No	-	-	-	-
2015	KEIZER	KM T-2	Asphalt Drum Recycler	No	-	-	-	-
2022	JCTR	30T	JC TRI-AXLE TAG	No	-	-	-	-
2023	LWL	T22IT21PG	TRI-AXLE TILT DECK	No	-	-	-	-
2023	INTL	HV607	Salt Truck	No	-	-	-	-
2024	Xpress	ALHC-0224005	Enclosed Contractor Trailer	No	-	-	-	-

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2024	Marathon	HMT4000	Hot Box	No	-	-	-	-
2025	Bucher/ Frght	V65T	Bucher Vacuum Sweeper SN#217642	No	-	-	-	-

5.2.4 PUBLIC WORKS - WATER

Table 10. Public Works - Water Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2018	DODGE	RAM1500	1/2 ton Pick Up	Yes	PWW-16	61.4 km	14.7 h	Other
2016	GMC	1500 Sierra	1/2 ton Pick Up	Yes	PWW-31	81.4 km	17.0 h	PWF
2018	GMC	1500 Sierra	1/2 ton Pick Up	Yes	PWW-34	60.9 km	13.4 h	Other
2018	Chev	4wd	1/2-ton WTP	Yes	WTP-19	58.7 km	14.9 h	Other
2018	CHEV	EQUINOX	PW MANAGER CRV	Yes	TBD	65.6 km	15.0 h	TBD
2015	FRHT	M2	Tandem Dump	No	-	-	-	-
2016	Ford	F350	1-ton CC w/service body	No	PWW-29	40.8 km	16.3 h	PWF
2017	Chev	WT2500	3/4-ton CC Pick Up	No	PWW-30	58.2 km	14.9 h	Other
2013	Ehwach	VMT-2	Valve Maint Tra	No	-	-	-	-

5.2.5 POLICE

Table 11. Police Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2021	Chev	Not pursuit	Blazer (unmarked)	Yes	TBD	TBD	TBD	TPS
2018	Dodge	Not pursuit	Caravan	Yes	TBD	TBD	TBD	TPS
2016	Chev	Not pursuit	Equinox (unmarked)	Yes	TBD	TBD	TBD	TPS
2021	Nissan	Not pursuit	Rogue (unmarked)	Yes	TBD	TBD	TBD	TPS
2023	Honda	Not pursuit	CRV (unmarked)	Yes	TBD	TBD	TBD	TPS
2018	Ford	Pursuit	Explorer Police Package	No	-	-	-	-
2022	Dodge	LEASED	Durango Police Package	No	-	-	-	-
2017	Dodge	Pursuit	Charger Police Package	No	-	-	-	-
2021	Dodge	Pursuit	Charger Police Package	No	-	-	-	-
2021	Dodge	Pursuit	Durango Police Package	No	-	-	-	-
2018	Dodge	Leased then bought	Charger Police Package	No	-	-	-	-
2022	Dodge	Leased then bought	Charger Police Package	No	-	-	-	-
2022	Ford		Hybrid Interceptor Police Package	No	-	-	-	-
2009	RU2	Not pursuit	Display Trailer	No	-	-	-	-
2021	Dodge	2nd hand	Charger Police Package	No	-	-	-	-
2024	Dodge	Durango	Durango Police Package	No	-	-	-	-
2025	Ford	Interceptor	KBA Police Package	No	-	-	-	-

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2025	Ford	Interceptor	KBA Police Package	No	-	-	-	-

5.2.6 ADMIN & BY-LAW/BUILDING INSPECTION

Table 12. Admin and By-Law/Building Inspection Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2015	Toyota		Rav 4 (unmarked)	Yes	Corp Services 1 - RAV4	16.4 km	15.3 h	TTH
2013	Honda	Leased then bought	Pilot (unmarked)	Yes	Corp Services 2 - Pilot	9.6 km	16.7 h	TTH
2017	GMC		Terrain	Yes	Planning - Building Inspector	42.1 km	17.4 h	TTH
2021	Chevrolet		Equinox	Yes	Planning - By-Law	40.7 km	18.2 h	TTH
2023	Mazda		CX-5 GX	Yes	TBD	27.2 km	16.9 h	TTH
2025	Honda	CR-V Hybrid	CRV Hybrid	Yes	TBD	27.2 km	16.9 h	TTH

5.2.7 PARKS, RECREATION & CULTURE

Table 13. Parks, Recreation, and Culture Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2022	Ford	F-150	Pickup (Truck#1)	Yes	PRC-1	28.3 km	16.9 h	DSRC
2019	GMC	Sierra	1500 (Truck#10)	Yes	PRC-10	29.5 km	17.2 h	Other

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2021	Chev	1500	Silverado (Truck#2)	Yes	PRC-2	36.0 km	16.7 h	Other
2021	Ford	F-150	Pickup (truck#3)	Yes	PRC-3	18.1 km	16.0 h	CLS
2021	Chevrolet	Silverado	150CC10903 (Truck#4)	Yes	PRC-4	26.5 km	16.9 h	Other
2024	Ford	Ranger 4RP	1/4 T Ranger (truck 6)	Yes	PRC-6	24.5 km	17.0 h	Other
2023	Chev	150K	Silverado (Truck#7)	Yes	PRC-7	28.2 km	17.8 h	DSRC
2024	Chev	1500	Silverado (Half T) (Truck#8)	Yes	PRC-8	30.7 km	16.4 h	CLS
2016	Nissan	Frontier	(Truck#9)	Yes	PRC-9	30.0 km	17.5 h	Other
2013	Dodge	Ram	One Ton Dump & Box (truck#5)	No	PRC-5	20.5 km	16.2 h	DSRC

5.2.8 PARKS, RECREATION & CULTURE EQUIPMENT

This complete group is not being considered for electrification.

Table 14. Parks, Recreation, and Culture Equipment Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2003	Kubota	F-2560	Tractor	No	-	-	-	-
2010	HMD	Utility	Trailer	No	-	-	-	-
2015	FRIES	UT167	Tandem Trailer	No	-	-	-	-
2022	Kubota	U-17 HGS	U17 Mini Excavator	No	-	-	-	-
2012	Kubota	BX2370	Tractor	No	-	-	-	-

5.2.9 FIRE

This complete group is not being considered for electrification.

