



Joint Office of  
**Energy and  
Transportation**

# **Building a Future Where Everyone Can Ride and Drive Electric**

**Stephen Costa**

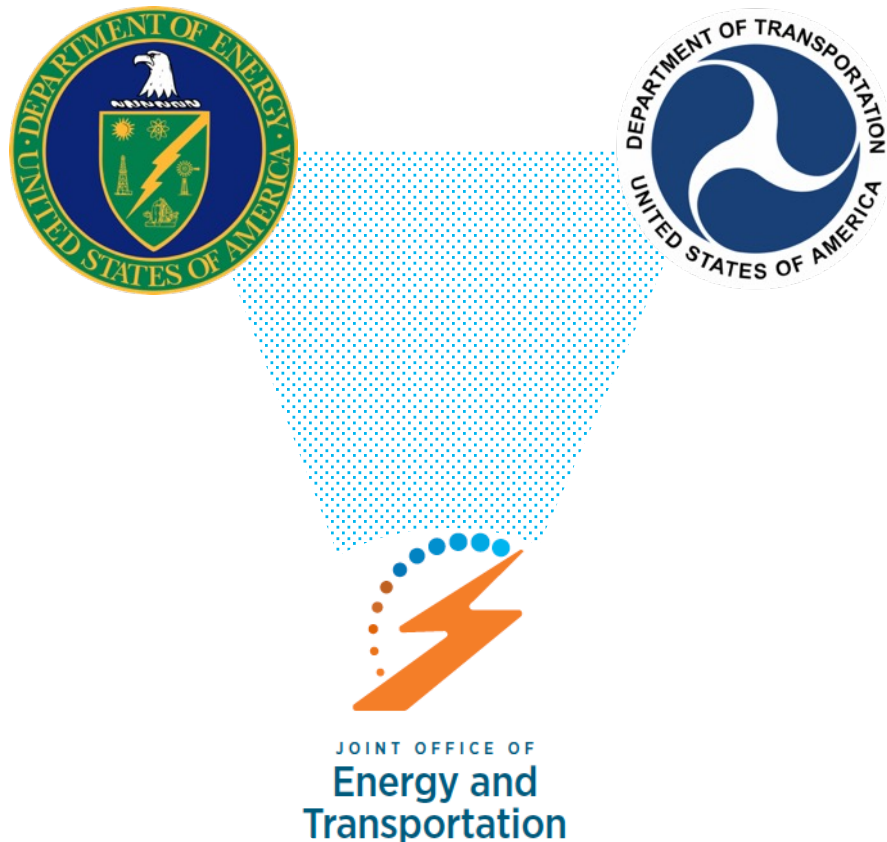
Electrify the South Collaborative

9/15/23

[driveelectric.gov](https://driveelectric.gov)

# Joint Office of Energy and Transportation

Established in the Bipartisan Infrastructure Law (BIL) to address areas of joint interest to the Departments of Energy and Transportation



## Mission

To accelerate an electrified transportation system that is affordable, convenient, equitable, reliable, and safe.

## Vision

A future where everyone can ride and drive electric.

# Immediate-Term BIL Priorities for the Joint Office

The Joint Office will provide unifying guidance, technical assistance, and analysis to support the following programs:



## **National Electric Vehicle Infrastructure Formula Program (U.S. DOT - FHWA)**

\$5 billion for states to build a national EV charging network along corridors



## **Charging & Fueling Infrastructure Discretionary Grant Program (U.S. DOT - FHWA)**

\$2.5 billion in corridor and community grants for EV charging, as well as hydrogen, natural gas, and propane fueling infrastructure



## **Low-No Emissions Grants Program for Transit (U.S. DOT - FTA)**

\$5.6 billion in support of low- and no-emission transit bus deployments



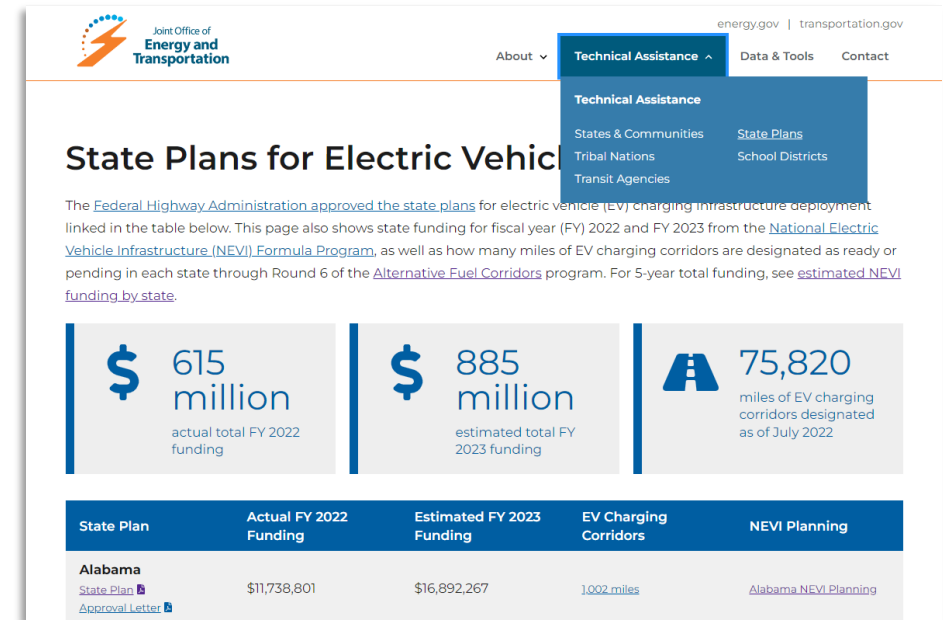
## **Clean School Bus Program (U.S. EPA)**

