

## INTRODUCTION

The Federal NEVI Formula Program recommends each State implement physical safety strategies related to the charging station site design, fire prevention, and electrical safety, as well as implement cybersecurity safety strategies such as software update management and certifications to ensure charging station operations protect consumer data and privacy.

To provide clarification to the Federal [NEVI Standards and Requirements](#) (23 CFR 680), ARDOT prepared the EVID Program Requirements. These Program Requirements are designed to provide specification for components of those EV charging stations awarded Program funding. The Program Requirements are organized as follows:

- A. SITE PLANNING
- B. ELECTRICAL SAFETY
- C. FIRE PREVENTION AND SAFETY
- D. CYBERSECURITY
- E. LOAD MANAGEMENT /DEMAND RESPONSE
- F. ADDITIONAL EV CHARGING SITE REQUIREMENTS

### A. SITE PLANNING

1. For every EV charging station installation, site specific plans are required that detail existing and proposed conditions for all equipment placement, electrical and underground details, parking and traffic control, and pedestrian access route (PAR). Every EV charging station installation shall follow all state and local design guidance for installation of electric vehicle charging equipment, including but not limited to electrical, fire, stormwater, or other environmental standards.
2. The Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Standards do not specifically address how many chargers must be accessible at an EV charging station. Under the ADA Standards, when a facility or element does not have specific scoping requirements, access to a “reasonable number” is required under the general prohibitions against discrimination in the Department of Justice (DOJ) regulations for Title II and Title III entities. For spaces required by ADA, it is recommended at least one charger for every 25 at a site be ADA accessible. See the U.S. Access Board site at [Electric Vehicle Charging Stations \(access-board.gov\)](https://www.access-board.gov/electric-vehicle-charging-stations).

3. Consult Arkansas Fire Prevention Code, Section 312 for requirements on impact protection of EV charging stations. Bollards and other fixed vehicle impact protection (other than standard curbs) shall not be used within the right-of-way (ROW), other than alleys or parking lots.
4. Adequate site lighting shall be considered during site planning. Where applicable, lighting shall follow the Arkansas Shielded Outdoor Lighting Act. Lighting is recommended to follow AASHTO Guidelines found in the Roadside Lighting Design Guide. LED lighting must be implemented to reduce energy consumption, and environmental impacts should be considered when placing and directing or shielding the lighting.
5. Replace any disturbed pavement or hardscape per associated site drawings.
6. Parking spaces shall be delineated with striping. Parking spaces shall be stenciled or otherwise signed to designate that parking is reserved only for electric vehicle charging.
7. If ADA parking spots are developed, parking spaces shall be 11' wide and approximately 20' long; [refer to Design Recommendations for Accessible Electrical Vehicle Charging Stations \(U.S. Access Board, Technical Assistance Document, 7/21/2022\) if intended to be an accessible space](#).

## **B. ELECTRICAL SAFETY**

1. EV charging stations shall have a Charge Circuit Interrupting Device (CCID) or Ground Fault Circuit Interrupter (GFCI) to shut off flow of electric power to reduce risk of electric shock (see Underwriters Lab (UL) - Standard 2231).
2. EV charging stations shall have over-current protection rated for the application. All components, including electrical equipment shall have to withstand current rating and other ratings appropriate for the application so as not to reduce the required safe power output capabilities of the chargers.
3. EV charging stations and any external accessories (if applicable) shall have outdoor-rated enclosure - National Electrical Manufacturers Association (NEMA) 4X or greater.
4. Ensure conduits and other electrical apparatus follow local electrical and fire codes, protecting cable and other equipment from inadvertent damage by vehicles moving into place. Use cable management systems or other means to prevent cable insulation, wiring, and cooling systems from being damaged.

As the site is installed, do not modify components of existing or new equipment or structure in any way that will jeopardize UL or other safety ratings of the equipment or facility.

**C. FIRE PREVENTION AND SAFETY**

1. At a minimum, charging equipment must be installed per the latest National Electric Code (NEC) and National Fire Protection Association (NFPA) standards, however all state and local codes will also apply.
2. A fire department emergency power disconnect shall be provided within 50 feet of the EV charging station, and supporting electric equipment, but no closer than 10 feet to any charger or cabinet. A Phenolic plaque with red background and 2" white lettering stating "FD Emergency Shutoff – Electric Vehicle Charging Station" shall be installed at each disconnect.
3. Ensure adherence to all building codes and NFPA standards for placement of hydrants, standpipe systems, and other means to extinguish a fire event.
4. If equipment is placed in a parking garage or other facility, work with local fire officials to determine if any specific risks exist from vehicle or charger batteries and implement any design components needed to effectively mitigate the identified risk(s).
5. EV charging station shall be monitored by video security surveillance system with digital video recorder (DVR). Recordings of surveillance system shall be maintained for 30 days.
6. A 24-hour call-in number must be provided by the owner/operator for customers and other stakeholders to contact in case of issues. Matters involving need for police, fire, and emergency medical services shall be directed to 911 operators

