Regional EV Charging Network Strategy

June 2022

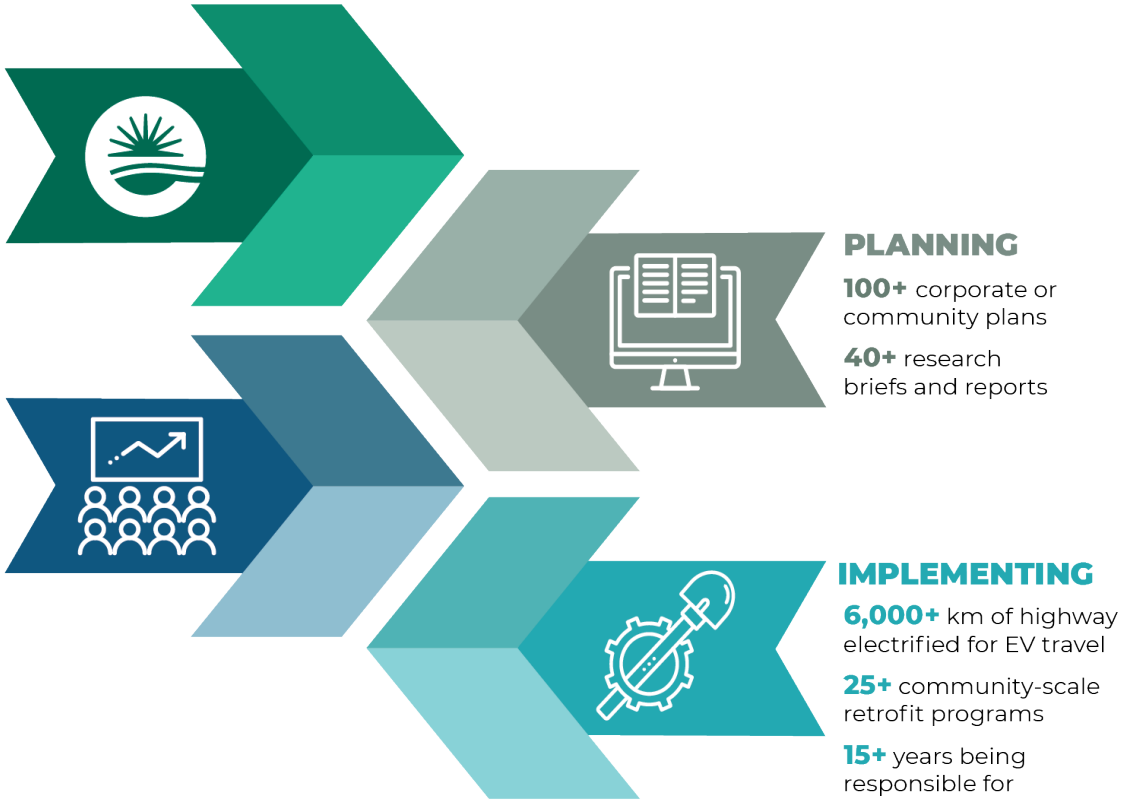
Presentation to Council

Community Energy Association

About Us

Community Energy Association

CEA is the only non-profit in BC focused exclusively on supporting local governments and Indigenous communities on CLIMATE and ENERGY activities.



Our Work

Community Energy Association

CEA helps communities with:

INITIATION
- Program design
- Grants
- Regional collaborations

MANAGEMENT
- Manage advisory committees
- RFPs/Vendor selection
- Contract negotiation & mgmt
- Deployment management
- Financial admin & reporting

COMMUNICATIONS
- Program branding, marketing & promotion
- Video production
- Digital communications

CEA has expertise in:

TRANSPORTATION

BUILDINGS

WASTE

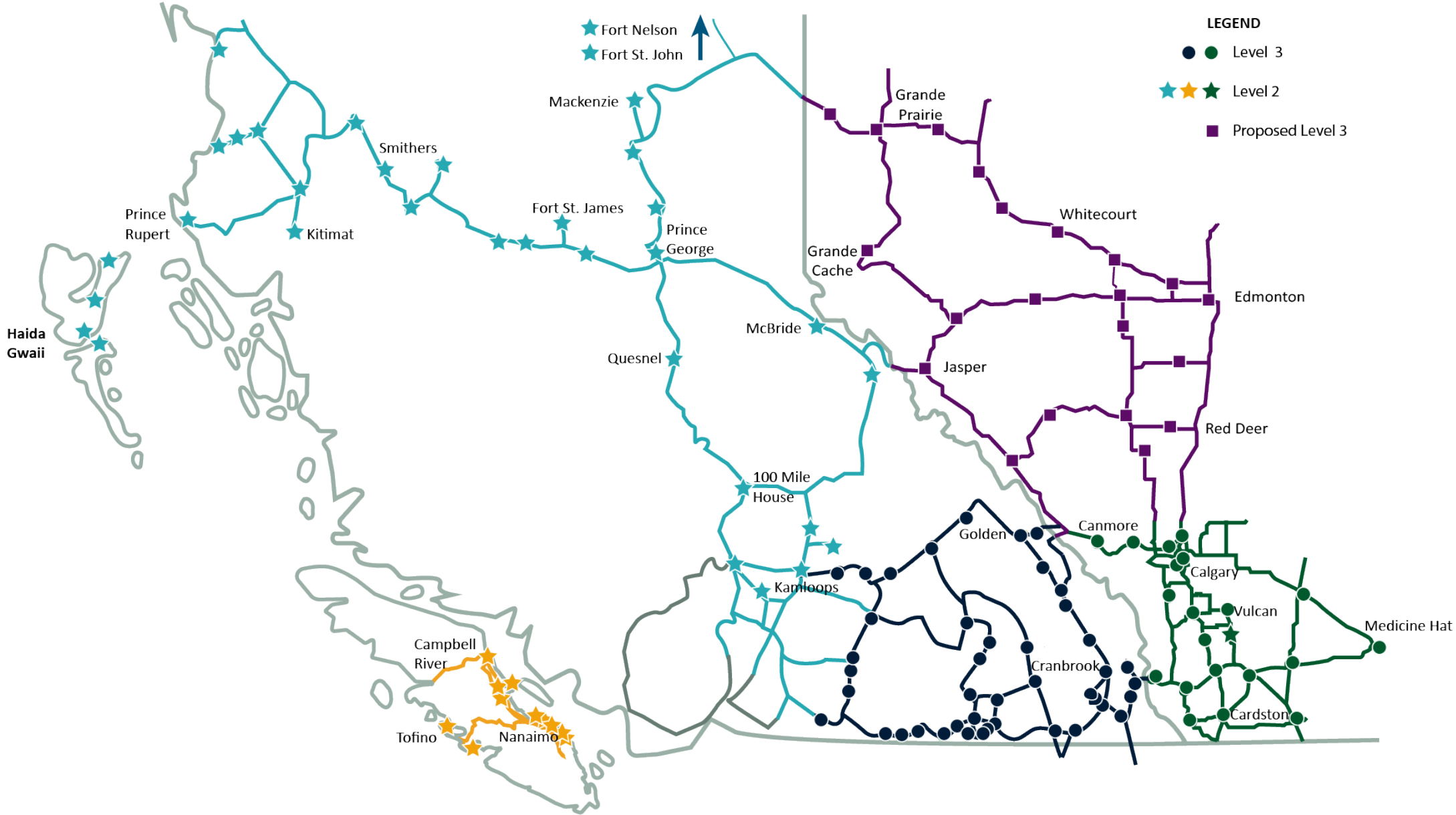
Mid-Island
28 Level 2 Stations

Charge North
58 Level 2 Stations
2,780 km of highway

Eventure Northwest Alberta
20 + DCFC/Level 2 Combined Stations:
PROPOSED

Peaks To Prairies
20 DCFC/level 2 combined stations
2020 netwrok complete
1,800km of highway