\$5 billion in support of electric school bus deployments

# National Electric Vehicle Infrastructure (NEVI) Program Updates

- **All 50 state plans plus DC and Puerto Rico approved** by FHWA in Sept 2022
  - **Unlocked \$1.5 B** in FY22 and FY23 state formula funding
- **Plan updates are currently under review** for FY 24 funding
- States have released or are getting ready to **release RFPs**
- **EV Charger Reliability and Accessibility Accelerator Projects NOFO - \$100M (New)**

[https://www.fhwa.dot.gov/environment/nevi/evc\\_raq](https://www.fhwa.dot.gov/environment/nevi/evc_raq)



# EV Charging Minimum Standards (23 CFR Part 680)



**Charging is a predictable and reliable experience**, by ensuring that there are consistent plug types, power levels, and a minimum number of chargers capable of supporting drivers' fast charging needs;



**Chargers are working when drivers need them to**, by requiring a 97 percent uptime reliability requirement;



**Drivers can easily find a charger when they need to**, by providing publicly accessible data on locations, price, availability, and accessibility through mapping applications;

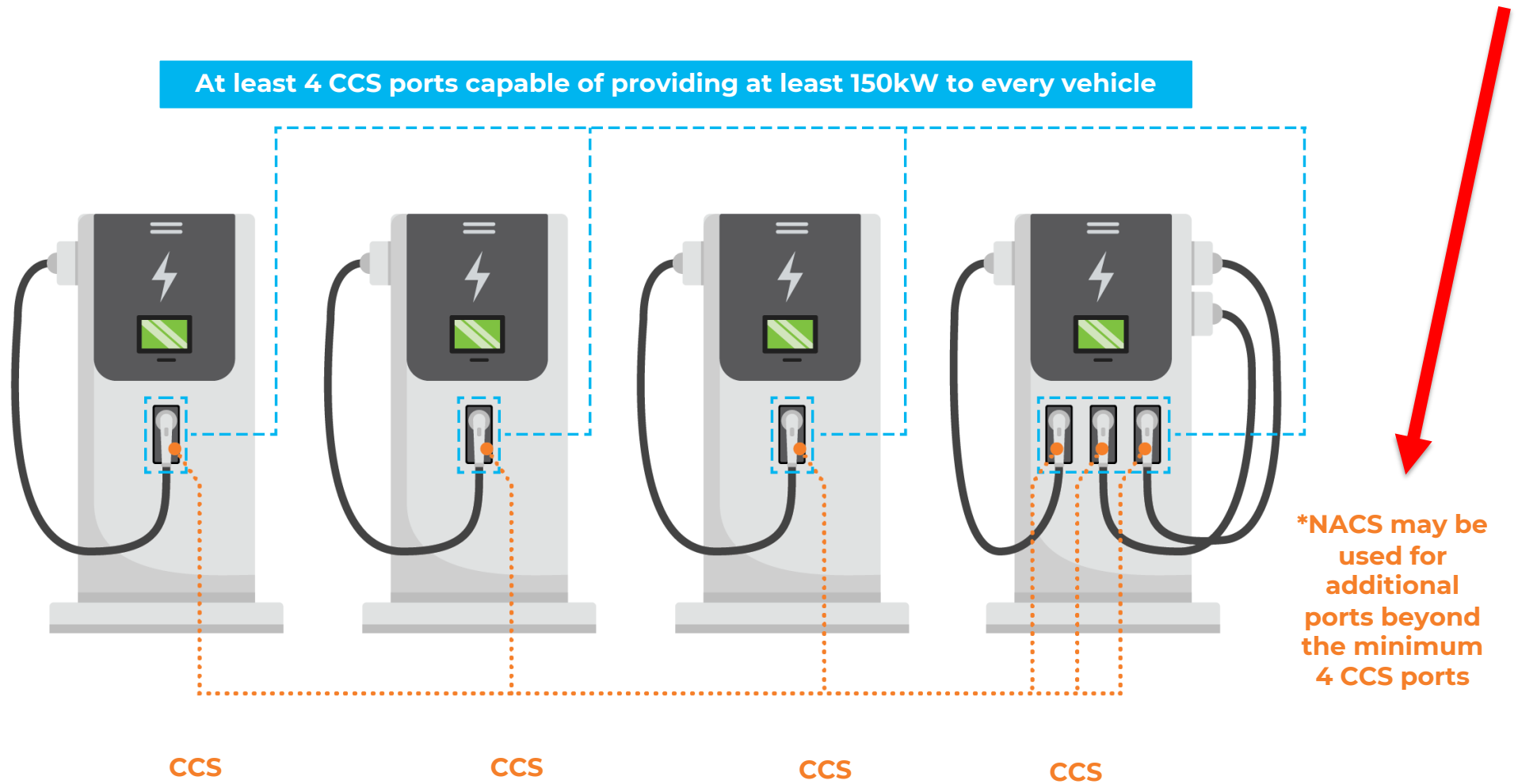


**Drivers do not have to use multiple apps and accounts to charge**, by requiring that a single method of identification works across all chargers; and,



**Chargers will support drivers' needs well into the future**, by requiring compatibility with forward-looking capabilities like Plug and Charge.

