LOCAL JURISDICTION ELECTRIC VEHICLE (EV) READY CHECKLIST

The EV Ready Checklist provides a comprehensive high-level overview of steps local jurisdictions can work on to prepare their community and government fleet for transportation electrification.

June 30, 2023
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INTRODUCTION TO THE CHECKLIST

Description

The Local Jurisdiction Electric Vehicle (EV) Ready Checklist provides a comprehensive, high-level overview of steps local governments can take to prepare their community and government fleet for transportation electrification. The EV Ready Checklist provides both concrete actions and real-world examples and resources with steps that governments can take to engage residents, businesses, and other stakeholders on community vehicle electrification efforts. The EV Ready Checklist includes model policies, plans, programs, partnerships, incentive programs, and more.

All local jurisdictions working towards becoming EV Ready should review the following Action Areas to guide their community readiness efforts:

1. Community Planning
2. Zoning
3. Building Codes
4. Permitting and Inspections
5. Government Fleets
6. Public Education and Outreach
7. Public Safety and Security

By focusing on these Action Areas, governments can help scale the adoption of EVs to contribute towards reaching local and state emissions reduction goals. Governments can also take the lead to ensure all efforts towards community electrification focus on equitable processes and outcomes. Equity concerns that might arise with the installation of public-use electric vehicle supply equipment (EVSE) include a project’s affordability, accessibility, reliability, location, safety, and related employment and economic opportunities. More information regarding equity considerations in EV infrastructure can be found under Action Areas 1 and 6 in the EV Ready Checklist.
1. COMMUNITY PLANNING

Checklist Actions

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<td>☐</td>
<td>1.1 Make a commitment to community EV Readiness by making a public statement, adopting an EV-focused resolution, and/or aligning with broader, collaborative initiatives at the regional, state, or national level.</td>
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<td>☐</td>
<td>1.2 Develop a plan for community EV Readiness that includes EV ownership projections, EVSE needs assessment and/or mapping, strategies to support community deployment (e.g., incentive programs), identifies local jurisdiction property sites for public charging, and processes to track key metrics.</td>
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<td>☐</td>
<td>1.3 Engage with historically underserved residents, such as those living in Equity Emphasis Areas (EEAs), to understand their desires and needs around electrification in their community.</td>
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<td>1.4 Engage with local property owners, large employers, communities, and other strategic partners to advance best practices, promote incentives and funding opportunities, and facilitate the deployment of EV infrastructure.</td>
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<td>1.5 Evaluate the use of EVSE on public properties for public usage, including factors like normal usage patterns, parking availability, traffic considerations, and planned use by government fleet.</td>
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<td>1.6 Coordinate with utilities to determine charging locations that would be best supported by existing electrical capacity. Additionally, coordinate with utilities on forward capacity planning and incentive programs.</td>
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<td>1.7 Leverage federal, state, and utility initiatives, incentives, and funding opportunities to facilitate deployment of both EVs and EV infrastructure.</td>
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Examples

- Montgomery County, MD developed the Charge Montgomery Community EV Charging Infrastructure Planning Tool, an interactive GIS Story Map to communicate with the public around different policy and market factors that may affect community EV charging.
- The City of Greenbelt, MD created the EV Infrastructure: A Plan for Greenbelt, through which the Greenbelt EV Infrastructure Planning Group (EVIPG) was formed to research and assemble information regarding current and future needs for EV charging infrastructure in Greenbelt.
- The City of Alexandria, VA created an EV Charging Infrastructure Readiness Strategy built around 31 specific recommendations in six key areas based on charger projections from the US Department of Energy’s EVI-Pro Lite Tool.
The City of Frederick adopted their Plug-In Electric Vehicle Charging Infrastructure Implementation Plan through a resolution. The plan was developed through stakeholder input and a detailed needs assessment.

The DC Transportation Electrification Roadmap action plan was created for the District to expedite the transition to zero-emission vehicles and help achieve their carbon reduction goals.

The State of Maryland has adopted California’s Advanced Clean Cars II regulation, requiring 100% of passenger car and light truck sales to be zero-emission by model year 2035.

