



# THE PATH TO POWER

*FLEET ELECTRIFICATION WORKSHOP*

## *WELCOME!*

Marriott St. Louis Airport  
January 16, 2024

Eastern Missouri Alliance for Clean Transportation & National  
Renewable Energy Laboratory



# AGENDA

- Welcome and Get to Know the Room
- Preparing for your Journey: Fleet Programs and Resources
- Fleet case Studies: Fort Leonard Wood and St. Louis County
- Laying the Ground Work: Tools to Help Get Started
- ASK AN EXPERT LUNCH and Display
- Fuel for the journey: Funding Strategies for EV's
- Powering the path forward: Utility Support for EV projects
- Building Your Roadmap: Expertise From Peers
- Final Survey





# THE PATH TO POWER

*FLEET ELECTRIFICATION WORKSHOP*

## Federal Fleet Electrification

Panel Session

January 16, 2024

Federal Fleet Stakeholders share lessons learned through almost three years of fleet electrification experience.

---



# Fort Leonard Wood Stakeholders

---

Fort Leonard Wood EVCS Team

## ABOUT

- Wide Range of Specializations, including Fleet Management, Engineering, Utility Planning & Organization
- Army Success Story for Fleet Electrification





# About Our Fleet

---

A wide variety of solutions for the Army's transportation needs.

- Electrification began in 2021/2022 under EO 14057
- Goal is 100% Zero Emission by 2035, with 100% Light Duty by 2027.
- Majority of Fleet is Light Duty Vehicles.
- Made up of cars, trucks, vans, available to the everyday driver.





# About Our Chargers

---

A variety of needs and missions can seem complex, but sometimes simple solutions are the best solutions.

- Fort Leonard Wood has seen great success with Level 2 Charging Stations.
- Stations are placed in locations easily accessible to multiple users or fleet parking areas.
- Level 2 Chargers easily facilitate overnight charging for Light Duty Vehicles.
- Solar Powered Charging Stations have also been fielded by Fort Leonard Wood.





# Major Questions

Fleet Electrification is a newer topic. There are many questions that circulate at all levels. The answers will likely be unique to your organization, but there are general ideas which can help start the discussion. Let's talk:

- How Do I Get Started?
- Who to Engage?
- What Should I Consider?
- How Do I Make Electrification Work?
- How Are Users Handling the Change?



# How Do I Get Started?

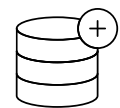
## Know Your Organization & Fleet

- Each Fleet is unique, and Electrification could be an excellent solution.
- Collect data on vehicle use and driver habits through usage records, telematics, and end-user discussions.
  - How far they drive, where they drive, how many miles a day, week, year, are all important values.

## Data-Driven Decisions

- Comparing vehicle use, quantities, and parked locations will inform you on how much capacity of charging you need and where you need it.





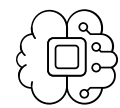
## Fleet Management

The parties responsible for monitoring and tracking vehicle use, maintenance, and acquisitions are the center of the nexus of Electrification.



## Engineering/Operations

Representation from people with specializations on how your locations operate will help make the transition flow into existing infrastructure.



## Planning/Leadership

The people who know what current and future expectations are provide great insight in making the right first steps and keeping the future in mind.



## Utilities

Utility Specialists within your organization will want to know about this shift, and your servicing utility may have additional assistance they could offer.



# What Should I Consider?

- How far and often are my vehicles driving?
  - Vehicles used infrequently, or with low to moderate (<75 miles/day, approx. 12+ hours off-time) demand are excellent candidates for electrification.
- How quick do I need them back on the road?
  - How quick you need vehicles up and running will dictate how many and what type of charger you may need.
- What Special Requirements Do I Have?
  - Vehicles towing, driving with heavy equipment, or with long idle times can all impact range. Vehicles with these requirements will have a greater charging demand.







## More Questions to Consider...

- Where and how are my vehicles parked?
  - Vehicles parked in a central location help minimize the number of chargers that might be needed.
- How many vehicles are out at a time?
  - All vehicles being used routinely means all vehicles will need charged routinely. Make sure you have an adequate number of plugs to meet this need.
- Could I be Missing Something?
  - Every fleet is different, with unique needs and activities. Having the right people engaged asking the right questions makes your team more prepared for the unexpected.



# How Do I Make Electrification Work?

With the foundation of a well-rounded and informed team backed by data, what are some practices to make the transition and operation smoother?



- Meet Regularly with Stakeholders
  - Setting up a regular meeting with the parties involved in your fleet electrification efforts will keep electrification on the mind and create a forum to solve any issues.
- Engage with End-Users
  - Talk with drivers of the vehicles and people at locations you are thinking of installing a charging station.
  - The end-user is a wealth of knowledge on how your vehicles will be used and bringing them in on the conversation gets them interested in EV's.
- Engage with Your Utility Provider
  - Fort Leonard Wood partnered with its serving electrical utility to provide a fast track to maintaining existing stations and installing new ones.
  - Your utility provider may be interested in working with you or may inform you on requirements you must meet.



# How Are Users Handling the Change?

EV users on Fort Leonard Wood have taken to the shift well. There is an initial period of culture change, where the end-user adjusts to charging at stations during off hours, but there have been no major issues with EV's disrupting workdays. General findings from end-user interactions are:

- Users are more receptive when they feel involved in the process.
    - Informing end-users before they receive an EV, providing them opportunities to test drive EV's before they are in full service, and engaging them when deciding where to place charging stations all help ease the transition.
  - Keeping charging convenient makes happier users.
    - When charging is not widely available, users will take to less efficient, more costly methods of charging, such as plugging into a wall outlet.
    - Fielding sufficient charging where it is needed and convenient to users minimizes headaches as users get into the mindset of using their EV's.
-



# Thank You





# Fleet Electrification Workshop

Craig Boyles



**SAINT LOUIS COUNTY**  
Missouri

# EV Goal

## Current Fleet:

- 1,400 Total Licensed Vehicles
- 1,051 Light Duty Vehicles
- 349 Heavy Duty Vehicles
- 43 Hybrids
- 10 Electric Vehicles

## 2027 EV Goal:

- Convert 27% of Light Duty Fleet
- 279 Light Duty Vehicle Target #
- Install Charging Network
- Manage Change
- At 5 Percent of Goal





# EV Plan

## Milestones:

- 2015 Researched Alternate Fuels
- 2018 Upgraded Fleet Software
- 2021 Initiated Telematics
- 2022 First EV Test Purchase
- 2022 Developed EV Plan

## Base Vehicle Criteria

- <150 miles per day EV Target
- Must use >5000 miles annually
- Smallest vehicle available
- Justify larger size vehicle

## Tools

- Annual Utilization Analysis
- Telematics Reports
- Fleet Management System





# Preparing for EV Transition

## EV Level II Chargers:

- Initial single charger purchase
- Relatively inexpensive ~\$3,000
- Wire length increases cost
- Charge during non-duty hours
- Installed 8 more Level II chargers

## Department of Energy Grant

- Purchased 5 Mach Es
- 20 Level II Dual Port Chargers





# EV Transition



## Advantages

- Reduced Reliance on Fossil Fuels
- Reduced Fleet Vehicle O&M Costs
- Reduced Emissions Output
- Local Government Sustainability



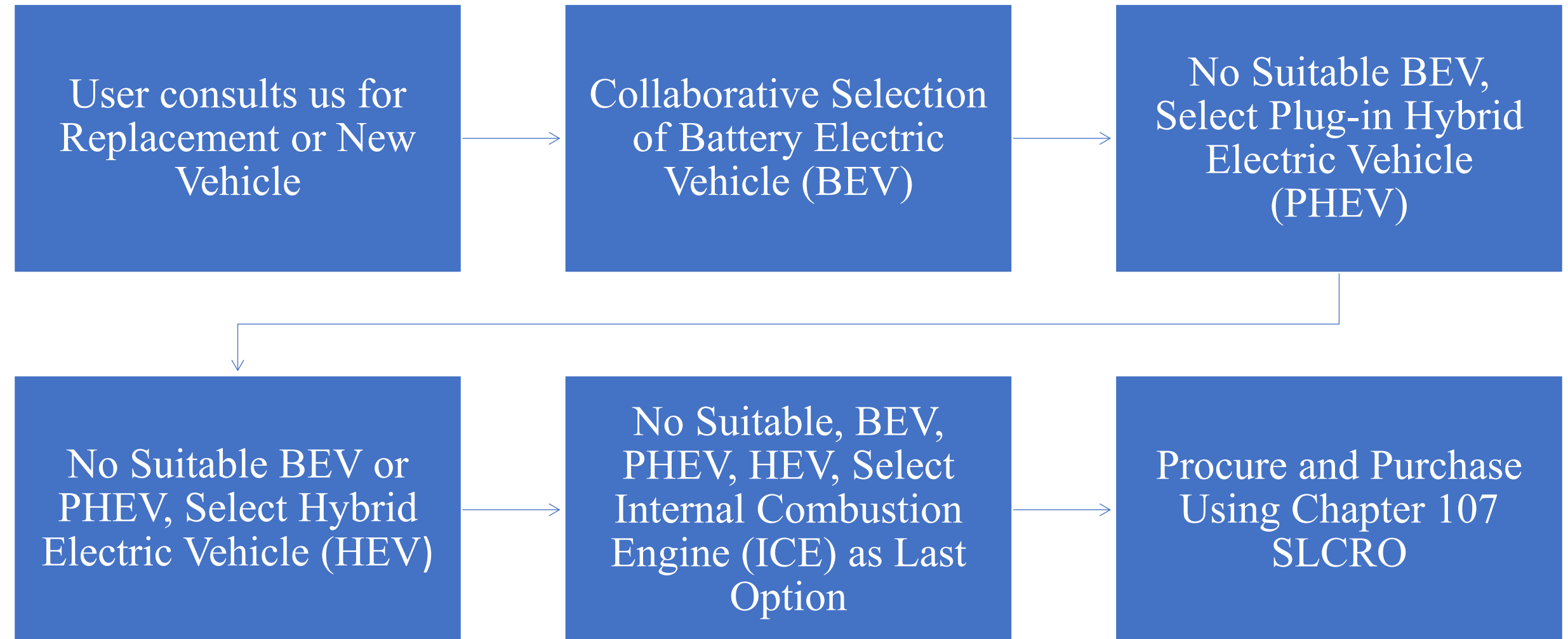
## Disadvantages

- High Initial County Investment
- Charging Infrastructure Installation
- EV Market
- Resistance to Change

# EV Purchase Decision Process

## Vehicle Purchase Process

- Priority on EV
- Plug in Hybrid
- Hybrid
- Ice (Last Resort)





# EV Customer Selection

## EV Criteria

- <150 Miles Per Day
- <26 Miles Per Gallon
- Justify why cannot select EV
- 27% of Fleet excellent for transition

## Charger Locations

- Vehicle Parked at charger at night
- Lighted
- Gated or indoor parking preferred
- Not driven 24 hours
- Preferably near electrical supply





# EV Purchase

## Concerns

- Increased Pricing
- Change Management
- Manufacturer Availability
- Charging Infrastructure
- Range Anxiety/Management

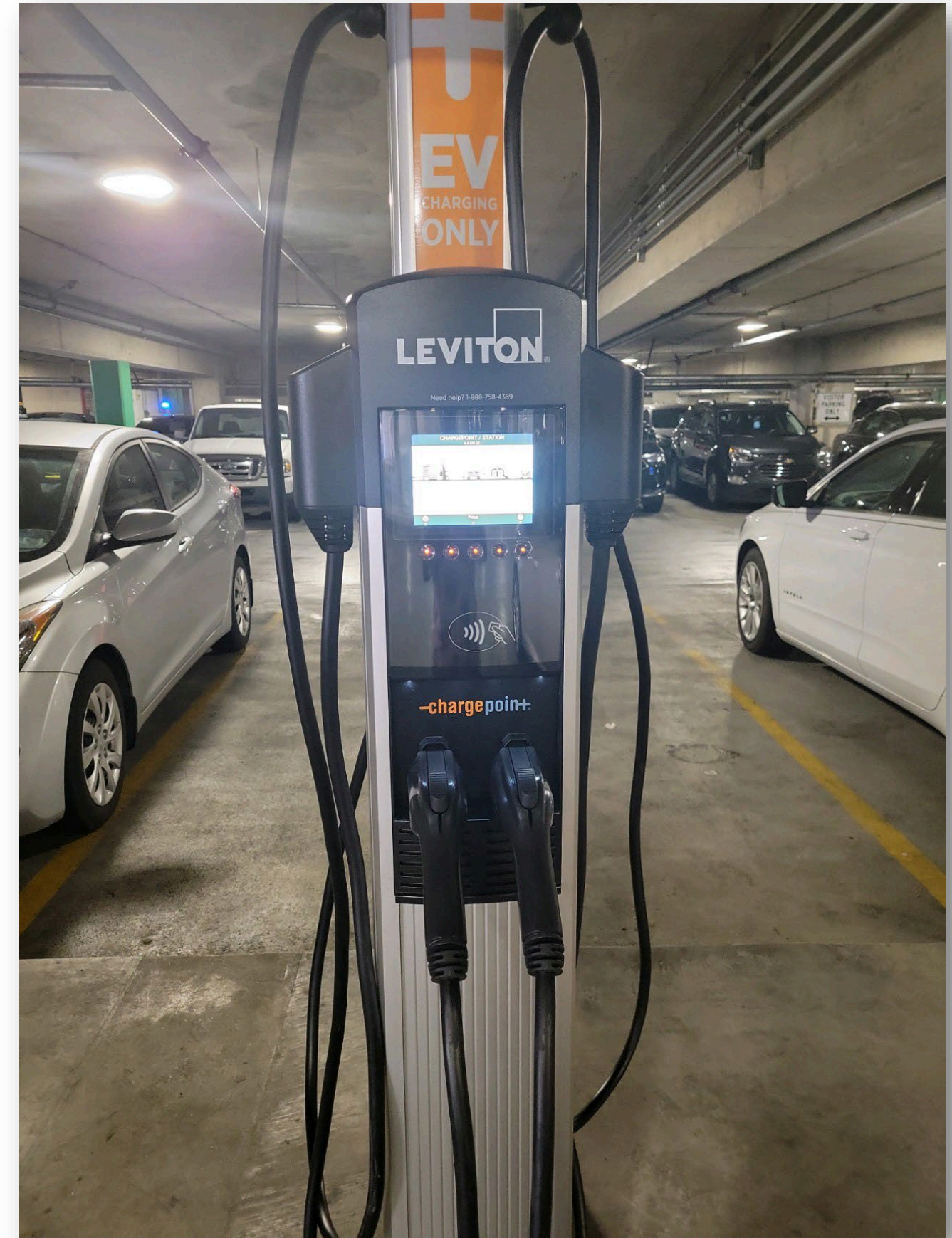




# EV Transition Progress Report

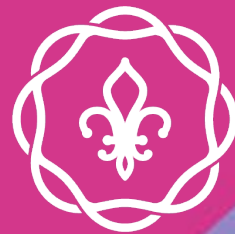
## EV Transition

- Overwhelming Success
- Positive Employee Feedback
- Zero Range Anxiety
- 5 Percent EV/Hybrid Fleet to date





Thank you



**SAINT LOUIS COUNTY**  
Missouri

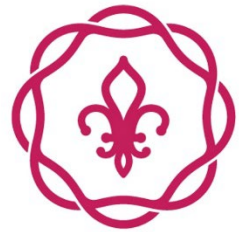




Fort Leonard Wood

William Wibberg

Richard Pentecost



SAINT LOUIS COUNTY  
Missouri

St. Louis County

Craig Boyles

---

**Thank you, speakers!**

U.S. DEPARTMENT OF  
**ENERGY**

Office of  
ENERGY EFFICIENCY &  
RENEWABLE ENERGY

# Preparing for Your Journey: Fleet Programs and Resources

Erin Andrews-Sharer, Emily Kotz, NREL  
EM-ACT





# State and Alternative Fuel Provider Fleet Program

- Fleet compliance program created by Energy Policy Act (EPAAct) of 1992, as amended
  - "Covered" state and alternative fuel provider fleets must meet requirements
  - Program focuses on acquisition of light-duty alternative fuel vehicles (AFVs) and petroleum reduction
- Two compliance options
  - Standard Compliance (SC): Focus on AFV acquisition
  - Alternative Compliance (AC): Focus on petroleum reduction
- 300+ reporting fleets in the Program today

## Alternative Fuels: \*

- Biofuels
- CNG
- Propane
- Hydrogen
- Electricity
- Pure B100
- Renewable diesel
- P-series fuels

\* As defined by Program

# State of the Program—Data

**Alternative Fuels Data Center** Search the AFDC

[FUELS & VEHICLES](#) [CONSERVE FUEL](#) [LOCATE STATIONS](#) [LAWS & INCENTIVES](#) **[Maps & Data](#)** [Case Studies](#) [Publications](#) [Tools](#) [About](#) [Home](#)

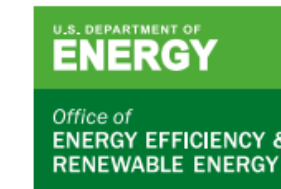
[EERE](#) » [AFDC](#) » [Maps & Data](#)

[Printable Version](#)

## Maps and Data

Find maps and charts showing transportation data and trends related to alternative fuels and vehicles.

	<b>Biodiesel Purchases by EPAAct-Regulated Fleets</b> Trend of State and Alternative Fuel Provider Biodiesel Purchases from 2000 to 2023 <i>Last update May 2024</i>	<a href="#">View Graph</a> <a href="#">Download Data</a>
	<b>EPAAct State &amp; Alternative Fuel Provider Fleet Exemptions</b> Trend of State & Alternative Fuel Provider (S&FP) exemption requests and vehicles exempted from 1997 to 2023 <i>Last update June 2024</i>	<a href="#">View Graph</a> <a href="#">Download Data</a>
	<b>AFV Requirements, Acquisitions, and Credits for Federal Agencies</b> Displays EPAAct alternative fuel vehicle (AFV) acquisition requirements, total AFV acquisitions, and additional credits toward the acquisition requirements for federal agencies from fiscal years 2000 through 2023 <i>Last update April 2024</i>	<a href="#">View Graph</a> <a href="#">Download Data</a>
	<b>Annual Vehicle Credits Earned and Used by Regulated Fleets</b> Trend of State & Alternative Fuel Provider (S&FP) EPAAct credits traded and transactions from 1999 to 2023 <i>Last update May 2024</i>	<a href="#">View Graph</a> <a href="#">Download Data</a>
	<b>Vehicle Credits Traded by Regulated Fleets</b> Trend of State & Alternative Fuel Provider (S&FP) EPAAct credits traded and transactions from 1997 to 2023 <i>Last update May 2024</i>	<a href="#">View Graph</a> <a href="#">Download Data</a>



## State & Alternative Fuel Provider Fleets: Fleet Compliance Annual Report Model Year 2022, Fiscal Year 2023



Photo from Getty Images, 480652712

### What Is EPAAct?

The Energy Policy Act of 1992 (EPAAct) was enacted in part to reduce the nation's dependence on imported petroleum. Provisions of EPAAct require certain fleets to acquire alternative fuel vehicles. The U.S. Department of Energy administers these requirements through its State and Alternative Fuel Provider Fleet Program, Federal Fleet Requirements, and Alternative Fuel Designation Authority.

The U.S. Department of Energy (DOE) regulates covered state government and alternative fuel provider fleets, pursuant to the Energy Policy Act of 1992 (EPAAct), as amended.

For model year (MY) 2022, the compliance rate for the more than 306 reporting fleets in the State and Alternative Fuel Provider Fleet Program was 100%.<sup>1</sup> Fleets used either Standard Compliance or Alternative Compliance reporting methods.

### Fleet Compliance at a Glance

More than 300 fleets used Standard Compliance and exceeded their aggregate MY 2022 acquisition requirements by 20% through acquisitions of creditable vehicles, biodiesel, infrastructure, and non-road equipment. The six covered fleets that used Alternative Compliance exceeded their aggregate MY 2022 petroleum use reduction requirements by 40%.

Overall, covered fleets reported use of more than 12.5 million gallons of pure biodiesel (B100), an increase from MY 2021 in total biodiesel fuel use reported. The number of reported light-duty alternative fuel vehicles (AFVs) acquired increased from MY 2021,<sup>2</sup> as did the number of vehicles that earned partial credit. MY 2022 marked the ninth year that fleets complying via Standard Compliance could earn credits for the acquisition of certain non-AFV electric-drive vehicles, as well as investments in alternative fuel non-road equipment, alternative fuel infrastructure, and emerging technologies. The data for MY 2022 suggest a steady presence of EPAAct-covered state and alternative fuel provider fleets in the AFV, alternative fuel, and advanced technology vehicle markets.

### Standard Compliance Results

Covered state and alternative fuel provider fleets operating under Standard Compliance (10 CFR Part 490, Subpart C or D) achieved compliance by acquiring AFVs and creditable non-AFV electric-drive vehicles; purchasing biodiesel for use in medium- or heavy-duty (MD/HD) vehicles; investing in alternative fuel infrastructure, non-road equipment, and emerging technology; and/or applying banked credits earned previously or acquired from other covered fleets.

#### In MY 2022, fleets that used Standard Compliance:

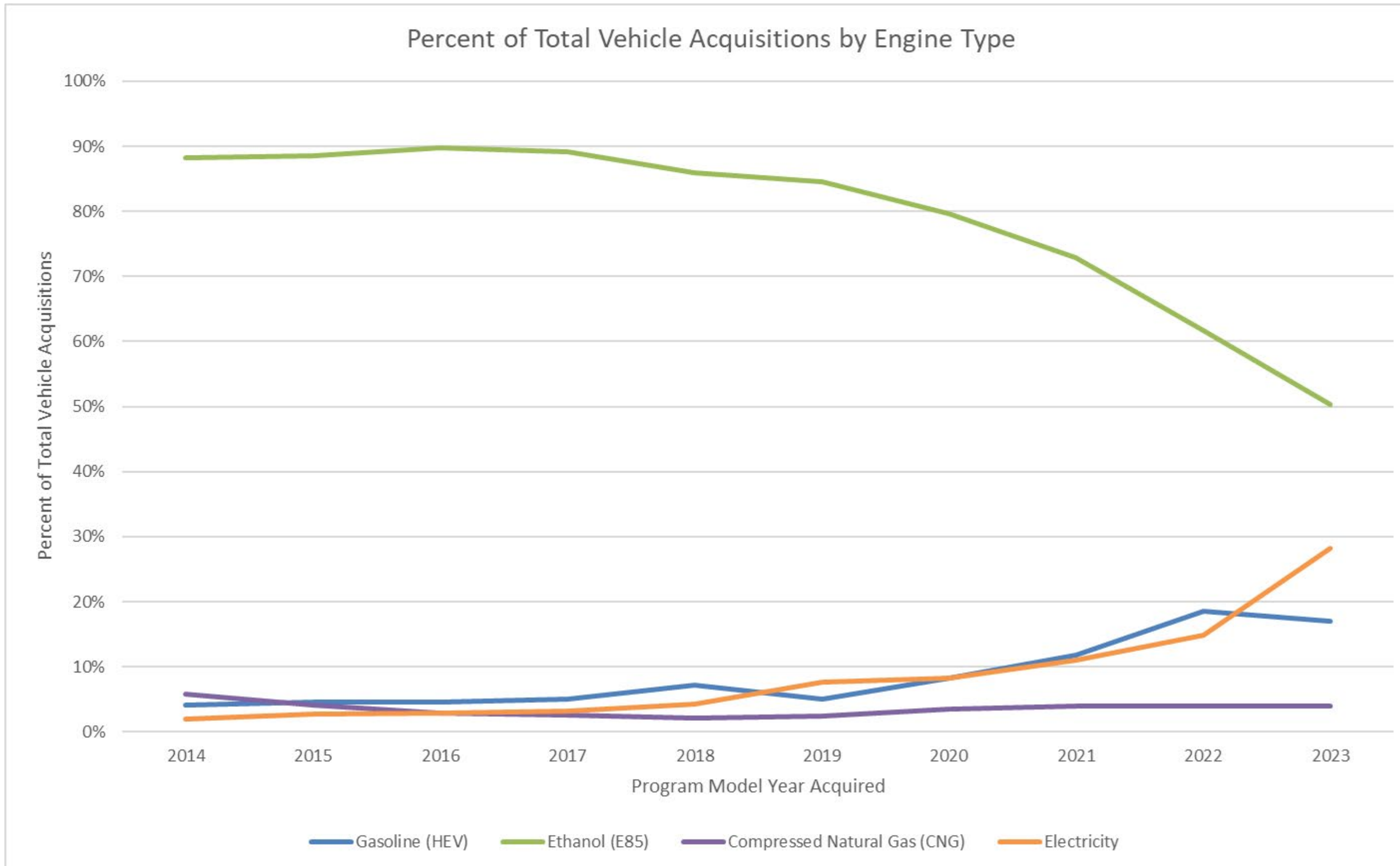
- Acquired 9,077 creditable light-duty and neighborhood electric vehicles (NEVs).
- Earned 1,162 credits for the acquisition of 2,501 partial credit vehicles, including creditable non-AFVs (i.e., light-duty hybrid electric vehicles [HEVs], certain plug-in hybrid electric vehicles [PHEVs], MD/HD hybrid electric vehicles, and NEVs).
- Earned 1,893 biodiesel fuel use credits by purchasing more than 12.5 million gallons of B100.<sup>3</sup>

<https://epact.energy.gov/program-annual-reports>

<https://afdc.energy.gov/data/search?q=EPAAct>



# Vehicle Acquisition—Engine Type



**\$32 million** investment in EV charging infrastructure (2023 reporting year)

# SAFP Program Support

- Resources for compliance
  - Webinars and guidance documents
  - Direct assistance
- Electrification workshops
- Clean Cities and Communities and federal fleet connections
- Technical assistance/analysis support (pilot)
- Case studies