# NEVI DCFC Charging Station Design



Power, Ports, and Connectors for Chargers in Communities & **Every 50 Miles** Along Alternative Fuel Corridors



# Technical Assistance Strategies

- Specialized assistance for **states, communities, Tribal Nations, transit agencies, and school districts.**
- **One-on-one meetings** with states to address questions and concerns related to NEVI.
- **Concierge service** (phone, email, web form) to efficiently route technical assistance requests for NEVI, electric school buses, and transit buses.
- TA Help Sheets, topical webinars, and tools.
- Technical assistance support team has **50 staff members across 10 organizations.**

## Technical Assistance

The Joint Office of Energy and Transportation (Joint Office) provides technical assistance on planning and implementation of a national network of electric vehicle chargers and zero-emission fueling infrastructure as well as zero-emission transit and school buses.

### States and Communities

The Joint Office provides technical assistance for [states and communities](#) creating and executing [state plans](#) under the National Electric Vehicle Infrastructure Formula Program and the Charging and Fueling Infrastructure Discretionary Grant Program.

### Tribal Nations

The Joint Office provides technical assistance to [tribal nations](#) electrifying their transportation systems. Learn more about zero-emission transportation [funding opportunities for tribal nations](#).

### School Districts

The Joint Office provides technical assistance to [school districts](#) applying for or receiving funding through the U.S. Environmental Protection Agency's Clean School Bus Program.

### Transit Agencies

The Joint Office provides technical assistance to [transit agencies](#) applying for or receiving funding through the Federal Transit Administration's Low or No Emission Vehicle Program.

[driveelectric.gov/technical-assistance](https://driveelectric.gov/technical-assistance)

[driveelectric.gov/bus](https://driveelectric.gov/bus)

[driveelectric.gov/transit](https://driveelectric.gov/transit)

# JO Technical Assistance Resources



## TECHNICAL ASSISTANCE HELP SHEET

### Public EV Charging Station Site Selection Checklist

The Joint Office of Energy and Transportation (Joint Office) provides technical assistance on planning and implementation of a national network of electric vehicle (EV) chargers and zero-emission fueling infrastructure, as well as zero-emission transit and school buses. There are several considerations that should be addressed when selecting a site for EV charging stations. The following is a checklist to assist with site selection for publicly available EV charging stations.

For more technical assistance resources please review [DriveElectric.gov/technical-assistance](https://driveelectric.gov/technical-assistance). If you would like detailed help or assistance with charging station site selection, please contact the Technical Assistance team at [DriveElectric.gov/contact](https://driveelectric.gov/contact).

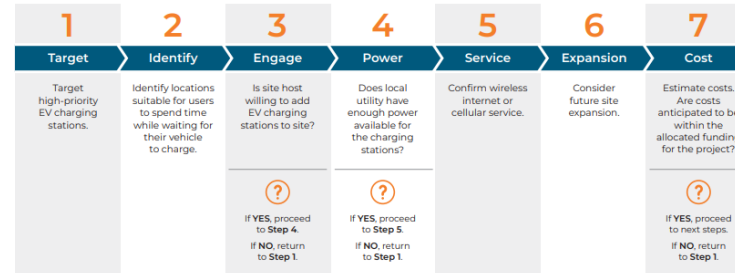
### Background Research for EV Charging Station Site Selection

Below are supplemental resources that can help stakeholders during the EV charging station site selection process:

- Identify current laws and incentives for the project location. Consider whether the incentives and funding have site selection or location requirements.
  - Use the Alternative Fuels Data Center (AFDC) [Laws and Incentives database](#) to identify current incentives, laws, and regulations.
  - Use the [NEVI U-Finder tool](#) to locate utility partners and incentives by zip code.
  - Contact your city or local organizations (such as a [Clean Cities coalition](#)) for further help with determining if there are applicable local programs with incentives.
- Determine the location of existing EV charging stations in the target area using the [AFDC Alternative Fueling Station Locator map](#).
- Estimate the number of EV charging stations needed in the target area. Consider direct-current fast charging (DCFC), Level 2, and e-micromobility charging for e-bikes or e-scooters.
  - Refer to local, regional, and state [National Electric Vehicle Infrastructure \(NEVI\) Formula Program](#) EV charging plans (may be referred to as a master plan, roadmap, etc.) for information on planned EV charging station locations (if available).
  - The [Electric Vehicle Infrastructure Projection Tool Lite](#) can be used to help estimate future charging station needs for the entire state and metropolitan areas.
  - If planning to use federal funds for the project, refer to the [NEVI Formula Program Standards and Requirements](#) for information such as minimum number of charging ports, connector type, power levels, availability, payment methods, equipment certifications, and uptime requirements.
  - Review building, zoning, and parking codes for specific EV-related regulations that may impact the project. Search for applicable local and state codes that may apply.
  - Some local and/or state codes have minimum requirements for the number of EV charging stations and/or accessible EV charging stations. The AFDC Laws and Incentives database tracks [state requirements](#). While not an exhaustive list, the Southwest Energy Efficiency Project manages a [list of municipalities that have adopted EV infrastructure building codes and zoning ordinances](#).
  - Identify if the site location is in an area likely to be flooded by reviewing U.S. Department of Homeland Security Federal Emergency Management Agency [flood maps](#).

