North Central Texas Council of Governments

Dallas-Fort Worth CLEAN CITIES

REGIONAL EV INFRASTRUCTURE WORKING GROUP

Jared Wright, Joslyn Billings, Maggie Quinn

September 20, 2023

Agenda

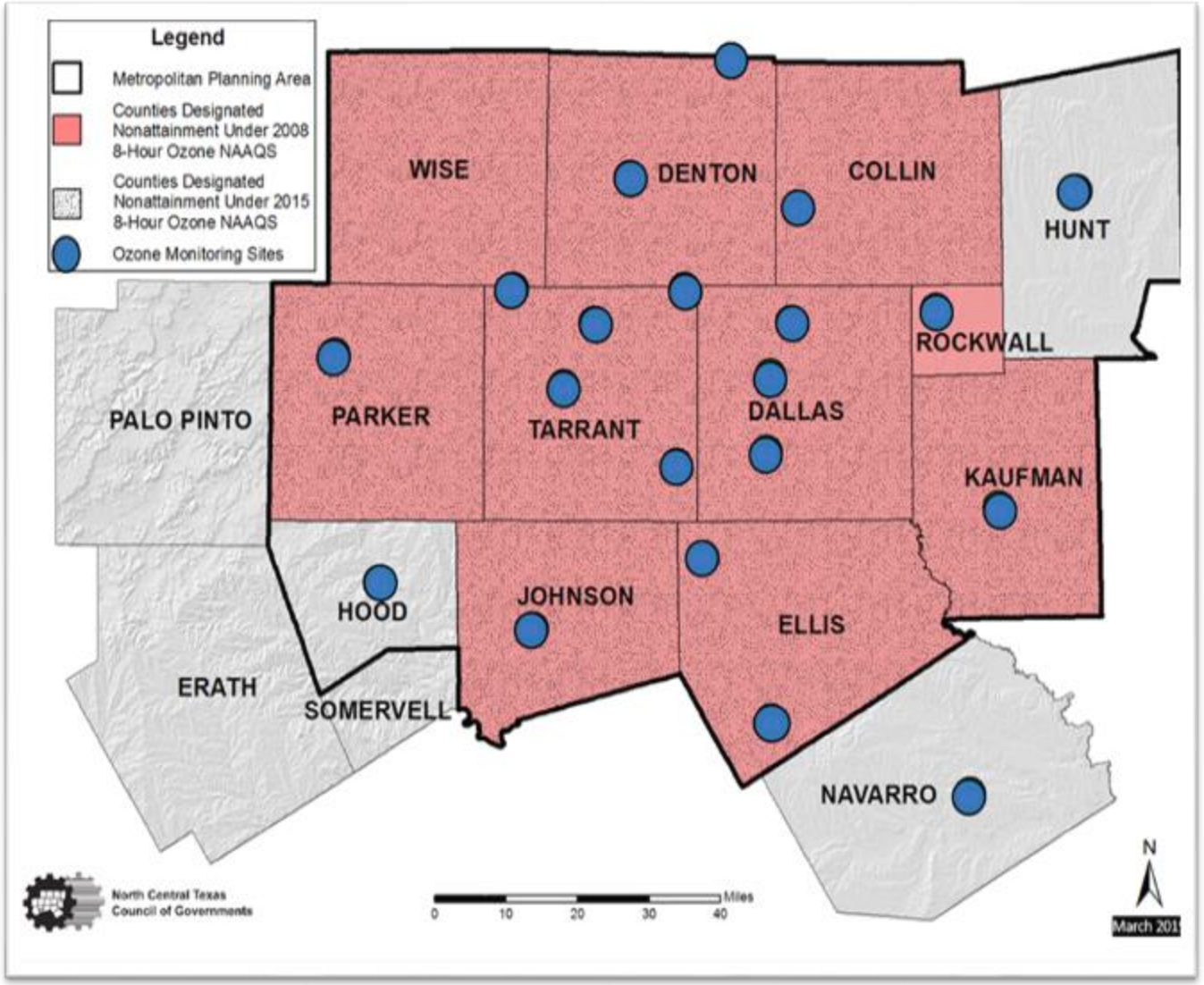
- NCTCOG Presentation
- Presenters: Brett L. King, City of Carrollton and Sean Ross, Polara
- Questions and Discussion
- Time for networking