Resources

- Metropolitan Washington Council of Governments EV Clearinghouse
- Metropolitan Washington Council of Governments Equity Emphasis Areas
- District of Columbia National Electric Vehicle Infrastructure (NEVI) Plan
- Maryland NEVI Plan
- Virginia NEVI Plan
- U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA) 23 CFR Part 680 NEVI Standards and Requirements
- White House EV Acceleration Challenge
- U.S. Department of Energy’s (DOE) Alternative Fuel Data Center (AFDC) Planning Tools Brochure
- U.S. Department of Transportation (DOT) Rural EV Toolkit Equity Considerations for EV Infrastructure Planning
- U.S. DOE Clean Cities Coalitions
  - Greater Washington Region Clean Cities Coalition
  - Maryland Clean Cities Coalition
  - Virginia Clean Cities Coalition
- Argonne National Laboratory Transportation Energy Equity Analysis and Resources
- U.S. Council on Environmental Quality (CEQ) Climate and Economic Justice Screening Tool
- Electrification Coalition Electrifying Transportation in Municipalities: A Policy Toolkit for Electric Vehicle Deployment and Adoption at the Local Level
- The National Renewable Energy Laboratory (NREL) EVI-X Modeling Suite of Electric Vehicle Charging Infrastructure Analysis Tools
2. ZONING

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<th>2.1</th>
<th>Clarify or establish new zoning rules and siting criteria to facilitate EVSE installations at both residential and commercial locations. Ensure that zoning rules are in sync with building codes related to EVSE requirements and incentives.</th>
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<td>2.2</td>
<td>Incorporate guidance regarding use restrictions and parking enforcement.</td>
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<td>2.3</td>
<td>Develop clear requirements for EVSE charging in parking lots, such as signage, accessibility of equipment, accessibility of spacing, curbs/ramps, and lighting.</td>
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<td>2.4</td>
<td>Clearly and concisely communicate EVSE zoning rules through various channels (e.g., government website, stakeholder outreach).</td>
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<td>2.5</td>
<td>Determine, and if legally allowable, if local jurisdictions want to offer incentives, such as an incentive for building owners to provide EVSE above minimum requirements set forth by local or state government.</td>
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Examples

- Prince George’s County, MD amended the definition of gas station in the Zoning Ordinance, requiring that Special Exceptions and Detailed Site Plans approved for Gas station uses include a minimum distance from structures used as a residence, and adding a requirement that the Gas station provide at least two Level 3 or DC fast charger EVSE.
- Frederick County, MD defines stopping, standing, or parking a vehicle in plug-in vehicle parking space that is not a plug-in vehicle as a misdemeanor. Violation is considered a Class C offense and punishable by a fine of $100-$250.
- Maryland restricts use of EV charging spaces to EVs that are actively charging. Drivers in violation may be subject to fines of $100. EV charging sites must post signage indicating rules regarding usage and violation penalties. Lastly, there is a regulation to prohibit homeowners associations from restricting the installation or use of an EVSE in a homeowner’s designated parking space.
- The City of Atlanta zoning code outlines design standards which must meet the city readiness requirement and the National Electric Code Article 625. The zoning ordinance also outlines available incentives for EV charging stations and parking.
- The Town of Colonie’s (New York State) Enhanced Development Regulations: Electric Vehicle Zoning Guidance & Best Practices provides a comprehensive plan to establish EV policies, ordinances, and regulations in local code to lay the foundation for EV adoption in a municipality.
Resources

- U.S. DOE AFDC [Plug-In Electric Vehicle Deployment Policy Tools: Zoning, Codes, and Parking Ordinances](link) and [Signage for Electric Vehicle Charging Stations](link)
- U.S. DOT FHWA 23 CFR Part 680 [NEVI Standards and Requirements](link)
- Transportation Climate Initiative [Siting and Design Guidelines for Electric Vehicle Supply Equipment](link)
- County of Santa Clara [Driving to Net Zero Zoning Code Recommendations and Resources](link)
- Alternative Fuels Data Center [Best Practices for Designing ADA-Compliant EV Charging Stations](link)
3. BUILDING CODES

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<th>3.1 Establish guidelines for what percentage of parking in new construction and renovated buildings must be EV Ready.</th>
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<td>3.2 Delineate what minimum level of service must be provided for EVSE in new construction and renovated buildings (e.g., EV Capable, EV Ready, EV Installed).</td>
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<td>3.3 Review existing codes for complimentary and conflicting language for EV and EVSE deployment. Consider how your existing code will impact EVs and EVSE (such as fueling station requirements, parking code requirements, American with Disabilities Act design recommendations).</td>
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<td>3.4 Offer alternatives to requirements set forth by building codes, such as having buildings achieve zero emissions vehicle (ZEV) or EV credits under LEED standard, Green Globes standard, etc.</td>
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Examples

