Fast Charge TN Network Program Resources

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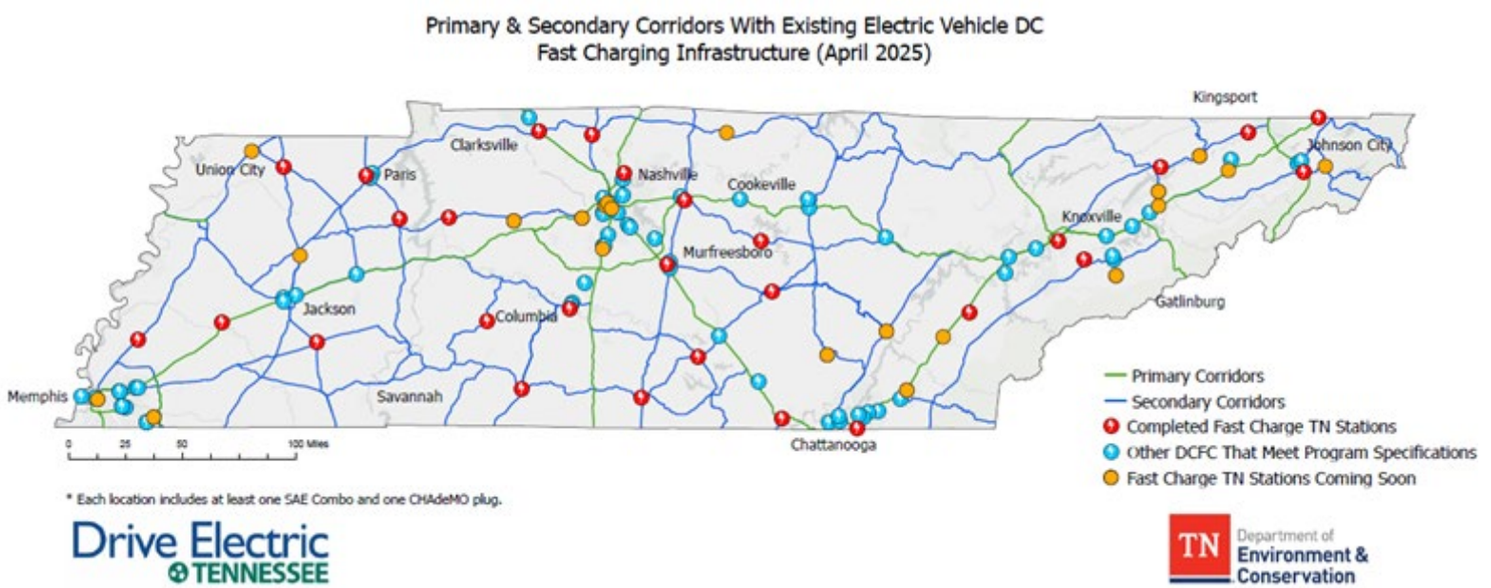
The Tennessee Department of Environment and Conservation (TDEC) and the Tennessee Valley Authority (TVA) have partnered to develop a statewide electric vehicle (EV) fast charging network to power the growth of EVs across Tennessee and reduce barriers of transportation electrification. Specifically, the two have signed an agreement to collaborate and fund a network of fast charging stations every 50 miles along Tennessee's interstates and major highways.



Fast Charge TN Network Overview

TDEC will leverage various funding sources to support the development of the Fast Charge TN Network. TDEC has committed 15%, the maximum allowable, of the State's Volkswagen Diesel Settlement Environmental Mitigation Trust allocation to fund ***Light-Duty Zero Emission Vehicle Supply Equipment*** . Initially $5.2 million from this fund was allocated to fast charging infrastructure along corridors.

- $5.2 million was made available under Round 1 to TVA-served Local Power Companies (LPCs) and other local utilities that distribute electricity in Tennessee whose service territory is located along prioritized corridor gaps.
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- As of April 2025, TDEC has approximately $2.3 million in additional funding to commit to the Program. In this Round 2 solicitation, eligible applicants will include local government entities, private companies, and/or non-profits .An interactive version of the corridor gap map may be accessed here.

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Funding & Reimbursement

For selected, eligible projects, the program will provide up to **80%** of the cost to purchase, install, operate, and maintain eligible EV charging infrastructure that will be located within a prioritized corridor gap and made available to the public. This program will not support the purchase or rental of real estate, other capital costs (e.g., construction of buildings, parking facilities, etc.), or general maintenance (i.e., maintenance other than of the EV charging infrastructure). Grantees will be required to provide at least 20% of the total project cost through direct or in-kind cost share.

This program will require selected projects to include at least two DC fast chargers at each location, with the option to request to install a maximum of four DC fast chargers per location. Additionally, requests for funding may not exceed $150,000 per fast charger to be installed. Grantees will be responsible for finding a suitable host site and purchasing, installing, owning, operating, and maintaining program-funded fast charging equipment for a period of no less than five years.