Table 15. Fire Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2013	CHEV	V8 FFV	Chev Silverado	Yes	-	-	-	-
2023	Ford	F150	Fire Inspector	Yes	-	-	-	-
2022	RAM	1500SLT	Chief New	Yes	-	-	-	-
1991	Ford	F800	Ford Rescue	No	-	-	-	-
2009	Spartan		Spartan Pumper	No	-	-	-	-
2014	Pierce		Aerial Ladder Fire Truck	No	-	-	-	-
2023	Pierce		Pumper	No	-	-	-	-
1920	LAF		Antique LaFrance Pumper	No	-	-	-	-
2011	HME	P2	Fire Engine	No	-	-	-	-

5.2.10 OTHER/MISC

This complete group is not being considered for electrification.

Table 16. Other/Misc Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2023	DJI Mavic 3T	Drone	Police Operations	No	-	-	-	-
2023	Orbea	E-Bike	Orbea Keram 20 mph LG Black	No	-	-	-	-

5.2.11 PENDING SURPLUS

This complete group is not being considered for electrification.

Table 17. Pending Surplus Fleet List.

Year	Make	Model	Description	Electric Replacement Available?	Linked GPS Tracker Name	Average Daily Kilometers Travelled	Average Longest Daily Dwell Event Duration	Main Parking
2014	Chev		Silverado Crew	Yes	-	-	-	-
2012	FRHT	M2	S/A Plow/Salt/ Dump	No	PWT-23	75.2 km	13.9 h	PWF
2012	FRHT	M2	S/A Plow/Salt/ Dump	No	PWT-24	62.0 km	16.0 h	PWF
1989	Mt. Trackless	Sidewalk Plow	MT5132	No	SWT-5	26.6 km	13.7 h	PWF
2010	Komat WA150-6	80024	Loader w/plow & wing	No	-	-	-	-
2013	Ford	F-150	Build Inspect	No	-	-	-	-
2008	FRHT	M2 106V	Tandem Plow/Salt/ Dump	No	-	-	-	-
2015	Ford	F-250	3/4-ton CC Pick Up	No	-	-	-	-

6 GHG EMISSIONS ASSESSMENT

6.1 Assessment Methodology

To quantify the potential for fleet vehicle emissions reductions EastPoint first determined the current fleet's GHG emissions baseline using established protocols for GHG inventory guidance for direct emissions from mobile combustion sources, such as *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.*[1] EastPoint leveraged the NRCan published Carbon Dioxide (CO_2) fuel consumption ratings search tool[2], along with the provided GPS tracking data for each make and model vehicle in the fleet to estimate annual CO_2 emissions. The vehicle tailpipe emissions were represented in grams per kilometre (g/km) for combined city and highway driving. By multiplying Vehicle Kilometres Traveled (VKT) data for each fleet vehicle by its associated emissions factor, EastPoint was able to provide an estimated baseline for on-road GHG emissions for all ICE vehicles eligible for future electrification.

Next, EastPoint calculated the estimated annual GHG emissions for the anticipated replacement ZEV for each existing fleet vehicle. Estimation methodology included using ZEV charging efficiency and range data for both summer and winter conditions to estimate the total electrical energy needed to power the ZEV on an annual basis. Finally, the estimated annual electrical consumption for each vehicle was multiplied by the published grid electricity emissions intensity as reported by Nova Scotia Power for 2024 annual operations[3] as well as a forecasted emissions intensity for the year 2030[4].

GHG emissions in the form of CO_2, methane (CH_4), and nitrous oxide (N_2O) are emitted directly through the combustion of fuels in different types of mobile equipment. It should be noted that for this exercise, the GHG emissions baseline and reductions potential are calculated for CO_2 emissions only, for the following reasons:

- For on-road vehicles less than 20 years old, CH_4, and N_2O emissions typically account for less than one percent of total GHG emissions.
- The approach to calculating CO_2 emissions from mobile combustion sources varies significantly from the approach to calculating CH_4 and N_2O emissions. While CO_2 can be reasonably calculated by applying emission factors based on the fuel quantity consumed, CH_4 and N_2O emissions depend largely on the emissions control equipment used (e.g. type of catalytic converter) as well as efficiency and vintage of the combustion technology.
- Due to this complexity, a much higher level of uncertainty exists in the calculation of CH_4 and N_2O emissions from mobile combustion sources, compared to the calculation of CO_2 emissions.

[1] https://ghgprotocol.org/corporate-standard
[2] Fuel consumption ratings search tool (nrcan-rncan.gc.ca)
[3] https://www.nspower.ca/cleanandgreen/air-emissions-reporting
[4] https://data-donnees.az.ec.gc.ca/data/substances/monitor/canada-s-greenhouse-gas-emissions-projections/Current-Projections-Actuelles?lang=en

6.2 Analysis of GHG Emissions

Based on the methodology described in **Section 6.1**, estimates of current and future GHG emissions were conducted. **Table 18** and **Figure 20** below display the results of the analysis. The vertical axis of **Table 18** should be noted due to the logarithmic scale, depicting order of magnitude reductions instead of integer values. Due to the aggregate emissions intensity of electricity generation within the province of Nova Scotia and the electric milage performance of the Cargo Van classification there is a slight increase in estimated emissions for these vehicles in the near future. As the emissions intensity of electricity generation is anticipated to significantly reduce by the year 2030 there is an associated decrease in the charging emissions of an electric fleet. This potential for reducing emissions over the long term should be held in consideration with an ICE vehicle fleet which will incur the present level of emissions in perpetuity. The detailed vehicle classifications and associated assessment data are included in **Appendix A** for reference.

The electrification of the fleet has the short-term potential for reducing vehicle CO_2 emissions by 35% given the emissions intensity of the electricity grid at present. There is potential to reduce the fleet CO_2 emissions by 89% with the emissions intensity that is forecasted to be achieved by the year 2030.

Table 18. Current and Future CO_2 Emissions per Year by Vehicle Type.