- The City of Gaithersburg, MD electrical codes require pre-wiring for EV charging stations in new residential construction. In addition to the one 125-volt receptacle outlet required for each car space by NEC Section 210.52(G)(1), every new garage or carport that is accessory to a one- or two-family dwelling or townhouse shall include a rough in outlet, to accommodate the future installation of a Level 2 (240-volt) EV charging receptacle outlet, installed in accordance with the requirements of the Electrical Code.

- Maryland has a requirement for builders to provide buyers the option to include a Level 2 EVSE or electric pre-wiring in all new homes which include a garage, carport, or driveway.

- Frederick County, MD passed an ordinance in 2022 requiring new residential construction, including single-family detached and townhouses and duplexes with an on-lot parking area, be built with a baseline level of EV-ready infrastructure.

- Howard County, MD became one of the first jurisdictions in the United States to require new residential construction with driveways or garages to have electric wiring for EVSE after passing an ordinance in 2019. New home construction is required to be EV ready, meaning it must include infrastructure for plug-in electric vehicles (PEV). Similarly, new multi-family dwellings are required to have one EVSE per 25 residential units.

- Pursuant to recently adopted code, the District of Columbia requires all new construction or substantial renovations post January 1, 2022, of commercial and multifamily units that have 3 or more off road parking spaces reserve at least 20% of the spaces for EV charging.

- The state of Virginia code allows an alternative to meeting infrastructure requirements if projects instead receive credits through the Virginia Energy Conservation and Environmental Standards (VEES), the U.S. Green Building Council’s Leadership in Energy and Environmental Standards (LEED), or the Green Globes system.
Design (LEED) green building rating standard, or the Green Building Initiative's Green Globes building standard.

- City of Pittsburgh Municipal Code states, “installation of level 2 and DC fast charging stations to...incorporate make-ready infrastructure to accommodate electric vehicle chargers for use by fleet vehicles and/or the public and City staff on City-owned property.”

Resources

- U.S. DOT FHWA 23 CFR Part 680 NEVI Standards and Requirements
- U.S. Access Board Design Recommendations for Accessible Electric Vehicle Charging Stations
- U.S. DOE Guidance in Complying with Americans with Disabilities Act Requirements
- Pacific Northwest National Laboratory (PNNL) Electric Vehicle Charging for Residential and Commercial Energy Codes
- U.S. EPA’s State and Local Energy and Environment Webinar Series: An Introduction to Electric Vehicle-Ready Buildings - defines EV Capable, EV Ready, EV Installed
4. PERMITTING AND INSPECTION

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<th>4.1</th>
<th>Develop a clear, streamlined permitting and inspection process for EVSE and a permitting review checklist that is published in an easily accessible location.</th>
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<td>4.1.1</td>
<td>Adopt a standard EVSE permit process for Level 2 non-residential, workplace, and multi-unit dwelling installations.</td>
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<td>4.1.2</td>
<td>Adopt a special EVSE permitting process for Level 3/DC fast chargers and large, complex Level 2 installations.</td>
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<td>4.2</td>
<td>Minimize permit fees for EVSE installation and consider adopting a fee incentive or waiver for EVSE installations.</td>
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<td>4.3</td>
<td>Continuously reassess the EVSE permitting process based on EVSE technological advancements and feedback from end users and internal staff on administrative processes.</td>
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Examples

- Montgomery County, MD has approved regulations governing the installation of privately-owned EVSE in public rights of way and developed guidelines for installation within private driveways, garages and parking pads on residential properties. The County has also developed web site pages for both residential and commercial EVSE installations that details permitting and inspection processes.
- Prince William County established permitting and plan review submission requirements for the installation of Residential Electric Vehicle Charging Systems in existing residential dwellings in accordance with the International Residential Code.
- The City of Fairfax, VA adopted general submittal requirements to obtain building and electrical permits for a typical EVSE installation.
- Prince George’s County established permitting guidelines for residential and commercial EVSE installations with a third-party inspection certification form.