Payment of project expenses will take place on a reimbursement basis. Reimbursement will be made following charging station completion, commissioning, and submission of supporting documentation of costs incurred. Grantees will be issued a reimbursement payment following project completion and approval of invoice(s).

Reimbursable costs include:

- Cost to purchase and install (e.g., utility make-ready) eligible EV charging infrastructure
- Support services (e.g., engineering and design, site identification and qualification)
- Operational and maintenance costs purchased upfront, including maintenance services and network fees

Non-eligible expenses include:

- The purchase or rental of real estate
- Other capital costs (e.g., construction of buildings, parking facilities, etc.)
- General maintenance (i.e., maintenance other than of the charging infrastructure)
- Legal fees associated with land acquisition

Site Selection

Site Considerations

Charging sites must follow **Site Selection Guidelines** found within the **Program Guidelines** to ensure a positive consumer experience.

Station Proximity to Roadway

Proximity to identified corridors is one important determinant of both consumer appeal and anticipated charging station utilization.

Access
- 24 /7 availability
- Publicly accessible
- No charge for entry

Nearby Amenities
- Restaurants
- Shops
- Restrooms

Corridors
- Interstates
- Major U.S. and State highways

Distance from highway
- <1 mile preferred
- 5 miles max
- 50 miles or less between Fast Charge TN Network stations

Power Supply
- Proximity to 480V, 3 phase power
- Future upgradability

Safety
- Secure
- Well-lit
- On-site personnel

Weather Protection
- Shelter from elements is desirable, but construction of such is not reimbursable under this program

TN Department of Environment & Conservation

Improving charging infrastructure availability: The Fast Charge TN Network

Installation Term

Grantees will have 15 months from the effective date of the **Contract** to complete the project. No-cost extensions will be evaluated on case-by-case basis.

Site Engineering and Design

- Complete environmental review and return the provided **Environmental Review Checklist,** which will be provided to selected grantees, for final site approval before beginning construction activities; additional information will be provided to outline necessary documentation and required information to complete this review.
- Design and construct site in accordance with **Minimum Technical Specifications,** which can be found in Program Guidelines, provided by the program.

Co-branding

To increase consumer awareness and recognizability of charging stations, a consistent visual design featuring program partner co-branding will be leveraged. Guidance on design and process will be provided by the program.

Operation & Maintenance Term

Grantees will be responsible for owning, operating, and maintaining program-funded fast charging equipment for a period of no less than five years. After termination of the contract term, property disposition requirements may apply depending on the funding source.

Site Acquisition

- A site host agreement will be required to show that the Grantee has been granted access to the property where charging stations are to be installed. If a Grantee owns the property, this will be confirmed via a **Verification of Property Ownership Form** provided by the program. The purchase or rental of real estate is a non- reimbursable cost under the program.

Equipment Acquisition

Purchase and install charging stations that meet the **Minimum Technical Specifications**, which can be found in the Program Guidelines, provided by the program.

EV Rate & Pricing

- TVA's EV rate (wholesale EV Rate plus Valley-wide retail adders) is recommended, but Grantees retain rate setting flexibility for electric services.
- Consumer pricing for charging services will be set by station owners and is not regulated by TVA.

Reporting & Station Access

- Grantees will be required to report station usage (or allow "view access" to the charging network for automated monitoring and reporting) and gross income generated for a period of no less than five years.
- Reports will be due on an annual basis unless otherwise agreed upon in individual program contract.

Program Income

All program income (gross income earned by the Grantee that is directly generated by the project or earned as a result of the project funding during the contract term) must conform with program income requirements (e.g., see 2 CFR § 200.307) in that such income must be reinvested in or used to defray ongoing costs of the project (e.g., other maintenance fees).