### Site Selection Process for EV Charging Stations

Below are high-level steps to guide stakeholders through selecting an EV charging station site. The figure provides an overview of the process flow, with the following steps providing more details.



- Target** high-priority EV charging locations that have been identified in local, regional, and state NEVI Formula Program plans.
- Identify** potential charging station locations that are:
  - Available and safe for public access including [Americans with Disabilities Act](#) accessibility, signage, lighting, and vandalism prevention.
  - In a location that is a highly visible and trafficked area.
  - Appropriately distanced from other [charging stations](#) considering vehicle range and routes.
  - In an area with amenities such as public access restrooms, drinking fountains, or Wi-Fi hot spots.
  - Conducive for customers to spend 2 or more hours for Level 2 charging stations and around 30 minutes for DCFC stations.
  - In an area with sufficient space to accommodate the typical vehicle uses and types, such as a pull-through station for a vehicle with a trailer.
  - In a location less likely to be inundated by [floodwaters](#).
- Engage with the site host** to determine if they are willing to add EV charging stations to their site (if request is not coming from the site host).
  - If site host is not willing, **return to Step 1**.
- Engage with the area power utility partner** to understand site limitations and costs related to electricity supply at the potential site location, including grid-level constraints. Confirm that the utility can support the full power of the electricity required by the charging stations.
  - If there is not sufficient electrical capacity at the location, **return to Step 1**.
- Confirm availability and suitability of wireless internet connection or cellular service** for EV charging stations. Engage with the EV service provider to understand the charging station model connection speed and signal strength requirements.
- Consider opportunities for future site expansion**, such as increased electrical capacity and sufficient space to accommodate additional EV charging stations as demand increases.
- Estimate costs**, including available incentives, project costs, ongoing expenses/fees, construction costs, and electrical upgrade costs.
  - Consider whether the costs are prohibitive in building EV infrastructure at this location.
  - If costs are prohibitive, **return to Step 1**.

## COMMUNITY ENGAGEMENT RESOURCES



### Community Engagement Tips for EV Infrastructure Deployment

This help sheet provides tips for conducting community engagement to support electric vehicle (EV) infrastructure planning and deployment. This document is a tool and an informative resource to be used in conjunction with other guidance. It is not intended to set policy or establish or replace any standards under state or federal law applicable to public notice or community engagement.

#### Integrating Equity in the Clean Transportation Transition

The Joint Office United Support for Transportation (JUST) Lab Consortium conducts actionable research on integrating equity into federally funded EV infrastructure deployment efforts.

For more information on the JUST Lab Consortium, please visit [DriveElectric.gov/just-lab-consortium](https://driveelectric.gov/just-lab-consortium).

An overarching consideration is that engagement for deploying EV infrastructure should not assume that EVs are the primary or exclusive solution of interest for community mobility needs, and should include information about opportunities for broader access to EVs (e.g., purchase incentives, EV car-sharing). Ideally, engagement about EV infrastructure will also include opportunities for community input that can inform more holistic investments in a safe transportation system with access to multiple modes that meet everyone's needs.