Accelerate Kootenays
13 DCFC / 40 Level 2's
2018 DCFC network complete
1,800km of highway



Electric Vehicles 101

HEV

hybrid
electric vehicle

internal combustion engine
no ability to plug in
high MPG efficiency

toyota prius

PHEV

plug-in hybrid
electric vehicle

fossil fuel and electric
ability to plug in
extended range over BEV

chevrolet volt

BEV

plug-in battery
electric vehicle

no internal combustion engine
battery only
lowest cost per km driven
zero emissions

nissan leaf

electric vehicles (EVs)

EV Chargers 101

L1

level 1 charging
AC, 120V

Plugs into any wall. Often comes with the purchase of vehicle. Can take hours, if not days to charge.

L1 charger

L2

level 2 charging
AC, 240V

Great for overnight home or workplace charging. Also good for tourism or recreation sites. 8-12 hr charge.

L2 home charger

DCFC

dc fast charging
variable DC voltage

Requires 3-Phase power. Good for shorter stops, either quick top ups, or generally 40 – 120 min to full.

public DC fast charger

Scope of Work

- Electric Vehicle Driver & Resident's Survey
  - What is the current awareness and interest in EVs?
- Assessment of Existing and Planned Infrastructure
- Develop Regional Siting Criteria
- Regional EV Charging Network Plan
  - How many stations are needed?
  - Where should they be located?
  - Level 2 or Level 3?

Scope of Work

- Options for Addressing Dwell Time
  - How to stop people from hanging out at parking stations preventing others from charging.
- Solar Siting Guidance
- Identification of Implementation Options

Project Objectives

- Complete a study that can provide information to Counties and Municipalities across the region
  - Strategic & Coordinated
- Implementation plan that can be actioned as funding comes available
  - E.g., Natural Resources Canada Zero Emissions Vehicle Infrastructure Program (NRCan ZEVIP)

NEWS RELEASE

Ontario Making it Easier to Access Electric Vehicle Chargers

Province Investing in Charging Infrastructure to Suppor
Ontario's Electric Vehicle Industry

March 22, 2022

Transportation

Partnership & Agreements

County of Wellington	City of Guelph	City of Stratford
City of St. Marys	County of Dufferin	County of Perth
County of Huron	County of Bruce	County of Grey