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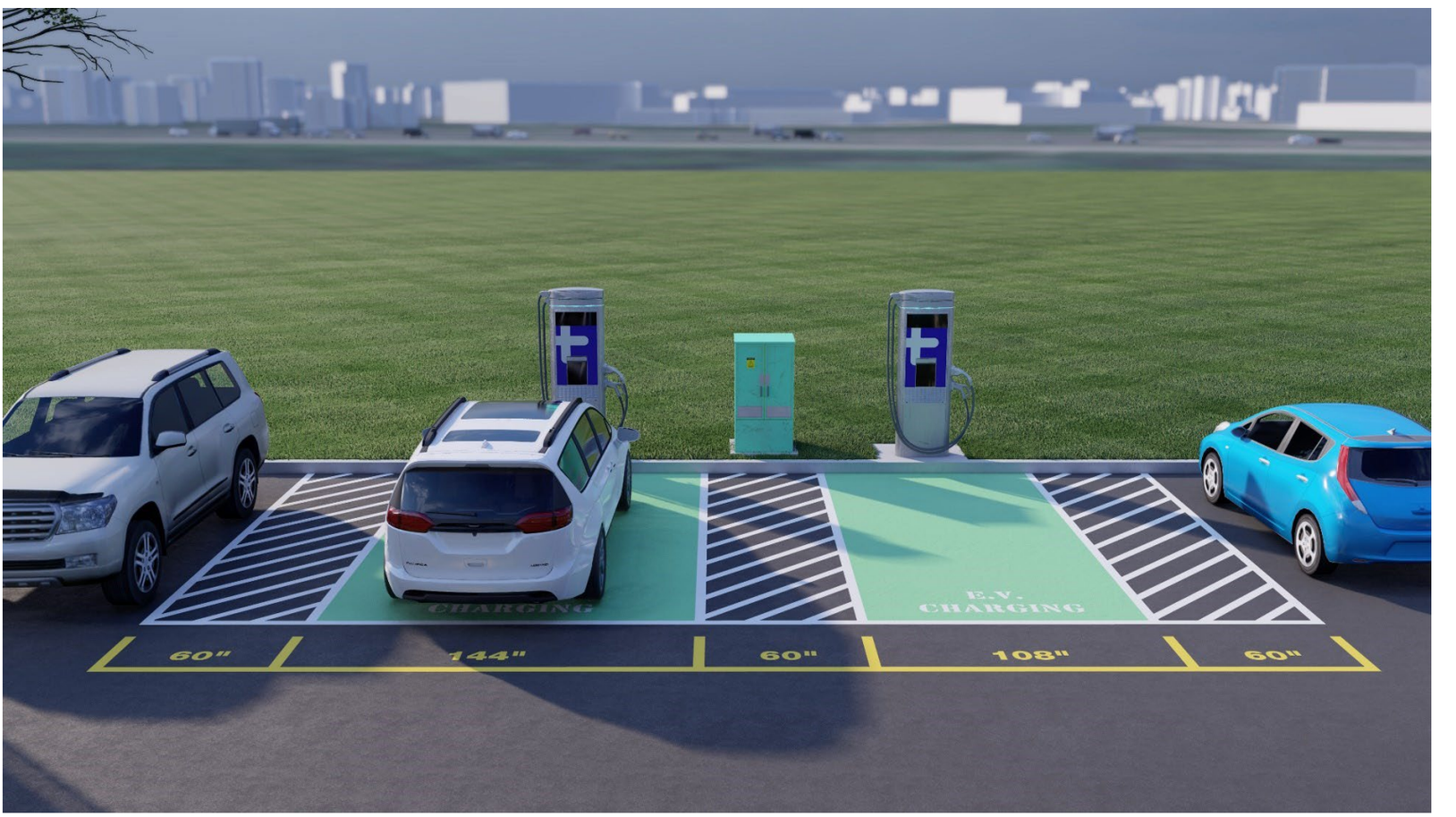
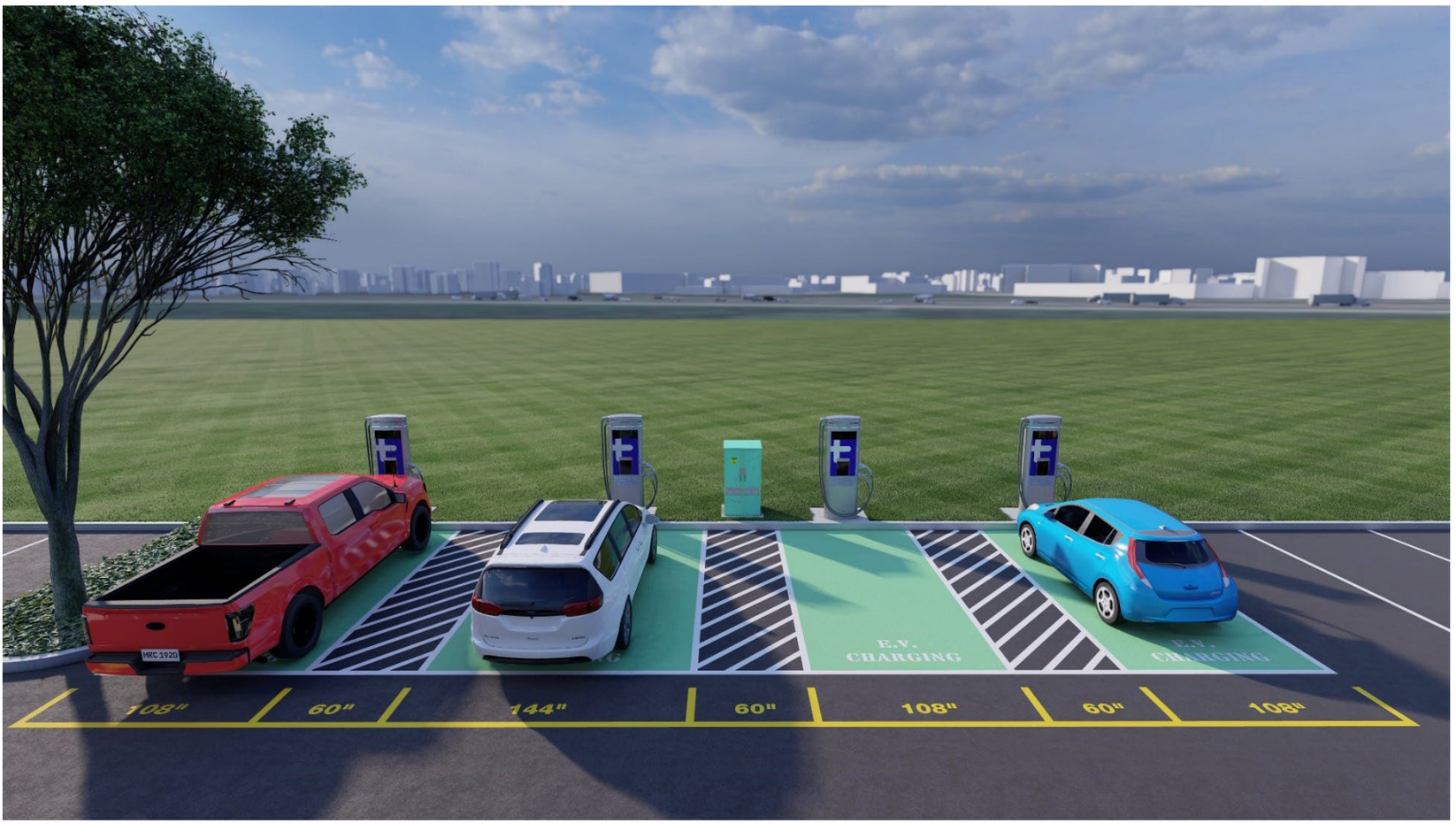
Example Site Layouts