#### Demonstrating Meaningful and Ongoing Community Engagement

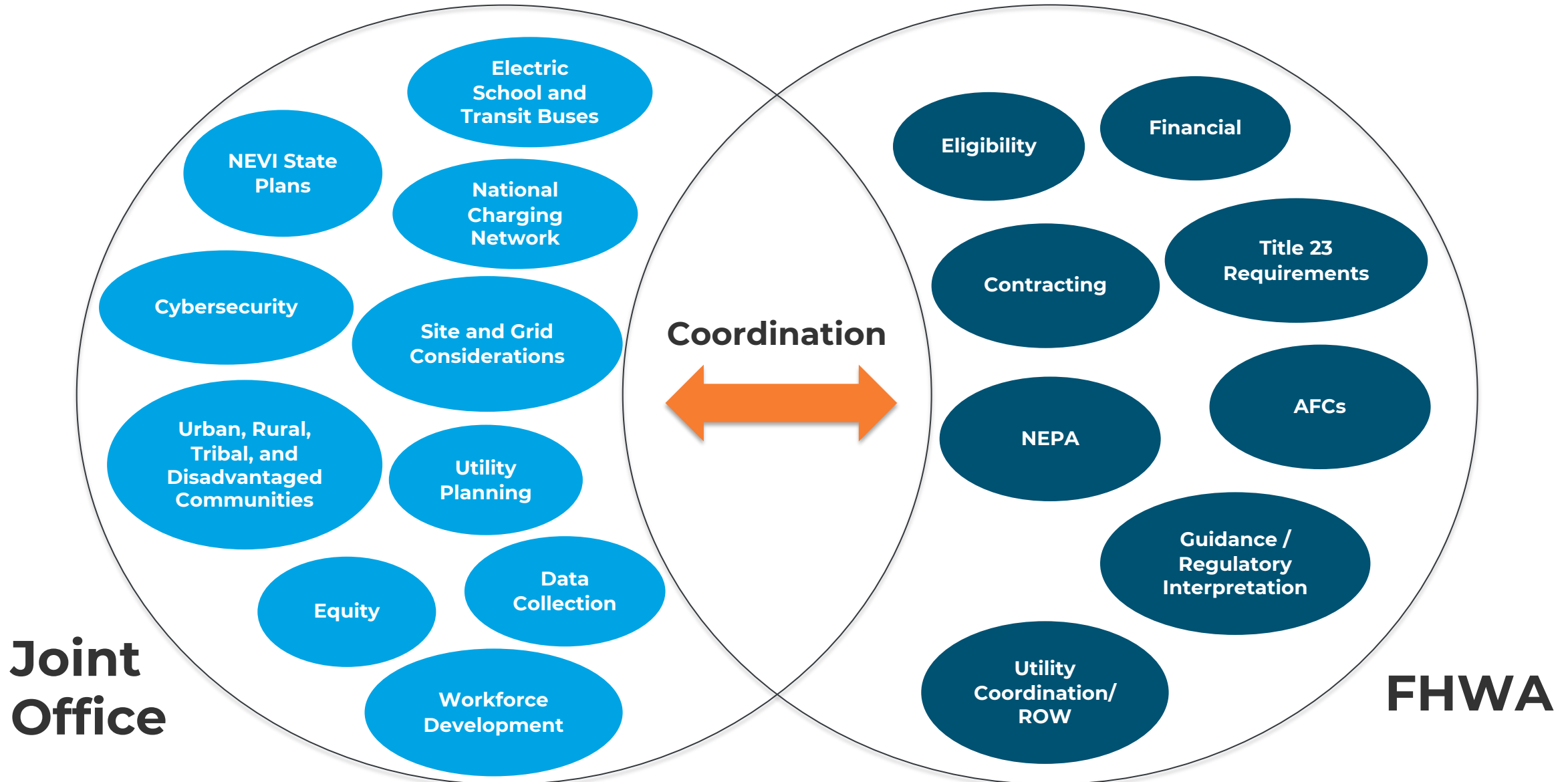
To develop meaningful and ongoing engagement strategies while implementing and deploying EV infrastructure, it is important to conduct background research by asking a few questions:

- Developing goals:** What are the goals of your community engagement strategy with disadvantaged communities (DACs) regarding EV infrastructure planning and implementation? How will you document and respond to non-EV-related input?
- Determining roles:** How will you include members of DACs in the development of a meaningful, ongoing community engagement strategy? What opportunities will be created for stakeholders to participate as leaders or decision-makers through the engagement process?
- Implementing strategies:** How will you operationalize community engagement? Will you need to hire additional assistance? How much of your budget will you spend on community engagement efforts? Can you leverage other existing efforts?
- Establishing a process:** What does your community engagement process look like over time? How will quality engagement be maintained consistently?

<https://driveelectric.gov/technical-assistance>



# Providing Technical Assistance (TA)



# Discretionary Grant Program for Charging and Fueling Infrastructure –

Applications for  
FY22-FY23 are  
now closed

**\$700M** in FY22 and FY23 funding

- Application period closed **June 13<sup>th</sup>**

Program is divided into two distinct **\$1.25 billion grant programs:**

- **Corridor** Grant Program
- **Community** Grant Program

Additional NOFOs expected FY24 – FY26

- FY24 - \$500M
- FY25 - \$600M
- FY26 - \$700M



# Key Requirements of the Corridor Program

**Total Funding:** \$350 Million (FY22/FY23)

**Minimum Award:** \$1 Million

**Maximum Award:** No maximum

**Located along a FHWA-designated  
Alternative Fuel Corridor (AFC)**

- EV DC Fast charging within 1 mile; other alternative fuels within 5 miles of an AFC

**Must be publicly accessible.**

**Must use funds to contract with a private entity.**

**Must address environmental justice.**

**Must be accessible to and usable by individuals with disabilities.**



# Key Requirements of the Community Program

**Total Funding:** \$350 Million (FY22/FY23)

**Minimum Award:** \$500,000

**Maximum Award:** \$15 Million

**Located on any public road or in other publicly accessible locations**

- E.g., parking facilities at public buildings, public schools, and public parks, or in publicly accessible parking facilities owned or managed by a private entity.