# DOE FEMP Fleet Management Program

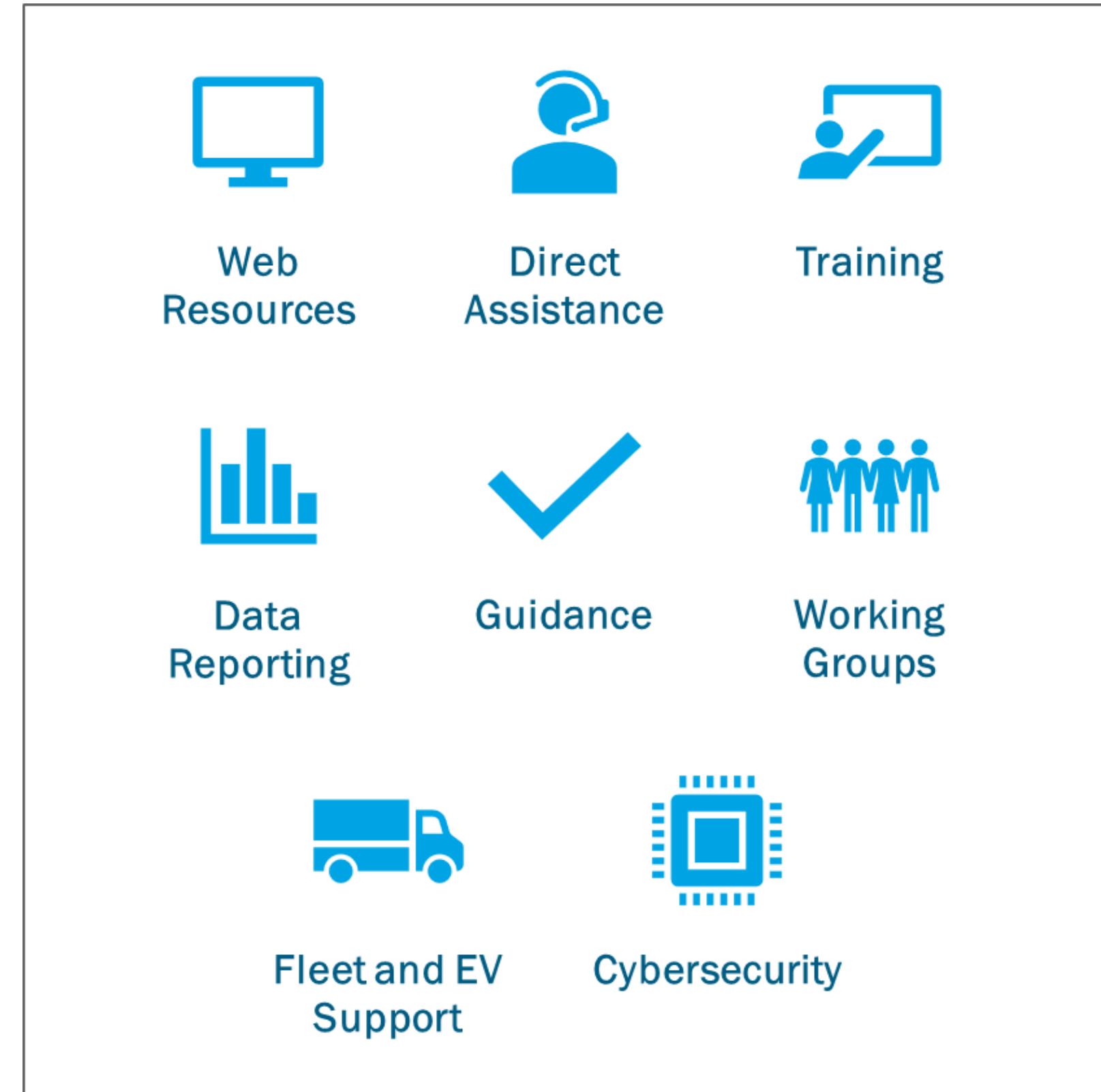
- Helps federal fleet community access the latest information, applications, and resources related to fleet efficiency and electrification
- Provides guidance and assistance to help agencies implement federal legislative and regulatory requirements mandating reduced petroleum consumption and increased alternative fuel use



# FEMP Federal Fleet Support

Direct assistance, resources, and tools available for:

- Statutory requirements
- Fleet data
- AFV candidates
- EV technology training
- EVSE installation planning
- Workplace charging programs
- Cybersecurity considerations
- Best practices and case studies





## The ZEV Ready Solution

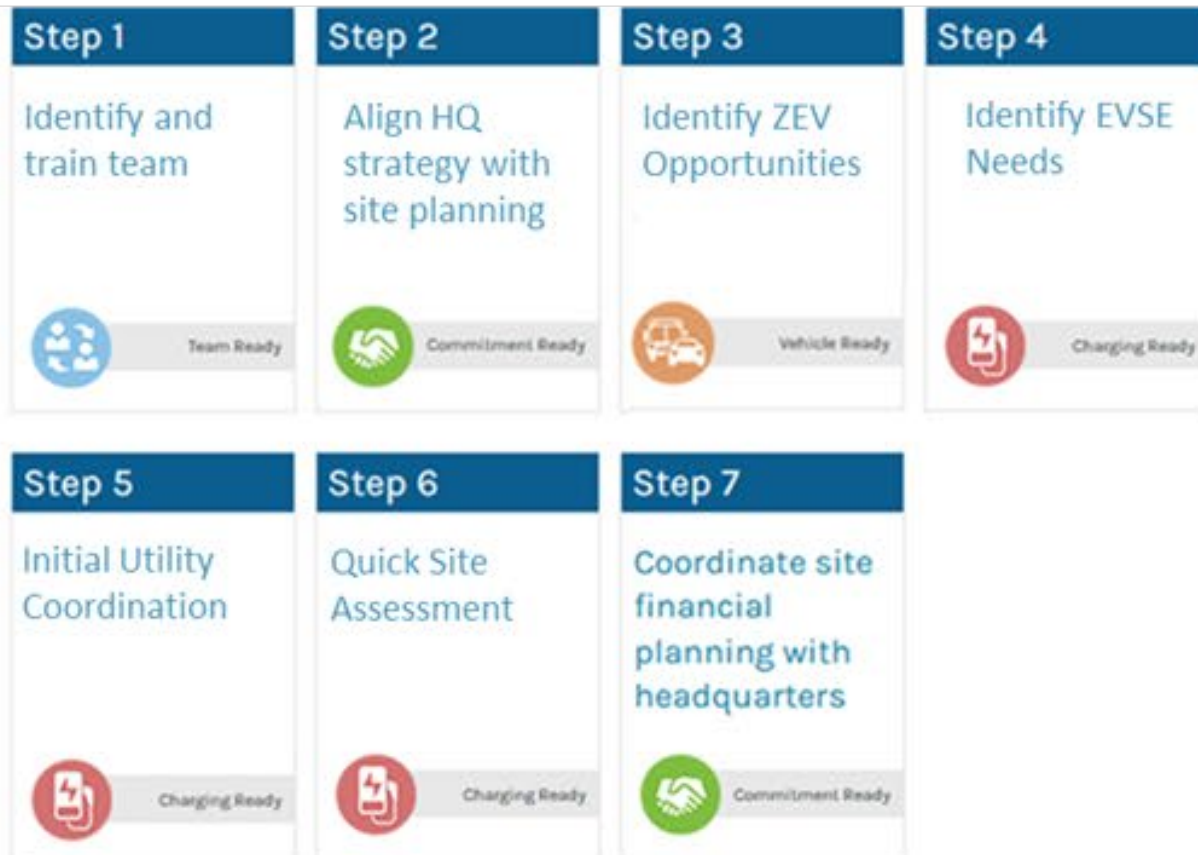
Framework to simplify and guide fleets through the process to electrify each fleet location



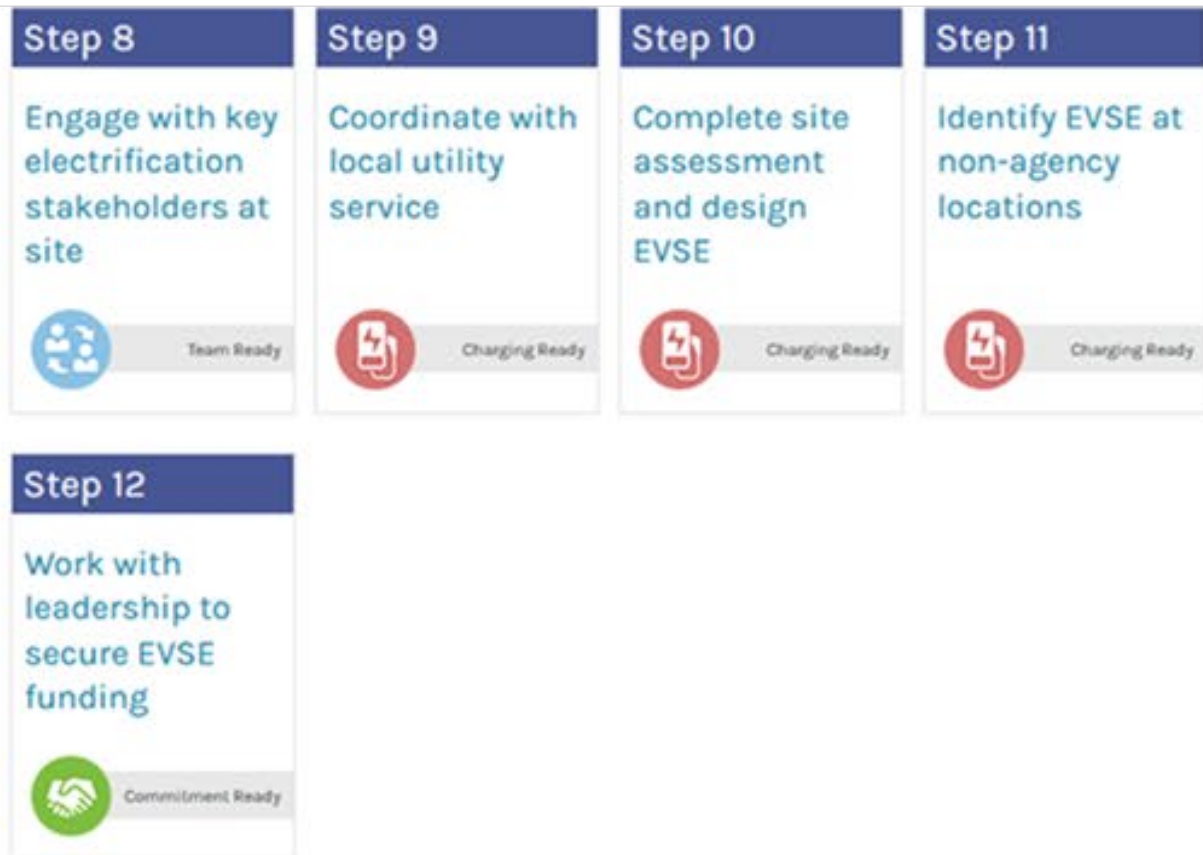
# Federal Fleet ZEV Ready Center

## 15 process steps organized in 3 phases – Planning, Design, ZEV Active

### Planning



### Design



### ZEV Active



<https://www.energy.gov/femp/federal-fleet-zev-ready-center>





**Clean Cities and  
Communities**



# Clean Cities and Communities

January 16, 2025

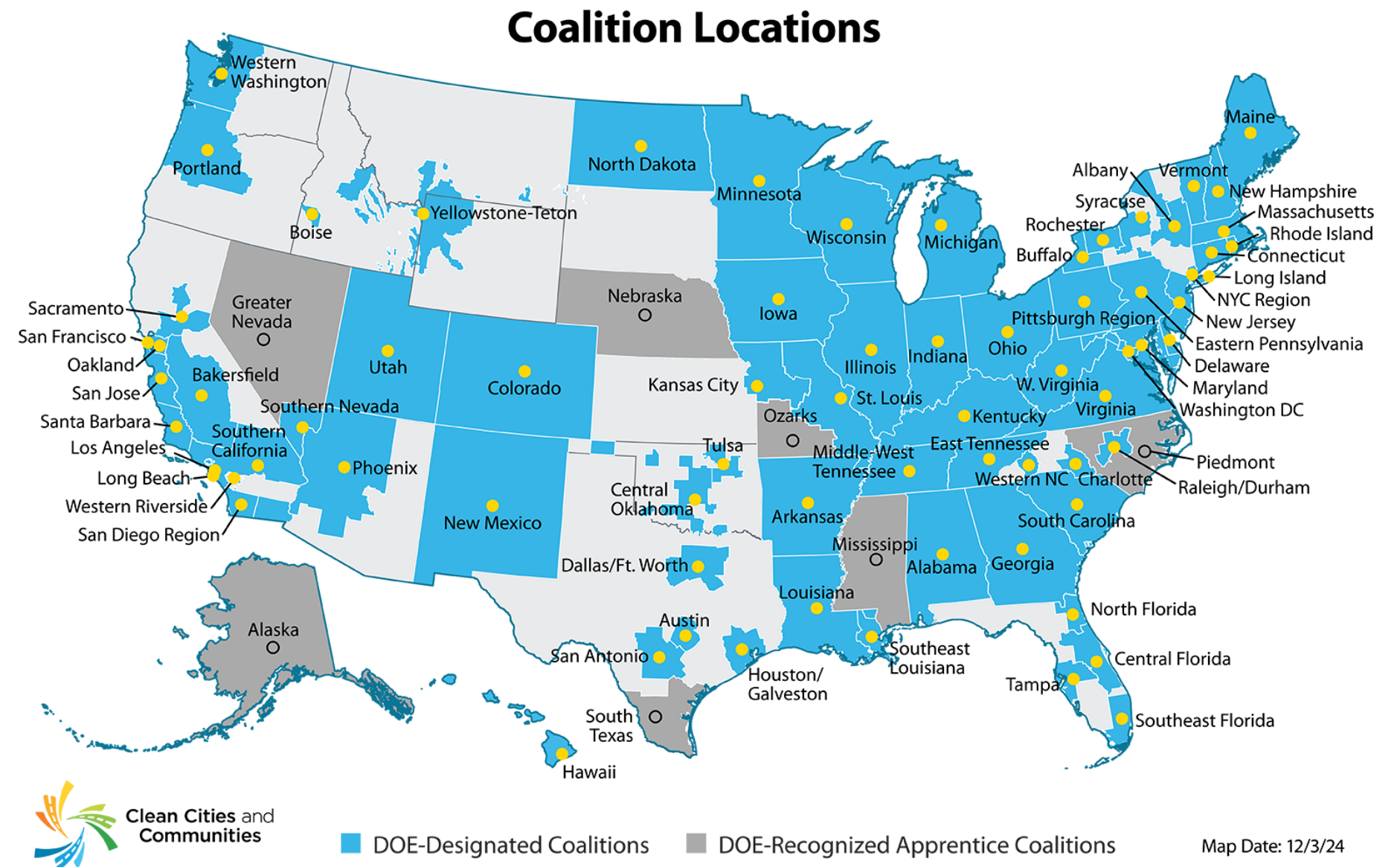
Kevin Herdler, *Executive Director*



**EASTERN MISSOURI**  
ALLIANCE FOR CLEAN TRANSPORTATION

# The CC&C Network

- Clean Cities and Communities is a U.S. Department of Energy (DOE) partnership to advance clean transportation nationwide.
- More than 85 Clean Cities and Communities coalitions work locally in urban, suburban, and rural communities to strengthen the nation's environment, energy security, and economic prosperity.





# What We Do

## Clean Cities Coalitions:

- Serve as forums for local stakeholders to connect and collaborate on saving energy and using affordable alternative fuels
- Provide grassroots support and resources on new transportation technologies and infrastructure development
- Support networks to help their stakeholders identify cost-effective solutions that work locally



# Strategically Advance Clean Transportation

Access technical assistance and hands-on problem-solving support.



**Connect to unbiased, data-driven tools and resources**



**Build partnerships**



**Receive personalized experience rooted in local context**



**Collaborate on funding opportunities**

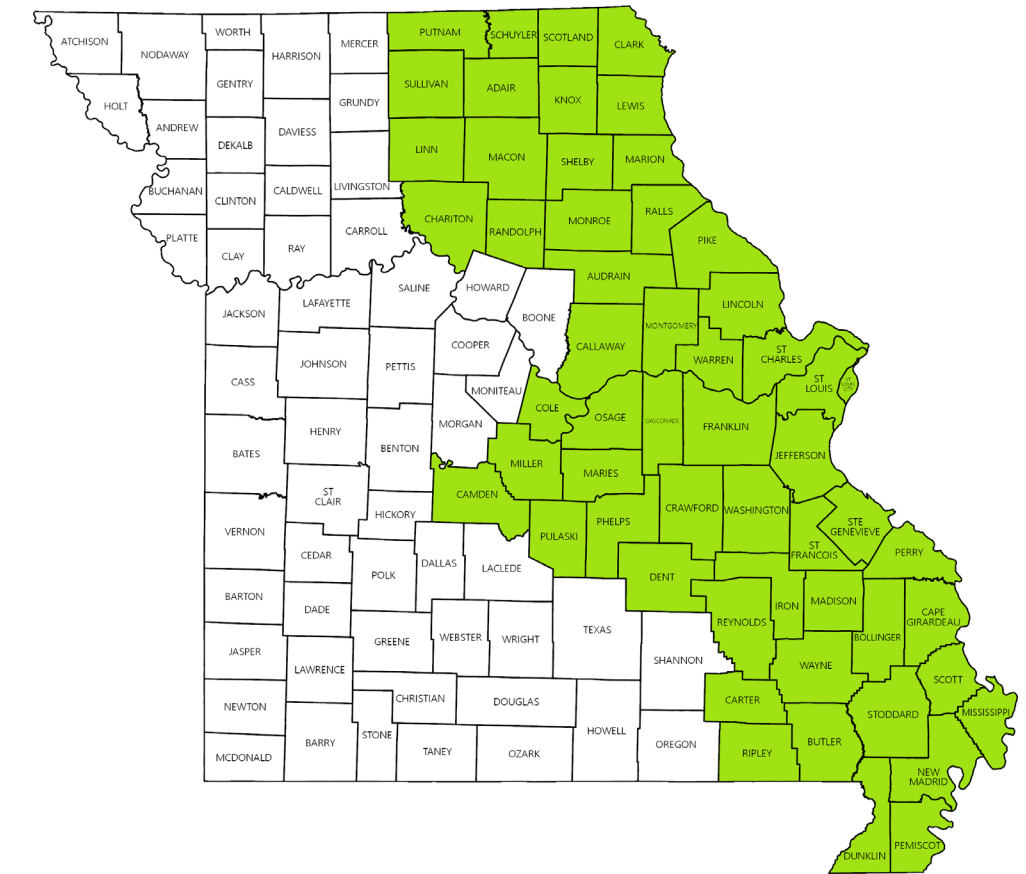




# EASTERN MISSOURI

## ALLIANCE FOR CLEAN TRANSPORTATION

EM-ACT's mission encompasses economic vitality, environmental integrity, and energy independence, promoting domestically produced fuels and innovative mobility systems.





**Clean Cities and  
Communities**

## **Technical Assistance Highlight: Electric School Bus Deployment**

- Electric school buses can improve air quality and alleviate health impacts from vehicle emissions
- Coalitions provide expert support for school districts to electrify school bus fleets
- Ritenour School District Fleet replaced with EM-ACT's assistance



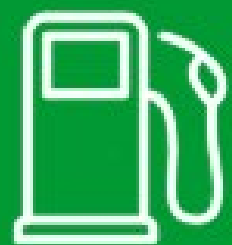




## Connect to Funding Opportunities

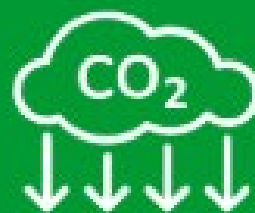
- Coalitions are a go-to resource to help navigate federal funding opportunities.
- Coalitions provide insights to DOE about on-the-ground needs that can help inform funding priorities.

<https://cleancities.energy.gov/funding-opportunities/>



**188m**

Gallons of gas & diesel replaced with domestic fuels



**1m**

Tons of greenhouse gases offset



**\$32m**

In assisted grants awarded to members\*

\* In past 5 years

## Our Successes

30+ Years of Transforming Transportation





**Clean Cities and  
Communities**



**Thank You!**

[Kherdler@em-act.org](mailto:Kherdler@em-act.org)



National Renewable Energy Laboratory

Erin Andrews-Sharer

Emily Kotz



**EASTERN MISSOURI**  
ALLIANCE FOR CLEAN TRANSPORTATION

Eastern Missouri Alliance for Clean  
Transportation

Kevin Herdler

---

**Thank you, speakers!**



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
ENERGY EFFICIENCY &  
RENEWABLE ENERGY

# Laying the Groundwork: Tools to Get Started

Erin Andrews-Sharer, NREL

Emily Kotz, NREL

Sophia Napoletano, ICF



# Fleet Electrification Process

Building  
a Team

Electric Vehicle  
Suitability

EV Charging  
Infrastructure  
Needs

Utility  
Coordination

Site  
Assessment

Operations



## Example Scenario—Setting the Stage

- State agency has 20 vehicles
  - 10 assigned admin vehicles
  - 5 vehicles used on two shifts for inspections
  - 5 motor pool vehicles
- Average radius of the metropolitan area is 20 miles
- Agency implemented telematics 3 years ago and is now looking to electrify its fleet per a state mandate

# Building a Team



# Every Project Needs an EV Champion

## Develop an elevator pitch

- Why should you do it
- What are the benefits
- Why it can work for you

## Be the expert

- <https://afdc.energy.gov/>
- Subscribe to newsletters
- Read up on new products
- Attend conferences
- Read new stories

## Have a plan

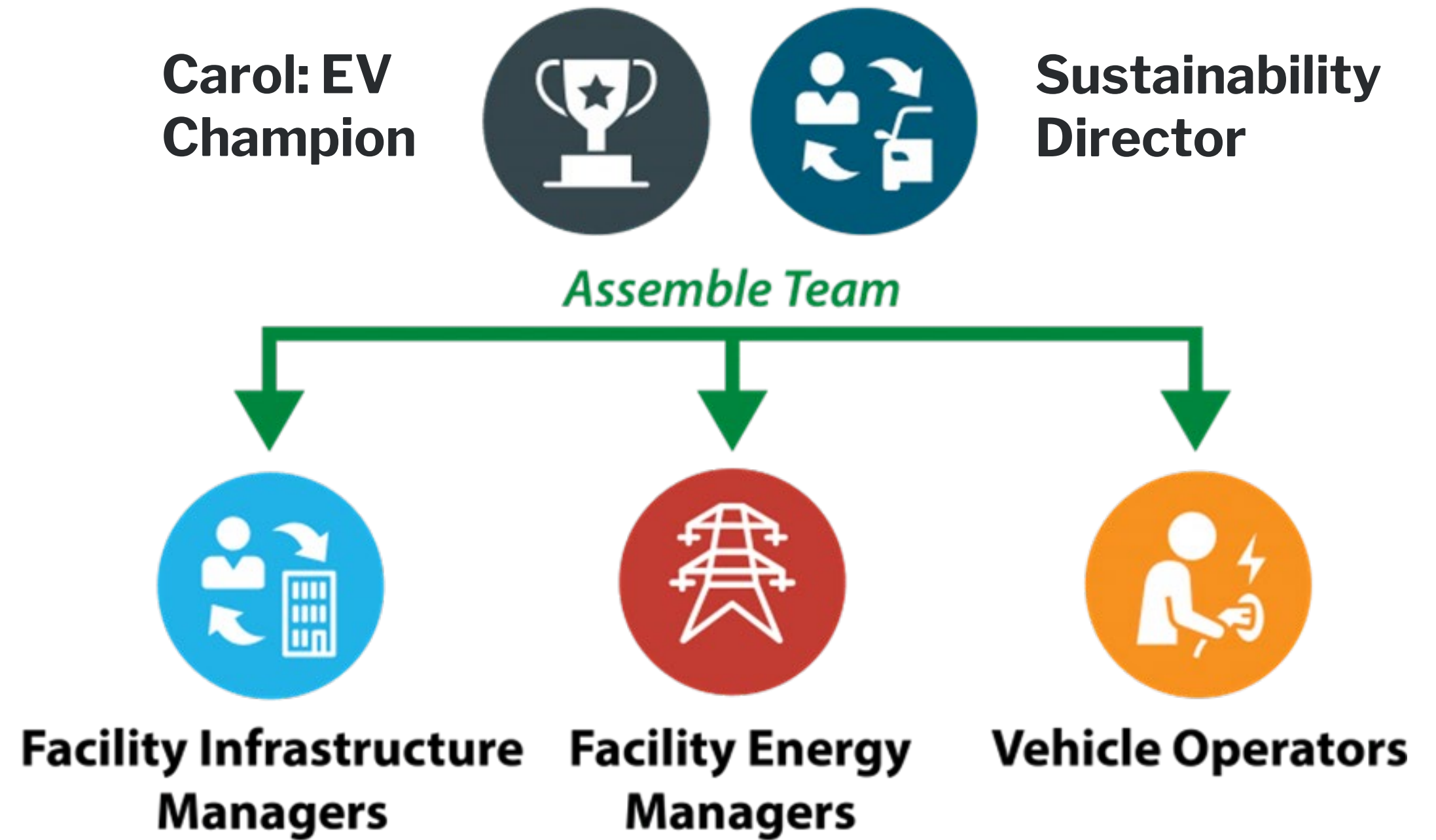
- Understand applicability/operations
- Develop a replacement strategy or criteria
- Understand your fleet and data
- Understand charging infrastructure requirements

**\*Successful EV Fleets Have A  
Champion\***



# It's a Team Effort

- Identify and assemble the team
- Process requires strong and frequent collaboration
- Led by EV champion
- Core team and leadership support





# Who Else May Need to Be Involved?

Contracting  
and  
Procurement

Sustainability  
Leadership

Local Utilities

Cybersecurity

Site Engineers  
and Planners

Fire Marshal

# EV Suitability



# Data is Key!

## Vehicle Specific Data

Yr/Make/Model

Odometer/Hour Meter

Life Expectancy

Class/Weight

Asset#/License/Identifier

Drivetrain

Fuel Type

## Ownership Data

Department/Sub-Dept.

Parking Location (details)

Acquisition Cost

Acquisition Date

Emergency/Special Usage

Availability

## Usage Data

Average Daily Mileage

Max Daily Mileage

Hours of Operation

Tow Capacity

Right-size Candidate

Dwell Time

## Annual Cost Data

Fuel

Maintenance

Repair

Parts/Labor

Accidents

Warranty

Insurance

Bill Back

Spreadsheet expertise is essential!