Below are some example site layouts that include at least one van accessible EV charging space. These layouts are provided as a resource. While there are additional layouts that include at least one van accessible EV charging space, these examples fit within traditional parking space layouts and allow maximum flexibility for larger electric vehicles such as pickup trucks and SUVs. More information on the program requirement to include at least one van accessible EV charging space can be found in the program **Accessibility Requirements.**




108"
60"
144"
60"
108"
60"
108"
E.V.
CHARGING


78"
96"
78"
108"
108"
72"
108"

Charging Site Development and Operation Best Practices

Developing and operating an electric vehicle (EV) fast charger site is a multi-step, multi-stakeholder process that requires thoughtful planning and execution. Planning in advance can help avoid surprises, streamline timelines, and better manage costs. There are several detailed "Best Practices" resources from various organizations such as EPRI, SEPA, and NYSERDA that can be leveraged. Below are topics that should be considered prior to installing EV charging stations.

Initial Planning:

- Successful infrastructure programs should invest a considerable amount of time in the planning phase.
- Familiarize yourself with EV fast charger technical specifications (typically 480V, three phase power, and 120+ kW for each location, but standards allow power levels up to 350kW per car). For the Fast Charge Network program, please reference the **Minimum Technical Specifications** document found within the **Program Guidelines**.
- Identify local travel corridors, such as interstates and major U.S. and state highways, and determine which of these routes currently have charging options.
- Consider areas of the distribution grid with known constraints or optimal areas (capacity) for hosting fast charger loads.
- Identify and engage relevant project partners early in the process, such as local government officials, third-party service providers, etc.
- Interface with local permitting authorities to understand local permitting requirements and specific codes associated with developing a charging site in your area.
- Consider specific legal requirements and terms you will want to include in a site host agreement with the site owner to secure a host property where chargers will be located.

Site Identification, Review, and Selection:

- Identify a list of potential target sites for hosting charging stations.
- Identify multiple potential sites, as some sites may pose challenges (e.g., conflicts with site host contracting, costs of electric infrastructure, environmental considerations, etc.). Refer to **Site Selection Guidelines**, which can be found in the **Program Guidelines**, for additional details.
- Perform high-level feasibility reviews of potential sites prior to committing significant time and resources into the project.
- Once you have a short list of potential sites, perform site surveys for prioritized site locations.
    - Identify where power will come from and where equipment such as transformers and switch gear will be placed.
    - Note the layout of parking spaces and whether any will need to be expanded or removed. If possible, select the widest and longest parking spaces to support easy access for drivers.
    - Consider potential issues relating to accessibility, including wheelchair accessibility (more on this topic is included below within the design section).
    - Take note of potential safety risks, such as steep drops or trip hazards.
    - Consider environmental impacts of site development. The **Environmental Review Checklist**, which can be found in the **Program Guidelines**, details items to consider. In general, locating charging sites within previously developed areas such as existing parking lots greatly reduce potential impacts.
    - Identify cellular signal strength and the cellular carriers that best service a particular location. Reliable cellular network access is important to connect charging stations to network management systems, including payment processing and monitoring.