**D. CYBERSECURITY**

1. NEVI policy is based on the latest Payment Card Industry Data Security Standard (PCI-DSS) information security standards. Payment terminals must be EMVCo L1 Certified (EMV). Any security measures taken shall meet or exceed published standards and software updates must be made in a timely manner to prevent a breach of cardholder data.
2. In case of any data security breach, Owner/Operator must contact ARDOT within 24 hours and advise means being taken to mitigate adverse circumstances.
3. If selected for conditional award, conditional Awardee's must supply a written Cybersecurity Plan for the project to be incorporated by reference and as an attachment to the final award agreement. The project Cybersecurity Plan must document potential risks and protections throughout the project's contracted lifetime. Evidence of adherence and update to the Cybersecurity Plan must be supplied annually to ARDOT. The Cybersecurity Plan must provide details on how the awarded party will ensure data

information encryption implements the following National Institute of Standards and Technology (NIST) guidelines:

- a. [NIST SP 800-63 Digital Identity Guidelines.](#)
  - b. [NIST SP 800-175 A Guideline for Using Cryptographic Standards.](#)
  - c. [NIST SP 800-175 B Guideline for Using Cryptographic Standards.](#)
  - d. [NIST SP 800-94 Guide to Intrusion Detection and Prevention Systems \(IDPS\).](#)
  - e. [NIST SP 800-92 Guide to Computer Security Log Management.](#)
  - f. [NIST SP 800-40 Guide to Enterprise Patch Management.](#)
  - g. [NIST SP 800-61 Computer Security Incident Handling Guide.](#)
  - h. [NIST SP-800-161 Supply Chain Risk Management Practices for Federal Information Systems and Organizations.](#)
  - i. [NIST SP-800-53 Security and Privacy Controls for Information Systems and Organizations.](#)
4. Employees or others involved in operation and maintenance with access to equipment and data shall be located within the United States and shall comply with all aspects of the Project's Cybersecurity plan.
  5. Independent audits shall be performed at least annually by a third-party qualified security assessor.

#### **E. LOAD MANAGEMENT/DEMAND RESPONSE**

1. Installers must coordinate with the local utility provider to confirm that expected power demand will remain within the capacity of the designed electrical system.
2. The network communications, controls, and back-office support service shall have the ability to monitor energy usage (kWh) and energy demand (kW) of the EV charging stations at all times.
3. Where applicable, network communications, controls, and back-office support service shall have the ability to respond to utility provided demand response signals via the Open Automated Demand Response 2.0b (or latest or equivalent) protocol.

#### **F. ADDITIONAL EV CHARGING STATION SITE REQUIREMENTS**

1. EV charging stations shall be capable of operating in an ambient temperature range of minus 22 to 122 degrees Fahrenheit with a relative humidity of up to 90 percent.

2. EV charging stations shall include security design features to remain tamper-resistant and vandalism resistant, such as tamper-resistant screws, anti-vandalism hardware, locked enclosures, and graffiti-resistant coating or paint. Vandal resistance is intended mostly relative to the touch screen, but the overall goal is to limit damage to vital parts of the equipment as it can sometimes be difficult to get a quick turnaround on parts such as card readers and other items. Contractors must submit Ingress Kinetic (IK) impact rating in joules for touch screens and ensure they are rated for the application.
3. EV charging stations shall be able to withstand extreme weather conditions including minor flooding, heavy rains, high winds, snow, and ice, and is protected from malfunctions due to condensation. Cabinets and above ground structures shall be designed to withstand a 90 MPH wind load.
4. Any form of graphics including branding, logos, and/or art, included on or in the vicinity of the charging stations within the public ROW are subject to the rules and regulations as directed by ARDOT. Vendors shall not use or post any ARDOT branding, logos, or signs including ARDOT branding or logos.
5. Screen displays shall be liquid-crystal display (LCD), Light-emitting diode (LED) or equivalent or better, user friendly, easy to operate, daylight and night viewable, and UV-protected with human-machine interface capability and operable with gloves.
6. Awardees may supply any combination of EV charging stations that meet NEVI minimum power requirements such as two (2) 350kW dual port chargers instead of four (4) 150kW EV charging stations.
7. EV charging stations must be compliant with the following standards or equivalent:
  - a. IEEE Std 2030.1.1-2015 (If CHAdeMO is implemented).
  - b. UL 2251 or equivalent for plugs, receptacles, and connectors.
  - c. Alignment with national standards for National Institute of Standards and Technology (NIST) Handbook 44 – Electric Vehicle Fueling Systems – Tentative Code. This is anticipating the inspection requirements per NEVI rules such as 680.116 (a) for EV charging stations that indicate the requirements for pricing display. EV charging stations shall have the ability to measure demand and energy delivered at an accuracy per national standards.
  - d. Alternating Current (AC) Level 2 chargers are ENERGY STAR certified (if AC Level 2 implemented).

8. Authorization under part 15, subpart B of the Federal Communications Commission (FCC) regulations for unintentional radiators.
9. Manufacturers or suppliers for these supplemental specification items, or aftermarket providers, must provide warranties covering a minimum of five (5) years for all chargers and equipment from the time of Notice of Acceptance from ARDOT for the funded project.
10. Suppliers must provide complete specifications and installation guides for all chargers and equipment. This information must also include any infrastructure required for the installation of a charger, including, but not limited to, placement of bollards and curb stops. Installation guides are intended for construction or personal safety requirements related to installation to not cause injury, damage the equipment, or void the warranty.
11. For placement of distribution cabinets and electrical equipment ensure local codes are followed. Rather than wall-mounted (unit-strut) applications, consider commercial pedestals to house equipment including the meter, distribution panel, potential transformers, current transformers, etc.
12. EV charging stations shall be accessible by ARDOT, or authorized agency representative, upon request for inspection, testing, etc. during the 5-year agreement period.