- Understand formulas like vlookup, iferror, sumifs, etc.
- YouTube and Google are your friend

# Example Scenario—Fleet Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Plate	Asset ID	Year	Make	Model	Vehicle Type	Primary Fuel Type	Current Mileage (Odometer)	Current MPG	VIN	Average Annual Miles	Avg. Days in Service (Yr)	Average Daily Miles	Peak M
2	MNJ8752	A01	2016	Ford	C-Max Hybrid	Hatchback Sedan	Gasoline	65,560	26.4	1FADP5AU3GL109076	8,195	222	36.9	61
3	MNJ4875	A02	2018	Ford	C-Max Hybrid	Hatchback Sedan	Gasoline	54,156	27.8	1FADP5AU3GL109077	9,026	235	38.4	68
4	MNJ7489	A03	2018	Ford	C-Max Hybrid	Hatchback Sedan	Gasoline	56,288	26.2	1FADP5AU1JL102425	9,381	227	41.3	50
5	MNJ2007	A04	2020	Chevrolet	Equinox	Compact SUV	Gasoline	22,801	20.3	2GNAXUEV6L6223335	4,560	243	18.8	46
6	MNJ6144	A05	2021	Ford	Escape Hybrid	Compact SUV	Gasoline	32,218	25.7	1FMCU9CZ7MUB01711	10,739	248	43.3	79
7	MNJ4512	A06	2021	Ford	Escape Hybrid	Compact SUV	Gasoline	24,640	26.2	1FMCU9CZ7MUB01712	8,213	198	41.5	75
8	MNJ6241	A07	2022	Ford	Escape Hybrid	Compact SUV	Gasoline	27,788	27.6	1FMCU0BZ1NUA86749	13,894	241	57.7	72
9	MNJ7555	A08	2022	Ford	Escape Hybrid	Compact SUV	Gasoline	30,541	27.1	1FMCU0BZ1NUA86748	15,271	242	63.1	92
10	MNJ2120	A09	2023	Chevrolet	Equinox	Compact SUV	Gasoline	15,486	22	3GNAXTEG3PL246505	7,743	237	32.7	45
11	MNJ1800	A10	2023	Ford	Escape Hybrid	Compact SUV	Gasoline	5,147	27.5	1FMCU9MZ5PUA56612	5,147	165	31.2	44
12	MNJ4632	INSP1	2016	Ford	F150	.5 Ton Pickup Truck (Ext. Cab)	Gasoline	146,258	13.4	1FTEX1EP4GFA37699	18,282	305	59.9	80
13	MNJ154	INSP2	2016	Ford	F150	.5 Ton Pickup Truck (Ext. Cab)	Gasoline	131,618	12.9	1FTEX1EP4GFA37698	16,452	308	53.4	83
14	MNJ58	INSP3	2022	Ram	ProMaster City	Compact Cargo Van	Gasoline	10,256	18.8	ZFBHRFCB4N6Y01983	10,256	221	46.4	55
15	MNJ6338	INSP4	2022	Ram	ProMaster City	Compact Cargo Van	Gasoline	9,045	18.2	ZFBHRFCB4N6Y01982	9,045	248	36.5	39
16	MNJ5523	INSP5	2023	Chevrolet	Silverado 1500	.5 Ton Pickup Truck (Ext. Cab)	Gasoline	18,526	19.4	3GCNDAEK9PG104843	18,526	298	62.2	75
17	MNJ97	MP1	2014	Toyota	Prius Hybrid	Hatchback Sedan	Gasoline	34,987	28.7	JTDKN3DU5E1816745	3,499	100	35.0	55
18	MNJ236	MP2	2014	Toyota	Prius Hybrid	Hatchback Sedan	Gasoline	45,365	28.2	JTDKN3DU5E1816744	4,537	125	36.3	62
19	MNJ2005	MP3	2015	Toyota	Prius Hybrid	Hatchback Sedan	Gasoline	36,852	29.3	JTDKN3DU6F1881542	4,095	102	40.1	48
20	MNJ9912	MP4	2017	Ford	Escape	Compact SUV	Gasoline	42,277	20.5	1FMCU0F70HUA09027	6,040	168	35.9	52
21	MNJ4777	MP5	2017	Ford	Escape	Compact SUV	Gasoline	43,651	21.3	1FMCU0F70HUA09026	6,236	156	40.0	49
22														

You have the data, but how do you make it actionable to inform your fleet electrification plan?



# Identify EV Candidates

## Light Duty



## Medium Duty



## Heavy Duty



## Off-Road



### Understand Operations

- Talk with operators, supervisors, etc.
- Verify with data


### Research Available Options

- Clean Cities and Communities / Peer Fleets
- Understand EV Capabilities

### Search Tools

- [AFDC Vehicle Search Tool](#)
- [CALSTART ZETI Tool](#)
- [Climate Mayors EV Purchasing Collaborative](#)

# Example Scenario: DRVE 2.0



Electrification  
Coalition

ABOUT ▾ OUR WORK ▾ RESOURCES NEWS ▾ CONTACT [DONATE](#)

Search...

## Get Access to the DRVE Tool

Enter your name and email address to receive a link that will allow you to download the tool. All contact information is kept strictly confidential, and will only be used for our internal tracking purposes.

Name \*

Email \*

Organization \*

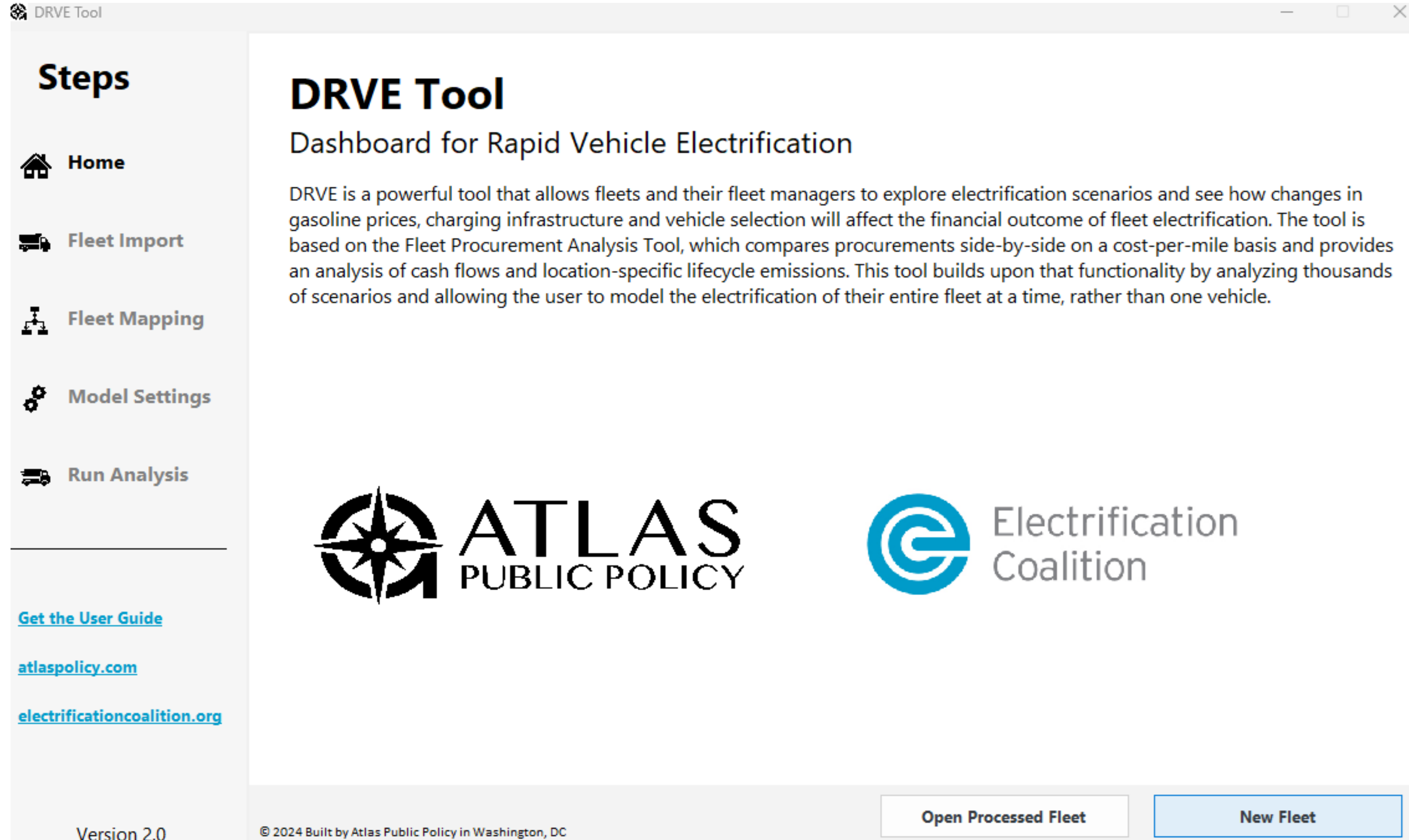
Fleet Size \*

City  State

[Download DRVE Tool](#)



# Example Scenario: DRVE 2.0



The screenshot shows the DRVE Tool dashboard. On the left is a sidebar with a 'Steps' section containing five menu items: 'Home' (house icon), 'Fleet Import' (truck icon), 'Fleet Mapping' (tree icon), 'Model Settings' (gears icon), and 'Run Analysis' (truck icon). Below these are three links: 'Get the User Guide', 'atlaspolicy.com', and 'electrificationcoalition.org'. The main content area has a title 'DRVE Tool' and subtitle 'Dashboard for Rapid Vehicle Electrification'. A paragraph describes the tool's capabilities. At the bottom of the main area are the logos for 'ATLAS PUBLIC POLICY' and 'Electrification Coalition'. The footer contains 'Version 2.0', a copyright notice '© 2024 Built by Atlas Public Policy in Washington, DC', and two buttons: 'Open Processed Fleet' and 'New Fleet'.

DRVE Tool

## Steps

- Home
- Fleet Import
- Fleet Mapping
- Model Settings
- Run Analysis

[Get the User Guide](#)


[atlaspolicy.com](https://atlaspolicy.com)


[electrificationcoalition.org](https://electrificationcoalition.org)

# DRVE Tool

## Dashboard for Rapid Vehicle Electrification

DRVE is a powerful tool that allows fleets and their fleet managers to explore electrification scenarios and see how changes in gasoline prices, charging infrastructure and vehicle selection will affect the financial outcome of fleet electrification. The tool is based on the Fleet Procurement Analysis Tool, which compares procurements side-by-side on a cost-per-mile basis and provides an analysis of cash flows and location-specific lifecycle emissions. This tool builds upon that functionality by analyzing thousands of scenarios and allowing the user to model the electrification of their entire fleet at a time, rather than one vehicle.

 **ATLAS**  
PUBLIC POLICY

 Electrification  
Coalition

Version 2.0

© 2024 Built by Atlas Public Policy in Washington, DC

Open Processed Fleet

New Fleet

# Example Scenario: DRVE 2.0

DRVE Tool

## Steps

- Home
- Fleet Import
- Fleet Mapping**
- Model Settings
- Run Analysis

[Get the User Guide](#)  
[atlaspolicy.com](https://atlaspolicy.com)  
[electrificationcoalition.org](https://electrificationcoalition.org)

Version 2.0


## Fleet Vehicle Mapping

This tool maps your fleet vehicles to a database of vehicles we have information on. In cases where a match isn't found, a default vehicle will be used based on the vehicle class. This section allows you to provide a custom mapping for each vehicle by selecting a different vehicle or adjusting the vehicle settings. You may save this mapping to be used in later analyses.

Unique Vehicles Found in Your Fleet (Count)

- CHEVROLET SILVERADO (1)**
- FORD F-150 (2)
- TOYOTA PRIUS (3)
- FORD C-MAX (3)
- CHEVROLET EQUINOX (2)
- FORD ESCAPE (7)
- RAM PROMASTER CITY (2)

### Baseline Replacement Vehicle




**2023 CHEVROLET SILVERADO 2WD GAS**

Class:	<b>Passenger Vehicles (Light-Duty)</b>
Use Case:	<b>Light Pickup</b>
MSRP/Price (\$):	<b>\$36,300</b>
Fuel Econ (MPG) [City/Hwy]:	<b>17/21</b>
Fuel Econ (MPGe) [City/Hwy]:	<b>N/A</b>
State Incentive (\$/Vehicle):	<b>\$0.00</b>

[Edit](#)

### Electric Alternative Vehicle



**2023 FORD F-150 LIGHTNING 4WD BEV**

Class:	<b>Passenger Vehicles (Light-Duty)</b>
Use Case:	<b>Light Pickup</b>
MSRP/Price (\$):	<b>\$49,995</b>
Fuel Econ (MPG) [City/Hwy]:	<b>N/A</b>
Fuel Econ (MPGe) [City/Hwy]:	<b>76/61</b>
State Incentive (\$/Vehicle):	<b>\$0.00</b>

[Edit](#)

[Back](#) [Save Processed Fleet](#) [Next](#)



# Example Scenario: DRVE 2.0

The screenshot displays the DRVE Tool interface. On the left is a sidebar with a 'Steps' menu containing: Home, Fleet Import, Fleet Mapping, Model Settings (highlighted), and Run Analysis. Below the menu are links for 'Get the User Guide', 'atlaspolicy.com', and 'electrificationcoalition.org'. The main content area is titled 'Model Settings' and features six settings cards arranged in a 3x2 grid:

- Market Factors**: Set fuel pricing and economic factors (represented by a gas pump icon).
- Charging Infrastructure**: Factor in the cost of charging and electrical upgrades (represented by a power line tower icon).
- Charging Strategy**: Choose how vehicles are charged (represented by a lightning bolt icon).
- Procurement Strategy**: Set purchase terms and apply available incentives (represented by a truck icon).
- Maintenance & Insurance**: Modify maintenance and insurance costs (represented by a wrench and screwdriver icon).
- Forecasting**: Customize vehicle pricing and fuel forecasts (represented by a calendar icon).

At the bottom of the main area, there is a text prompt: 'For additional resources and technical assistance, including procurement options, please visit: [DriveEVFleets.org](https://DriveEVFleets.org)'. Below this is the logo for the Climate Mayors EV Purchasing Collaborative, with the text: 'The Climate Mayors EV Purchasing Collaborative is a one-stop shop that connects public fleets with a growing selection of EVs and charging stations, policy guidance, technical resources, assessment tools, and financing options to support the successful transition of public fleets to electric.'

The bottom of the interface contains a footer with the text 'Version 2.0' and four navigation buttons: 'Back to Fleet Mapping', 'Import Settings', 'Export Analysis Settings', and 'Run Analysis'.

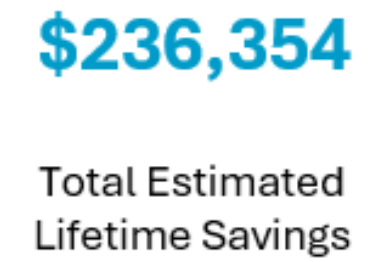
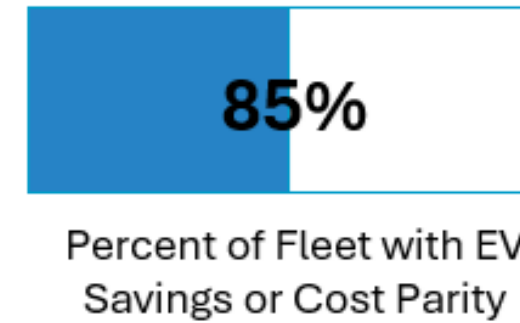
# Example Scenario: DRVE 2.0

## Results Dashboard

[View PDF Report](#)

[Save Results](#)

### Key Indicators



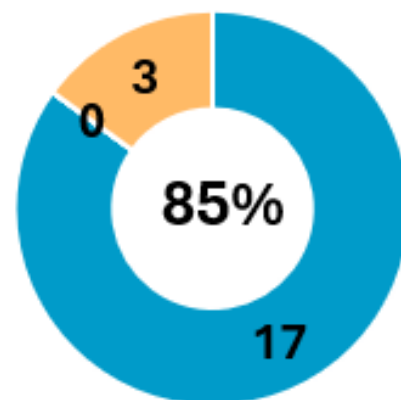
### Vehicles with EV Savings or Cost Parity by Vehicle Class

■ EV Savings

■ Cost Parity

■ EV Costs

Light-Duty Vehicles



Medium-Duty Vehicles

**0**  
**0%**

Heavy-Duty Vehicles

**0**  
**0%**



# Example Scenario: DRVE 2.0

Original Fleet Vehicle	Conventional Replacement	Electric Replacement	Count	Conventional Average NPV	Electric Average NPV	Average EV NPV Savings	Average Percent Savings from EVs	Conventional Average Cost per Mile	Electric Average Cost per Mile	Average EV Savings per Mile
<b>Passenger Vehicles (Light-Duty)</b>										
<b>Car</b>										
⊕ FORD C-MAX	2024 CHEVROLET TRAX GAS	2023 FORD MUSTANG MACH-E RWD LFP BEV	3	\$49,352	\$44,875	\$4,477	9.1%	\$0.56	\$0.51	\$0.05
⊕ TOYOTA PRIUS	2024 TOYOTA PRIUS GAS	2023 FORD MUSTANG MACH-E RWD BEV	3	\$40,128	\$43,278	(\$3,150)	-7.9%	\$1.00	\$1.08	(\$0.08)
<b>Light Pickup</b>										
⊕ CHEVROLET SILVERADO	2023 CHEVROLET SILVERADO 2WD GAS	2023 FORD F-150 LIGHTNING 4WD BEV	1	\$65,862	\$55,238	\$10,624	16.1%	\$0.51	\$0.43	\$0.08
⊕ FORD F-150	2023 FORD F150 PICKUP 2WD GAS	2023 FORD F-150 LIGHTNING 4WD BEV	2	\$60,756	\$53,819	\$6,937	11.4%	\$0.50	\$0.44	\$0.06
<b>Minivan</b>										
⊕ RAM PROMASTER CITY	2023 FORD TRANSIT CONNECT VAN FWD GAS		2	\$43,687		\$43,687	100.0%	\$0.65		\$0.65
<b>SUV/MPV</b>										
⊕ CHEVROLET EQUINOX	2024 CHEVROLET EQUINOX FWD GAS	2024 CHEVROLET EQUINOX 1LT BEV	2	\$47,021	\$37,028	\$9,993	21.3%	\$0.80	\$0.64	\$0.17
⊕ FORD ESCAPE	2023 FORD ESCAPE FWD GAS	2024 CHEVROLET EQUINOX 1LT BEV	7	\$52,547	\$39,537	\$13,009	24.8%	\$0.65	\$0.50	\$0.15

# Discussion Questions

- Who has telematics on their vehicles and how do you use it?
- Has anyone used DRVE 2.0 or a different TCO tool?
- What data do you need to make decisions?
  - What data is hard to obtain?
  - What data do you need to communicate to others?



# EV Charging Infrastructure

# EV Charging Infrastructure

	Input Voltage (V)	Output Power (kW)	LDV Charge Rate	Primary Fleet Use
Level 1	120	1.4–1.9	2 to 5 miles of range per hour of charging	PHEVs and low mileage BEVs
Level 2	208 or 240	6.6–19.2	10 to 40 miles of range per hour of charging	BEVs that don't require a quick recharge
DC Fast	Typically 480	25–350	100 to 200+ miles of range in 30 minutes of charging	BEVs that need a quick recharge





# Steps to Identify EVSE Needs

1 – Group ZEVs by where they park



2 – Determine the duration the ZEV needs to charge



3 – Identify what type of EV charging is needed



4 – Determine an EV:EVSE ratio for the project area



5 – Consider futureproofing opportunities

## Example Scenario: Charging Context

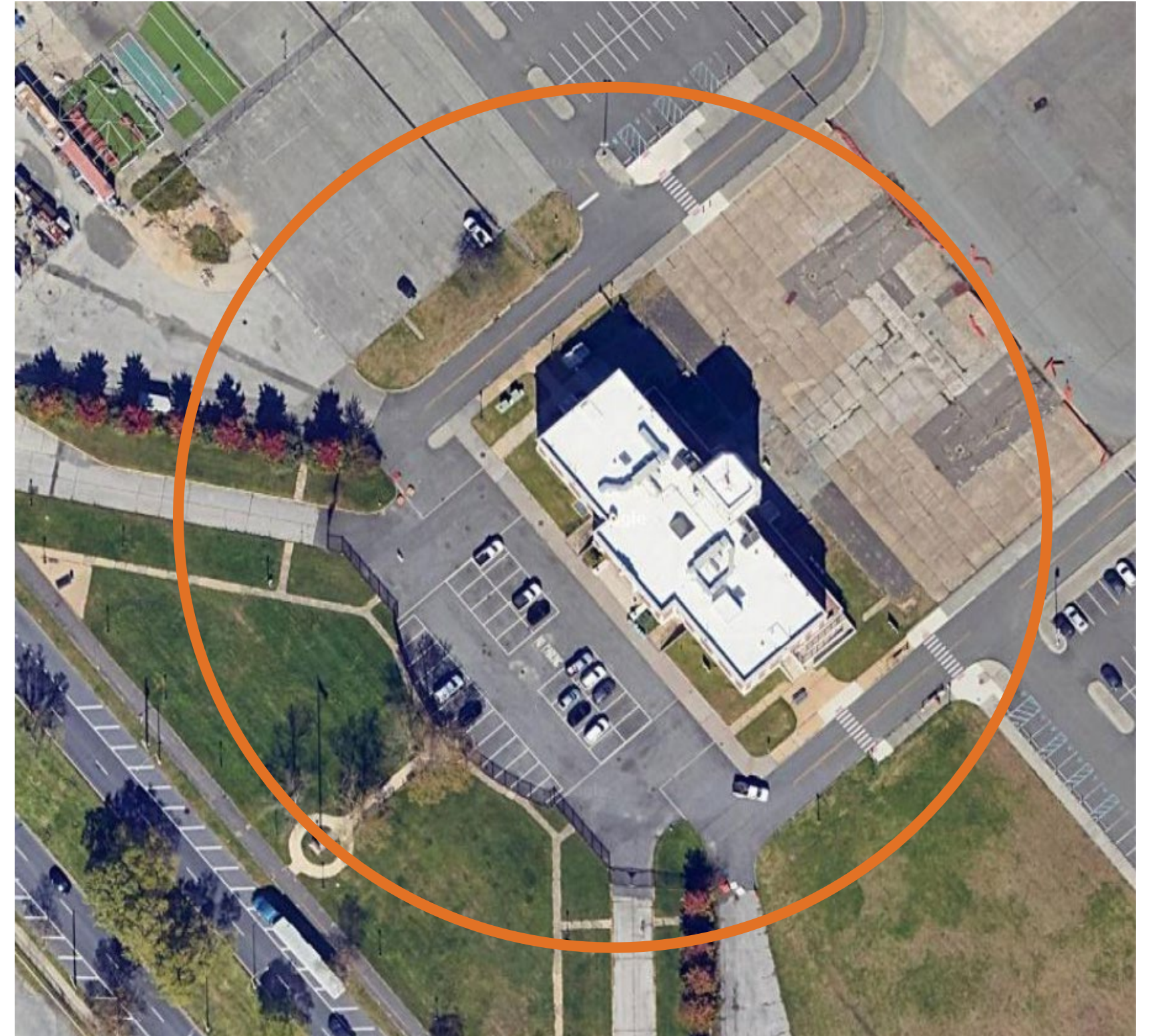
Based on our operational and telematics data, we know that:

- All 20 vehicles return to the site at the end of their day (i.e., no vehicles are taken home by staff or otherwise park offsite)
- While the admin and motor pool vehicles spend an average of 20.5 hours per day on site, our inspection vehicles only spend around 11 hours on site each day as they are double shifted
- Admin and motor pool vehicles are only used Monday through Friday and on average 194 days per year, but the inspection vehicles are used Monday through Saturday and on average 276 days per year



# Example Scenario: Group Vehicles By Where They Park

- Create EV charging station “projects” for the parking areas where ZEVs will or could park
- Use telematics or your fleet management information system to group vehicles



## Example Scenario: Determine the Duration the ZEV Needs to Charge

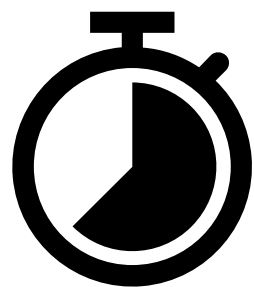
For each EV in the project area, look at the following information:



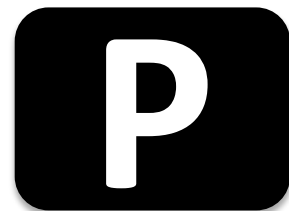
Battery size/range for ZEV replacement  
(BEV vs. PHEV)



How many miles the vehicle travels and how it compares to the ZEV replacement range



Vehicle dwell periods



Available parking and flexibility to move ZEV after charging is complete

- **Vehicles will need to charge every 2 to 4 days (overnight)**
- **Midday charging would rarely be needed**



## Example Scenario: Identify What Type of EV Charging Is Needed

When calculating the EV charging power level needed to support fleet vehicles, consider:

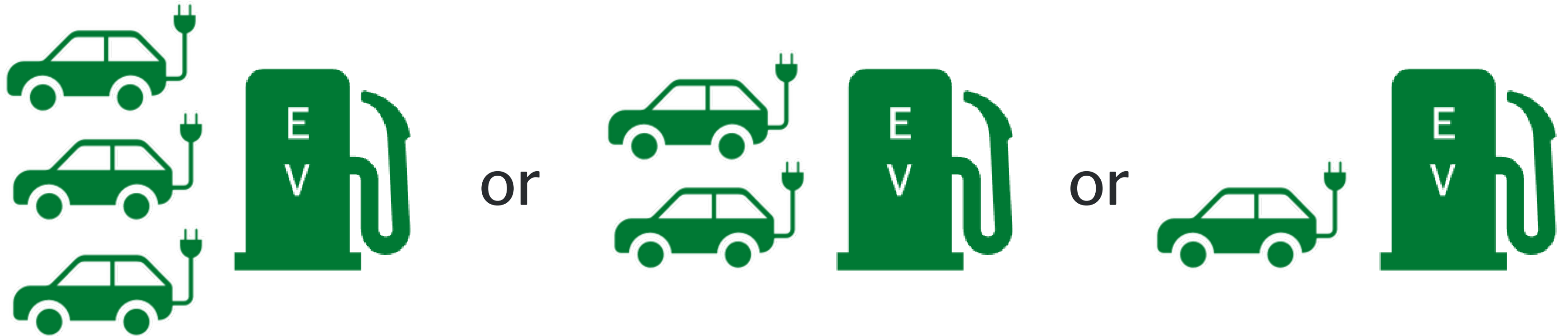
- Rarely will a vehicle need to charge from 0–100%
- For vehicles relying on overnight charging, Level 1 or 2 charging is often sufficient
- For vehicles that need on-site midday charging, DC fast charging may be needed

$$\text{Power (kW)} = \frac{\text{Energy (kWh)}}{\text{Dwell Time (hours)}}$$

**Standard Level 2 (~6.7kW) EV charging stations will be sufficient (could consider managed charging to save costs)**

# Example Scenario: Determine EV:EVSE Ratio

How many EVSE ports are needed to support fleet of 20 vehicles once they are 100% EVs?