Site Design, Permitting, and Accessibility

- Determine the number and type of charging stations and electrical equipment needed.
    - The **Minimum Technical Specifications**, which can be found in the **Program Guidelines**, for corridor Fast Charge Network locations document detail minimum number of chargers, minimum power levels/charging speeds, etc.
- Evaluate design and construction requirements.
    - Determine what is required to bring electrical service to the site, place transformers, and connect charging stations.
    - Trenching through pavement may be necessary but should be minimized to save costs.
    - Consider how to integrate landscaping into the project. The location and type of landscaping in a parking facility helps to define vehicle and pedestrian movement and enhance visual design by hiding electrical support equipment.
    - Third-party service providers may be helpful during the design process.
- Determine additional site needs.
    - Signage and surface marking (e.g., striping, painting the parking spot, etc.) should be clearly visible to tell drivers where the chargers are and to delineate designated parking spaces, restrictions, etc.
    - Safety and security must be considered such as lighting and proximity to publicly available amenities.
- Public charging stations must enable access for persons with disabilities and follow all federal ADA requirements.
    - For the Fast Charge Network program, at least one van-accessible electric vehicle charging space will be required. This will provide adequate space to move a wheelchair or other equipment in and out of a wheelchair accessible van and allow wheelchair access to plug in common electric vehicles. Please refer to the Fast Charge Network Program **Accessibility Requirements**, which can be found in the **Program Guidelines**. Fast Charge Network Program **Accessibility Requirements** are not a substitute for following all federal ADA requirements as they are established and updated.
- Public charging stations should comply with all applicable environmental protection, building codes, and safety ordinances.
- Coordinate regular working sessions with permitting authorities to reduce the time and cost associated with permitting, especially if including an awning or canopy structure for weather protection; such structures may be treated and permitted differently in different areas.
- Include provisions in the site design to allow future deployment of additional charging stations and/or upgrade of current stations to higher power chargers. Example items to consider:
    - Extra conduit runs to additional parking spaces for future chargers.
    - Larger than required conduit to allow higher power upgrades (to support larger conductors in the future).
    - Larger than required concrete pads to accommodate higher-capacity transformers in the future.
    - Appropriately rated switch gear, disconnects, metering bases, etc. to accommodate higher powered chargers and additional chargers in the future.
    - Extra circuit breaker spaces for future chargers.
    - Provisions in site host agreements to enable future expansion.

Construction, Installation, and Commissioning

- Complete **Environmental Checklist Review**, which can be found in the **Program Guidelines**, for final site approval before beginning construction activities. Additional information will be provided to outline necessary documentation and required information to complete this review.
- After securing the necessary permits, complete civil engineering site preparations such as trenching and pouring foundations for equipment.
    - Third-party service providers may be helpful during the construction process.
- A final inspection by local permitting authorities is usually required; coordinate regular working sessions with permitting authorities throughout construction to speed up reviews and avoid surprises.
- Perform final site commissioning of any charging infrastructure, including the connection of the chargers to the utility's electric service and to the cellular network that provides remote monitoring and service.

Commercial Operation

- After final site commissioning, the EV charger commences commercial operation and will then undergo regular preventative maintenance as well as unplanned corrective maintenance throughout its lifetime.
- Assess charging infrastructure maintenance and operation needs and costs.
    - Charger companies and network providers typically offer subscription-based services for regular O&M services for a set period (e.g., five years).
- Chargers are typically remotely monitored and controlled through a software back-end and user interface "network." In many cases, over-the-air firmware updates can continuously improve charger functionality.
- Certain local customer service functions such as general housekeeping, and/or maintenance support functions may be best supported by the site host (e.g., the site host can alert the O&M provider if the station appears to be damaged); ensure these expectations are communicated to local site host staff members and are reflected in the site host agreement.

Signage Recommendations

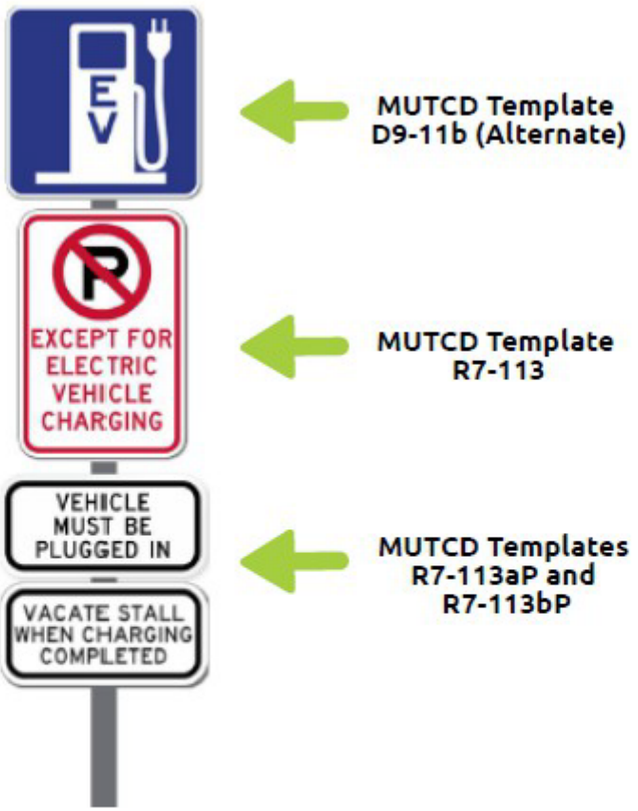
Sign Design and Location

On the next page is an example of signage that the Fast Charge Network program would encourage at fast charging sites. Although there are many EV charging station sign designs used by different stakeholders across the U.S., the recommendations below were designed to create simple and consistent signage for fast charging locations given the following considerations:

- Given the short duration of a fast-charging session, it is preferred that site hosts utilize signage that encourages parking spot turnover by allowing EVs to park in said spots only while actively charging.
- The Federal Highway Administration (FHWA) provides options for signage templates in its Manual on Uniform Traffic Control Devices (MUTCD). These FHWA-approved templates were utilized when designing these signage recommendations. Visit mutcd.fhwa.dot.gov for more information.
- EV signage should be erected for each parking spot with access to the fast-charging equipment. For example, site hosts with one fast charger that can charge two vehicles at the same time should install two sets of signposts, one centered in front of each parking spot accessing the charging station.
- For those fast-charging sites located in large campuses or parking lots, it is important for wayfinding signage to be provided within the property to assist EV drivers in finding the actual charging stations. Such wayfinding should be placed at major campus/parking lot entrances and continually placed throughout the property to lead drivers to the charging station location. Wayfinding markers should combine EV charging station logo signs (MUTCD Template D0-11b (Alternate)) with directional arrows and be placed at regular intervals, where needed.

Signage Recommendations were created through a Drive Electric Tennessee (DET) EV stakeholder group with experience in EV charging and road signage

Recommended DC Fast Charging Signage



Wayfinding Signage

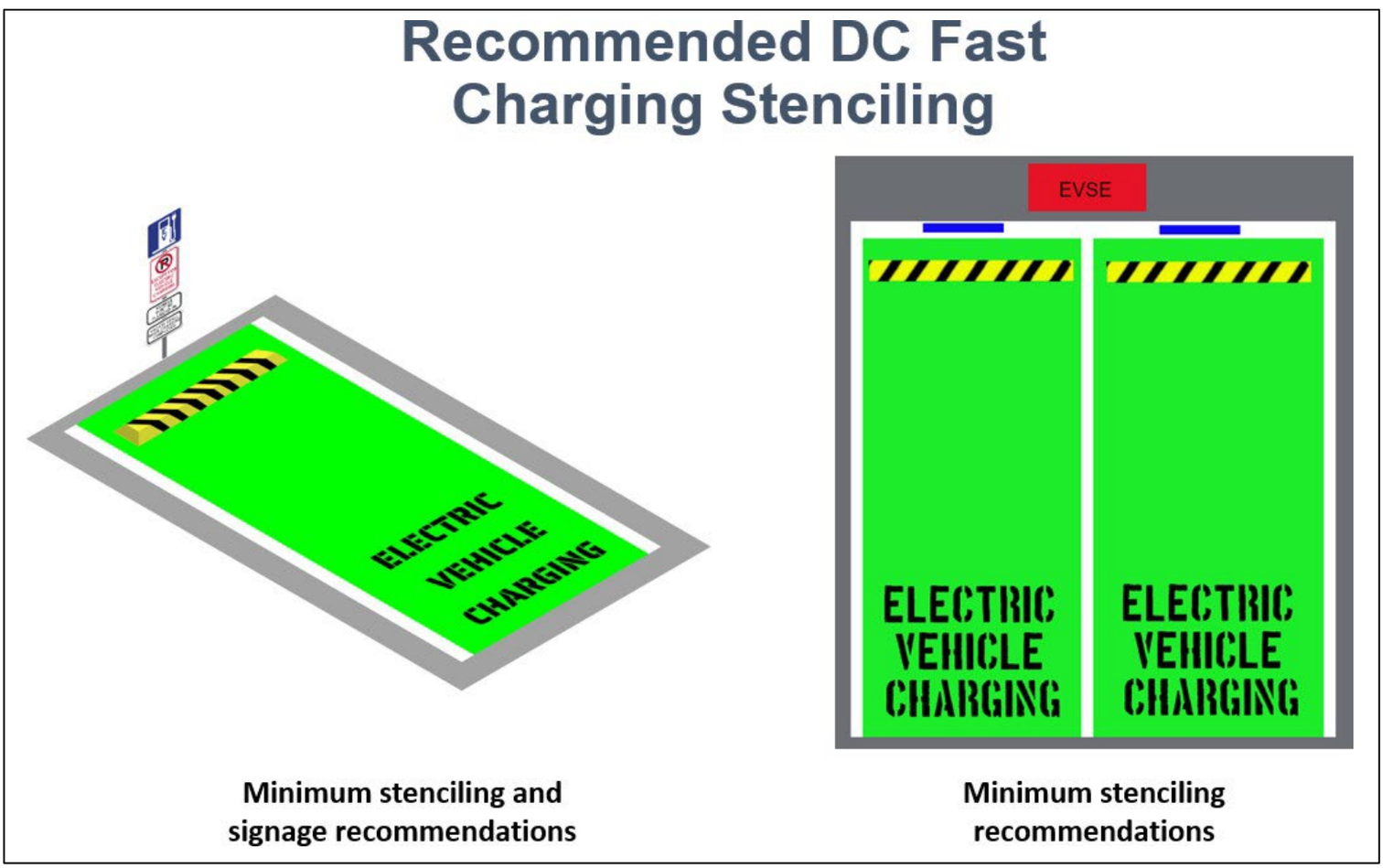
From left to right, MUTCD Templates M5-1, M5-2, M6-1, M6-2, and M6-3