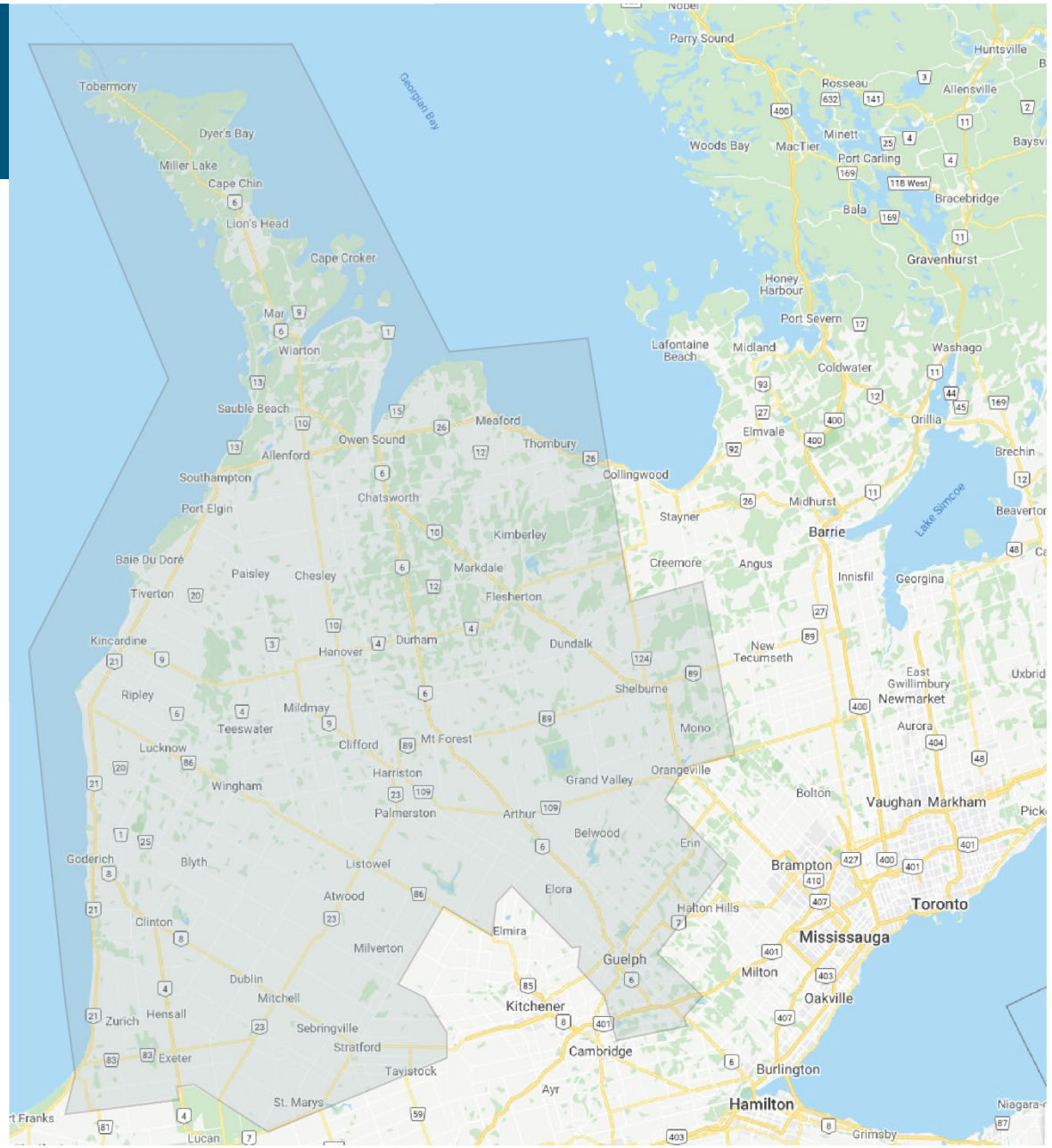
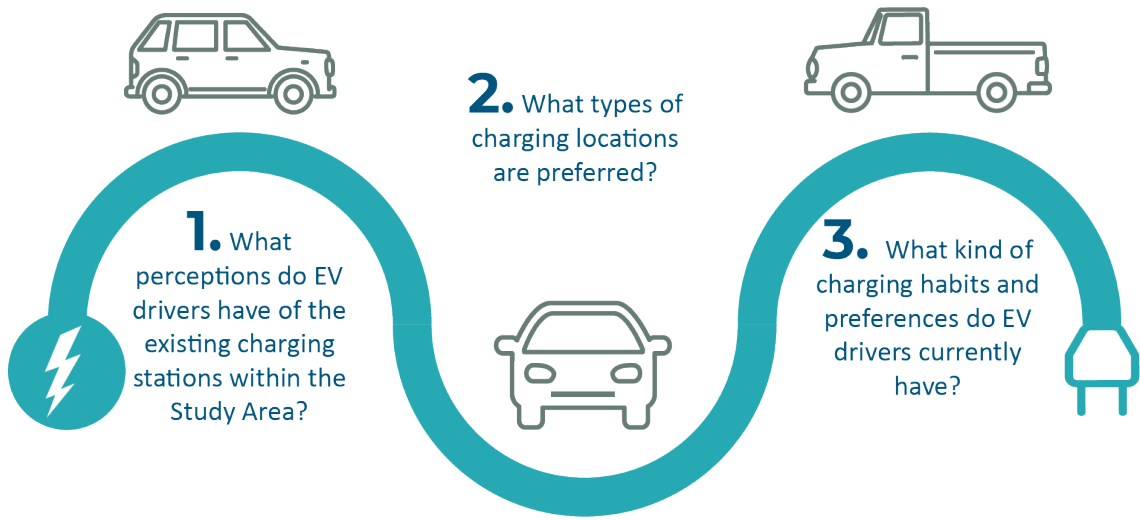