2:1 EV:EVSE ratio to provide flexibility  
10 EV charging station ports for 20 BEVs



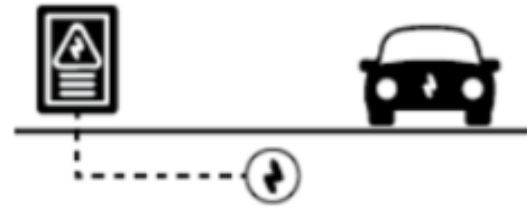
# Example Scenario: Consider Futureproofing Opportunities

## Considerations:

- Timeline for replacing the ZEV (what is needed in the next two years vs. further out in the future)
- Add extra capacity in a service panel/transformer upgrade or extra conduit to reduce future site work

### EV-Capable Parking Space: Electrical Panel Capacity & Conduit

- Install panel capacity and conduit (raceway) to accommodate the future build-out of EV charging with 208/240 V, 40-amp circuits.
- Rational: Provide hard-to-retrofit elements during new construction while minimizing up-front cost.



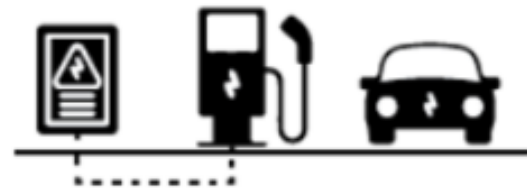
### EV-Ready Parking Space: Install full circuit

- Full circuit installations include 208/240V, 40-amp panel capacity, raceway, wiring, receptable, and overprotection devices similar to a dryer circuit.
- Rational: Full circuits are plug-and-play ready and minimize total costs and additional barriers to installing Electric Vehicle Supply Equipment (EVSE).



### EV-Installed: Install EV Charging Station (also known as Electric Vehicle Supply Equipment or EVSE).

- Install charging stations during new construction.
- Rational: Provide a visible signal that building supports EV charging and reduce future EV charger installation costs to zero.



Source: <https://afdc.energy.gov/fuels/electricity-codes-and-ordinances>

## Phase 1: Install 6 ports

## Phase 2: Install 4 ports



# Decide Who Has Access to EV Charging Stations



EV charging station access levels differ based on who can use the charging station (fleet-only, employee-only, shared, other)

The primary EV charging station access decision at most fleet facilities is whether employee charging access for employee privately owned vehicles (POVs) will be permitted (workplace charging)



## Basic Charging Setup

### Secure GOV Access

No data or controls

## Data Capture

### GOV Use Only

Integrates electric meter

## Access Control/Transactions

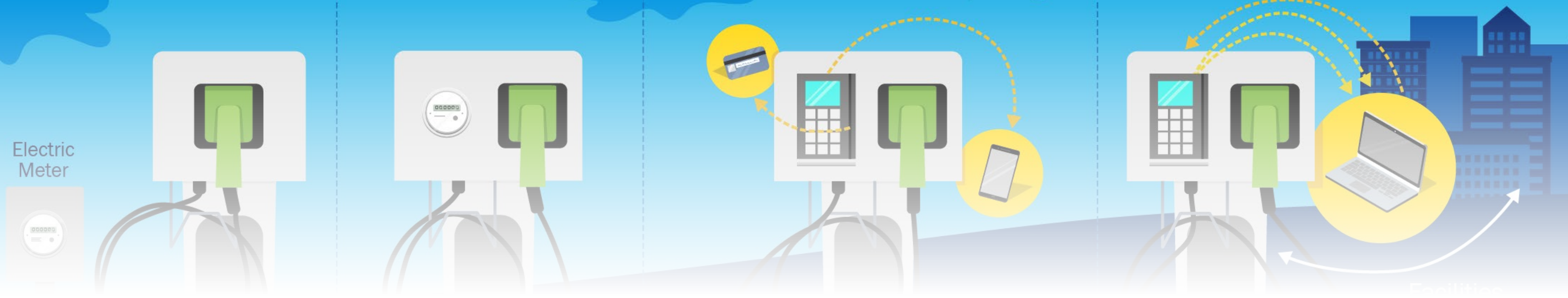
### POV Workplace Charging or GOV Use in Public Locations

Provides more detailed reporting

## Managed Charging

### Mitigating Demand Charges

Avoids transformer upgrades



- A networked EVSE has built-in data management or metering capabilities that track the energy use
  - Commonly provides the ability to process payment transactions, control vehicle access, track charging session data, and manage charging



# Comparing Networked vs. Non-Networked EVSEs

	<b>Networked</b>	<b>Non-Networked</b>
<b>Payment</b>	Can collect payment	Can't collect payment
<b>Data Tracking</b>	Tracks/reports charging session level data	Does not track/report on charging data
<b>Connectivity</b>	Requires connectivity (e.g., cellular service); connectivity issues can disrupt service	No connectivity required
<b>Load Management</b>	Load management capabilities (complexity will vary)	No load management capabilities outside of power sharing
<b>Costs</b>	Higher upfront and ongoing costs	Lower upfront and ongoing costs



# Discussion Questions

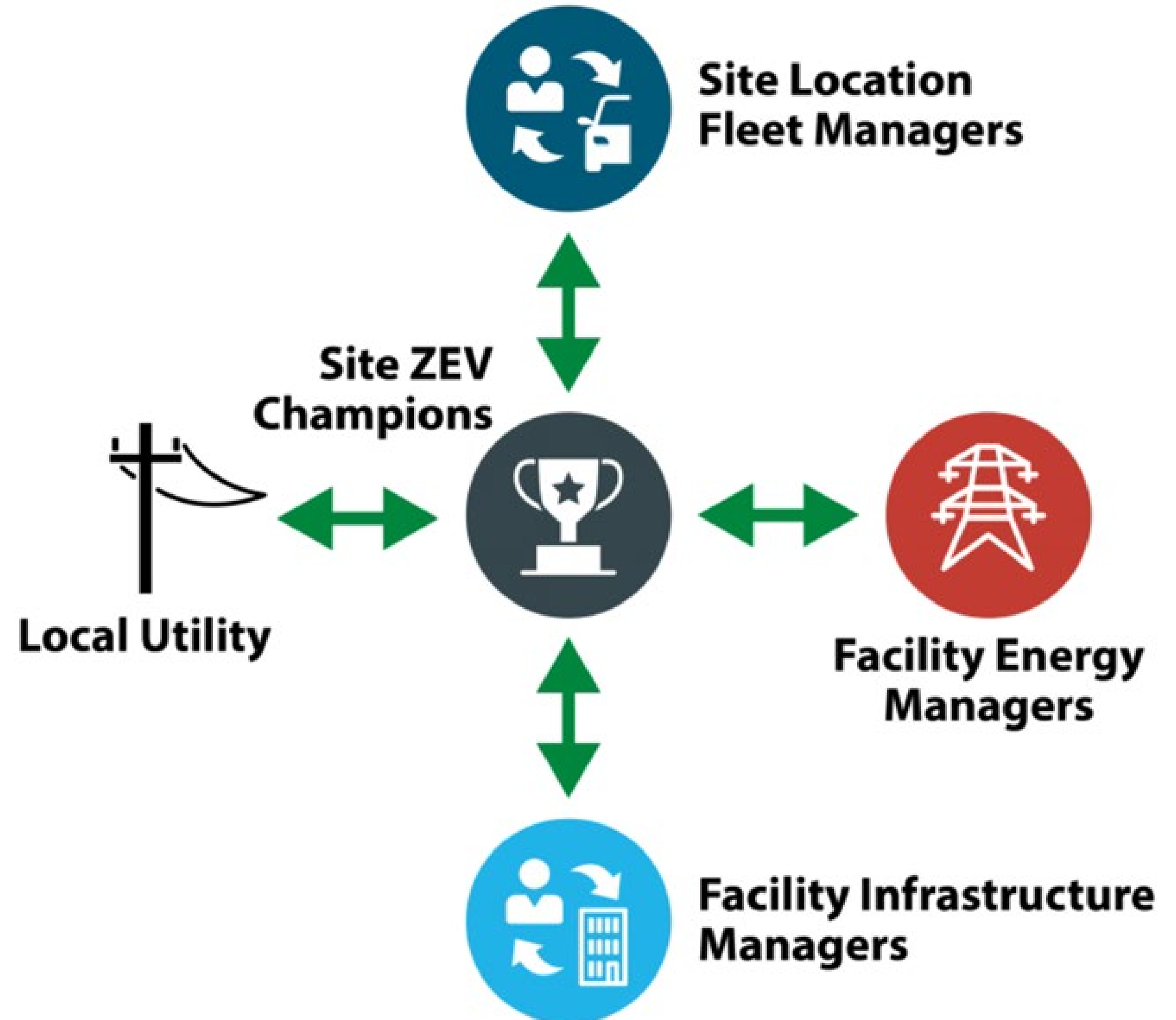
- How many fleets have installed EV charging stations?
  - Did you consider any future proofing – to plan for more charging in the future?
- What kind of charging ratio are you using?
  - 1:1, 2:1, or higher?
- Who is using networked versus nonnetworked charging?

# Site Assessment



# Site Assessment

EVSE design has wide impacts across the fleet location, including both fleet and facility operations. Critical to success is effective coordination between the site ZEV champion, site fleet manager, and facility infrastructure manager as well as your local utility.



# Example Scenario: Site Assessment

## Site assumptions

- Agency's headquarters building is older and needs electrical upgrades
- Building does have a large capacity 3-phase service
- Fleet vehicles park in a fleet-only parking area





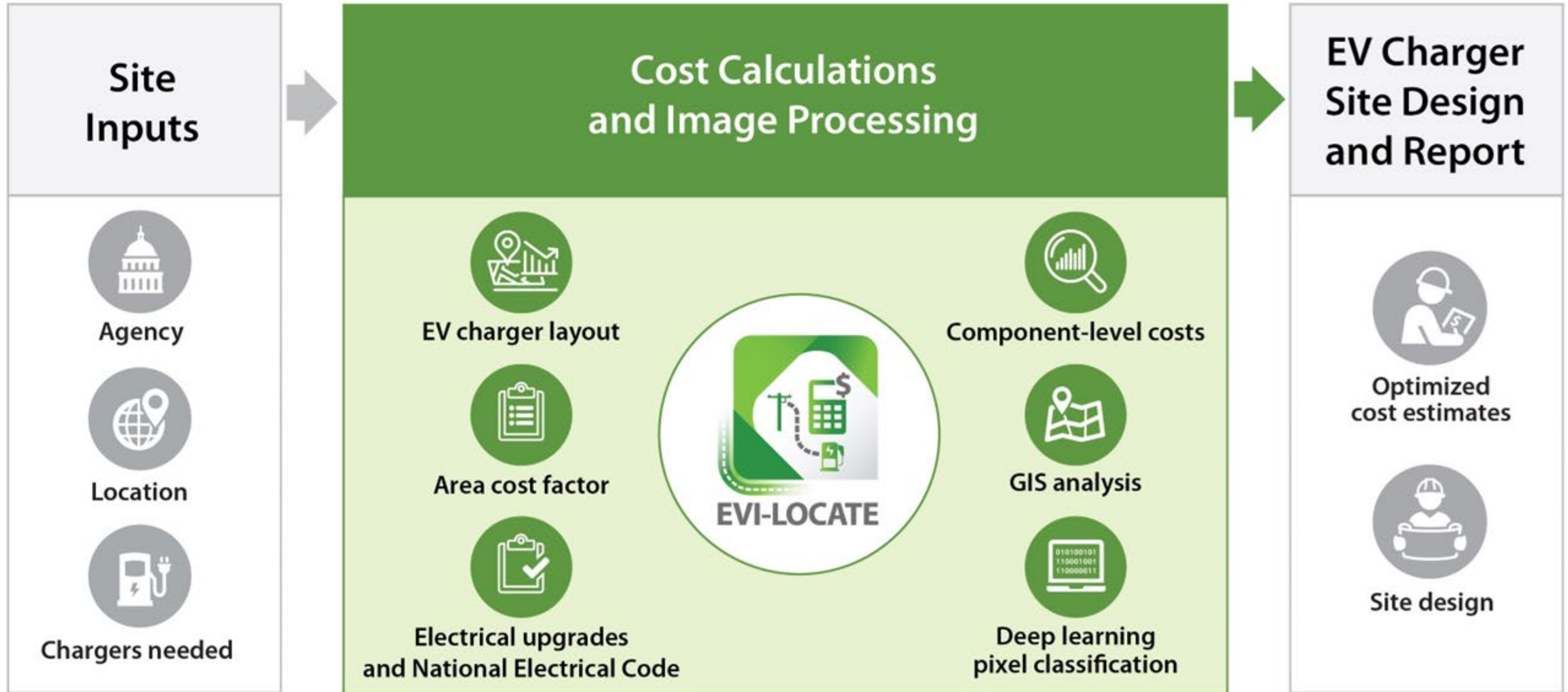
# Electric Vehicle Infrastructure – Locally Optimized Charging Assessment Tool and Estimator

Plan charging station deployments

Assess site-specific electrical needs

Calculate local project costs

# EVI-LOCATE: EV Charging Stations Site Assessment Tool





# Public Login: <https://evi-locate.nrel.gov/>

## EVI-LOCATE

Electric Vehicle Infrastructure — Locally Optimized Charging Assessment Tool and Estimator



[Resources](#) [Contact](#)

Federal User Access

Public User Access

Public Log In

Don't have an account? Click **Public Log In** above, then click "**Create a EVI-LOCATE Hub Community account.**" in the resulting popup to request access.

## Welcome to EVI-LOCATE

The Electric Vehicle Infrastructure - Locally Optimized Charging Assessment Tool and Estimator (EVI-LOCATE) is a comprehensive design tool that helps you create an electric vehicle charging station deployment plan, from layout to cost estimates.

The following key data can help you start a site analysis:

- Charger requirements-desired number of charging ports and power levels
- Existing utility assets-transformers and service panels that might connect to your chargers.

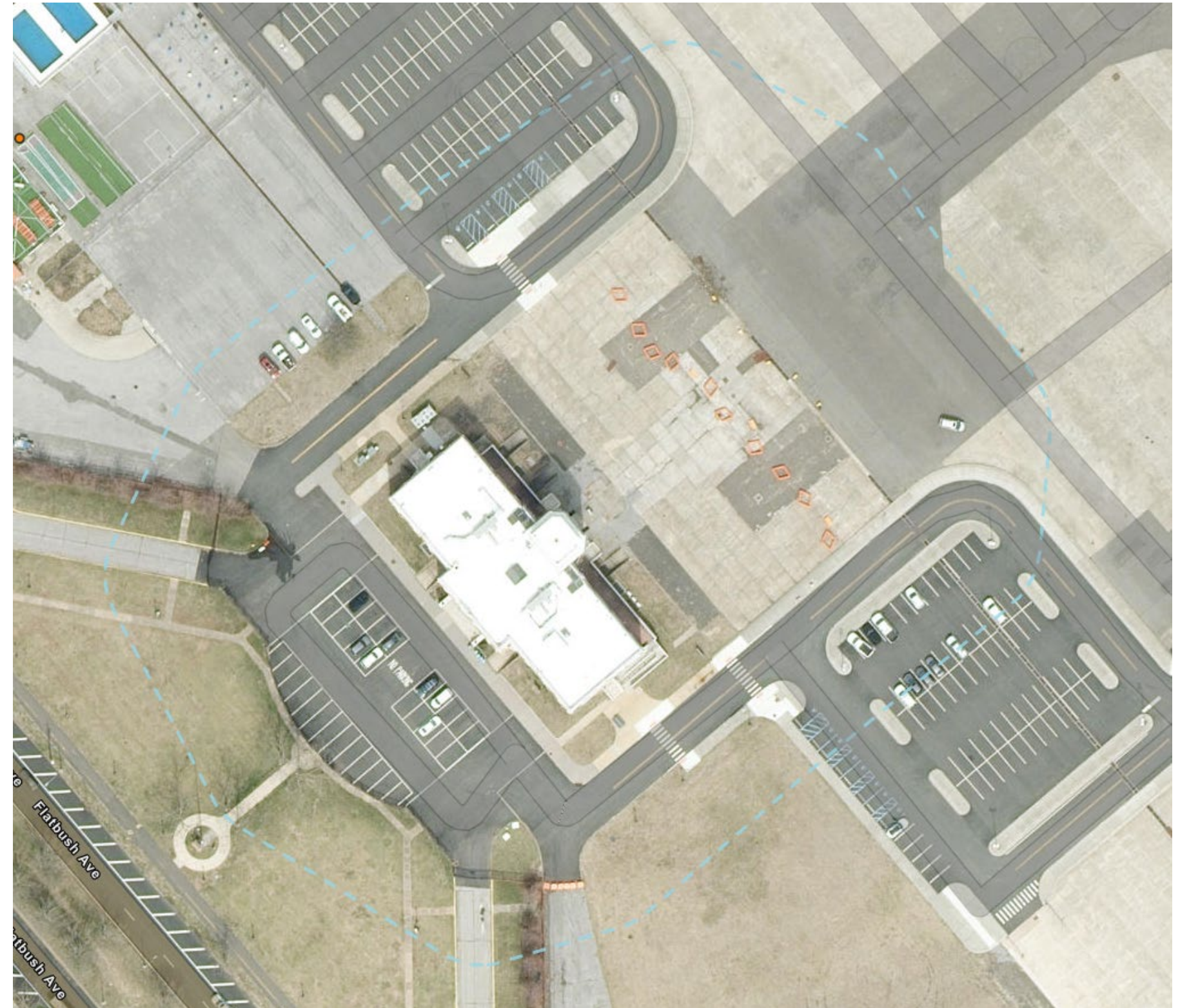
You do not need to have all your site information to start using the tool. You can save your work and edit your project later. You can also review sticking points with EV charging experts at NREL. Contact us at [evi-locate@nrel.gov](mailto:evi-locate@nrel.gov) if you have any questions.



# Define Site Boundary

## Define Site

- Draw a polygon project area
- Name your site
- Make sure the polygon is large enough to include the charging stations, transformer, and panel





# Select EVSEs

## Select Template and Add to the Map

- Users can filter to their preferred charger or select generic option
- Add to the map

**Generic Level 2 Dual Port Pedestal**

# Select Electric Vehicle Charger Type

If you would like to select a generic EV Charger for planning purposes, select it from the dropdown menu below. Otherwise, you can create a new configuration template based on options available through GSA's EV Charger

**Create EV Charger Configuration Template**

Charger Level: Level 2

Mount Type: Pedestal

Number of Ports: Dual

Network: Yes

Manufacturer: **ATOM POWER**

Model Numbers:

Template Name:

Mounting Type: Pedestal

Ampere: 40

Create new configuration

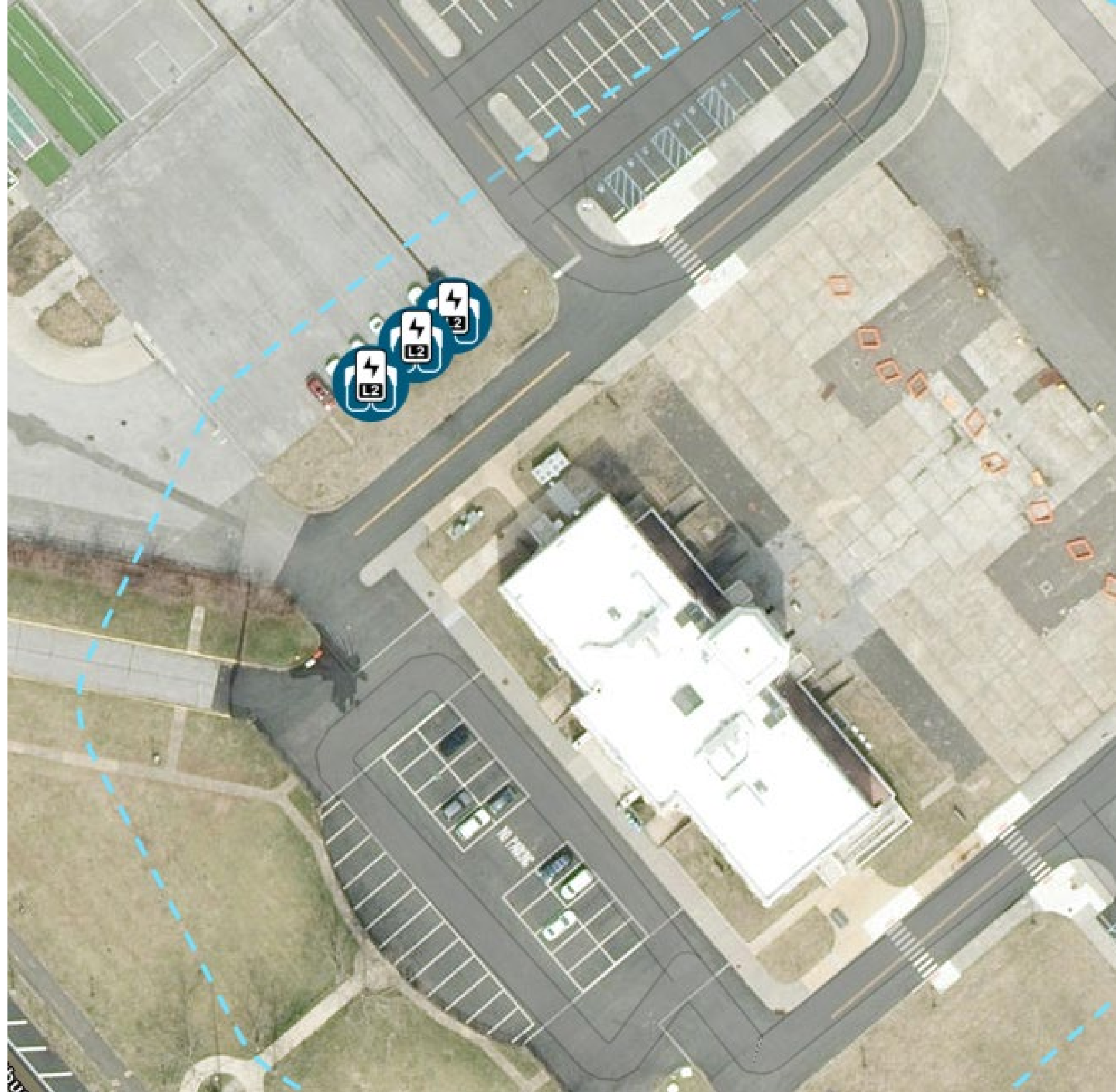
ADA

## Select EVSEs

### Select Template and Add to the Map

- Users can filter to their preferred charger or select generic option
- Add to the map

**Add three dual port EV charging stations**



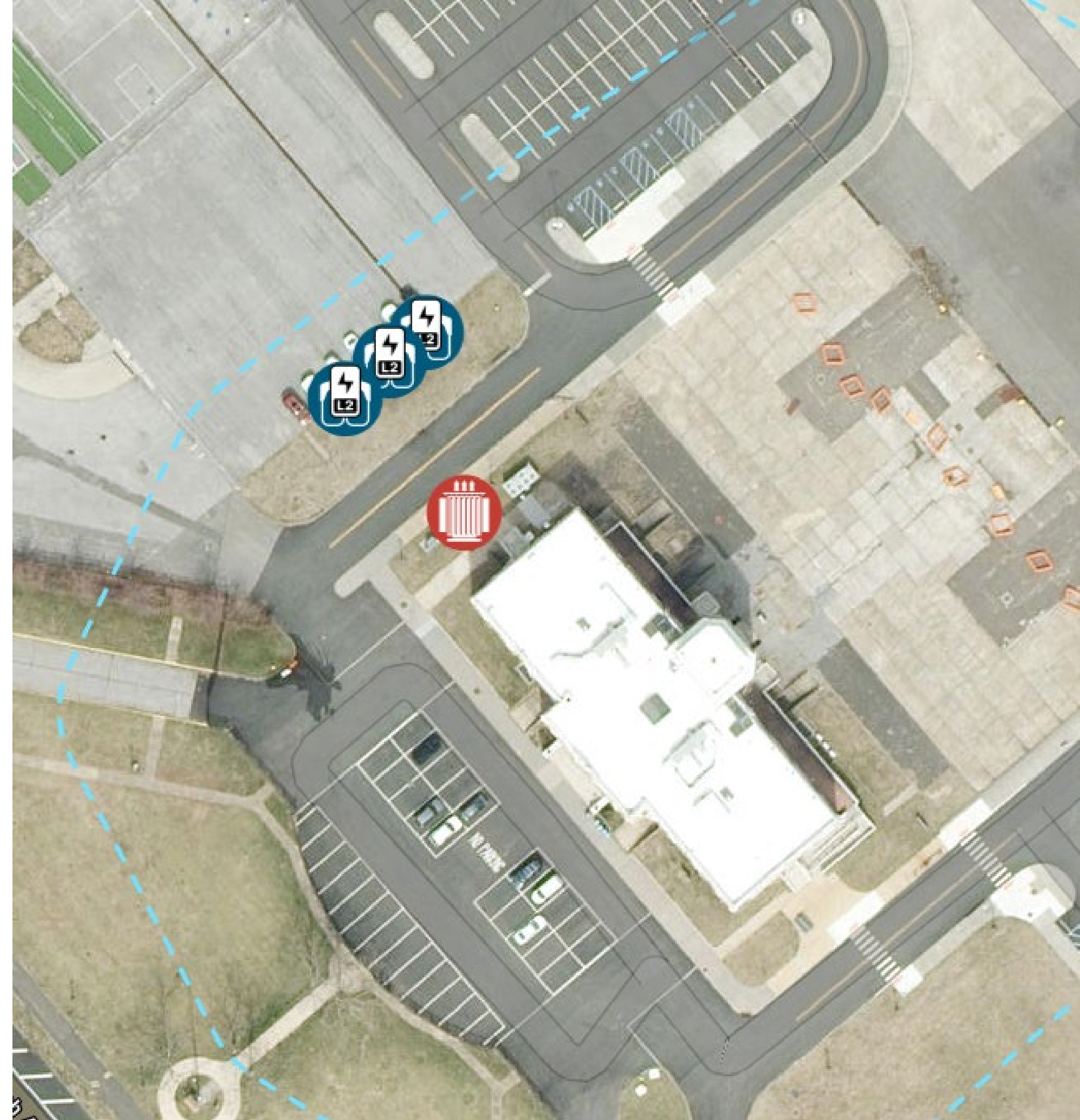


# Transformer

## Manage Transformer

- Select if costs should be included and whether to add a new or use the existing transformer
- Input existing rating (kVA) and peak load (kVA) to check if existing equipment is sufficient