Parking Spot Striping and Stenciling

All parking spots with access to fast charging station(s) should be painted to provide added visibility for EV motorists. Specifically, it is recommended that site hosts solidly paint parking spots with access to the fast-charging equipment in the “electric green” color, #00FF00. For those spots, it is also recommended to stencil the words “Electric Vehicle Charging” at the entrance to the charging stall. These features will help EV drivers find the charging station(s) while also discouraging non-EV drivers from parking in said stalls and blocking off charging station use.

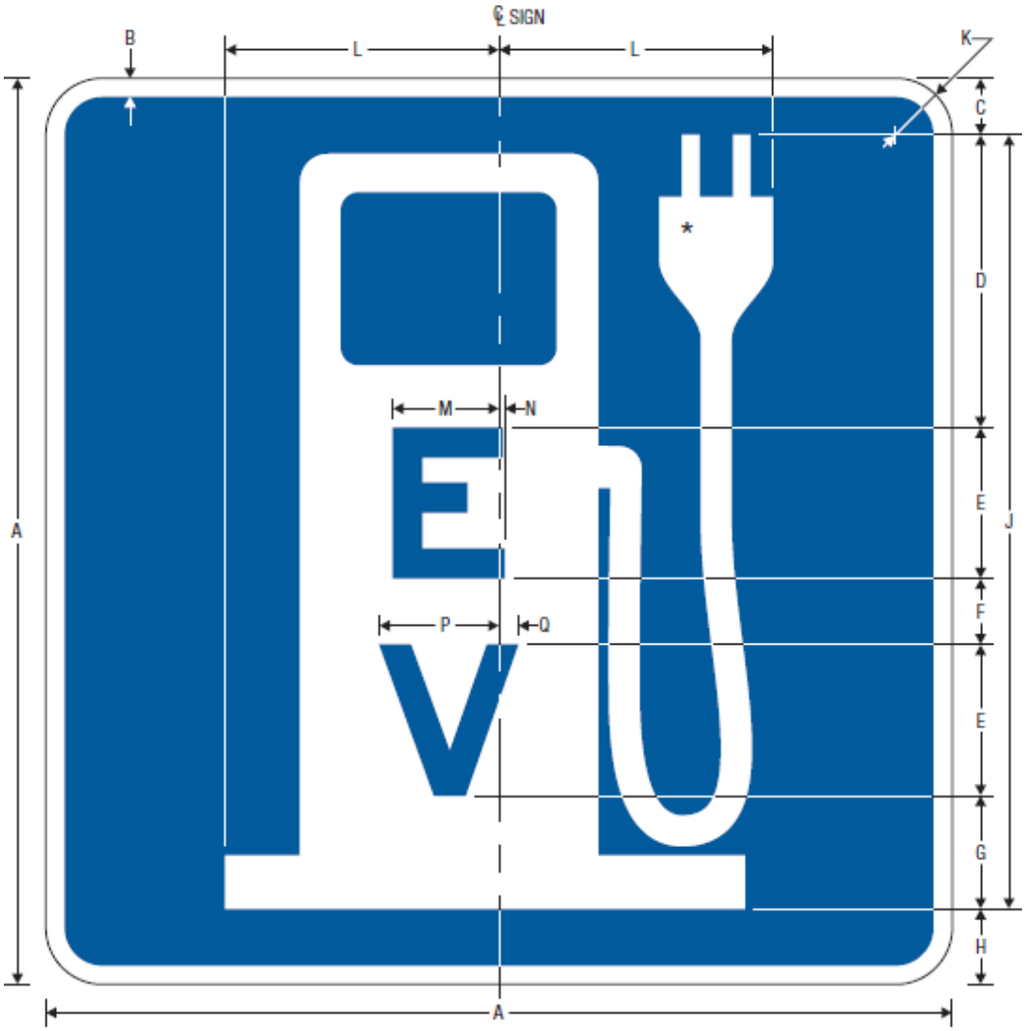
Additionally, it is suggested that a yellow parking bumper/wheelstop with black striping be placed in each spot with access to the fast-charging station(s), to improve pedestrian safety, help further designate the parking spot(s) as reserved for special use, and minimize the possibility of drivers damaging loose charging station cables when parking.