**Must be publicly accessible.**

**May use funds to contract with a private entity.**

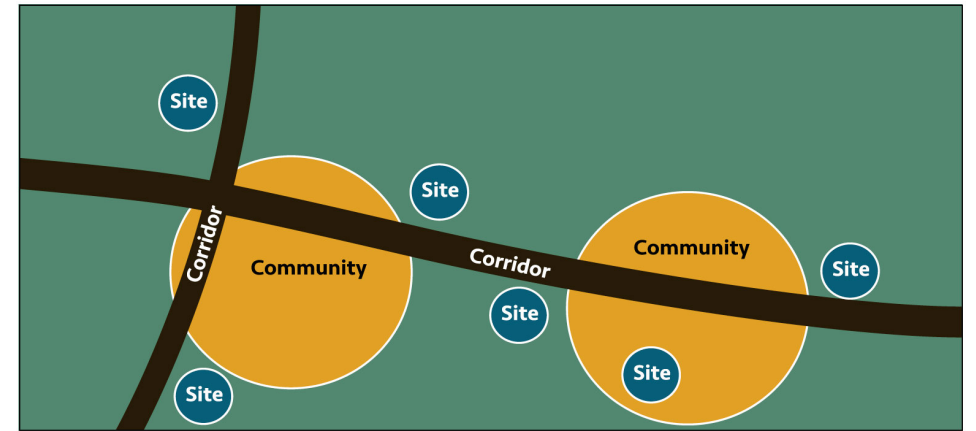
**Must address environmental justice.**

**Projects to reduce GHGs and fill gaps in publicly accessible charging and other alt fuels infrastructure.**

**Must be accessible to and usable by individuals with disabilities.**

# Eligible Entities

- States or political subdivision of States
- Metropolitan planning organizations
- Unit of local governments
- Special purpose districts or public authorities with a transportation function, including port authorities
- Indian tribes
- U.S. Territories
- Authorities, agencies, or instrumentalities or entities owned by one or more entities listed above
- Group of entities listed above
- State or local authorities with ownership of publicly accessible transportation facilities (*\*Community Program only*)





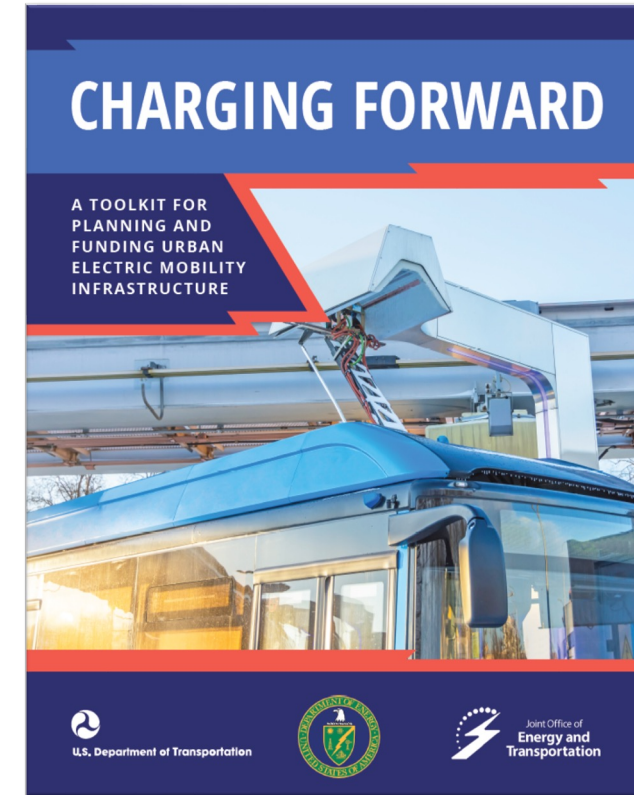
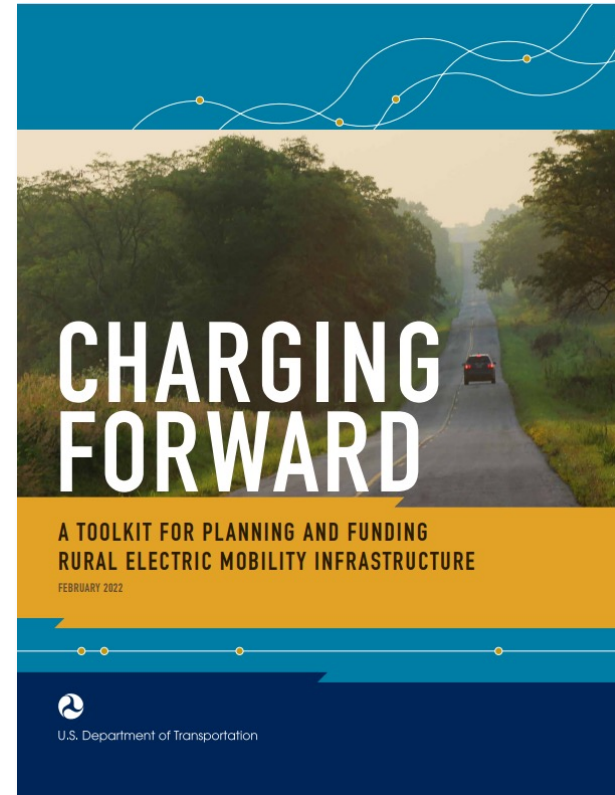
# Charging Forward

## Two Toolkits for Planning and Funding Rural and Urban Electric Mobility Infrastructure

- Electric Mobility Basics
- Benefits and Challenges of Rural & Urban Mobility Electrification
- Rural & Urban Electrified Transit & School Buses
- Micromobility
- Infrastructure Planning
- Building Codes, Fleets & Curbside Charging
- Accessible Design
- Partnership Opportunities
- Funding and Financing

### Includes...

- ✓ Grant and loan opportunities
- ✓ Planning tools and resources
- ✓ Success stories



[transportation.gov/urban-e-mobility-toolkit](https://transportation.gov/urban-e-mobility-toolkit)

[transportation.gov/rural/ev/toolkit](https://transportation.gov/rural/ev/toolkit)

# Partnership Opportunities

Diverse partnerships support rural & urban entities in planning, funding, and implementing EV infrastructure projects.