Working Group Priorities:

Coordinate EV Infrastructure efforts across North Texas

Provide guidance, resources, and collaboration opportunities to local governments and other members

Who We Are



North Central Texas Council of Governments

Regional Planning Agency

Regional Transportation Council

Metropolitan Planning Organization (MPO)

Dallas-Fort Worth CLEAN CITIES

Local Clean Cities Coalition

Key Focus Areas and Goals

Clean Vehicle Initiatives

- Support Transition to Zero Emission Vehicle (ZEV) and Other Alternative Fuel Technologies
- Assist Deployment of Clean Vehicle Technologies by Identifying, Promoting, and Providing Funding

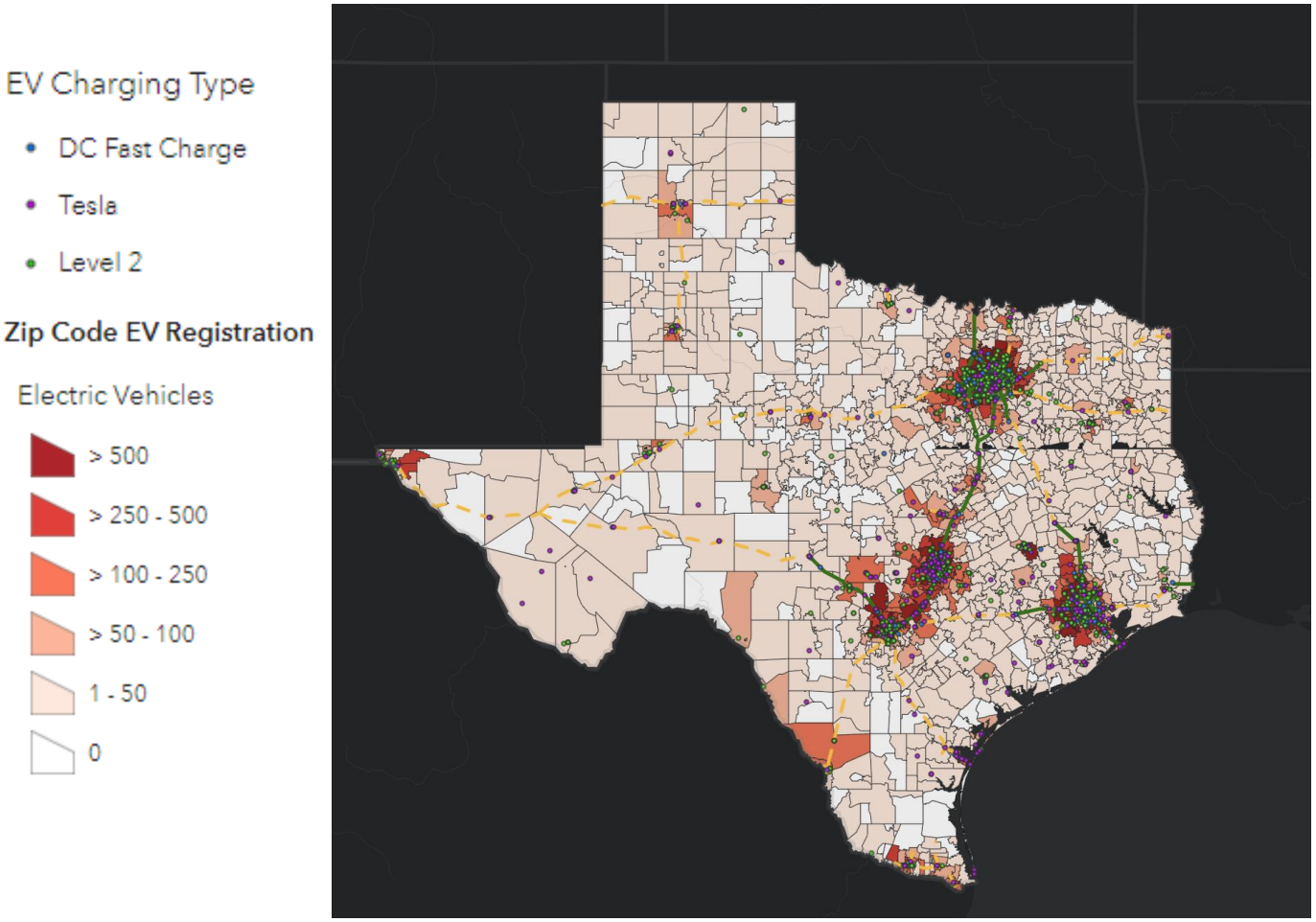
Clean Infrastructure Initiatives

- Increase Equitable Access to EV Charging Infrastructure
- Build Publicly-Accessible Infrastructure Network to Support ZEV Transition in Medium- and Heavy-Duty Sector
- Ensure Local Governments are Informed and Prepared to Support Local EV Adoption
- Reduce Barriers, Delay, and Cost in Local Infrastructure Development

Energy Integration

- Minimize Negative Electric Grid Impacts Associated with Transportation Electrification
- Increase Local Availability of Renewable Fuels (electricity, natural gas, hydrogen, biodiesel)
- Improve Resilience against Fuel/Energy Interruptions

Texas Data And Trends



Electric Vehicle (EV) Registration Data

www.dfwcleancities.org/evnt -> EVs and Texas

Region	September 2022	September 2023	Increase
Texas	145,883	218,889	50%
DFW	49,783	81,093	63%
Austin	29,550	43,321	47%
San Antonio	13,960	21,102	52%
Houston	32,787	52,949	61%

Charging Station Dashboard

https://txdot.mysocialpinpoint.com/tx_ev_plan

Charging Sites Statewide (includes Tesla):

2,762 Level 2

388 DC Fast

NEVI Formula Funding Impacts to Texas

Texas Department of Transportation (TxDOT) to Receive and Administer ~$407 Million Over Five years to Deploy EV Charging

Provide at Least One Qualifying Station Every 50 Miles Along Designated Corridors:

- Be Within One Mile of Designated EV Corridor Exit
- Include at Least Four CCS 1-type and four NACS (Tesla) DC Fast Charge Connectors, Minimum 150kW Power Output at All Times
- Minimum Site Power Capacity 600 kW

Restrict Funding to Designated EV Corridors until Demonstration that all Designated Highways are “Saturated” With Qualifying Stations