**New transformer needed to support the project**

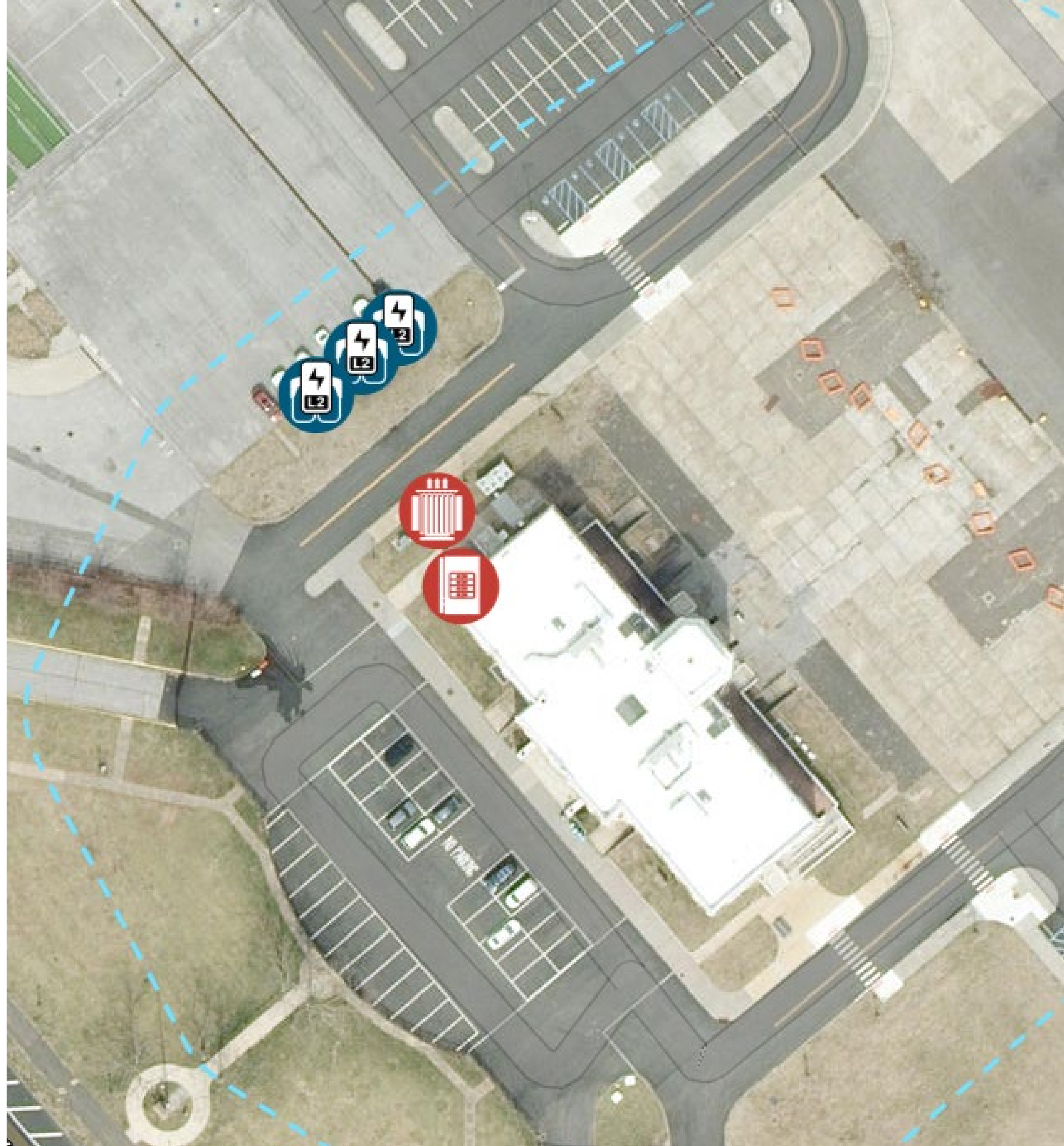


# Service Panel

## Manage Service Panel

- Select if costs should be included and whether to add a new or use the existing service panel
- Input existing voltage rating and (if using an existing panel) number of open spaces to check if existing equipment is sufficient

**New service panel needed to support the project**



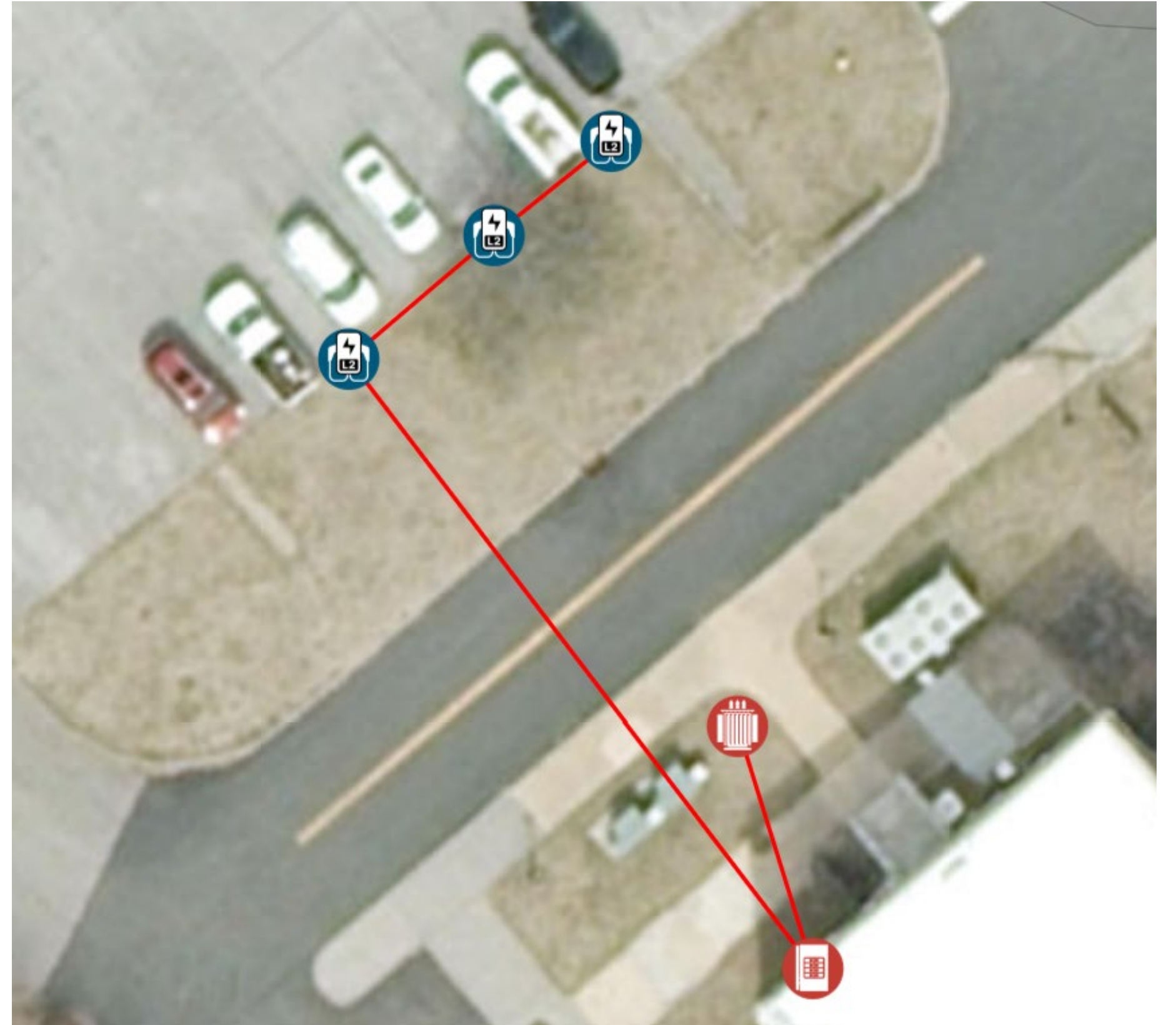


# Wiring: Connecting the Equipment

## Wiring Run

- Tool identifies low-cost line from transformer to panel to chargers
- Identifies hardscape and softscape

**Generate electric lines connecting the electrical equipment with the EVSE**



# Cost Calculations

## Edit Cost Assumptions

+ Inputs for Example Site

### EV GROUP 1 ADDITIONAL CONSTRUCTION COST COMPONENTS

- Bollards:  Include
- Wheelstops:  Include
- Signage:  Include
- Painting:  Include

### PROJECT COSTS (%)

EVI-LOCATE includes default numbers for project costs that can be modified by the user. Please update any of these defaults as appropriate for your project.

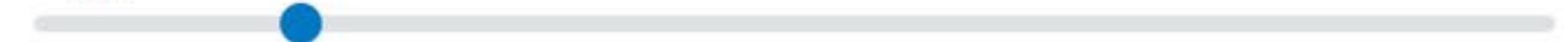
State and Local Sales Tax Percent

0%



Contractor Overhead Percent

15%



Contractor Profit Percent

10%



Bond Costs Percent

2.5%



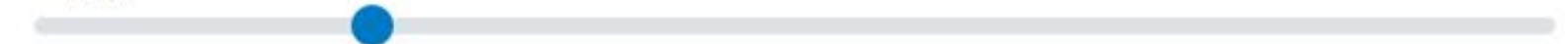
Permits and Zoning Percent

2%



Contingency Cost Percent ?

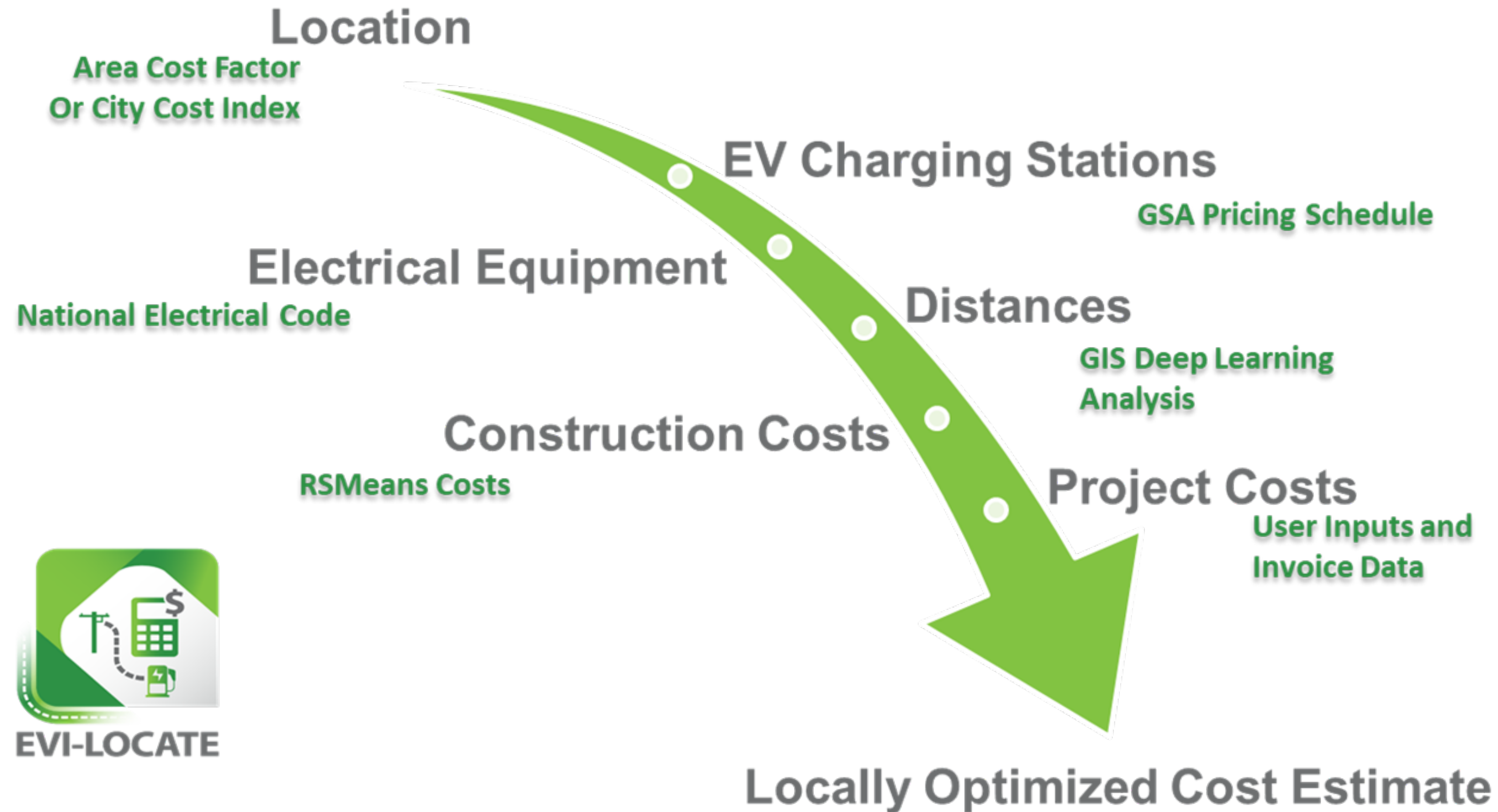
20%



Generate Calculated Costs

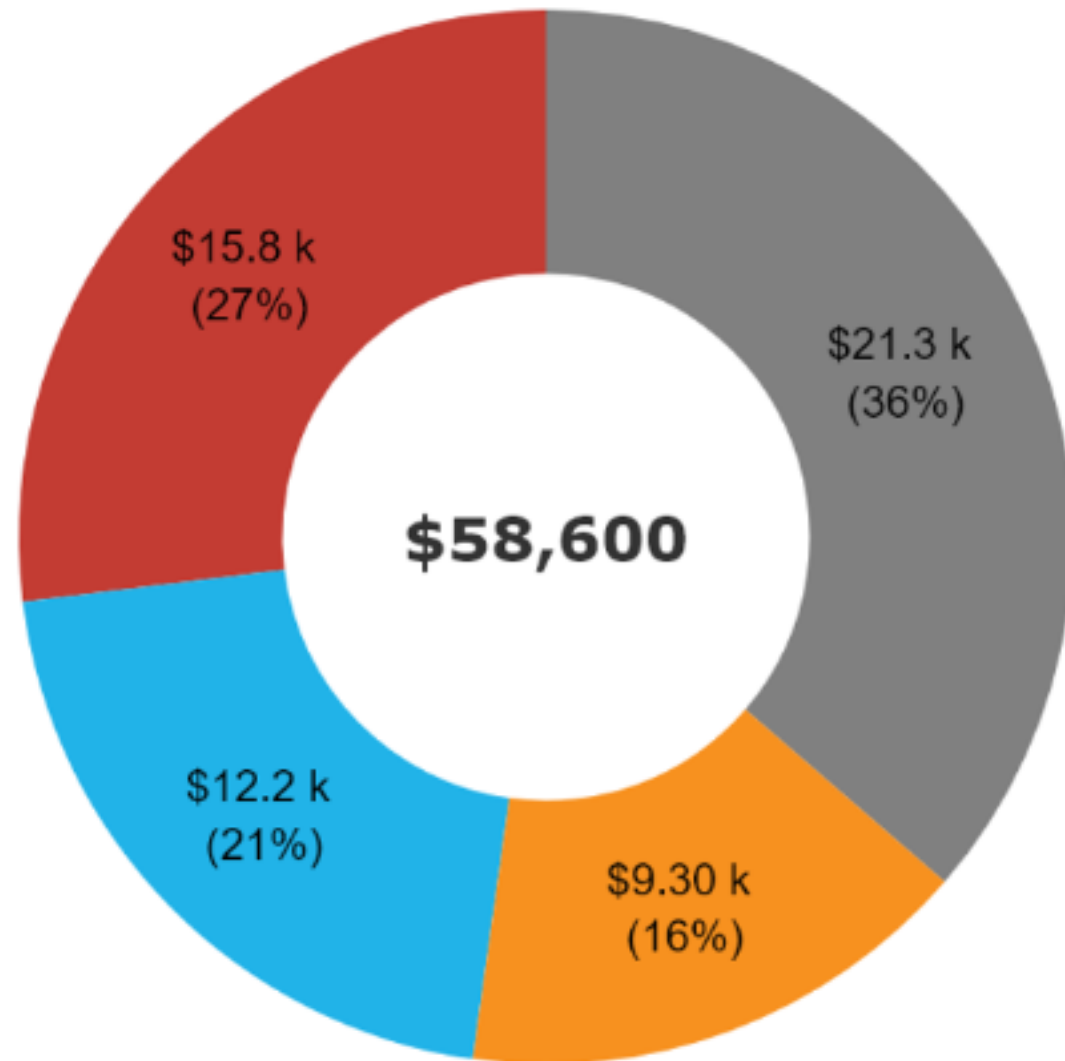


# Cost Estimator Components and Data Sources



# Detailed Cost Estimates

Estimated Cost of EV Charging Stations Installation



■ Project Costs      ■ Electrical  
■ EV Charging Stations      ■ Construction



Accelerate the site design process



Unify assumptions for cost calculations



Generate detailed estimates in 20 minutes



Organize agency EV charging planning



# Discussion Questions

- Do you think EVI-Locate would help with your planning?
  - If so, how?
- Other Questions?

# Final Questions

- What other tools have you used?
- How many fleets plan to lead and execute the fleet electrification internally?
  - How many intend to outsource to contractors?

## Key Takeaways:

- You are the expert on your fleet, and it is critical to have baseline understanding of the electrification process
- Know what questions to ask of the experts
- There are resources available to you and your fleet



## Contact Information

Erin Andrews-Sharer: [Erin.andrewsharer@nrel.gov](mailto:Erin.andrewsharer@nrel.gov)

Emily Kotz: [Emily.kotz@nrel.gov](mailto:Emily.kotz@nrel.gov)

Sophia Napoletano: [Sophia.napoletano@icf.com](mailto:Sophia.napoletano@icf.com)



National Renewable Energy Laboratory

Erin Andrews-Sharer

Emily Kotz



ICF

Sophia Napoletano

---

**Thank you, speakers!**

# Back-up Slides



# Limitations of Conventional Charging

- Plug and leave approach
- Limitations for larger fleets:
  - Inefficient charging power allocation.
  - Time consuming for larger fleets.
  - Human error.
- Increased operational costs:
  - Charging during peak pricing hours.
  - Uncoordinated charging leading to **peak demand charges**.
  - Infrastructure upgrade requirements.
- At-capacity local grids struggling to meet larger EV fleet needs.



# What Is Managed Charging?

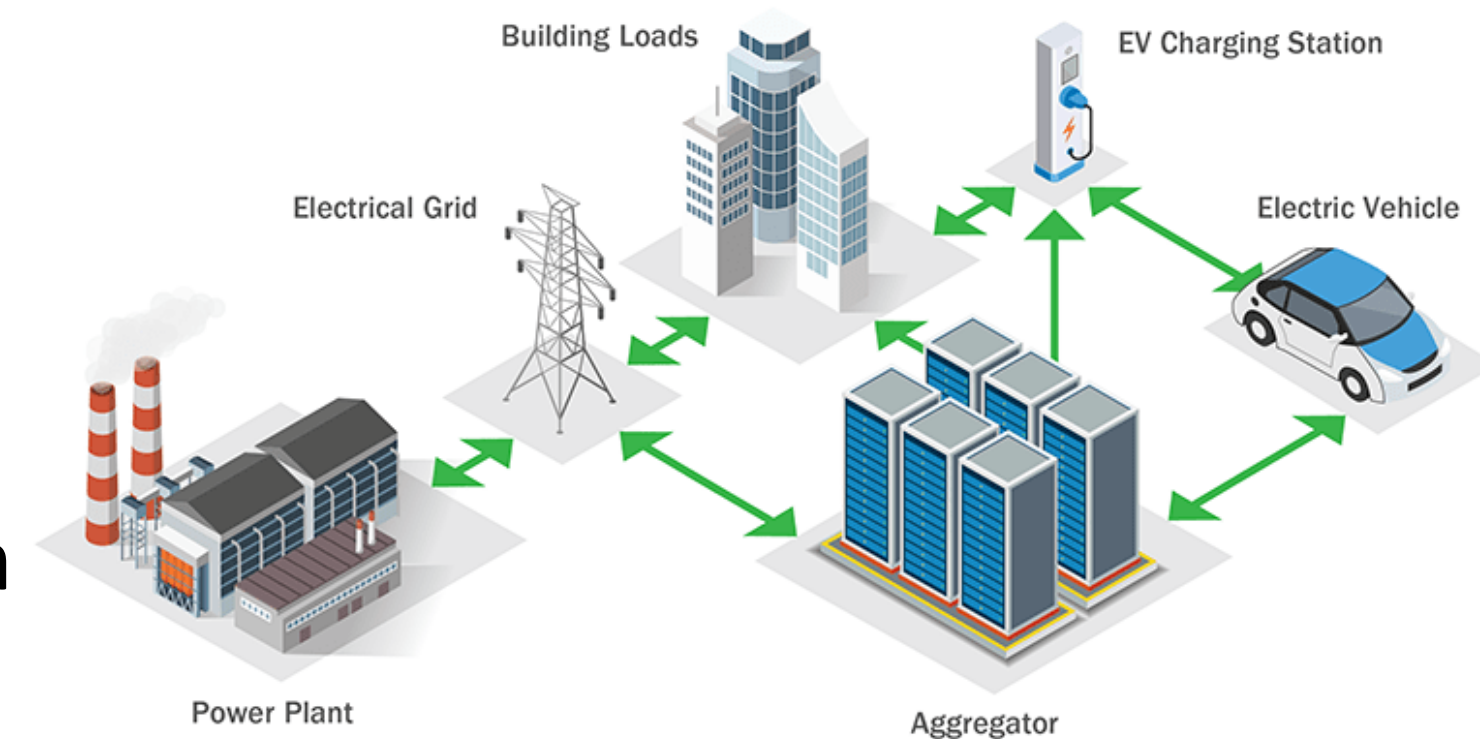
- EV charging may be managed and controlled
  - Strategically plan vehicle charging
  - Avoid expensive upgrades
    - Set a limit on the system load
  - Reduce energy costs
    - Shift charging to off-peak pricing hours
    - Reduce peak demand charges
  - Manage a large fleet
    - Ensure EVs are charged when needed
- Requires a networked EVSE with a standard communications protocol
- Offers various levels of sophistication, from manual scheduling to automatic planning



*Manually planning and scheduling when and how to charge. Illustration by NREL.*

# What Is Smart Charge Management?

- Managed charging, smart charging, etc.
- **Dynamic** coordinated control of EV charging
- Can balance energy needs among:
  - Connected EVs/EV charging stations
  - Buildings
  - Energy generation
  - Grids
- Uses sophisticated communication protocols (such as Open Charge Point Protocol [OCPP] and similar) and work based on a pre-defined objective function
- Objective Function: Intended goal

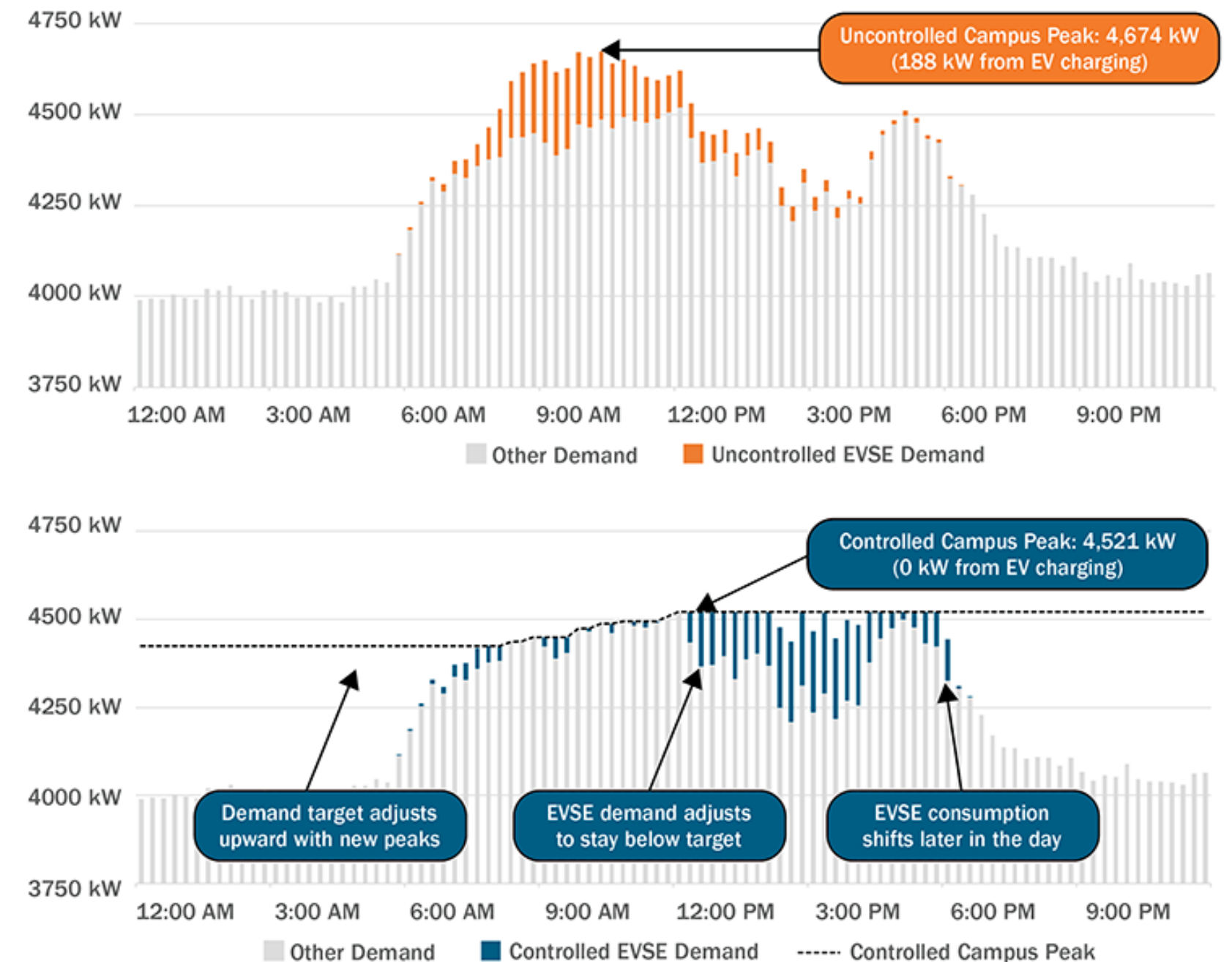


*Smart Charge Management can connect and communicate with multiple entities simultaneously to ensure control objective. Illustration by NREL.*