Vehicle Classification	Current CO_2 Emissions per Year [kg]	ZEV Fleet Estimated Future CO_2 Emissions per Year [kg] (2024)	ZEV Fleet CO_2 Emissions/Year [kg] (2030)
Cargo Van	2,184	2,586	454
Pickup Truck	95,334	60,153	10,562
SUV	36,465	24,478	4,298
Total	133,983	87,217	15,314

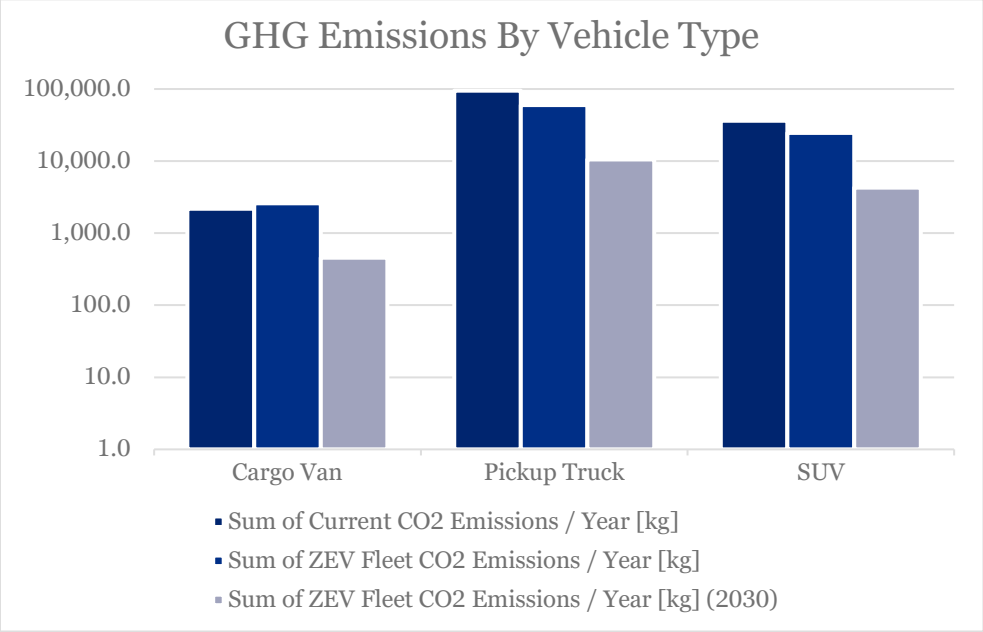


Figure 20. Current and Future GHG Emissions by Vehicle Type.

7 OPTIONS ANALYSIS

7.1 Truro Town Hall

7.1.1 EVSE OPTIONS

With the spare electrical capacity of 97.4 kW on the service, there is available capacity on the electrical system to accommodate up to 14 Level 2 charger ports at a load of 6.6 kW (32 A at 208 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two charger ports can share a single circuit and communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled. Each charger port can serve one parking stall.

The above scenario describes the maximum number of chargers that could be accommodated without an electrical service upgrade. This far exceeds the requirements of the fleet vehicles that would be expected to charge at this location. Based on six (6) vehicles with an average daily distance of 42.1 km or less, and an average maximum daily dwell time of at least 15.3 hours**, it is recommended to install three (3) dual-port Level 2 chargers serving six (6) parking stalls**. Each dual-port charger would be configured to operate on one 40 A circuit at 208 V, 1Ø, 2W, with the maximum amperage draw on each circuit being 32 A.

7.1.2 REQUIRED ELECTRICAL UPGRADES

The existing infrastructure was assessed for space within electrical panels to accommodate the potential EVSE. The 208 Y/120 V distribution panel in the main electrical room was observed to have space for accommodating a new 3-pole breaker which could be used to supply a new 208 Y/120 V, 100 A, 18 circuit branch circuit panel installed in the main electrical room and dedicated to the EVSE. Each circuit would be supplied by a 40A-2P breaker in this new panel.

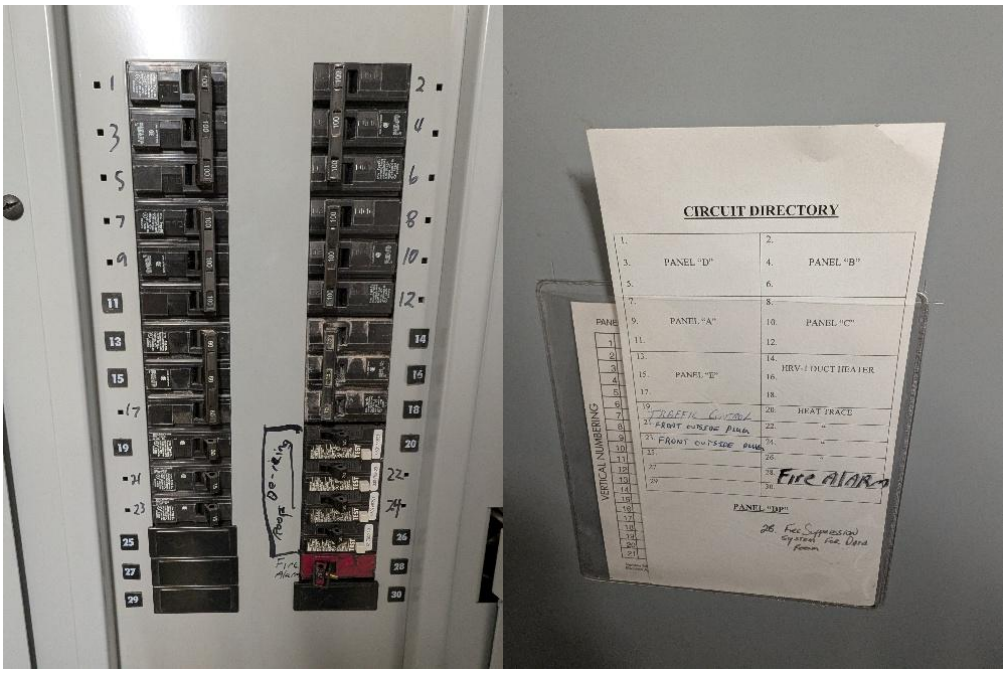


Figure 21. Truro Town Hall 208 Y/120 V Distribution Panel.

The work required to electrically supply the EVSE listed above would entail routing conduit from the new dedicated panel in the main electrical room, through the building to the north exterior wall. The conduit would penetrate through the exterior wall, turn down the side of the building, transitioning to underground and routing across the driveway to the (6) parking stalls.

With the location of these parking spaces, it is recommended to install bollards to provide extra protection to the EVSE.



Figure 22. Truro Town Hall Fleet Parking.

The Rough Order of Magnitude (ROM) cost estimate for implementing the recommended charging infrastructure is presented in **Table 19.**

Table 19. ROM Truro Town Hall.