Resources

- California Governor’s Office of the Small Business Advocate Electric Vehicle Charging Station Permitting Guidebook
- GoEV City Policy Toolkit
- California Plug-In Electric Vehicle Collaborative Streamlining the Permitting and Inspection Process for Plug-In Electric Vehicle Home Charger Installations
• Center for Sustainable Energy Electric Vehicle Charging Station Permitting and Inspection Best Practices: A Guide for San Diego Region Local Governments
5. GOVERNMENT FLEET

Checklist Actions

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<th>5.1</th>
<th>Adopt a policy agenda that identifies clear fleet- or transportation-related GHG reduction goals and/or aligning with broader, collaborative initiatives at the regional, state, or national level.</th>
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<td>5.2</td>
<td>Develop EV government operation plan(s) that include a fleet assessment and recommendations for light-, medium-, and heavy-duty vehicles (e.g., transit buses, refuse trucks, etc.) and supporting EVSE needs. The plan should factor in right sizing policies, using the right vehicle for the right application, life-cycle costs, and resilience measures (such as solar-powered charging, battery storage and vehicle-to-grid).</td>
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<td>5.3</td>
<td>Determine which staff member(s) will serve as the primary coordinator(s) or program manager(s) responsible for executing the government operation plan. Plan should include vehicle maintenance plan and workforce training to ensure maintenance is properly executed, ensuring vehicle reliability and longevity.</td>
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<td>5.4</td>
<td>Link policy agendas and plans to Capital Improvement Plans (CIP) and budget to execute plans and achieve goals.</td>
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<td>5.5</td>
<td>Identify the grant, funding, and incentive programs available to help fund the purchase, operation, or maintenance of EVs and EVSE.</td>
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<td>5.6</td>
<td>Issue an RFP or use cooperative purchasing contracts to procure EVs and EVSE. Ensure contract language clearly states the contractors’ responsibilities such as installation, maintenance, removal, disposal/recycling, and administrative systems for example integration with vehicle maintenance systems, charging management software, etc.</td>
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Examples

- The City of Rockville’s Resolution to Transition the City Fleet commits to reducing gasoline and diesel consumption in the City’s on-road fleet vehicles by 20 percent between FY 2023 and FY 2028, below a FY 2019 baseline. The Maryland Energy Administration Clean Fuels Technology Assistance Program supported the analysis of the City of Rockville, MD’s fleet and recommend 20 of 60 ICE vehicles to be converted to EVs, which would save the city more than $400K in total cost of ownership over 15 years and reduce more than 240K gallons of gasoline.

- Arlington County’s 2019 Community Energy Plan (CEP) (pg. 25) includes a policy to transition the government fleet to carbon-neutral transportation by 2050. To support implementation of this policy the County’s Adopted FY 2023 Budget includes $4.65 million that provides funding to advance electrification of the County’s fleet and achievement of the 2019 CEP goals.
• Fairfax County’s [2021 Update Regarding Electric Vehicle Charging Infrastructure Memorandum](#) outlines plans to install EVSE for county fleet vehicles, along with proposed rates for public charging for those stations located in county-owned parking lots and publicly-accessible garages.

• New York City’s [Clean Fleet Transition Plan](#) was created in support of Mayoral Executive Order 90 of 2021, which mandates fleet electrification by 2040. The plan defines three “EV market-readiness tiers” based on vehicle categories and expected market availability. These Tiers are used to provide examples of specific models based on availability at the time of the report.

• Philadelphia’s [Municipal Clean Fleet Plan](#) includes total fleet transition costs with and without state incentives from 2021-2030 (pg. 23), to support their proposed goal of reducing light and medium-duty vehicle emissions by at least 45% from 2019 levels by 2030.