# Benefits of Smart Charge Management

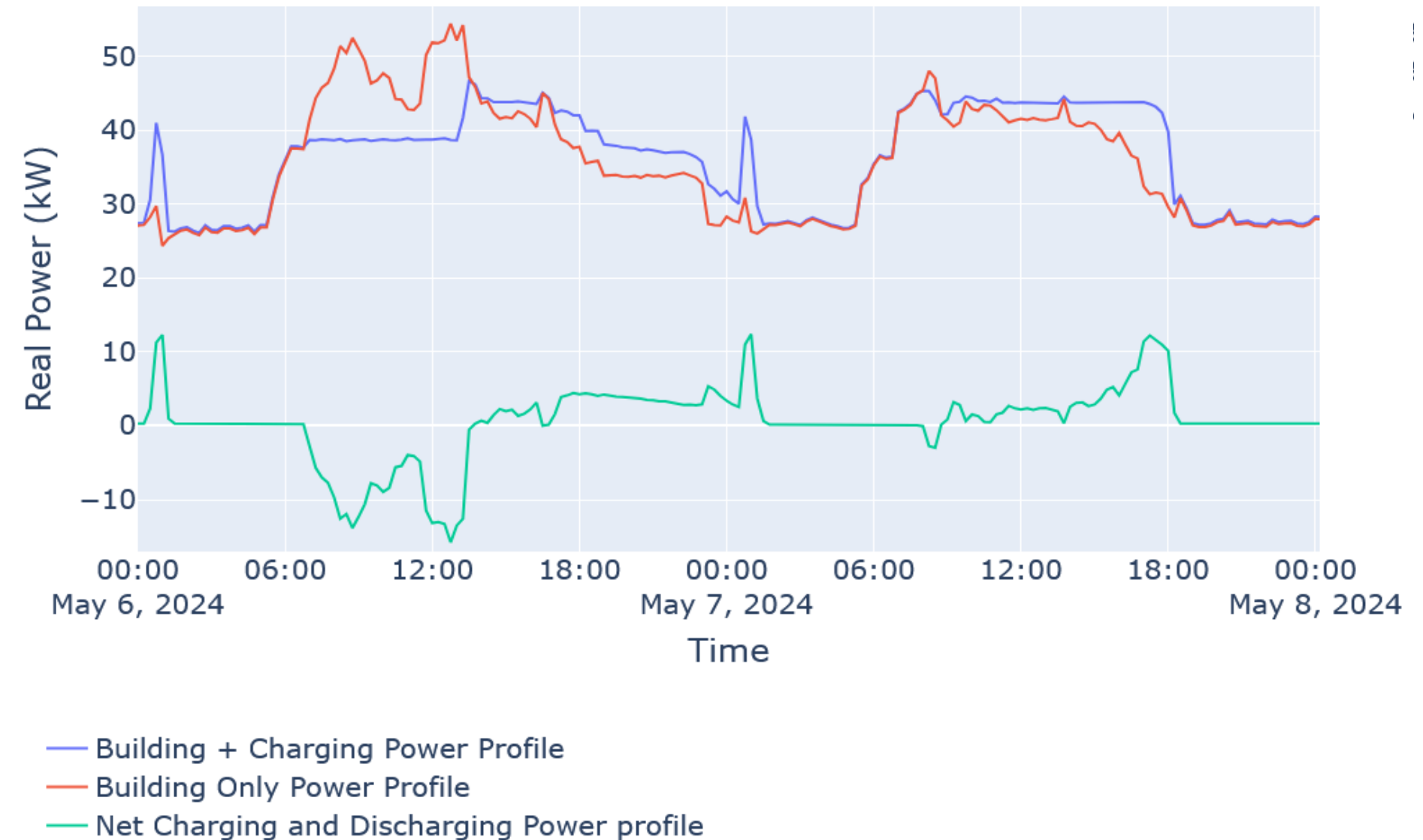
- Optimize energy usage and cost:
  - Time of use rate
  - Demand charges – enforce power ceiling
  - Renewable energy utilization
- Reduce EV charger installation costs and timeline:
  - High number of EV charging stations can lead to system overloading
  - Make use of existing electrical and EV charging infrastructure



*Illustration adapted from the NREL report, [Integrating Electric Vehicle Charging Infrastructure into Commercial Buildings and Mixed-Use Communities: Design, Modeling, and Control Optimization Opportunities](#)*

# Benefits of Smart Charge Management

- Optimize fleet and building operations and ensure vehicle readiness:
  - Ensure vehicle readiness
  - Schedule charging during off-peak
- Support connected loads during extreme events:
  - Demand response events
  - Utilize EVs as mobile energy storage units



*Chart provided by a federal building testing V2G technology.*



# **Alternative Fuels Data Center (AFDC)**



# Alternative Fuels Data Center (AFDC)

afdc.energy.gov

The screenshot shows the top portion of the AFDC website. At the top left is the U.S. Department of Energy logo with the text "Energy Efficiency & Renewable Energy". To the right of the logo is a navigation link: "EERE Home | Programs & Offices | Consumer Information". Below the logo is the title "Alternative Fuels Data Center" in large green letters. To the right of the title is a search bar with the placeholder text "Search the AFDC" and a green "SEARCH" button. Below the title and search bar is a horizontal navigation menu with several items: "FUELS & VEHICLES" (highlighted in green), "CONSERVE FUEL", "LOCATE STATIONS", "LAWS & INCENTIVES", "Maps & Data", "Case Studies", "Publications", "Tools", "About", and "Home".

[EERE](#) » [AFDC](#) » [Fuels & Vehicles](#)

[Printable Version](#)

## Alternative Fuels and Advanced Vehicles

More than a dozen [alternative fuels](#) are in production or under development for use in [alternative fuel vehicles](#) and [advanced technology vehicles](#). Government and private-sector fleets are the primary users for most of these fuels and vehicles, but individual consumers are increasingly interested in them. Using alternative fuels including electricity and advanced vehicles instead of conventional fuels and vehicles helps the United States conserve fuel and lower vehicle emissions.



### Biodiesel ▶

Biodiesel is a renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled cooking grease for use in diesel vehicles.

[Diesel Vehicles ▶](#)



### Electricity ▶

Electricity can be used to power electric vehicles, which are increasingly available.

[Electric Vehicles ▶](#)



### Ethanol ▶

Ethanol is a widely used renewable fuel made from corn and other plant materials. It is blended with gasoline for use in vehicles.

[Flexible Fuel Vehicles ▶](#)



### Hydrogen ▶

Hydrogen is a potentially emissions-free alternative fuel that can be produced from domestic resources for use in fuel cell vehicles.

[Fuel Cell Vehicles ▶](#)



### Natural Gas ▶

Natural gas is a domestically abundant fuel that can have significant cost advantages over gasoline and diesel fuels.

[Natural Gas Vehicles ▶](#)



### Propane ▶

Propane is a readily available gaseous fuel that has been widely used in vehicles throughout the world for decades.

[Propane Vehicles ▶](#)



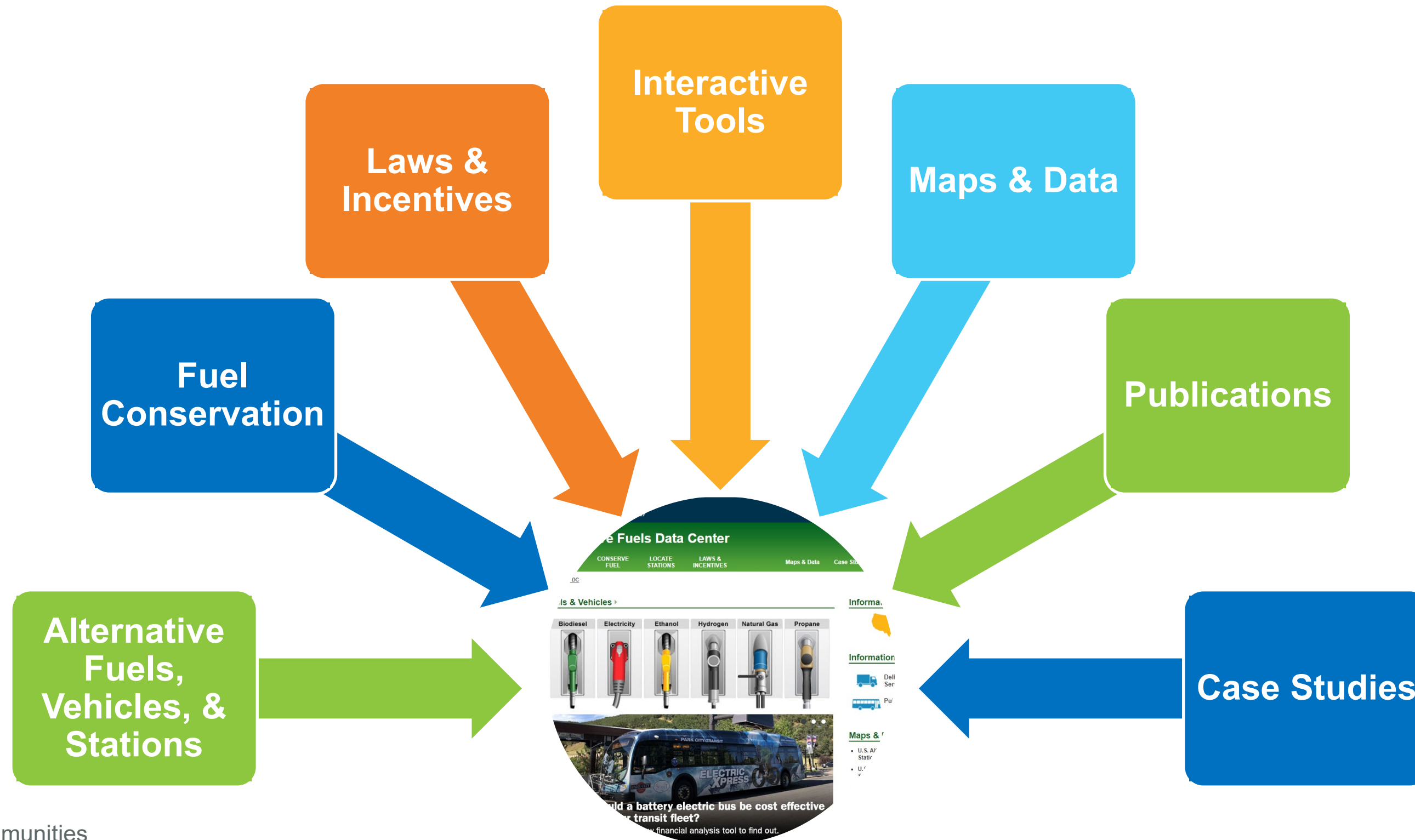
### Renewable Diesel ▶

Renewable diesel is a biomass-derived transportation fuel suitable for use in diesel engines.

### Emerging Fuels ▶

Several emerging fuels are considered alternative fuels under the [Energy Policy Act](#) and may be under development or already developed and available in the United States.

# What does the AFDC provide?



# Who uses the AFDC?

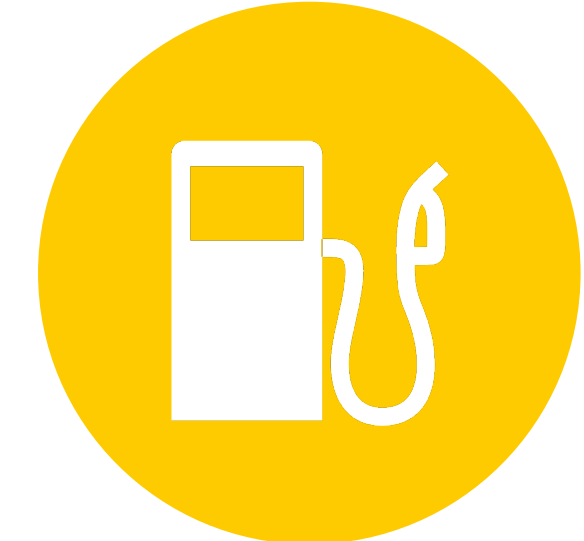


Fleet managers

**3 Million**  
users annually



Transportation  
planners



Fuel providers

**12 Million**  
pageviews annually



Utilities

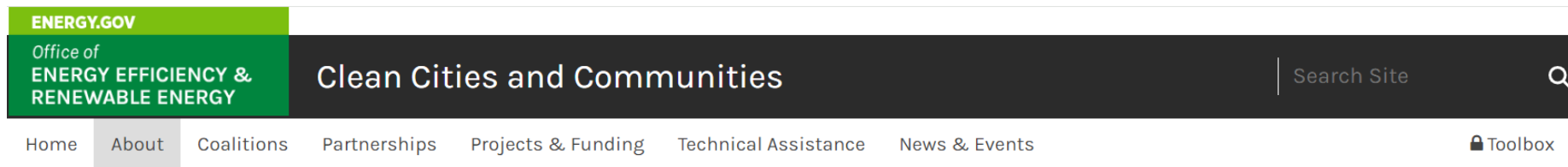
**25 Million**  
station searches annually



Clean Cities and  
Communities  
coalitions



# Fact Sheets



Clean Cities and Communities » About » Publications

- Goals & Accomplishments
- Hall of Fame
- Publications**
- Working with Us
- Contacts

## Publications

Find popular publications related to alternative fuels and vehicles, infrastructure development, emissions, and saving fuel.

### About Clean Cities and Communities

- [American Recovery and Reinvestment Act: Clean Cities Project Awards](#)
- [Clean Cities Coalitions 2022 Activity Report](#)
- [Clean Cities Coalitions Overview](#)
- [Clean Cities Contacts](#)
- [Clean Cities Technical Assistance Project \(Tiger Teams\)](#)
- [Clean Cities: A Model of Collaborative Technology Innovation Built Over 30 Years](#)
- [Designing a Successful Transportation Project: Lessons Learned from the Clean Cities American Recovery and Reinvestment Act Projects](#)

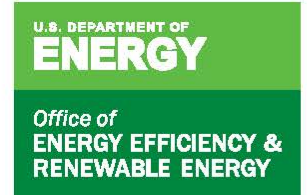
### New Publications

- [Adoption of Plug-in Electric Vehicles: Local Fuel Use and Greenhouse Gas Emissions Reductions Across the U.S.](#)
- [Clean Cities Coalitions 2022 Activity Report](#)
- [Community Charging: Emerging Multifamily, Curbside, and Multimodal Practices](#)

### Additional Resources

Find hundreds of publications on

**Your go-to source for Clean Cities and Communities publications.**  
[cleancities.energy.gov/publications](https://cleancities.energy.gov/publications)



## Ethanol Basics

Ethanol is a widely used, domestically produced renewable fuel made from corn and other plant materials. Ethanol can be blended with gasoline in different amounts. In fact, more than 98% of gasoline sold in the United States contains ethanol to oxygenate the fuel and help to reduce air pollution.<sup>1</sup> Using ethanol in fuel also helps the nation increase the use of domestic alternative fuels, thereby potentially reducing reliance on imported oil. Gasoline and gasoline blendstocks can also use ethanol as an octane enhancer to increase vehicle performance.

### What ethanol blends are available?

Nearly all fuel-grade ethanol is sold as E10, a low-level blend of 10% ethanol, which is approved for use in all conventional light-duty vehicles. E15 (10.5%–15% ethanol) is approved for use in model year (MY) 2001 and newer light-duty conventional vehicles. To use E85, a high-level blend containing 51%–83% ethanol (depending on geography and season), a vehicle must be a flexible fuel vehicle (FFV). Intermediate blends between E15 and E85 are also approved for FFVs. These blends are typically available through blender pumps, which draw fuel from two storage tanks—one containing regular gasoline, and another containing E85. The most common blends are E20 and E30.



Ethanol may be labeled in a variety of ways at the pump. Photo by Dennis Schroeder, NREL 47090

### What is an FFV?

An FFV, as its name implies, has the flexibility of running on more than one type of fuel. FFVs can be fueled with unleaded gasoline, E85 (flex fuel), or any combination of the two. Like conventional gasoline vehicles, FFVs have a single tank and fuel system. However, FFVs differ in fuel-system materials and control systems to account for ethanol content (Figure 1). There are currently

more than 20 million FFVs registered in the United States.<sup>2</sup> However, many FFV owners don't realize their car is an FFV and that they have a choice of fuels. An FFV is often distinguished by an emblem on the back of the vehicle, and some FFVs have yellow fuel caps. To find FFV models, see the Alternative Fuels Data Center's (AFDC) Alternative Fuel and Advanced Vehicle Search ([afdc.energy.gov/vehicles/search/](https://afdc.energy.gov/vehicles/search/)).

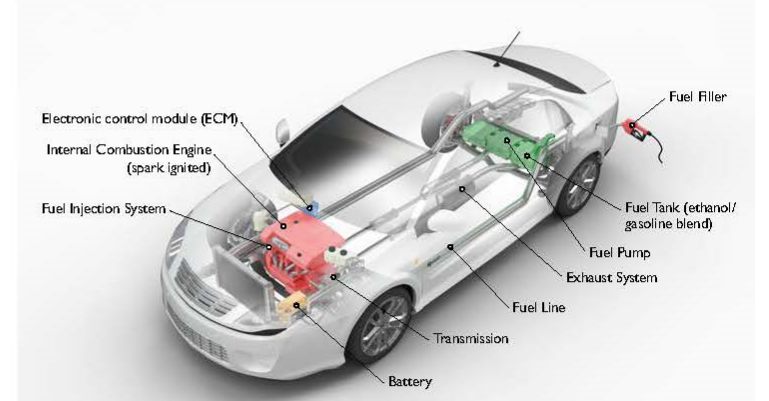


Figure 1. FFV Components. Illustration by Josh Bauer, NREL

<sup>1</sup> Pocket Guide to Ethanol 2017, Renewable Fuels Association, <http://www.ethanolrfa.org/wp-content/uploads/2017/02/Pocket-Guide-to-Ethanol-2017.pdf>  
<sup>2</sup> Vehicle populations were determined using 2016 Polk vehicle registration data purchased by the National Renewable Energy Laboratory.



# Alternative Fuel and Advanced Vehicle Search

- Compare all classes of alternative fuel vehicles, electric vehicles, and hybrids.
- Website: [afdc.energy.gov/vehicles/search](http://afdc.energy.gov/vehicles/search)

**Alternative Fuels Data Center**

Search the AFDC

[FUELS & VEHICLES](#) [CONSERVE FUEL](#) [LOCATE STATIONS](#) [LAWS & INCENTIVES](#) [Maps & Data](#) [Case Studies](#) [Publications](#) **[Tools](#)** [About](#) [Home](#)

[EERE](#) » [AFDC](#) » [Tools](#) » Vehicle Search [Printable Version](#)

### Alternative Fuel and Advanced Vehicle Search

Find and compare alternative fuel vehicles (AFVs), engines, and hybrid/conversion systems. Some of the light-duty AFVs may count toward vehicle-acquisition requirements for [federal fleets](#) and [state and alternative fuel provider fleets](#) regulated by the Energy Policy Act (EPA). Download a complete list:  
[Light-Duty Vehicles](#)   
[All Vehicles](#)

#### Vehicles by Type

 <a href="#">Sedan/Wagon</a>	 <a href="#">Pickup</a>	 <a href="#">SUV</a>	 <a href="#">Van</a>
 <a href="#">Step Van</a>	 <a href="#">Vocational/Cab Chassis</a>	 <a href="#">Street Sweeper</a>	 <a href="#">Refuse</a>
 <a href="#">Tractor</a>	 <a href="#">Passenger Van/Shuttle Bus</a>	 <a href="#">Transit Bus</a>	 <a href="#">School Bus</a>

#### Vehicles by Manufacturer

**Light-Duty**

**Medium- and Heavy-Duty**

#### Engines and Hybrid/Conversion Systems

For medium- and heavy-duty vehicles:

<a href="#">ENGINE &amp; POWER SOURCES</a>	<a href="#">CONVERSION &amp; HYBRID SYSTEMS</a>
--	---

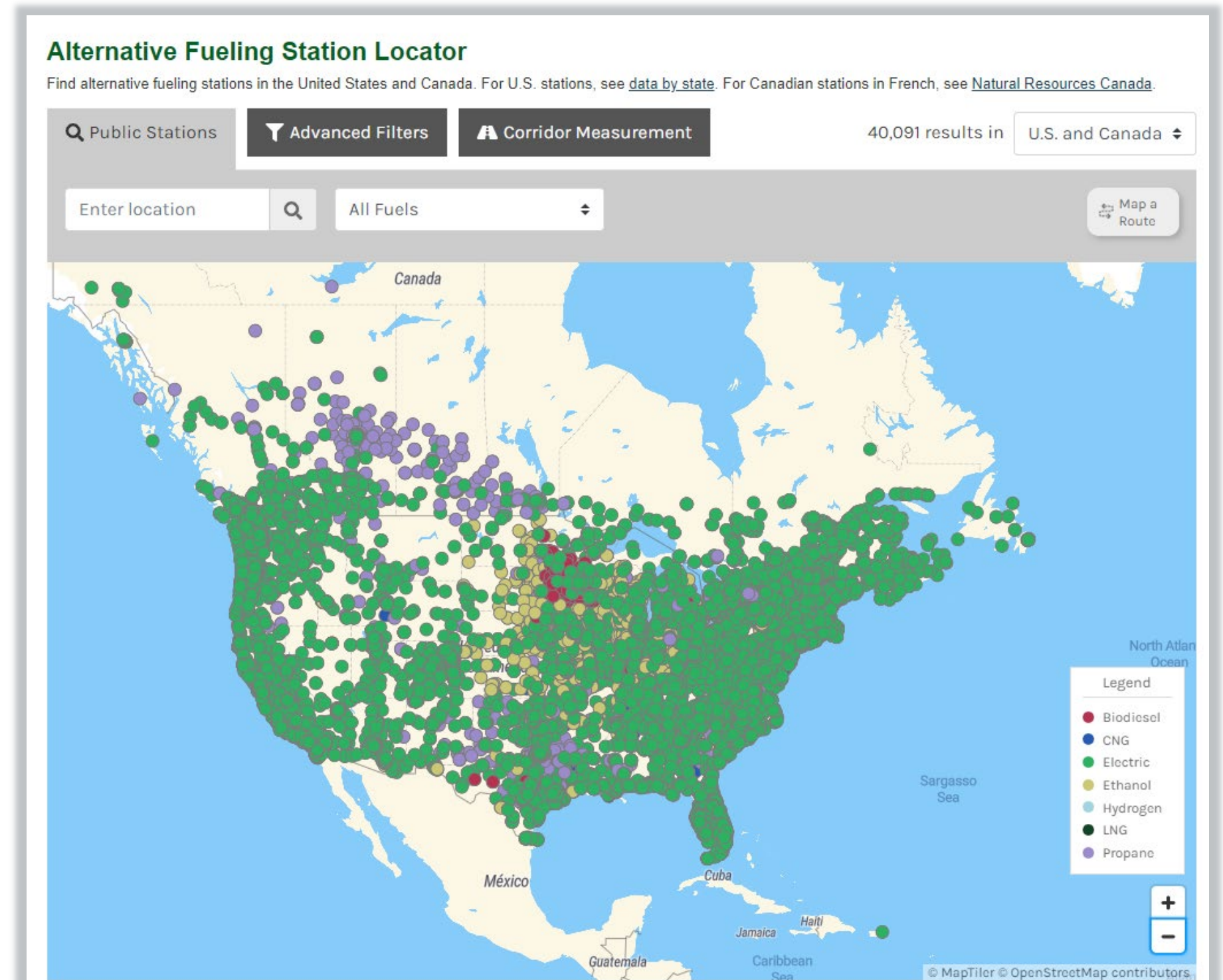
[ABOUT THE DATA](#)