Item	Cost	Notes
Cast-in-Place Concrete	$ 12,000	Concrete Pads & Bollards
Electric Vehicle Charging Units	$ 30,000	Level 2 EVSE
Wires and Cables (0 - 1,000 V)	$ 3,540	Branch Circuit Wiring
Conduits, Conduit Fastenings and Conduit Fittings	$ 3,680	Branch Circuit Raceways
Panelboards: Breaker Type	$ 6,000	120/208 V Panel
Electrical Cabinets and Enclosures	$ 1,140	Communications Gateway
Wiring Devices	$ 240	Receptacle
Moulded Case Circuit Breakers	$ 2,440	6 x 40 A - 2 P, 15 A - 1 P, 125 A - 3 P
Excavating, Trenching, and Backfilling	$ 10,000	Direct Buried Ducts to Chargers
Sub-Total Electrical:	**$ 69,040**	
General Project Costs		
Sub-Total:	**$ 69,040**	
General Conditions:	**10%**	**$ 6,904**
Construction O&P Cost:	**15%**	**$ 10,356**
Contingency:	**30%**	**$ 20,712**
TOTAL:	**$ 107,020**	Rounded up to nearest $10

7.2 Truro Police Service

7.2.1 EVSE OPTIONS

With the spare electrical capacity of 127.2 kW on the service, there is available capacity on the electrical system to accommodate up to 19 Level 2 charger ports at a load of 6.6 kW (32 A at 208 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two charger ports can share a single circuit and communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled. Each charger port can serve one parking stall.

The above scenario describes the maximum number of chargers that could be accommodated without an electrical service upgrade. This far exceeds the requirements of the fleet vehicles that would be expected to charge at this location. Assuming that each of the five vehicles travels less than the typical single-charge range of a standard fully electric passenger vehicle and has an average maximum daily dwell time of at least 12 hours, **it is recommended to install three (3) dual-port Level 2 chargers serving six (6) parking stalls.** Each charger port would be supplied with a dedicated 40 A circuit at 208 V, 1Ø, 2W, with the maximum amperage draw on each circuit being 32 A. Supplying each port with a dedicated circuit means that the full amount of power available in the circuit can be supplied to the vehicle. Note that the assumed metrics are conservative, and further exploration of the vehicle metrics may reveal that circuit sharing between pairs of charging ports has no detrimental impacts to the regular use of the vehicles.

It should also be noted that in addition to installing the Level 2 chargers described above, there is sufficient spare capacity in the electrical service to also accommodate a 50 kW Level 3/DC Fast Charger for emergency charging. This can be explored further if desired.

7.2.2 REQUIRED ELECTRICAL UPGRADES

The existing infrastructure was assessed for space within electrical panels to accommodate the potential EVSE. The main distribution board in the main electrical room was observed to have space for accommodating a new 3-pole breaker which could be used to supply a new 208 Y/120 V, 225 A, 18 circuit branch circuit panel installed in the main electrical room and dedicated to the EVSE (Level 2 chargers only). Each circuit would be supplied by a 40 A - 2P breaker in this new panel.

If a Level 3 DC Fast Charger is desired, an additional 200 A-3P fused switch would be installed in the main distribution board to feed this higher power EVSE. Note that a 208 - 480 V step up transformer would likely be required and may need to be installed outside next to the EVSE if the main electrical room cannot accommodate it.



Figure 23. Truro Police Service 208Y/120 V Distribution Board.

The work required to electrically supply the EVSE listed above would entail routing conduit from the main electrical room, out to the rear of the building, transitioning to underground, and routing beneath the sidewalk area to the parking spaces.

With the location of these parking spaces, it is recommended to install bollards to provide extra protection to the EVSE.

The Rough Order of Magnitude (ROM) cost estimate for implementing the recommended charging infrastructure is presented in **Table 20.**

Table 20. ROM Truro Police Service (Optional Level 3 DCFC)*.

Item	Cost	Notes
Cast-in-Place Concrete	$ 12,000 (16,000)	Concrete Pads & Bollards
Electric Vehicle Charging Units	$ 30,000 (90,000)	Level 2 EVSE (Level 3 DCFC)
Wires and Cables (0 - 1,000 V)	$ 5,080 (6,240)	Branch Circuit Wiring
Conduits, Conduit Fastenings and Conduit Fittings	$ 7,940 (8,340)	Branch Circuit Raceways
Dry-Type Transformers up to 600 V Primary	$ (20,000)	75 kVA 208:480V Step-Up Transformer
Panelboards: Breaker Type	$ 8,000	120/208V Panel
Electrical Cabinets and Enclosures	$ 1,140	Communications Gateway
Wiring Devices	$ 240	Receptacle
Moulded Case Circuit Breakers	$ 2,440 (5,440)	6 x 40 A - 2 P, 15 A - 1 P, 225 A - 3 P (2 x Disconnect Switches)
Excavating, Trenching and Backfilling	$ 3,000	Direct Buried Ducts to Chargers
Sub-Total Electrical:	**$ 69,840 (158,400)**	
General Project Costs		
Sub-Total:	**$ 69,840 (158,400)**	
General Conditions:	**10%**	**$ 6,984 (15,840)**
Construction O&P Cost:	**15%**	**$ 10,476 (23,760)**
Contingency:	**30%**	**$ 20,952 (47,520)**
TOTAL:	**$ 108,260 (245,520)**	Rounded up to nearest $10

*The cost in brackets represents the estimated total for both the baseline Level 2 chargers and an optional Level 3 charger. The equipment in brackets represents the additional components required for installation of a Level 3 charger.

7.3 Colchester Legion Stadium

7.3.1 EVSE OPTIONS

With the spare electrical capacity of 274.7 kW on the 600 Y/347 V service, there is available capacity on the electrical system to accommodate up to 41 Level 2 charger ports at a load of 6.6 kW (32 A at 208 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two charger ports can share a single circuit and communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled. Each charger port can serve one parking stall.

With the spare electrical capacity of 38.7 kW on the 208 Y/120 V service, there is available capacity on the electrical system to accommodate up to 5 Level 2 chargers at a load of 6.6 kW (32 A at 208 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two charger ports can share a single circuit and

communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled.

The above scenarios describe the maximum number of chargers that could be accommodated without an electrical service upgrade. This far exceeds the requirements of the fleet vehicles that would be expected to charge at this location. Based on two (2) vehicles with an average daily distance of 30.7 km or less, and an average maximum daily dwell time of at least 16.0 hours**, it is recommended to install one (1) dual-port Level 2 chargers serving two (2) parking stalls**. The dual-port charger would be configured to operate on one 40 A circuit at 208 V, 1Ø, 2W, with the maximum amperage draw on each circuit being 32 A.