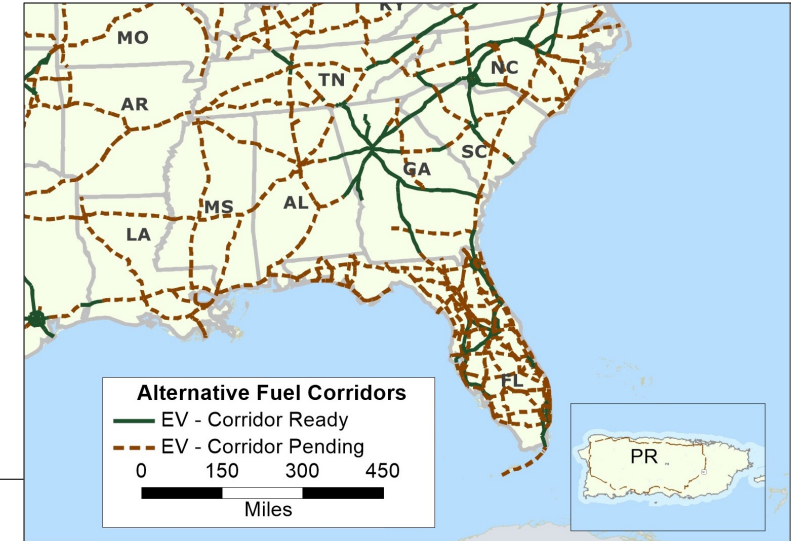
Statewide, multistate, and tribal partners

Local and regional planning partners

Electric utilities

Charging networks

Site hosts



# Project Planning Checklist

The toolkits walk through a planning checklist for EVSE projects and provide technical guidance.

## PROJECT DEVELOPMENT AND SCOPING

- Establish overall project scale
- Determine site and installation type
- Identify project partners
- Decide on ownership model
- Assess EV charging needs
- Identify needs for permitting and regulatory compliance

## UTILITY PLANNING

- Assess local grid infrastructure
- Determine electricity rates and pricing structures

## INSTALLATION PLANNING

- Determine procurement process
- Determine network connection needs
- Select equipment and network provider
- Assess installation needs and costs

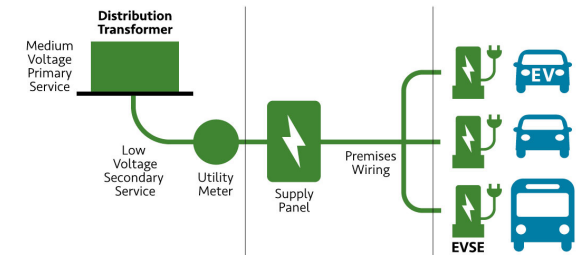
## OPERATIONAL PLANNING

- Assess operations and maintenance costs
- Determine pricing, payment, and access
- Consider additional needs

### ITERATIVE PROCESS

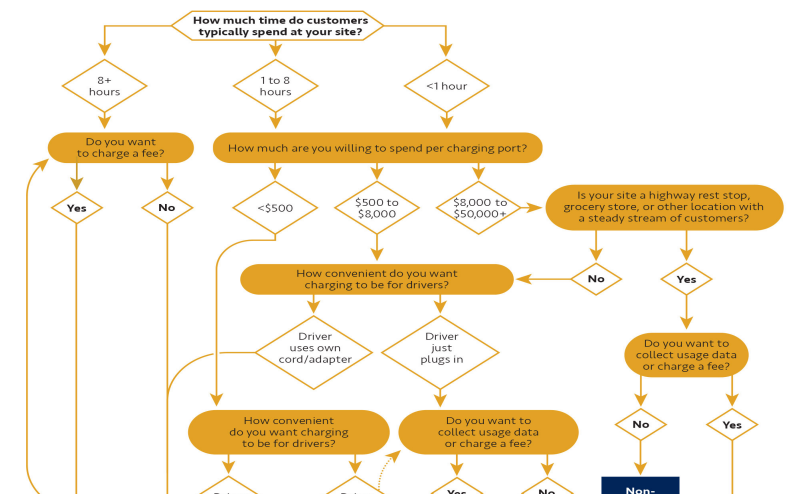
Revisit and Refine Prior Steps as Needed

## Decide on an ownership model



	UTILITY SERVICE	PREMISES WIRING	EVSE
1. Traditional	Electric Company	Customer	
2. Make Ready	Electric Company		Customer
3. EVSE Only	Electric Company	Customer	Electric Company
4. Full Ownership	Electric Company		

## Assess installation needs and costs





# Tools and Resources

The toolkits include a compilation of planning tools, including calculators, maps, templates, and guidance documents.