Applications are Open, **Due by October 16, 2023**

Remaining Funds Distributed:

- In/Near County Seats
- Other Locations TBD by MPO

CCS 1 = Combined Charging System
NACS = North American Charging Standard

Electric Vehicle (EV) Reliability and Accessibility Accelerator Program

Providing up to $100 million in Federal Funding to Repair and Replace Non-Operational EV Charging Infrastructure

- Eligible Applicants are Limited to State Departments of Transportation and Local Governments
  - "Temporarily unavailable" Public EV Charging Ports Can be Found On the Alternative Fuels Data Center Website
  - Unavailable Chargers Have to be Listed on the AFDC by October 11, 2023
- The Joint Office Expects to Award Funding to All Eligible Applications
- Find More Information on Grants.gov
- Applications Due by **November 13, 2023**

Joint Office of Energy and Transportation

Other Funding Opportunities for Infrastructure

Program/Incentive	Eligible Activities	Funding Amount	Deadline to Apply
Alternative Fuel Infrastructure Tax Credit	Installation of qualified fueling equipment, such as EV charging infrastructure in eligible locations	Up to 30% tax credit	December 31, 2032
TERP Alternative Fueling Facilities Program	Funds new construction or the expansion of existing alternative or natural gas fueling facilities	Up to $400,000 for a compressed natural gas CNG or LNG project Up to $600,000 for a combined CNG and LNG project Up to 50% or maximum of $600,000, whichever is less, for fuels other than natural gas	Closed; Expected to open 2024
Rural Business Development Grants	EV charging stations can be funded through this grant if local small businesses can provide Letters of Support that state the charging stations will support job growth/retention	There is no maximum grant amount; however, smaller requests are given higher priority. There is no cost sharing requirement. Opportunity grants are limited to up to 10 percent of the total Rural Business Development Grant annual funding.	Closed; Expected to open Spring 2024

Oncor's Electrification Efforts

Oncor's EVolution Program

- Ensure Adequate Infrastructure Planning for Fleets to Maximize Efficiency and Profitability
  - No Cost to Participate
  - Fleet Managers and Program Partners can Enroll!
  - EVOLUTION (oncor.com)