7.3.2 REQUIRED ELECTRICAL UPGRADES

The existing infrastructure was assessed for space within electrical panels to accommodate the potential EVSE. There were no physical spaces observed within 208 Y/120 V Panel 'EH', however, it appears that there are several breakers currently 'off' and unlabelled which are assumed as spare breakers. This means that two adjacent spare breakers can be removed and replaced with one new 40A-2P breaker for the purpose of supplying the EVSE.

On the 600 Y/347 V service, a 30-circuit panelboard was observed in the service room with minimal physical breaker space. The remainder of the existing 600 Y/347 V infrastructure includes splitters with no known capacity of the lugs within the splitters. While the 600 Y/347 V service could be used for supplying the EVSE, implementation would be more complicated than using the 208 Y/120 V service. Therefore, preference is given to using the 208 Y/120 V service.

With the electrical service upgrades not yet completed and the full extent unknown, the required upgrades are based off the existing service as reviewed on site.

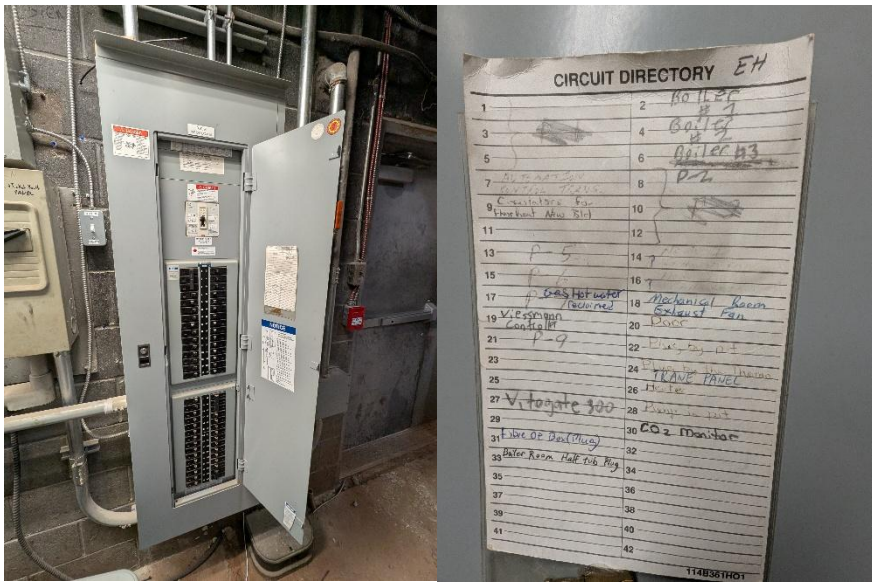


Figure 24. Colchester Legion Stadium 208Y/120 V Panel 'EH'.

The work required to electrically supply the EVSE listed above would entail routing conduit from Panel 'EH' in the main electrical room, out to the side of the building, transitioning to underground and trenching across the compound to the perimeter of the fenced area. The conduit would penetrate through the exterior wall, turn down the side of the building, transitioning to underground and routing across the driveway to the (6) parking stalls.

With the location of these parking spaces, it is recommended to install bollards to provide extra protection to the EVSE.

The Rough Order of Magnitude (ROM) cost estimate for implementing the recommended charging infrastructure is presented below in **Table 21.**

Table 21. ROM Colchester Legion Stadium.

Item	Cost	Notes
Cast-in-Place Concrete	$ 4,000	Concrete Pads & Bollards
Electric Vehicle Charging Units	$ 10,000	Level 2 EVSE
Wires and Cables (0 - 1,000 V)	$ 1,300	Branch Circuit Wiring
Conduits, Conduit Fastenings and Conduit fittings	$ 2,600	Branch Circuit Raceways
Electrical Cabinets and Enclosures	$ 1,140	Communications Gateway
Wiring Devices	$ 240	Receptacle
Moulded Case Circuit Breakers	$ 600	2 x 40 A - 2 P, 15 A - 1 P
Excavating, Trenching and Backfilling	$ 11,000	Direct Buried Ducts to Chargers
Sub-Total Electrical:	**$ 30,880**	
General Project Costs		
Sub-Total:	**$ 30,880**	
General Conditions: **10%**	**$ 3,088**	
Construction O&P Cost: **15%**	**$ 4,632**	
Contingency: **30%**	**$ 9,264**	
TOTAL:	**$ 47,870**	Rounded up to nearest $10

7.4 Douglas Street Recreation Centre

7.4.1 EVSE OPTIONS

With the spare electrical capacity of 17.4 kW on the service, there is available capacity on the electrical system to accommodate up two (2) Level 2 charger ports at a load of 7.2 kW (32 A at 240 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two charger ports can share a single circuit and communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled. Each charger port can serve one parking stall.

The above scenario describes the maximum number of chargers that could be accommodated without an electrical service upgrade. This meets the requirements of the fleet vehicles that would be expected to charge at this location. Based on three (3) vehicles with an average daily distance of 28.3 km or less, and an average maximum daily dwell time of at least 16.2 hours, **it is recommended to install two (2) dual-port Level 2 chargers serving four (4) parking stalls.** Each dual-port charger would be configured to operate on one 40 A circuit at 240 V, 1Ø, 2W, with the maximum amperage draw on each circuit being 32 A.

7.4.2 REQUIRED ELECTRICAL UPGRADES

The existing infrastructure was assessed for space within electrical panels to accommodate the potential EVSE. Since there was no spare physical space for new breakers in the distribution equipment, it is recommended to replace the main 240/120 V panelboard with a new panelboard that has more physical capacity. The upgraded panel will then feed the new EVSE using two new 40 A-2 P breakers.



Figure 25. Douglas Street Recreation Centre 240/120 V Panelboard.

The work required to electrically supply the EVSE listed above would entail routing conduit to the exterior wall of the boiler room and down the side of the building, transitioning to underground, and trenching across the driveway to the parking spaces.

With the location of these parking spaces, it is recommended to install bollards to provide extra protection to the EVSE.

The Rough Order of Magnitude (ROM) cost estimate for implementing the recommended charging infrastructure is presented below in **Table 22.**

Table 22. ROM Douglas Street Recreation Centre.