**Resources**

• Electrification Coalition [Electrifying Transportation in Municipalities: A Policy Toolkit for Electric Vehicle Deployment and Adoption at the Local Level](#) (see section on Fleets)

• [Maryland Smart Energy Communities](#) Transportation Petroleum Reduction Goals and Funds

• Maryland Department of General Services [Electric Vehicle Infrastructure Program](#)

• Maryland Energy Administration [Clean Fuels Technical Assistance (CFTA) Program](#)

• Electrification Coalition [Advancing Vehicle to Grid Technology Adoption](#) Policy Recommendations for Improved Energy Security and Resilience

• U.S. DOT FHWA 23 CFR Part 680 [NEVI Standards and Requirements](#)

• Interstate Renewable Energy Council (IREC) [Vehicle-To-Grid (V2G) Standards For Electric Vehicles](#)

• Cooperative Purchasing Contracts:
  - Maryland Department of General Services [Intergovernmental Cooperative Purchasing Agreements](#)
  - Climate Mayors [Electric Vehicle Purchasing Collaborative](#)
  - Sourcewell Cooperative Purchasing

• Local and State Governmental Procurement Documents:
  - [Electric Vehicle Charging Station – PowerFlex Systems, Inc.](#) (DC)
  - [Solar Electric Vehicle Charging Station – Beam Global](#) (DC)
  - [Electric Vehicle Supply Equipment & Related Services – Lilypad EV](#) (State of Maryland)
  - [Electric Vehicle Charging Stations & Equipment – SemaConnect](#) (State of Maryland)
  - [Furnish & Install Electric Vehicle Charging Stations – ChargePoint, Inc.](#) (Virginia Commonwealth)
  - [Electric Vehicle Charging Stations – National Car Charging, LLC](#) (Fairfax County)
- Electric Vehicle Chargers – National Car Charging, LLC (Arlington County)
- Electric Vehicle Chargers Software & Maintenance – ChargePoint, Inc. (Arlington County)
- Electric Vehicle Charging Stations – ChargePoint, Inc. (Montgomery County)
- Solar Electric Vehicle Charging Stations – Beam Global (Montgomery County)
- Electric Vehicle Charging Stations – Auer Electric, Inc. (Howard County)
6. PUBLIC EDUCATION AND OUTREACH

Checklist Actions

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<tr>
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<th>6.1</th>
<th>Educate the public on EVs and EVSE. Potential topics include vehicle life-cycle costs and benefits, incentive programs, permitting, solar powered charging and battery storage, battery recycling, performance, range, safety, and resilience.</th>
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<td>6.2</td>
<td>Articulate public health, equity, climate, and energy outcomes and benefits from EV readiness.</td>
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<td>6.3</td>
<td>Coordinate with local utilities to promote and communicate available resources, incentives, grid capability, how to charge your car in a power outage, along with recommended points of contact, for public, private, and fleet electrification efforts.</td>
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<td>6.4</td>
<td>Develop and promote community partnerships with local businesses and organizations such as dealerships, non-profits, and EV owners’ associations. Leverage these partnerships in planning community events to promote EV adoption.</td>
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<td>6.5</td>
<td>Engage with residents in Equity Emphasis Areas to best understand their desires and needs around electrification in their community.</td>
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<td>6.6</td>
<td>Engage with workforce development organizations, labor unions, public schools, trade schools, community colleges, etc. to ensure local workforce is involved in the transition to EVs.</td>
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Examples

- The Montgomery County EV Purchasing Cooperative (EVPC) partners with local dealerships to offer exclusive incentives on EVs for residents. The EVPC had over 1,000 residents sign a pledge to make their next vehicle electric. By signing this pledge, residents receive a monthly newsletter with EV news, educational resources, and a first look at dealership incentives.

- Fairfax County, VA created EVS FROM EVERY ANGLE, which promotes a broad range of resources including a comprehensive guide to EV basics, FAQs about EVs, permitting for EVSE, Road to EV Ownership, an EV Decision-Making Toolkit, and more.

- Washington, DC has several incentive programs to encourage EV adoption including:
  - The Alternative Fuel Vehicle (AFV) Conversion and Infrastructure Tax Credit provides tax credits for the conversion of qualified AFVs.
  - EV Title Excise Tax Exemptions for qualified EVs
  - Alternative Fuel Vehicle Exemption from Driving Restrictions such as time-of-day and day-of-week restrictions if the vehicles are part of a fleet that operates at least 10 vehicles in the District of Columbia.
o Alternative Fuel Vehicle and Infrastructure Support which supports private investment in clean transportation projects, including alternative fuel vehicles and infrastructure.

- The City of Bowie, MD’s Sustainability Grants for Businesses support small/local businesses to increase their energy efficiency. Reimbursement is capped at $5,000 and the installation of EV infrastructure is an eligible project.