Oncor's Managed EV Charging Study

- EVolution Participants are Eligible to Participate
- Provides up to $25,000 for Commercial Fleets to Work with Oncor on Peak Demand Shifting and Other Energy Efficiency Objectives
  - Participants Must Have 5 EV Chargers or at Least 2 Medium- Heavy-Duty EVs
  - Participants Must Attend Monthly Meetings
- Contact Joshua.Emeter@oncor.com for more information

National Drive Electric Week

National Celebration to Raise Awareness of Benefits of EVs

- Exhibitors
- Electric Vehicle Display and Ride and Drives
- Food, Games, and more

Dallas-Fort Worth National Drive Electric Week

Sunday, October 1, 2023, 2:00 - 5:00pm
Tanger Outlets
15853 North Fwy, Fort Worth, TX 76177

2022 National Drive Electric Week Event

Register and learn more at https://www.dfwcleancities.org/ndew

Contact Us

Lori Clark
Senior Program Manager
& DFWCC Director
lclark@nctcog.org

Jared Wright
Senior Air Quality Planner
jwright@nctcog.org

Joslyn Billings
Air Quality Planner
jbillings@nctcog.org

Maggie Quinn
Air Quality Planner
Mquinn@nctcog.org

Dallas-Fort Worth CLEAN CITIES

dfwcleancities.org

cleancities@nctcog.org

Questions and Discussion

Brett L. King
City of Carrollton
Building Official - Development Services Department
brett.king@cityofcarrollton.com

Sean Ross
Polara Energy
Senior Manager - Business Development, US
sean.ross@polara.energy

Solving the Charging Puzzle

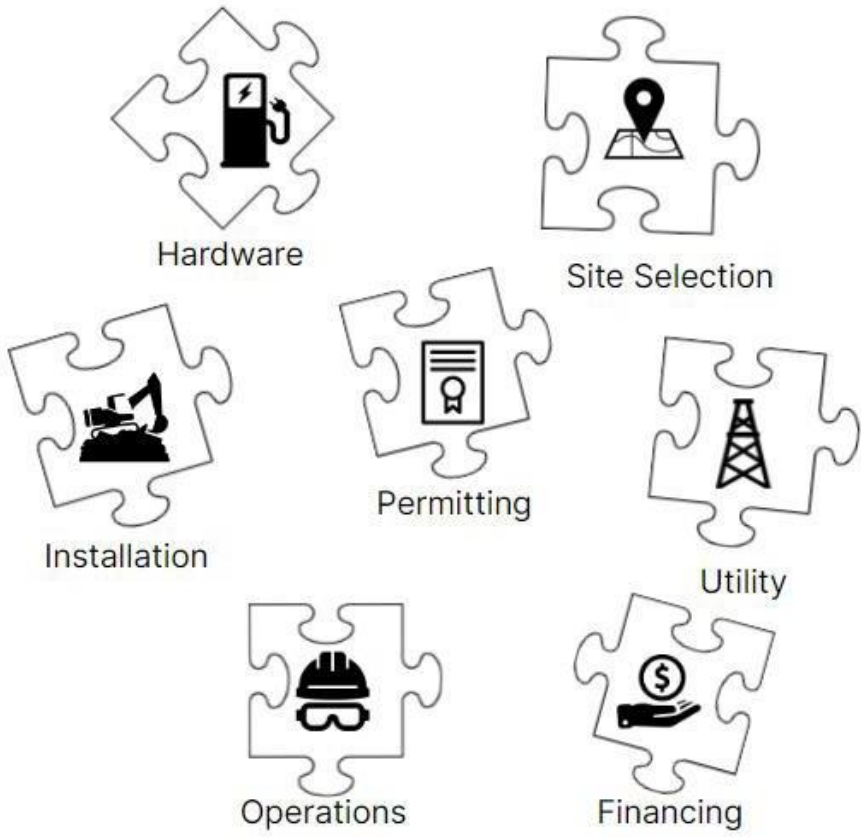
Sean Ross – Senior Manager Business Development,
US

POLARA

Agenda

- Overview of charging landscape
- Identifying your use case & fleet needs
- Site considerations
- Deployment bottlenecks, best practices
- Service provider evaluation
- Polara