# Alternative Fueling Station Locator

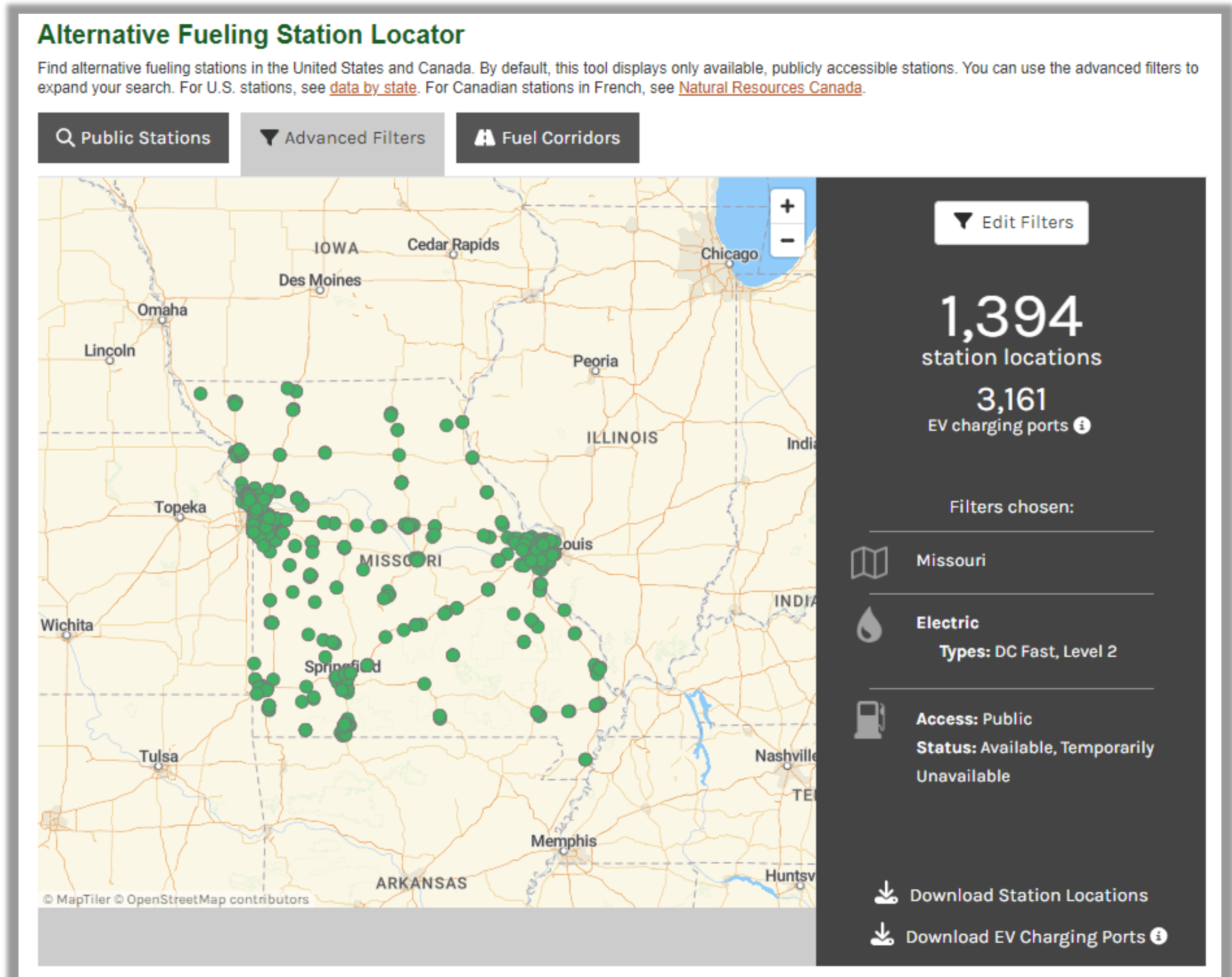


- Locate alternative fueling stations and get maps and driving directions.
- Website: [afdc.energy.gov/stations](https://afdc.energy.gov/stations)

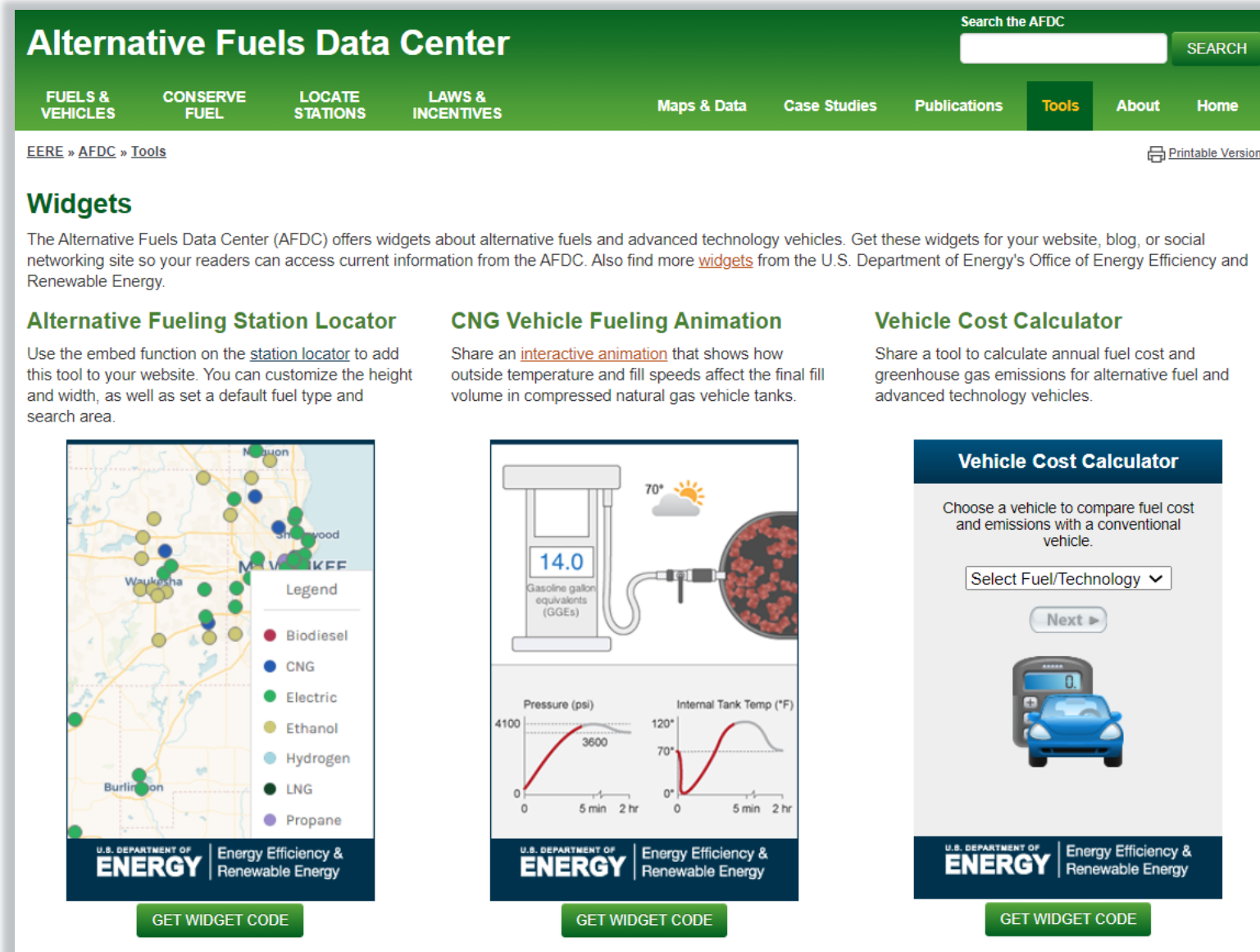




# Public EV chargers in Missouri

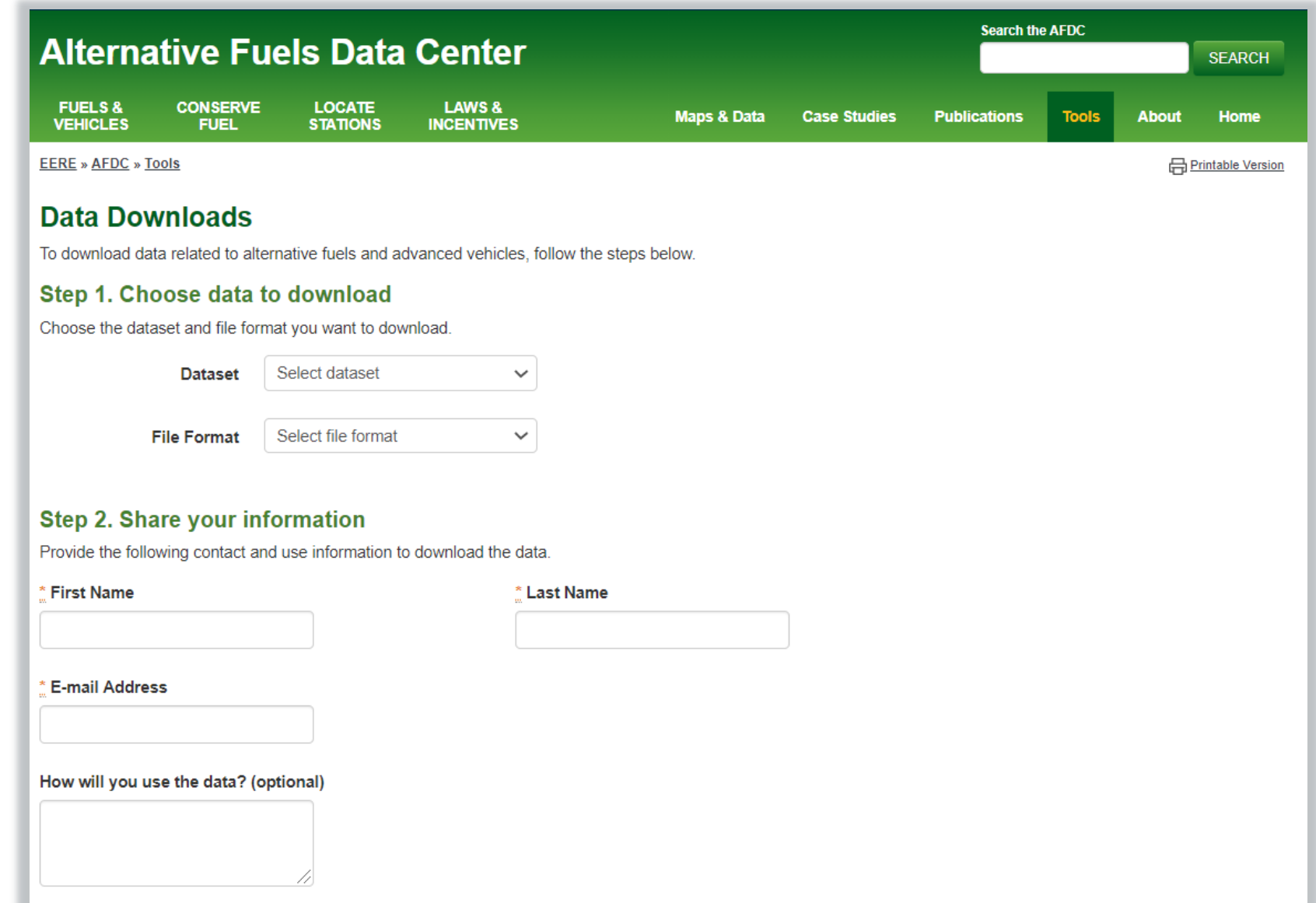


# AFDC Data Downloads and Widgets



The screenshot shows the 'Alternative Fuels Data Center' website with the 'Tools' menu selected. The 'Widgets' section is active, displaying three widget options: 'Alternative Fueling Station Locator', 'CNG Vehicle Fueling Animation', and 'Vehicle Cost Calculator'. Each widget includes a brief description, a visual preview, and a 'GET WIDGET CODE' button. The 'Alternative Fueling Station Locator' shows a map with various fuel types marked. The 'CNG Vehicle Fueling Animation' shows a fuel pump and graphs for pressure and temperature. The 'Vehicle Cost Calculator' shows a car and a 'Next' button.

[afdc.energy.gov/widgets](http://afdc.energy.gov/widgets)



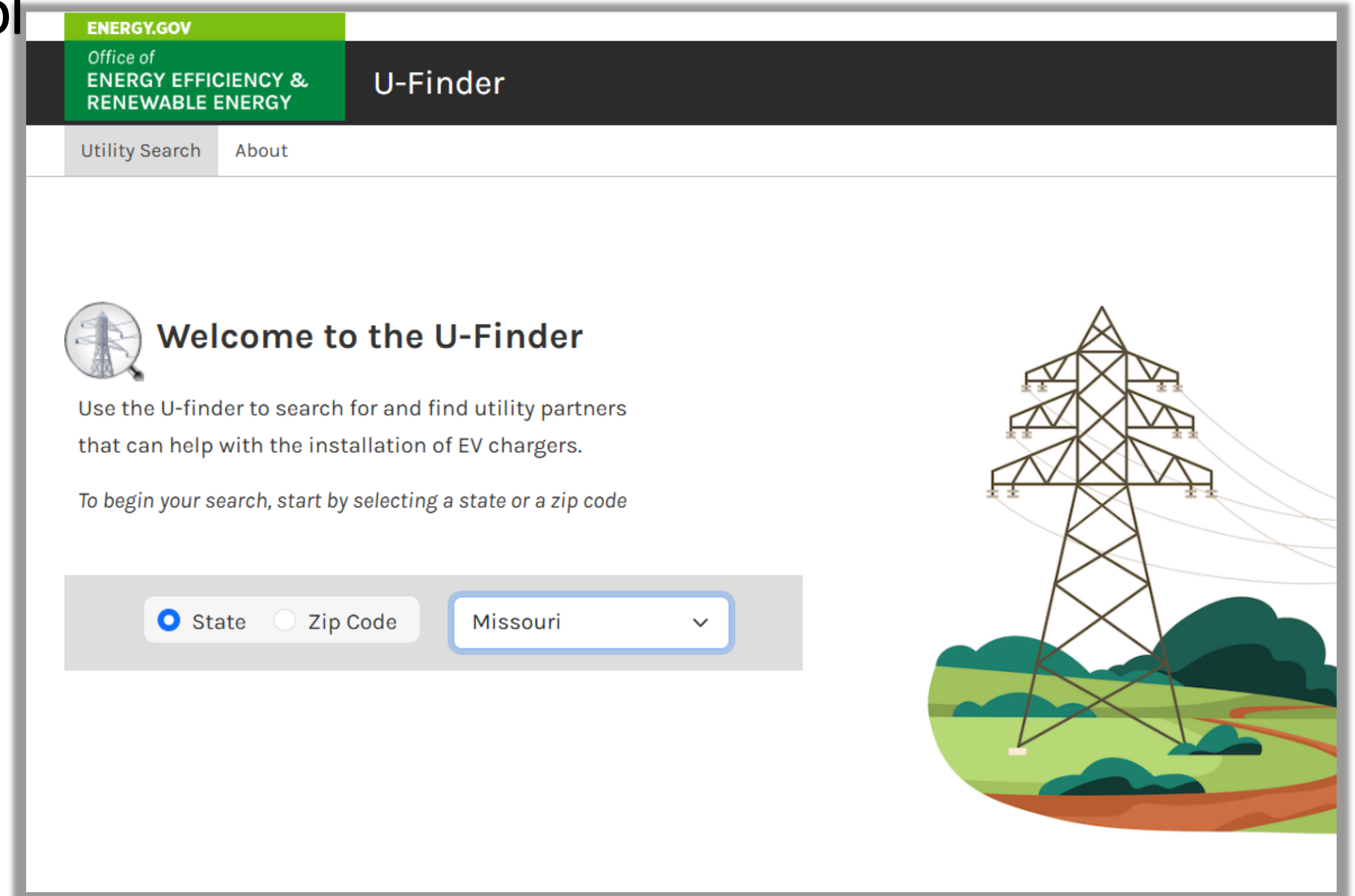
The screenshot shows the 'Alternative Fuels Data Center' website with the 'Tools' menu selected. The 'Data Downloads' section is active, showing 'Step 1. Choose data to download' with dropdown menus for 'Dataset' and 'File Format'. 'Step 2. Share your information' includes input fields for 'First Name', 'Last Name', and 'E-mail Address', along with a text area for 'How will you use the data? (optional)'. A 'Printable Version' link is visible in the top right corner.

[afdc.energy.gov/data\\_download](http://afdc.energy.gov/data_download)

[developer.nrel.gov/docs/transportation](http://developer.nrel.gov/docs/transportation)

# U-Finder Tool

- Search for local utility partners that can help with installation of EV chargers





# U-Finder Tool

- Find utility and government incentives by state or zip code
- Find utility contact information

The screenshot shows the 'Find EV Charger Utility Partners' interface. At the top, there's a search bar with 'State' selected and 'Missouri' chosen from a dropdown. Below this, it says 'Current results for Missouri'. There are three filter tabs: 'Missouri Utilities' (active), 'Missouri Government Incentives', and 'Clean Cities and Communities'. Below the filters, there are search and filter controls: 'Utility name' with a search input and magnifying glass icon, 'Utility Ownership' with a dropdown set to 'All', and 'Sort by' with a dropdown set to 'Percent of State'. The results list two utilities:

Utility Name	Known as	Ownership	Percent of Missouri Covered	Actions
Union Electric Co - (MO)	Ameren: Union Electric Co	Investor	33%	Show Incentives + Show Contact Information +
Evergy Missouri West	Evergy	Investor	23%	Show Incentives + Show Contact Information +

# State Information Search




- Find state information about alternative fuels and advanced vehicles.
- Website: [afdc.energy.gov/states](http://afdc.energy.gov/states)

**Alternative Fuels Data Center**

FUELS & VEHICLES   CONSERVE FUEL   LOCATE STATIONS   LAWS & INCENTIVES   Maps & Data   Case Studies

[EERE](#) » [AFDC](#) » [Tools](#)

 **State Information**

Select a state below to find state-specific information about alternative fuels and advanced vehicles, including laws and incentives, fueling stations, fuel prices, and more.

# Federal and State Incentives Database



- Find federal and state laws and incentives for alternative fuels and vehicles, air quality, fuel efficiency, and other transportation-related topics.
- Website: [afdc.energy.gov/laws](http://afdc.energy.gov/laws)

**Alternative Fuels Data Center** Search the AFDC

FUELS & VEHICLES CONSERVE FUEL LOCATE STATIONS **LAWS & INCENTIVES** Maps & Data Case Studies Publications Tools About Home

[EERE](#) » [AFDC](#) » Laws & Incentives [Printable Version](#)

## Federal and State Laws and Incentives

Find federal and state laws and incentives for alternative fuels and vehicles, air quality, fuel efficiency, and other transportation-related topics.

**Federal** [Recent Federal Actions](#)  
[Key Federal Legislation](#)

**State** [Recent State Updates](#)  
[Local Examples](#)  
[Utility Examples](#)

select a state

**Search**  
by category or keyword

**See All**  
in summary tables

– **Technology Bulletins**

[Connecting Dots and Bridging Gaps: Alternative Fueling Corridors](#)

[All Technology Bulletins](#)

+ **Maps & Data**

+ **Case Studies**

+ **Publications**

+ **Tools**

For questions or to submit an incentive, email the [Technical Response Service](#). For additional incentives, search the [Database of State Incentives for Renewables & Efficiency](#).

*This information provides an overview of laws and incentives and should not be your only source of information for making decisions about vehicle purchases, taxes, or other binding agreements. Please refer to the federal and state contacts included to verify these laws and incentives are still applicable, and consult your tax advisor.*

[ABOUT THE DATA](#) [Download Data](#) [Data Fields](#) [Developer API](#)



# Missouri EV Laws and Incentives Page

The screenshot displays the 'Alternative Fuels Data Center' website. The header is green with the title 'Alternative Fuels Data Center' and a search bar. Navigation tabs include 'FUELS & VEHICLES', 'CONSERVE FUEL', 'LOCATE STATIONS', 'LAWS & INCENTIVES' (highlighted), 'Maps & Data', 'Case Studies', 'Publications', 'Tools', 'About', and 'Home'. The breadcrumb trail is 'EERE » AFDC » Laws & Incentives » State'. A sidebar on the left lists 'Search', 'Federal', 'State' (selected), 'Local Examples', 'Utility Programs', and 'Summary Tables'. The main content area is titled 'Missouri Laws and Incentives' and includes an introductory paragraph, a link to 'Utilities / Private Entities Offering Incentives', and a 'Laws and Incentives' section with 'VIEW ALL' and 'ADVANCED SEARCH' buttons. A 'Missouri Information' box on the right contains a map icon and text: 'Find information about alternative fuels and advanced vehicles in Missouri.' The 'Laws and Incentives' section includes a filter for 'EVs, PHEVs' and lists 8 filtered results from 19 items. The results are categorized into 'State Incentives' (3 items), 'Laws and Regulations' (5 items), and 'Utilities / Private Entities Offering Incentives' (11 items).

**Alternative Fuels Data Center** Search the AFDC

FUELS & VEHICLES CONSERVE FUEL LOCATE STATIONS **LAWS & INCENTIVES** Maps & Data Case Studies Publications Tools About Home

EERE » AFDC » Laws & Incentives » State [Printable Version](#)

Search  
Federal  
**State**  
Local Examples  
Utility Programs  
Summary Tables

## Missouri Laws and Incentives

Listed below are incentives, laws, and regulations related to alternative fuels and advanced vehicles for Missouri. Your local [Clean Cities coalition](#) can provide you with information about grants and other opportunities. You can also access coalition and other agency contact information in the [points of contact](#) section.

To view a list of utilities that are offering incentives in Missouri, see [Utilities / Private Entities Offering Incentives](#).

### Laws and Incentives

Information in this list is [updated](#) throughout the year and comprehensively reviewed annually after Missouri's [legislative session](#) ends.  
*Last Comprehensive Review: August 2024*

Filter by Technology/Fuel

8 results filtered from 19 items

#### State Incentives


- [Missouri's National Electric Vehicle Infrastructure \(NEVI\) Planning](#)
- [Alternative Fuel Vehicle \(AFV\) Emissions Inspection Exemption](#)
- [Energy Provider Sales Tax Exemption](#)

#### Laws and Regulations

- [Public Utility Definition](#)
- [Alternative Fuel Vehicle \(AFV\) Decal](#)
- [Alternative Fuel Vehicle \(AFV\) Acquisition and Alternative Fuel Use Requirements](#)
- [Local Electric Vehicle \(EV\) Charger Installation Policy Restrictions](#)
- [Alternative Fuel Promotion](#)

#### Utilities / Private Entities Offering Incentives

- [Ameren Illinois](#)
- [Ameren Missouri](#)
- [Cuivre River Electric Cooperative](#)
- [Energys](#)
- [Farmers' Electric Cooperative](#)
- [Kirkwood Electric](#)
- [Liberty Utilities](#)
- [Osage Valley Electric Cooperative](#)
- [Platte-Clay Energy Cooperative](#)
- [Southwestern Electric Cooperative](#)
- [Three Rivers Electric Cooperative](#)
- [United Electric Cooperative](#)
- [West Central Electric Cooperative, Inc.](#)



### Missouri Information

Find information about alternative fuels and advanced vehicles in Missouri.

# Federal Tax Credits for EVs and Charging Infrastructure

- Learn how consumers, fleets, businesses, and tax-exempt entities can take advantage of clean vehicle and alternative fuel infrastructure tax credits.

The screenshot shows the 'Alternative Fuels Data Center' website. The header is green with a search bar and navigation links: 'FUELS & VEHICLES', 'CONSERVE FUEL', 'LOCATE STATIONS', 'LAWS & INCENTIVES' (highlighted), 'Maps & Data', 'Case Studies', 'Publications', 'Tools', 'About', and 'Home'. Below the header, the breadcrumb trail reads 'EERE » AFDC » Laws & Incentives » Federal'. The main heading is 'Tax Credits for Electric Vehicles and Charging Infrastructure'. The text below explains that until 2032, federal tax credits are available for consumers, fleets, businesses, and tax-exempt entities investing in new, used, and commercial clean vehicles (including all-electric vehicles, plug-in hybrids, and fuel cell vehicles) and EV charging infrastructure through the Inflation Reduction Act of 2022. It notes that manufacturers and dealerships must work with the IRS to ensure buyers can take advantage of these credits. A 'Clean Vehicles' section follows, with a sub-heading and a paragraph explaining that consumers and fleets can take advantage of clean vehicle tax credits, and manufacturers and dealerships must work with the IRS to ensure buyers can claim these credits. Below this are four cards: 'Consumers' (blue background, person icon), 'Fleets' (grey background, truck icon), 'Dealerships' (grey background, car icon), and 'EV Manufacturers' (grey background, wrench icon). Each card contains a brief description of the tax credit information available.

**Alternative Fuels Data Center**

Search the AFDC  **SEARCH**

**FUELS & VEHICLES** **CONSERVE FUEL** **LOCATE STATIONS** **LAWS & INCENTIVES** **Maps & Data** **Case Studies** **Publications** **Tools** **About** **Home**

[EERE](#) » [AFDC](#) » [Laws & Incentives](#) » [Federal](#) [Printable Version](#)

## Tax Credits for Electric Vehicles and Charging Infrastructure

Until 2032, federal tax credits are available to consumers, fleets, businesses, and tax-exempt entities investing in new, used, and commercial clean vehicles—including all-electric vehicles (EVs), plug-in hybrid EVs, fuel cell EVs—and EV charging infrastructure through the Inflation Reduction Act of 2022 and implemented by the Internal Revenue Service (IRS).\* Manufacturers of these vehicles, and the dealerships that sell them, must work with the IRS to ensure buyers of EVs can take advantage of these tax credits. Your state, utility, or local government may provide [additional incentives](#).

### Clean Vehicles

Explore how consumers and fleets (including businesses and tax-exempt entities) can take advantage of clean vehicle tax credits and how manufacturers of these vehicles and the dealerships that sell them must work with the IRS to ensure buyers of EVs can claim these vehicle tax credits.

**Consumers**  
Learn about tax credits for acquiring (new or used) EVs.

**Fleets**  
Explore credits for commercial and tax-exempt entities.

**Dealerships**  
Learn how to register with the IRS and take advantage of tax credits at time-of-sale.

**EV Manufacturers**  
Find out how to qualify your company's vehicles for the clean vehicle credit.

# Contact Information

Sophia Napoletano: [Sophia.napoletano@icf.com](mailto:Sophia.napoletano@icf.com)




PATH TO POWER  
Electrification Coalition  
Fleet Funding Tools

---

January 16, 2025





**ABOUT THE ELECTRIFICATION  
COALITION**  
**Electrifying transportation for our  
economic and national security**

The Electrification Coalition is a nonpartisan, nonprofit organization that develops and implements a broad set of strategies to facilitate the widespread adoption of electric vehicles to overcome the economic, public health, and national security challenges that stem from America's dependence on oil.