Item	Cost	Notes
Cast-in-Place Concrete	$ 4,000	Concrete Pads & Bollards
Electric Vehicle Charging Units	$ 20,000	Level 2 EVSE
Wires and Cables (0 - 1,000 V)	$ 1,130	Branch Circuit Wiring
Conduits, Conduit Fastenings and Conduit Fittings	$ 1,950	Branch Circuit Raceways
Panelboards: Breaker Type	$ 8,000	120/240 V Panel
Electrical Cabinets and Enclosures	$ 1,140	Communications Gateway
Wiring Devices	$ 240	Receptacle
Moulded Case Circuit Breakers	$ 600	2 x 40A - 2 P, 15 A - 1 P
Excavating, Trenching and Backfilling	$ 5,000	Direct Buried Ducts to Chargers
Sub-Total Electrical:	**$ 42,060**	
General Project Costs		
Sub-Total:	**$ 42,060**	
General Conditions:	**10%**	**$ 4,206**
Construction O&P Cost:	**15%**	**$ 6,309**
Contingency:	**30%**	**$ 12,618**
TOTAL:	**$ 65,193**	Rounded up to nearest $10

7.5 Water Treatment Facility

7.5.1 EVSE OPTIONS

With the spare electrical capacity of 338.2 kW on the service, there is available capacity on the electrical system to accommodate up to 50 Level 2 charger ports at a load of 6.6 kW (32 A at 208 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two charger ports can share a single circuit and communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled. Each charger port can serve one parking stall.

The above scenario describes the maximum number of chargers that could be accommodated without an electrical service upgrade. This far exceeds the requirements of the fleet vehicles that would be expected to charge at this location. Based on one (1) vehicle with an average daily distance of 58.7 km, and an average maximum daily dwell time of 14.9 hours, **it is recommended to install one (1) dual-port Level 2 charger serving two (2) parking stalls.** The dual-port charger would be configured to operate on one 40 A circuit at 208 V, 1Ø, 2W, with the maximum amperage draw on the circuit being 32 A.

It should also be noted that in addition to installing the Level 2 charger described above, there is sufficient spare capacity in the electrical service to also accommodate a 50 kW Level 3/DC Fast Charger for emergency charging. This can be explored further if desired.

7.5.2 REQUIRED ELECTRICAL UPGRADES

The existing infrastructure was assessed for space within electrical panels to accommodate the potential EVSE. A 225 A 208 Y/120 V, 3Ø, 4W, 42-circuit Panel 'B2' located in the main level electrical closet was observed to have physical breaker capacity to accommodate a new 40 A - 2 P breaker for supplying the Level 2 EVSE.

If a Level 3 DC Fast Charger is desired, a new 70 A-3P breaker would be installed in the 600 Y/347 V distribution section of the main switchboard to feed this higher power EVSE. Note that a 600-480V step down transformer would likely be required and may need to be installed outside next to the EVSE if the main electrical room cannot accommodate it.

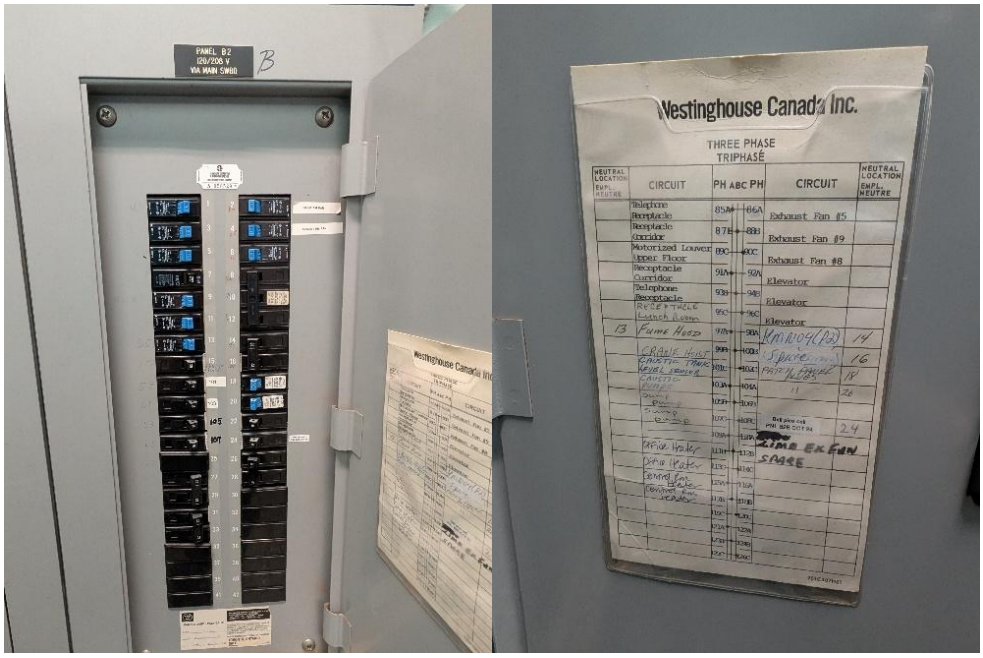


Figure 26. Water Treatment Plant 208 Y/120 V Panel 'B2'.

The work required to electrically supply the EVSE listed above would entail routing conduit from the electrical closet on the main level, up into the ceiling space to the exterior wall and mounting an EVSE on the wall or pedestal with mechanical protection such as bollards.

The Rough Order of Magnitude (ROM) cost estimate for implementing the recommended charging infrastructure is presented below in **Table 23.**

Table 23. ROM Water Treatment Facility (Optional Level 3 DCFC)*.

Item	Cost	Notes
Cast-in-Place Concrete	$ 4,000 (7,000)	Concrete Pads & Bollards
Electric Vehicle Charging Units	$ 10,000 (70,000)	Level 2 EVSE (Level 3 EVSE)
Wires and Cables (0 - 1,000 V)	$ 610 (870)	Branch Circuit Wiring
Conduits, Conduit Fastenings and Conduit Fittings	$ 880 (1,750)	Branch Circuit Raceways
Dry-Type Transformers up to 600 V Primary	$ (20,000)	(75 kVA 600:480 V Step-Down Transformer)
Electrical Cabinets and Enclosures	$ 1,140	Communications Gateway
Wiring Devices	$ 240	Receptacle
Moulded Case Circuit Breakers	$ 600 (3,100)	2 x 40 A - 2 P, 15 A - 1 P (70 A - 3 P, Disconnect Switch)
Sub-Total Electrical:	**$ 17,470 (104,100)**	
General Project Costs		
Sub-Total:	**$ 17,470 (104,100)**	
General Conditions: **10%**	**$ 1,747 (10,410)**	
Construction O&P Cost: **15%**	**$ 2,621 (15,615)**	
Contingency: **30%**	**$ 5,241 (31,230)**	
TOTAL:	**$ 27,080 (161,360)**	Rounded up to nearest $10

*The cost in brackets represents the estimated total for both the baseline Level 2 chargers and an optional Level 3 charger. The equipment in brackets represents the additional components required for installation of a Level 3 charger.