Overview of Charging Landscape

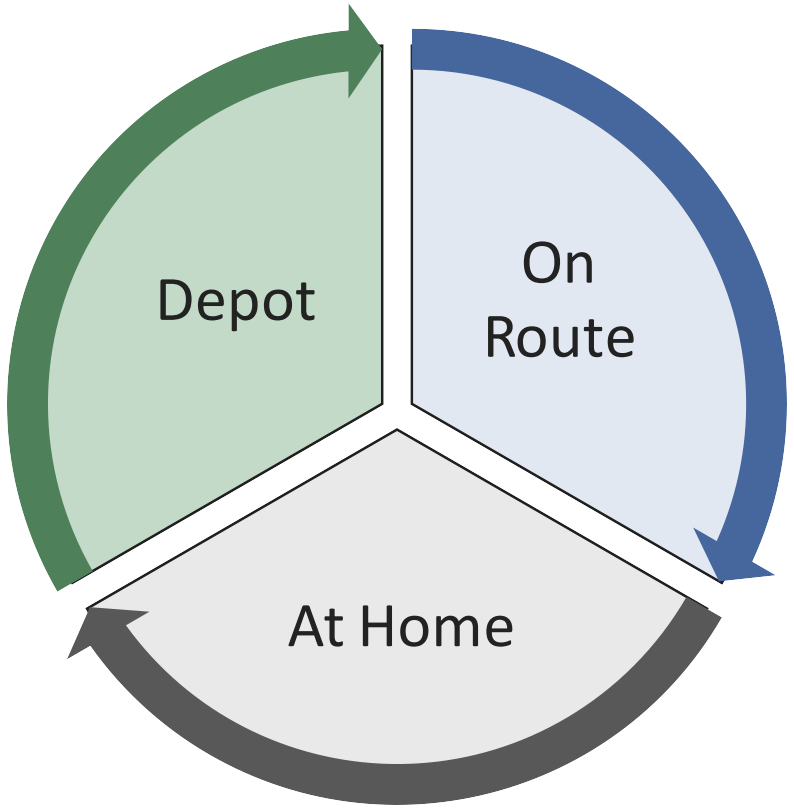


Deploying charging can be incredibly complex, requiring extensive coordination across many factors and stakeholders

Key steps include:

- Site design
- Permitting
- Procurement
- Construction and installation
- Commissioning

Identifying Your Use Case & Fleet Needs



- ❑ AC Level 2
- ❑ DCFC (low & high)

- ❑ Public networks
- ❑ Mobile charging

- ❑ AC Level 2

Identifying Your Use Case & Fleet Needs

Vehicles

How many vehicles today
How many vehicles at full scale
? What type of vehicles ?
How many miles per day ?
How much dwell time and where
?





EVSE

What charging speed ?
AC or DC charging ? Both ?
Where to install chargers ?
What features are required
?
What type of management tools
?

Pro Tip

All electric vehicles and all chargers are not created equal.
Be sure the equipment compliments the vehicle and vice

Site Considerations

Assess Your Site

- Identify the available power capacity
- Understand local ordinances
- Determine if site has 3 phase power
- Identify optimal charger placement
- Understand panel, transformer status
- Engage landlord

Major Cost Drivers

- Oversized hardware
- Networking / software fees
- Trenching
- Labor
- Materials

Deployment Process and Typical Bottlenecks

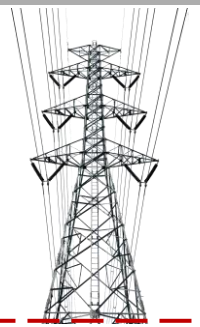
Long Lead Items

Site Design

Weeks

Utility Upgrades

Months or Years



Permitting

Months

Equipment Procurement

Months

Construction

Weeks

Installation

Weeks

Commissioning

Days

Go Live

Pro Tip

Start the process early with a site assessment. Understand the opportunities and constraints of your location.

Service Providers Evaluation

Ask the Right Questions

- Can you define your turnkey offer ?
- What services are in-house vs subcontracted ?
- Is your hardware OCCP compliant ?
- Is your equipment Buy-America compliant ?
- What is your leadtime ?
- What measures do you take to future-proof ?
- Who is the manufacturer ?
- How many EV chargers are connected to your software?