- The Greater Washington Region Clean Cities Coalition in its Racial Equity Federal Agenda calls for convening of E-Mobility Equity Policy Forums/Listening Sessions followed by reports outlining action items.

- The City of Seattle worked with community-based organizations to host outreach events, listening sessions, and surveys in multiple languages and adjusted efforts to address the needs of the community.

- Drive Electric Colorado is part of Drive Electric USA, a Department of Energy-funded project comprised of Clean Cities Coalitions, electric vehicle groups, and other committed partners from fourteen states. Drive Electric Colorado offers a unique coaching service that connects potential EV adopters with experts in one on one conversations to address any questions or concerns they may have.

### Resources

- U.S. DOE EV Champion Training Series and An EV Future: Navigating the Transition (Convening Stakeholders for Interactive Peer-to-Peer Discussions)

- U.S. DOT’s Federal Highway Administration (FHWA):
  - Public Involvement Techniques for Transportation Decision Making
  - How to Engage Low-Literacy and Limited-English-Proficiency Populations in Transportation
  - Every Place Counts Leadership Academy Transportation Toolkit

- Utility EV Programs serving metropolitan Washington include:
  - Dominion
  - Pepco DC
  - Pepco MD
  - BGE
  - SMECO
  - Potomac Edison

- Several green banks, C-PACE, and other financing programs in the region incentivize EVs, including:
  - DC Green Bank
    - PACE
    - CLEER
- Montgomery County Green Bank
  - C-PACE
  - CLEER
  - EV-CIP
- FSC First
  - Green Energy Loan Program
- Maryland Clean Energy Center (MCEC)
  - MDPACE
- Virginia PACE Authority
  - Alexandria C-PACE
- Electric Vehicle Association of Greater Washington, DC (EVADC) is an organization of EV owners, educators, and enthusiasts promoting EVs as an environmental and energy benefit to society.
- The Maryland Department of Transportation (MDOT), Maryland Energy Administration (MEA), and Maryland Department of the Environment (MDE) facilitate Maryland EV, an EV education and outreach resource serving Maryland and the Mid-Atlantic.
- Generation 180 Electrify Your Ride National Campaign
- The National Renewable Energy Laboratory (NREL) Transportation-Related Consumer Preference Data and Utility Finder tool
- West Virginia University National Alternative Fuels Training Consortium
7. PUBLIC SAFETY AND SECURITY

Checklist Actions

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<td>7.1</td>
<td>Provide EV-specific emergency response training for all first responders and incorporate transportation electrification into public safety plans.</td>
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<td>7.2</td>
<td>Incorporate best practices for physical security into considerations for site design requirements of EVSE (e.g., lighting, locations relative to building, security cameras, call boxes) while maintaining ADA compliance.</td>
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<td>7.3</td>
<td>Reduce electrical hazards by ensuring EVSE are installed and maintained by contractors/electricians with the proper licenses and EVSE specific training (e.g., Electric Vehicle Infrastructure Training Program (EVITP) certification).</td>
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<td>7.4</td>
<td>Require EVSE operator (via clauses in contract language) to protect against cyber security threats on EVSE by taking precautions such as encrypting hard drives, updating secure communication protocols, installing tamper detection sensors and alarms, and performing routine on-site maintenance to update firmware, software, and check for malicious hardware.</td>
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<td>7.5</td>
<td>Engage with utilities to develop safety protocol for repairs behind the meter (i.e., utility infrastructure) on both public and government fleet EVSE.</td>
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<td>7.6</td>
<td>Develop public awareness messaging and training for citizens on how to charge EVs safely and what to do if an emergency occurs.</td>
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Examples

- Washington State Department of Transportation provides cyber security requirements for contracted vendor agreements/EVSE service providers in its NEVI Plan (pg. 39) in compliance with the state’s Office of the Chief Information Officer’s security standards.
- The National Electric Vehicle Infrastructure (NEVI) formula program requires that EVSE’s receiving funding be installed and maintained by a technician certified by the Electric Vehicle Infrastructure Training Program (EVITP) or a certification of equal value.

Resources

- National Fire Protection Association (NFPA) self-paced online training program, Alternative Fuel Vehicles Training Program for Emergency Responders
- Sandia National Laboratories study on Cybersecurity for Electric Vehicle Charging Infrastructure, includes a best practice list and vendor recommendations