7.6 Public Works Facility

7.6.1 EVSE OPTIONS

With the spare electrical capacity of 108.6 kW on the service, there is available capacity on the electrical system to accommodate up to 16 Level 2 charger ports at a load of 6.6 kW (32 A at 208 V, 1Ø, 2W) per port, if providing dedicated circuits to each port. Alternatively, two (2) charger ports can share a single circuit and communicate with each other to scale their power accordingly thereby ensuring the circuit is not overloaded. In this case, the quantity of chargers could be doubled. Each charger port can serve one parking stall.

The above scenario describes the maximum number of chargers that could be accommodated without an electrical service upgrade. This far exceeds the requirements of the fleet vehicles that would be expected to charge at this location. While further investigation is required to finalize the data on eligible vehicles that would park here, it is known that there are at least three (3) vehicles and possibly up to six (6). Based on six (6) vehicles with an average daily distance of 81.4 km or less, and an average maximum daily dwell time of at least 17.0 hours, **it is recommended to install three (3) dual-port Level 2 chargers serving six (6) parking stalls**. Each charger port would be supplied with a dedicated 40 A circuit at 208 V, 1Ø, 2W, with the maximum amperage draw on each circuit being 32 A. Supplying each port with a dedicated circuit means that the full amount of power available in the circuit can be supplied to the vehicle. Note that the assumed metrics are conservative, and further exploration of the vehicle metrics may reveal that circuit sharing between pairs of charging ports has no detrimental impacts to the regular use of the vehicles.

7.6.2 REQUIRED ELECTRICAL UPGRADES

The existing infrastructure was assessed for space within electrical panels to accommodate the potential EVSE. Breaker space is very limited. It is recommended to install a new 45 kVA step down transformer, fed from the 600 V splitter via fused disconnect switch. The transformer in turn would supply a new 208 Y/120 V panel equipped with a 40 A - 2 P breaker for each circuit. Ideally, this equipment would be located in an electrical room. If necessary, the transformer can be wall mounted along with the new panel and located within the parking bays.



Figure 27. Public Works Facility 600 Y/347 V Splitter.

The work required to electrically supply the EVSE listed above would entail routing conduits from the new dedicated panel in the electrical room, through the building to column mounted EVSE.

With the location of these parking spaces, it is recommended to install bollards to provide extra protection to the EVSE.

The Rough Order of Magnitude (ROM) cost estimate for implementing the recommended charging infrastructure is presented in **Table 24.**

Table 24. ROM Public Works Facility.

Item	Cost	Notes
Dry-Type Transformers up to 600 V Primary	$ 12,000	45 kVA 600:120/208 V Step-Down Transformer
Enclosed Switches and Circuit Breakers	$ 650	60 A Disconnect Switch
Electric Vehicle Charging Units	$ 30,000	Level 2 EVSE
Wires and Cables (0 - 1,000 V)	$ 2,380	Branch Circuit Wiring
Conduits, Conduit Fastenings, and Conduit Fittings	$ 11,600	Branch Circuit Raceways
Electrical Cabinets and Enclosures	$ 1,140	Communications Gateway
Wiring Devices	$ 240	Receptacle
Moulded Case Circuit Breakers	$ 3,830	6 x 40 A - 2 P, 15 A - 1 P
Sub-Total Electrical:	**$ 67,840**	
General Project Costs		
Sub-Total:	**$ 67,840**	
General Conditions:	**10%**	**$ 6,784**
Construction O&P Cost:	**15%**	**$ 10,176**
Contingency:	**30%**	**$ 20,352**
TOTAL:	**$ 105,160**	Rounded up to nearest $10

8 CONCLUSIONS

Through the site visits, capacity and infrastructure evaluations, fleet information, and GPS data, we have determined that the top facility candidates for EV readiness in order from best candidates to least are as follows:

1. **Truro Town Hall** – Adequate spare load capacity; new circuits are easily installed; adequate parking stall capacity; estimated $107,020 for Level 2 charging.
2. **Truro Police Service** – Adequate spare load capacity; new circuits are easily installed; adequate parking stall capacity; estimated $108,260 for Level 2 charging or $245,520 for Level 2 and Level 3 charging.
3. **Water Treatment Facility** – Adequate spare load capacity; new circuits are easily installed; adequate parking stall capacity; estimated $27,080 for Level 2 charging or $161,360 for Level 2 and Level 3 charging.
4. **Public Works Facility** – Adequate spare load capacity; new circuits are easily installed; slightly convoluted interior parking arrangement; estimated $105,160 for Level 2 charging.
5. **Douglas Street Recreation Centre** – Assumed spare load capacity is considered adequate but requires verification; installation of new circuits is not straight forward, but achievable; adequate parking stall capacity; estimated $65,193 for Level 2 charging.
6. **Colchester Legion Stadium** – Adequate spare load capacity; new circuits are easily installed; identified parking area appears congested; estimated $47,870 for Level 2 charging.

9 CLOSING

We trust the information contained in this report satisfies your requirements, and aids in any future decision-making processes. Should you have any questions regarding any information presented in this report, please do not hesitate to contact the undersigned.