# ELECTRIFICATION COALITION

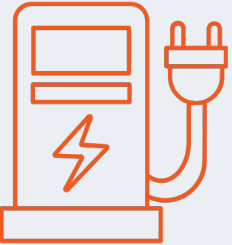
## Programs Around the United States



**Federal Policy**



**State Policy**



**Charging Infrastructure Expansion**



**Fleet Electrification**



**Electric Freight Consortium**



**Port Electrification Network**



# Agenda

January 16, 2024





# Funding Opportunities & Other Resources

---



Electrification  
Coalition





# FEDERAL POLICY

## EV Incentives

---

- Commercial Clean Vehicle Tax Credit (30D/45W)
  - Personal vehicles: **\$7,500** tax credit
  - Businesses: up to **\$7,500** tax credit for light-duty vehicles, up to **\$40,000** tax credit for medium- and heavy-duty vehicles
  - Not all manufacturers/vehicles meet eligibility requirements
  - Income and battery materials are not considered when assessing vehicle eligibility

Photo Source: Shutterstock, rights purchased for DC Roadmap





# FEDERAL POLICY

## EV Incentives

---

- Alternative Fuel Vehicle Refueling Property Tax Credit (30C)
  - Residential: **30%**, up to **\$1,000**
  - Commercial: **6%**, up to **\$100,000** per unit
- Elective Pay/Direct Pay
  - Allows **tax-exempt entities**—such as state and city governments and non-profit organizations—to utilize federal tax credits
  - See the EC's [Elective Pay page](#) for details

Photo Source: Shutterstock, rights purchased for DC Roadmap





# FINDING FUNDING & CREATING POLICY

## EC Resources

---

- [Dashboard for Rapid Vehicle Electrification \(DRVE Tool\)](#): customizable, user-friendly fleet electrification tool that generates a personalized total cost of ownership analysis
- [EV Funding Finder](#): choose-your-own-adventure style navigator for EV funding opportunities
- [AchiEVe: Model Policies to Accelerate Electric Vehicle Adoption](#): toolkit that details the best policies and implementation strategies to accelerate EV adoption












Photo Source: EVgo

# FINDING FUNDING & CREATING POLICY

## EV Funding Finder

Step 1: I represent a...

 City	 Rural Area
 School	 Freight/Shippers and Carriers
 EV Advocate or Community Organization	 Business
 Non-Profit Transportation Group	 Individual
 State	



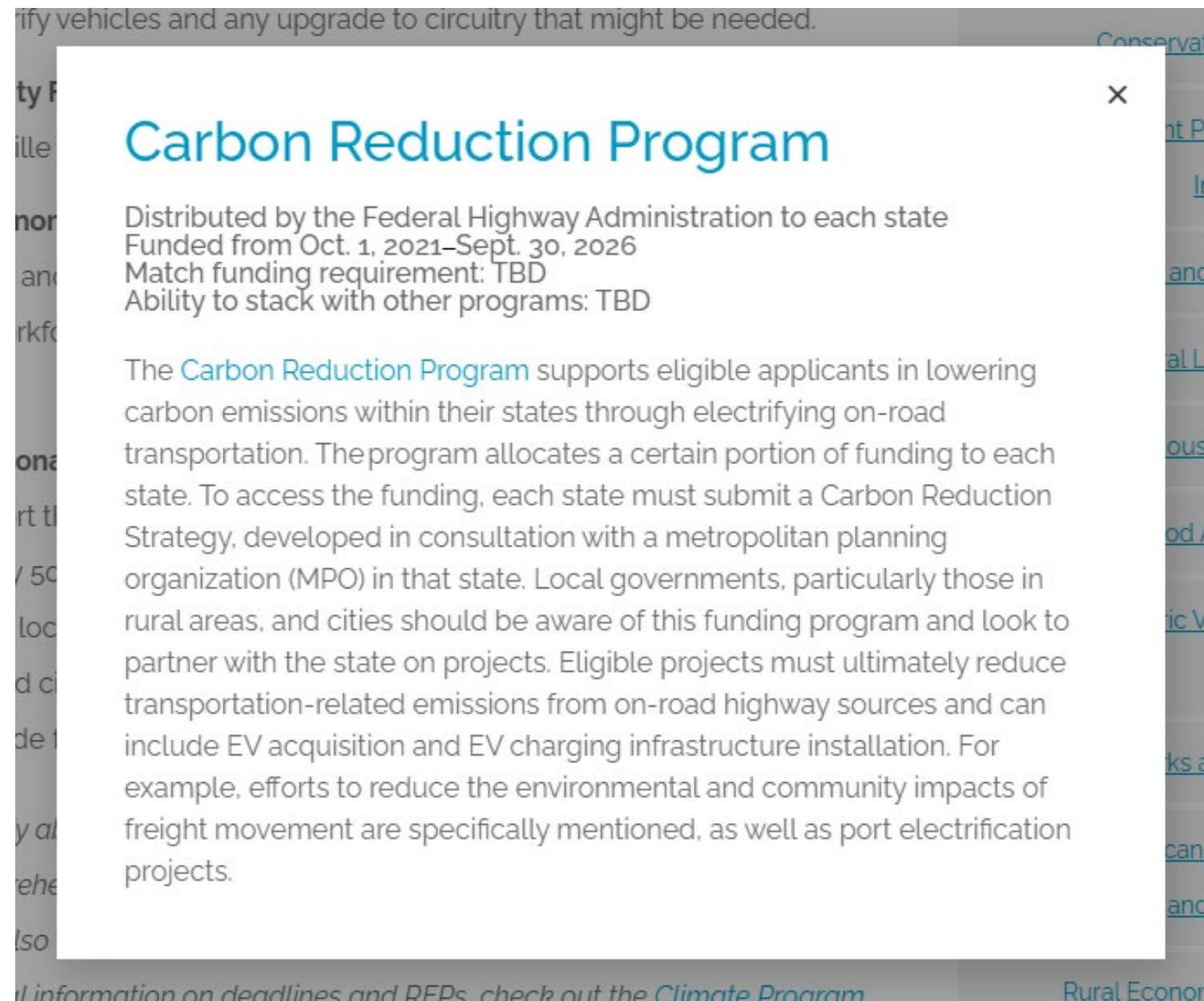
Step 2

Select Funding Scenarios

<input checked="" type="checkbox"/> <b>Purchase or Lease a Light-Duty Vehicle</b> Funds to purchase or lease a light-duty vehicle (ex: passenger car)	<input checked="" type="checkbox"/> <b>Purchase Light-Duty Charging Infrastructure</b> EV charging infrastructure incentives for light-duty vehicles	<input checked="" type="checkbox"/> <b>Grid Upgrades</b> Funding for updating and preparing the grid for at-scale EV adoption
<input checked="" type="checkbox"/> <b>Purchase or Lease a Medium- or Heavy-Duty Vehicle</b> Funds to purchase or lease a medium- or heavy-duty vehicle (ex: school bus)	<input checked="" type="checkbox"/> <b>Purchase Medium- or Heavy-Duty Charging Infrastructure</b> EV charging infrastructure for medium- and heavy-duty vehicles	<input checked="" type="checkbox"/> <b>Access Support Planning</b> Funding to ensure adequate planning of EV infrastructure
<input checked="" type="checkbox"/> <b>Support Workforce Development</b> Funds to train and ensure a workforce has the required skills and certifications	<input checked="" type="checkbox"/> <b>Access Technical Assistance</b> Funds to provide technical expertise to access EVs or EV infrastructure	<input checked="" type="checkbox"/> <b>Electrify Ports</b> Funding for shipping and transportation companies to electrify port transit



# FINDING FUNDING & CREATING POLICY EV Funding Finder



**Carbon Reduction Program**

Distributed by the Federal Highway Administration to each state  
Funded from Oct. 1, 2021–Sept. 30, 2026  
Match funding requirement: TBD  
Ability to stack with other programs: TBD

The [Carbon Reduction Program](#) supports eligible applicants in lowering carbon emissions within their states through electrifying on-road transportation. The program allocates a certain portion of funding to each state. To access the funding, each state must submit a Carbon Reduction Strategy, developed in consultation with a metropolitan planning organization (MPO) in that state. Local governments, particularly those in rural areas, and cities should be aware of this funding program and look to partner with the state on projects. Eligible projects must ultimately reduce transportation-related emissions from on-road highway sources and can include EV acquisition and EV charging infrastructure installation. For example, efforts to reduce the environmental and community impacts of freight movement are specifically mentioned, as well as port electrification projects.

[For more information on deadlines and RFPs, check out the Climate Program](#)



**Discretionary Grant Program for Charging and Fueling Infrastructure**

Distributed by the Federal Highway Administration  
Application window: Applications Due May 30th  
Match funding requirement: 20% local match

The Discretionary Grant Program for Charging and Fueling Infrastructure consists of \$2.5 billion million dollars to complement the build-out of EV charging infrastructure along alternative fuel corridors. States, cities, metropolitan planning organizations, and local governments are eligible recipients and can receive the grant.

Of the \$2.5 billion, \$1.25 billion is set aside for community and corridor grants, with priority given to applications serving rural areas, low- and middle-income areas, and in areas with a high ratio of multi-unit dwellings to single-family homes.

The Charging and Fueling Infrastructure program includes two streams of funding; one focused on community charging and one focused on corridor charging. Though each stream has distinct eligibility, public entities are allowed to peruse both grant funding opportunities in one application allowing funding to move farther, faster.

Businesses that want to install EV charging stations should partner with local governments and cities to become a "site host" for charging infrastructure. Under this grant, the charging infrastructure must be located on a public road or in other publicly accessible locations, such as public buildings, public schools, public parks, or in publicly accessible parking facilities owned or managed by a private entity.

Program updates will be posted [here](#), and the EC's resources on CFI can be found [here](#).



# EV Purchasing Collaborative

---





# What is the EVPC?

---

- A turnkey, one-stop online procurement portal providing U.S. public entities equal access to **competitively bid for EVs and charging infrastructure**
- All vehicles available through the program have gone through the competitive bid process with Sourcewell, a government purchasing agency
- Partners include the EC, Climate Mayors, Sourcewell, the National Auto Fleet Group, and other organizations
- More information at <https://driveevfleets.org/>



Photo Source: 2023 EC Events



# Who can participate?

---

**Any U.S. public entity**, including (but not limited to):

- Cities
- Counties
- Courts
- School districts
- State agencies
- Public universities

Photo Source: Shutterstock, rights purchased for DC Roadmap





# How it Works

---

## 1 Search for your organization

Confirm you are a [Sourcewell member](#). Even if you have an existing contract with them, it is recommended that you check.

## 2 Check availability

Visit the [National Auto Fleet Group's website](#) to browse the available vehicles and identify which ones you are interested in.

## 3 Request a quote

Fill out your information in the form on the website to receive a quote.

## 4 Order and receive your EVs

Place your order via the website and wait for delivery of your vehicles!

# Examples of Available EVs

---



2024 Ford Mach-E

MSRP: \$43,495

226 miles



2024 Ford E-Transit

MSRP: \$46,890

215 miles



2024 Ford Lightning

MSRP: \$54,995

230 miles



# Other Services Provided

---

- Resources on EVs, EV policies, case studies, and procurement
- Contacts for medium- and heavy-duty electric chassis and equipment procurement
- Electric school bus automaker contacts
- Vendors for charging station solutions at a discount
- Contact for managed and leased fleet solutions

Photo Source: Shutterstock, rights purchased for DC Roadmap





# Other EV Deployment Programs

Ports and Workplace Deployment

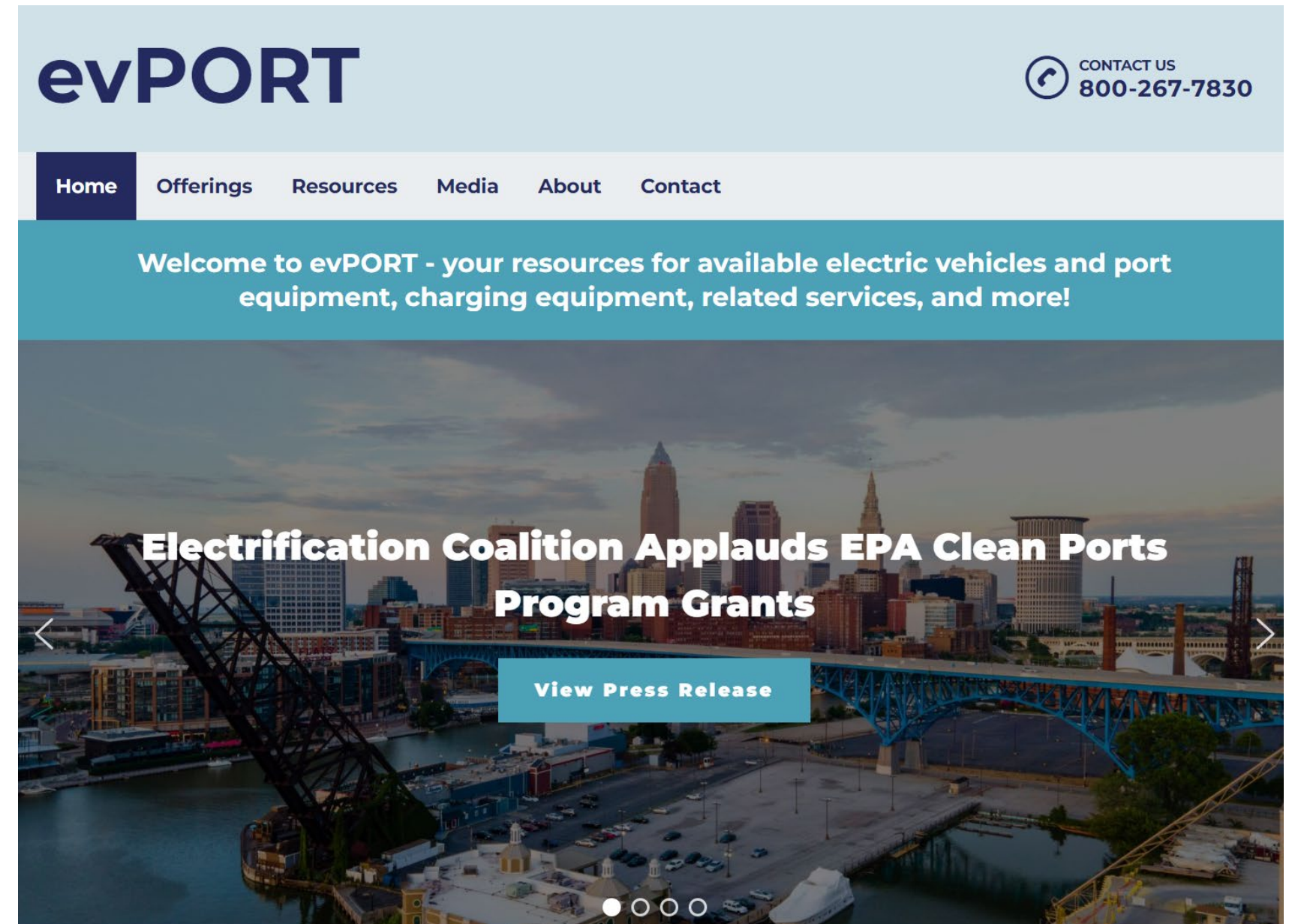




# evPORT

---

- A collaborative purchasing portal for electric vehicles and related equipment at ports
- Includes medium- and heavy-duty vehicles, forklifts, utility vehicles, and charging infrastructure vendors
- More Sourcwell contracts to come
- Check it out at [evport.org](https://evport.org)!





# Electric Vehicle Adoption Leadership Certification

---



Get EVAL certified!

- Backed by the **U.S. Department of Energy** and run in collaboration with Forth, Plug In America, EVNoire, and other partners
- Seeks to **advance workplace charging** by recognizing the critical role that workplaces play in charging access
- Offers **technical assistance** and other resources to organizations facilitating access to clean commute options, including EVs
- **Nationally recognized certification** that distinguishes employers leading the charge to increase U.S. energy security and lower emissions



# Questions?

---





Electrification  
Coalition

**Jill Goldwasser**

Policy Associate

[jgoldwasser@electrificationcoalition.org](mailto:jgoldwasser@electrificationcoalition.org)

[ElectrificationCoalition.org](http://ElectrificationCoalition.org)

314.352.0141

CITY  
SENIORS  
INCORPORATED

4705 Ridgewood Avenue  
St. Louis, MO 63116

Transportation ▪ Meals ▪ Senior Center

Electric Vehicle Experience

Jennifer Bess, Executive Director

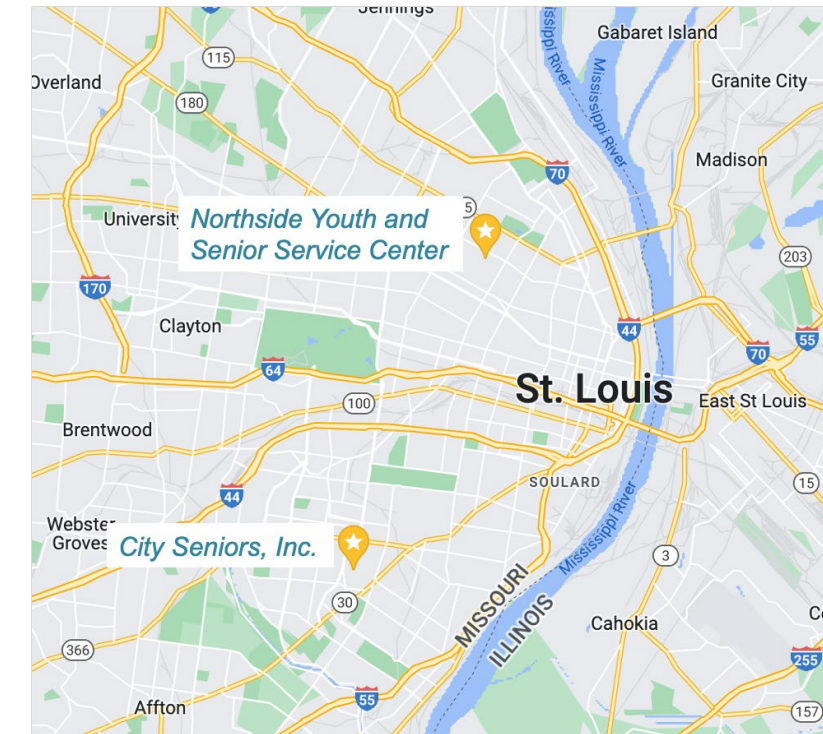
[jbess@stlouiscityseniors.com](mailto:jbess@stlouiscityseniors.com)

[www.stlouiscityseniors.com](http://www.stlouiscityseniors.com)



# SiLVERS: St. Louis Vehicle Electrification Rides for Seniors

- The SiLVERS program provided five all-electric Chevy Bolts to two senior centers (Northside and City Seniors, Inc.)
- EVs are used to provide rides and deliver meals to seniors
- **Objectives:** Increase EV adoption and reduce transportation-related operating expenses for social service agencies, showing that:
  - EV fleets can save community-based organizations money and improve service delivery
  - EV chargers can serve both CBO fleets, as well as staff and community members
  - Pilots like this can accelerate regional EV adoption
  - With tools and best practices based on this model, SiLVERS can be replicated by CBOs and social service agencies nationwide





# OPERATIONS

- **Components of SILVERS**

- 5 new Electric Vehicles for the fleet
  - 3 at Northside Youth and Senior Service Center
  - 2 at City Seniors, Inc.
- Car insurance covered through Forth
- 5 EV chargers to be used in the fleet and by the public
  - Chargers, installation, maintenance and operation covered by program
- \$25,000 for each CBO personnel time
  - Over 3 years, covers personnel time for training in the program and promotion to community







2020 Chevrolet Bolt Hatchback





# Charging Stations



# Meal Delivery

---

- 6300 Meals monthly = 75,600 annually
- 315 persons served monthly = 510 annually





# Electric Vehicle Transportation

- 100 rides monthly = 1200 annually
- 450 possible passengers





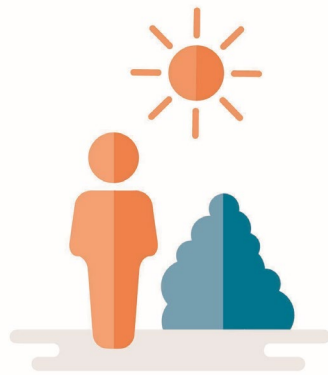
# RESULTS (through June 2023)



**100,765**  
meals delivered



**2,055**  
rides provided



**460**  
unique individuals  
received rides



**45,000+**  
lbs of CO2 saved

**28451.060**  
**KWHs**  
Total Energy

or

**45521.696**  
Metric lbs of  
CO2 saved

=

CO2 Emissions From:



**2276.1**  
Gallons of gasoline



**22163**  
Pounds of coal burned

Greenhouse gas  
emissions avoided by:



**5.690**  
Tons of waste recycled  
instead of landfilled

Carbon sequestered  
by:



**25.606**  
Acres of U.S. forests in  
one year



# Improved Business Model

- Home Delivered Meal Drivers upgraded from using personal vehicles to electric vehicles for meal delivery.
- Annual fuel reimbursement cost savings \$5000 to staff
- **Annual Costs:**
- Insurance - \$2000
- Electricity - \$1700
- Registration tags - \$30
- Electric Vehicle Decal - \$120
- Repairs – tires \$300
- Charging station repairs - tbd





# The Culprit in our Story

- Charging station worked intermittently from the start
- Extreme weather
  - Hot – above 95
  - Cold – below 32
- electrical issues

EV Box

AMP UP

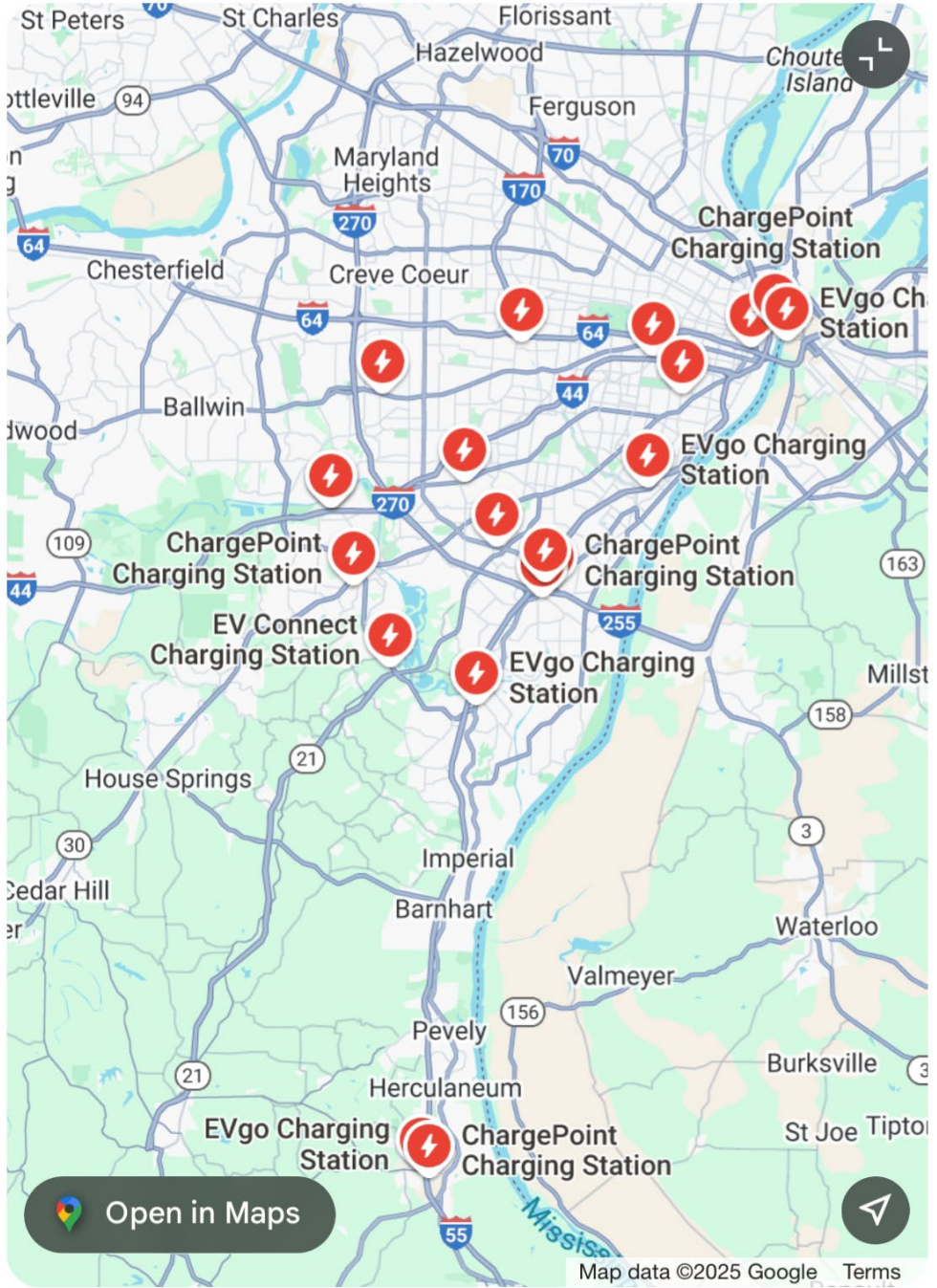




# What to do when you have a Charging Emergency

- Google EV stations
- Choose a suitable one that is public
- Take your credit card
- Take a book and/or make sure your phone is charged - this will take an hour or so depending on the charger and your immediate battery need

Places



Open in Maps

Map data ©2025 Google Terms

EVgo Charging Station  
Electric vehicle charging station  
Arnold, MO  
Open 24 hours  
CHAdemo · 50.0 kW 1/1

CALL DIRECTIONS



# The Consistent Hero of our Story The Electrical Tower

Other findings:

- Regenerative breaks charge the battery enough to help in a pinch
- As long as you do not accelerate while coasting system will put you into a recharge mode
- Don't handle well in snow and ice





## Staff Feedback from Survey

“This is a great program, and we're excited for a possible "SiLVERS V2" where hopefully we can find funding to expand the capacity of the program so more seniors can take rides. Thank you for the partnership!”

“Passengers have enjoyed the quiet, smooth rides that the EVs provide. The drivers enjoy not having to go to the gas stations as often when they're able to use the EVs.”

“It has made me consider my next vehicle purchase being EV.”

“The EVs have been very useful and have saved on fuel costs.”

## Client Feedback

“Smooth ride, getting in/out is easy.”

“I like, no I love the electric vehicle. It's smooth.”



The background features a gradient from light blue on the left to light orange on the right. There are several curved, overlapping lines in the top-left and bottom-right corners, with the top-left lines being light blue and the bottom-right lines being light orange.

**Questions?**

Ranken Technical College

Andy Jesse



Chris McNeally

Chris Mitchell

Ronnie Raines

William Stewart

Mike Whitcraft

---

**Thank you, speakers!**



# Thank You for Attending!

Please complete our final survey about your experience



**EASTERN MISSOURI**  
ALLIANCE FOR CLEAN TRANSPORTATION