Develop a ranking system

	Hardware				Construction Services		
Area	**Heliox**	**Kempower**	**Phihong**	**Siemens**	**Brytemove**	**Kimley-Horn**	**SEAM Group**
Ease of Doing Business							
Responsiveness	3	3	1	1	2	2	2
Quality	2	2	2	1	2	2	2
Timeliness	3	2	2	1	2	2	2
Cost	2	2	3	2	2	2	2
Total Score	**13**	**12**	**11**	**6**	**10**	**10**	**10**

Scoring
1 = Below Expectations
2 = Meets Expectations
3 = Exceeds Expectations

favorable
neutral
unfavorable

Preliminary

	DFW	VAN
Energy Cost		
Demand Charges		
AHJ Ease		
Utility Ease		
Strategic Location		
Deployment Timeline	Average	

Energy Cost							
Demand Charges							
AHJ Ease							
Utility Ease							
Strategic Location							
Deployment Timeline	Above Average	Below Average	Average	Above Average	Below Average	Average	

Best Practices for Streamlining Deployment

Get an Early Start

- Gather key documents such as single-line drawings and utility bills
- Take photos of electrical panel, electrical service entrance, and desired charger placement
- Engage stakeholders early and determine short term vs long term objectives

Make Data Driven Decisions

- Obtain a site assessment to determine any issues ahead of time and develop a plan to mitigate
- Complete a fleet analysis to understand battery SOC, temperature, load and other factors to determine optimal charge rates
- Right size equipment based on the need

About Polara

We are an electric vehicle infrastructure company that engineers and constructs sites for fleet applications.

Since 2021, Polara has established itself as a leader in deploying charging infrastructure across North America.

Our service offering includes:

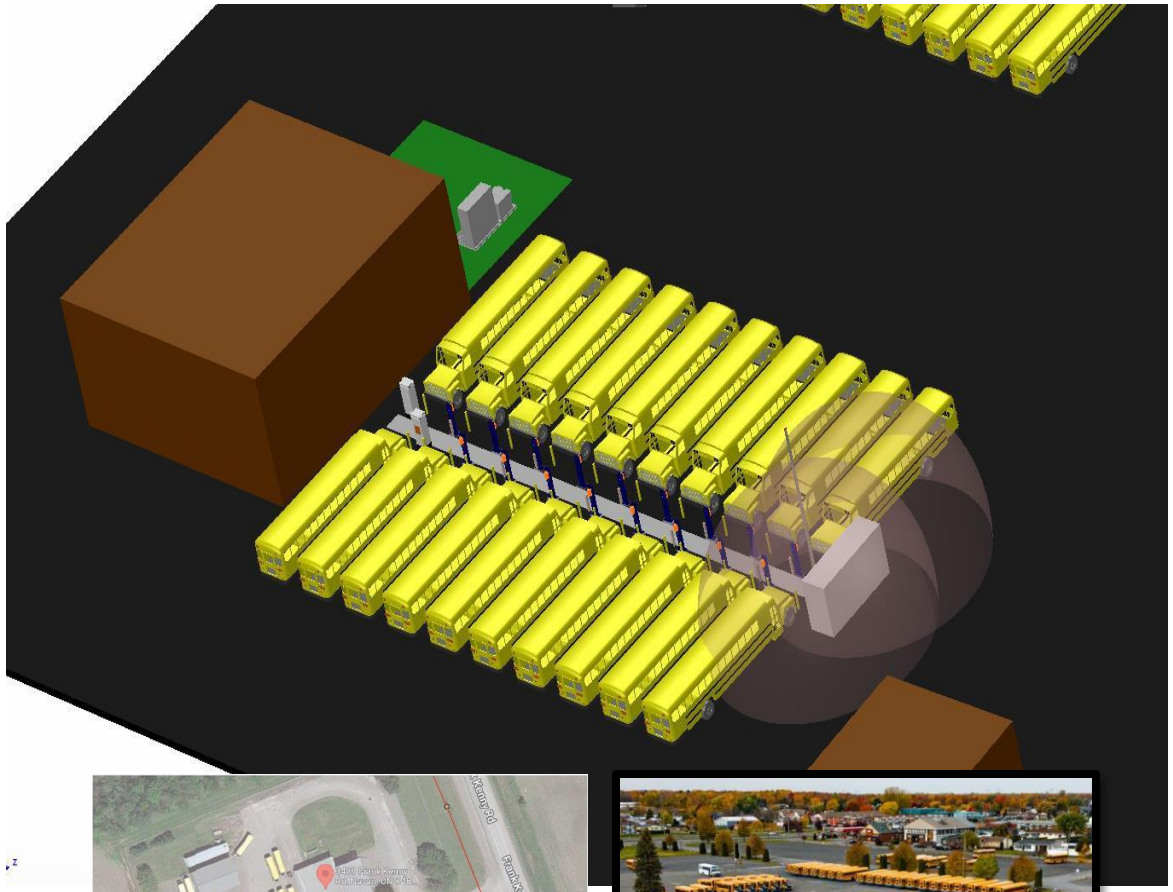
- Customized fleet studies
- Site engineering
- CHRGPK Distribution & Metering System
- Training and Management tools