EASTPOINT

Prepared by

R. A. Sandy MacInnis, P. Eng.
Senior Electrical Engineer
902.422.2000
sandy.macinnis@eastpoint.ca

Kirk Herman, P. Eng., CEM, LEED AP BD+C
Energy and Decarbonization Engineer
902.422.2000
kirk.herman@eastpoint.ca

Matt McCumber, P. Eng.
Intermediate Electrical Engineer
902.422.2000
matt.mccumber@eastpoint.ca

Holly White
Electrical Designer
902.422.2000
holly.white@eastpoint.ca

APPENDIX A

GHG EMISSIONS ASSESSMENT

Town of Truro - Canadian Urban Institute

EV FLEET OPTIONS ANALYSIS

September 19, 2025

EASTPOINT

ARCHITECTURE – ENGINEERING – SUSTAINABILITY

EastPoint Reference No. 354005

APPENDIX A

Asset #	Building	Province	Vehicle Description	Current Fuel System	Average Longest Daily Dwell Event Duration [h]	Daily VKT [km]	CO_2 emissions [g/km]	Current CO_2 Emissions/Year [kg]	Anticipated Replacement Vehicle (BEV/PHEV)	Replacement Vehicle Classification	ZEV Fleet CO_2 Emissions/Year [kg]	ZEV Fleet CO_2 Emissions/Year (2030) [kg]	Notes
PWT-12	Public Works - Light Trucks	Nova Scotia	2016 Chevrolet City Express	ICEV	18	27	220	2184	BEV	Cargo Van	2586	454	
PWT-14	Public Works - Light Trucks	Nova Scotia	2015 Ford F-150 4x4	ICEV	18	49	276	4946	BEV	Pickup Truck	3173	557	
PWT-35	Public Works - Light Trucks	Nova Scotia	2022 Chevrolet Silverado	ICEV	14	70	274	7001	BEV	Pickup Truck	4523	794	
TBD	Public Works - Light Trucks	Nova Scotia	2024 Ford F-150	ICEV	17	49	266	4738	BEV	Pickup Truck	3153	554	
TBD	Public Works - Light Trucks	Nova Scotia	2023 Ford F-150	ICEV	17	49	252	4489	BEV	Pickup Truck	3153	554	
PWW-16	Water Treatment Facility	Nova Scotia	2018 Dodge RAM	ICEV	15	61	331	7418	BEV	Pickup Truck	3968	697	
PWW-31	Water Treatment Facility	Nova Scotia	2016 GMC Sierra	ICEV	17	81	298	8854	BEV	Pickup Truck	5260	924	
PWW-34	Water Treatment Facility	Nova Scotia	2018 GMC Sierra	ICEV	13	61	298	6624	BEV	Pickup Truck	3935	691	
WTP-19	Water Treatment Facility	Nova Scotia	2018 Chevrolet Silverado	ICEV	15	59	298	6385	BEV	Pickup Truck	3793	666	
TBD	Water Treatment Facility	Nova Scotia	2018 Chevrolet EQUINOX	ICEV	15	66	195	4669	BEV	SUV	3354	589	
TBD	Truro Police Service	Nova Scotia	2021 Chevrolet Blazer	ICEV	16	50	221	4033	BEV	SUV	2556	449	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
TBD	Truro Police Service	Nova Scotia	2018 Dodge Grand Caravan	ICEV	16	50	276	5037	BEV	SUV	2556	449	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
TBD	Truro Police Service	Nova Scotia	2016 Chevrolet Equinox	ICEV	16	50	214	3906	BEV	SUV	2556	449	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
TBD	Truro Police Service	Nova Scotia	2021 Nissan Rogue	ICEV	16	50	189	3449	BEV	SUV	2556	449	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
TBD	Truro Police Service	Nova Scotia	2023 Honda CR-V	ICEV	16	50	181	3303	BEV	SUV	2556	449	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
Corp Services 1 - RAV4	Admin/Bylaw/Building Inspection	Nova Scotia	2015 Toyota Rav4	ICEV	15	16	205	1227	BEV	SUV	838	147	
Corp Services 2 - Pilot	Admin/Bylaw/Building Inspection	Nova Scotia	2013 Honda Pilot	ICEV	17	10	265	929	BEV	SUV	491	86	
Planning - Building Inspector	Admin/Bylaw/Building Inspection	Nova Scotia	2017 GMC Terrain	ICEV	17	42	221	3396	BEV	SUV	2152	378	
Planning - By-Law	Admin/Bylaw/Building Inspection	Nova Scotia	2021 Chevrolet Equinox	ICEV	18	41	198	2941	BEV	SUV	2081	365	
TBD	Admin/Bylaw/Building Inspection	Nova Scotia	2023 Mazda CX-5 4WD	ICEV	17	27	209	2075	BEV	SUV	1391	244	
TBD	Admin/Bylaw/Building Inspection	Nova Scotia	2025 Honda CR-V Hybrid	ICEV	17	27	151	1499	BEV	SUV	1391	244	
PRC-1	Parks, Recreation, & Culture	Nova Scotia	2022 Ford F-150	ICEV	17	28	256	2644	BEV	Pickup Truck	1829	321	
PRC-10	Parks, Recreation, & Culture	Nova Scotia	2019 GMC Sierra	ICEV	17	30	261	2810	BEV	Pickup Truck	1906	335	
PRC-2	Parks, Recreation, & Culture	Nova Scotia	2021 Chevrolet Silverado	ICEV	17	36	263	3456	BEV	Pickup Truck	2326	408	
PRC-3	Parks, Recreation, & Culture	Nova Scotia	2021 Ford F-150	ICEV	16	18	253	1671	BEV	Pickup Truck	1170	205	
PRC-4	Parks, Recreation, & Culture	Nova Scotia	2021 Chevrolet Silverado	ICEV	17	27	263	2544	BEV	Pickup Truck	1712	301	
PRC-6	Parks, Recreation, & Culture	Nova Scotia	2024 Ford Ranger 4WD	ICEV	17	25	257	2298	BEV	Pickup Truck	1583	278	
PRC-7	Parks, Recreation, & Culture	Nova Scotia	2023 Chevrolet Silverado	ICEV	18	28	281	2892	BEV	Pickup Truck	1822	320	
PRC-8	Parks, Recreation, & Culture	Nova Scotia	2024 Chevrolet Silverado	ICEV	16	31	281	3149	BEV	Pickup Truck	1984	348	
PRC-9	Parks, Recreation, & Culture	Nova Scotia	2016 Nissan Frontier	ICEV	18	30	285	3121	BEV	Pickup Truck	1939	340	
-	Fire Services	Nova Scotia	2013 Chevrolet Silverado	ICEV	16	50	322	5877	BEV	Pickup Truck	3231	567	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
-	Fire Services	Nova Scotia	2023 Ford F-150	ICEV	16	50	252	4599	BEV	Pickup Truck	3231	567	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
-	Fire Services	Nova Scotia	2022 Dodge Ram 1500SLT	ICEV	16	50	267	4873	BEV	Pickup Truck	3231	567	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.
-	Surplus	Nova Scotia	2014 Chevrolet Silverado	ICEV	16	50	271	4946	BEV	Pickup Truck	3231	567	Assummed 16 Hour Daily Dwell Time and 50 Daily VKT.