Figure 1. Project Study Area (shaded in grey)

Resident & EV Driver Surveys

- Incentives and/or outreach and engagement to encourage businesses-owners/workplaces to install Level 2 chargers is key.
- Incentives and/or outreach and engagement to support homeowners to install Level 2 chargers at home.
- Increased communications regarding existing EV charging network.
- Communication of available EV car models in the market today.
- Survey responses of non-EV drivers indicate that many residents maintain misconceptions about the reliability of EVs.



Existing Infrastructure

- Current Level 3 (DC Fast Charging) EV stations
- In addition, 145 Level 2 stations across the region

DCFC Station
Government-owned

DCFC Station
Private-owned

DCFC Station
Private-owned
Limited availability

Level 2 Station

Siting Criteria

For EV Drivers

- Dedicated parking stall while charging
- Accessibility
- Desirable place to stop: safety & lighting

For Project (Technical & Co-Benefits)

- Contributes to overall network
- Walkability to amenities
- Visibility to motorists & pedestrians
- Future proofing: adding stations, accommodating car share growth
- Available power source
- Signage & branding for high visibility
- Appropriate ownership

EV Network Strategy

STEP 01
Document current Level 3 EV charging infrastructure

STEP 02
Insert current EV charging infrastructure into modeling tool

STEP 03
Identify gaps in current EV charging infrastructure

STEP 04
Present modeling results to Partners for review and assessment against siting criteria

STEP 05
Revise the map incorporating partner feedback

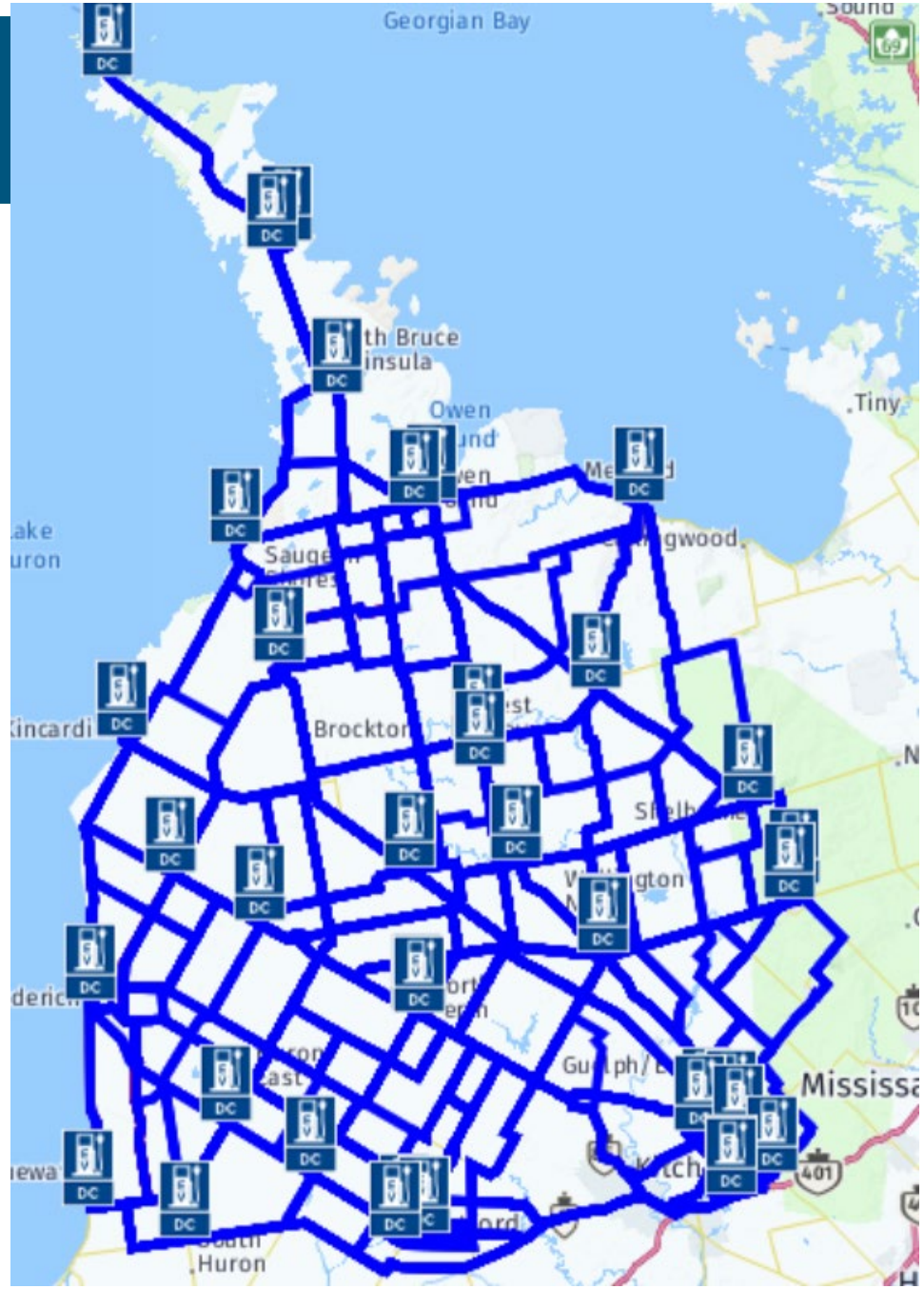
STEP 06
Complete desktop electrical capacity review