Alternative Fueling Station Locator

VICE Battery-Electric Bus Model

	A	B	C	D	E	F	G	H
1								
2			<b>Project Year</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
3			Months Vehicle Ownership	6	12	12	12	12
4			Months EVSE Ownership	6	12	12	12	12
5			Months Battery Life	6	12	12	12	12
6								
7			<b>Purchase Price</b>					
8			Incremental Cost of all Vehicles	\$1,629,232				
9			EVSEs	\$200,000				
10			EVSE Installation	\$68,200				
11			Grant	\$1,500,000				
12			<b>Up-front net cost of project</b>	<b>\$397,432</b>				
13			<b>Residual Values and battery replacement</b>					
14			Diesel bus residual value	\$0	\$0	\$0	\$0	\$0
15			EB residual value	\$0	\$0	\$0	\$0	\$0
16			Battery Salvage Value	\$0	\$0	\$0	\$0	\$0
17			2nd Battery Salvage Value	\$0	\$0	\$0	\$0	\$0
18			EVSE Salvage Value	\$0	\$0	\$0	\$0	\$0
19			Battery Replacement Cost	\$0	\$0	\$0	\$0	\$0
20								
21			<b>Operating Costs</b>					
22			Electricity Price (per kWh)	\$0.13	\$0.13	\$0.13	\$0.13	\$0.13
23			Electricity Demand Charge (per month)	\$265	\$265	\$265	\$265	\$265
24			Diesel Price (per gallon)	\$3.18	\$3.20	\$3.22	\$3.25	\$3.27
25			EV Fleet Maintenance	\$11,813	\$23,626	\$84,004	\$84,004	\$84,004
26			EV Fleet Electricity Costs	\$18,078	\$36,122	\$36,089	\$36,056.57	\$36,024
27			Diesel Fleet Maintenance	\$57,753	\$115,505	\$115,505	\$115,505	\$115,505
28			Diesel Fleet Fuel Costs	\$47,103	\$94,865	\$95,529	\$96,198	\$96,871

EV Charging Justice40 Map Tool

FHWA's Virtual Public Involvement Website

DOE LEAD Tool

ENERGY STAR EV Chargers

# EV Infrastructure Funding Matrix

The toolkits includes a comprehensive list of federal programs and eligibilities.

AGENCY/ OFFICE	PROGRAM NAME	PROGRAM TYPE	PROGRAM DESCRIPTION	ELIGIBLE PARTIES	LDV CHARGING	TRANSIT CHARGING	COMMERCIAL CHARGING	MICROMOBILITY	INFRASTRUCTURE PLANNING	WORKFORCE DEVELOPMENT	VEHICLE ACQUISITION
DOT FHWA	Advanced Transportation and Congestion Management Technologies Deployment	Grant (Discretionary)	This program provides grants to eligible entities to develop model deployment sites for large-scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment. Demonstration projects could include EV charging infrastructure integrated with intelligent transportation systems with the Smart Grid and other energy distribution and charging systems or associated with advanced mobility and access technologies such as dynamic ridesharing.	States, Localities, Transportation Providers, Research or Academic Institutions	•	•					
	Carbon Reduction Program	Grant (Formula)	This formula grant program provides funding to States for projects designed to reduce transportation emissions.	States	•	•	•		•	•	•
	Charging and Fueling Infrastructure Grant Program	Grant (Discretionary)	This program will strategically deploy publicly accessible EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure along Alternative Fuel Corridors and in community locations such as parking facilities, public schools, public parks, or along public roads.	States, Tribes, Metropolitan Planning Organizations, Localities, U.S. Territories; State or local authorities with ownership of publicly accessible transportation facilities (for community-based projects only)	•	•	•		•		
	Congestion Mitigation & Air Quality Improvement Program	Grant (Formula)	Provides a flexible funding source to State and Localities for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality.	States, Tribes, Localities; Transportation providers and nonprofits if they enter into an agreement with	•	•	•	•			



# Inflation Reduction Act (IRA) Tax Credits

## Clean Vehicle Credit (I.R.C. 30D and 25E)

- Up to \$7,500 for personal new vehicles
- Up to \$4,000 for personal used vehicles
- <https://fueleconomy.gov/feg/taxcenter.shtml>

## Alternative Fuel Refueling Property Tax Credit (I.R.C. 30C / I.R.C. 30D)

- Up to 30% of cost per item of property
- Up to \$1,000 for residential; \$100,000 for business
- Low-income communities or Non-urban areas

<https://www.whitehouse.gov/cleanenergy/directpay/>

<https://www.irs.gov/credits-deductions/elective-pay-and-transferability>

## Commercial Clean Vehicle Credit (I.R.C. 45W)

- BEVs and FCEVs: equal to the lesser: 30% of the vehicle cost, or the incremental cost.
- Up to \$40,000 for vehicles weighing  $\geq$  14,000 lbs.

## Direct Pay to Tax-Exempt & Governmental Entities

- For purchasers of commercial clean vehicles
- For alternative fuel vehicle refueling and charging property