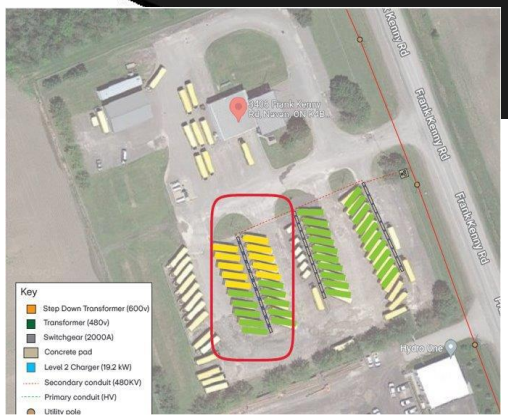
Fleet Analysis

- How many buses?
- What is the available power at site?
- Does the site require power upgrades?
- Battery SOC Route Analysis
  - Summer / Winter
  - Weight
  - Range/Distance

Site Design

- Site design, operational flow & charger placement
- 3D plans and 2 iterations with customer
- Engineering documents provided include:
  - Cable Schedule
  - Plot Plan
  - Bill of Materials
  - Scope of Work for Installation
  - Permits





CHRGPK

CHRGPK family, that is highly efficient, reliable, and configurable for the client fleet. Complete with all required circuit breakers, transformers, steel floor structure and distribution equipment, the CHRGPK is a solution that can be delivered to the site, outdoors, without the need for additional equipment or shelters.

Modular Design
Easy replacement of components for electricians, ensuring flexibility and convenience

Scalability
Components can be upgraded even after construction and installation, allowing for future expansion

High Efficiency
Maintains greater than 97% efficiency regardless of transformer loading, optimizing energy usage

Harmonic Dampening
Meets IEEE requirements for total harmonic distortion, minimizing electrical noise and ensuring a clean power supply

Utility-Grade Metering & Protection
Equipped with advanced metering and protection features, ensuring accurate measurement and reliable operation

Skid Installation
Installed on a skid to prevent overheating and eliminate single point of failure issues often associated with containerized solutions

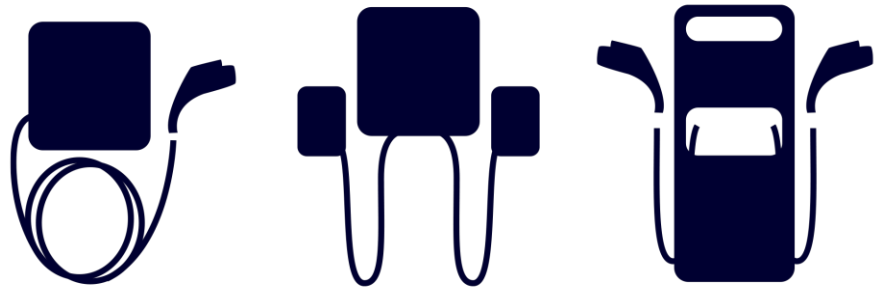
Customizable Metering Cabinet
Designed to meet local grid codes, providing compliance and adaptability to specific regulatory requirements

Experts in Grid to Charger Electrification

Analysis
Current fleet size and circuits
Electrical power requirements
Electrical engineering
Site layout design

Execution
Government funding application
Equipment integration
Project Management
Commissioning and start up

Services
Training
Energy management
Technical support
Spare parts



Thank you!

Sean Ross
Senior Business Development Manager - USA
Sean.ross@polara.energy
571-723-0173

POLARA