STEP 07
Final proposal for regional EV charging network strategy

EV Network Strategy

- Level 3 (17)

Bluewater	Paisley
Durham	Seaforth
Ferndale	Shelburne
Flesherton	Southampton or Saugeen Shores
Kincardine	Thornbury
Lion’s Head	Tobermory
Listowel	Wiarton
Lucknow	Wingham
Mitchell	



EV Network Strategy

- Level 2
  - Priority ranking of potential sites
    - 13 Priority 1 sites
  - Accounts for proximity to existing Level 2 and Level 3 chargers, planned Level 3 chargers, and forecasted demand
  - Evaluated against siting criteria

Location	County
Bruce County Museum	Bruce
Sauble Beach 1	Bruce
Sauble Beach 2	Bruce
Meaford Hall Arts & Culture Centre	Grey
Dundalk Library	Grey
Hanover Town Hall/ Library	Grey
Bayfield-Clan Gregor Square	Huron
Blyth Arena & Community Centre	Huron
Welcome Centre, Mitchel	Huron
St. Marys Station Gallery	Perth
Canadian Baseball Hall of Fame and Museum	Perth
Drayton Municipal Parking Lot	Wellington
Future Erin Library	Wellington

Implementation Options

1. Collaboration Models
    a. Regional Collaboration
        i. Install all stations through a single procurement and funding process
        ii. Install stations in multiple phases
    b. Individual Approach
    c. Hybrid Approach
2. Ownership, Operations and Maintenance Models
    a. Third-Party Ownership and Operations
    b. Municipal Ownership and Third-Party Operations

Federal (ZEVIP)
Provincial partnership
Private Funding
Municipal Funding

Next Steps

- For Level 2 EV chargers:
  - Further engagement with utilities and electric service providers to confirm electrical capacity at locations (minimum 40 amps per charger)
  - Further discussion with regional municipalities to confirm proposed sites are fit-for-purpose given local context and confirmation of siting criteria evaluation
- Determine model for implementation

Thank you

Danielle Wiess

dwiess@communityenergy.bc.ca

www.communityenergy.bc.ca