The left figure below is a side-angle of a single parking spot, demonstrating the posting of signage at the head of the fast-charging parking space, the placement of a bumper/wheelstop, and the electric green stenciling design in the recommendations. The right figure below is a top-down view of a typical fast charging site, which shows the fast-charging station positioned in the center of two adjacent parking spots. EV signage is centered in front of each parking spot, reflected in this example as blue rectangles. These two figures show recommended fast charging station stenciling needed to maximize parking spot visibility and minimize the risk of non-EVs parking in the reserved spots.



FHWA MUTCD Appendices

- Sign Template D9-11b (Alternate), issued April 1, 2011
- Sign Template R7-113, issued June 17, 2013
- Sign Template R7-113aP, R7-113bP, issued June 17, 2013



D9-11b (Alternate)

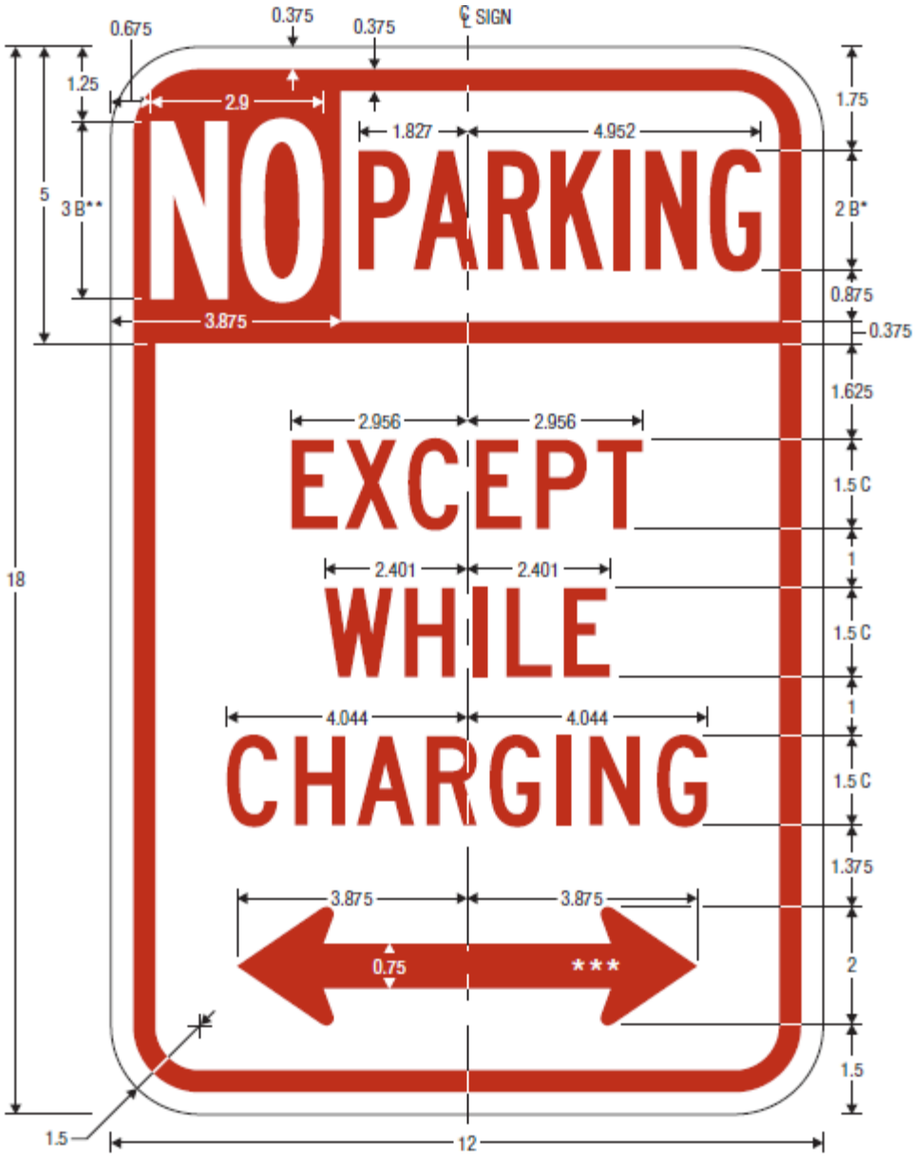
Electric Vehicle Charging (Alternate Symbol)

	A	B	C	D	E	F	G	H	J	K	L	M
C	24	0.5	1.5	7.75	4 E(m)	1.75	3	2	20.5	1.5	7.25	2.814
	30	0.75	1.875	9.625	5 E(m)	2	4	2.5	25.625	1.875	9.063	3.518

N	P	Q
0.148	3.174	0.507
0.185	3.968	0.635

* See page IA-13-2 for symbol design

COLORS: LEGEND, BACKGROUND — BLUE (RETROREFLECTIVE)
SYMBOL, BORDER — WHITE (RETROREFLECTIVE)



R7-113

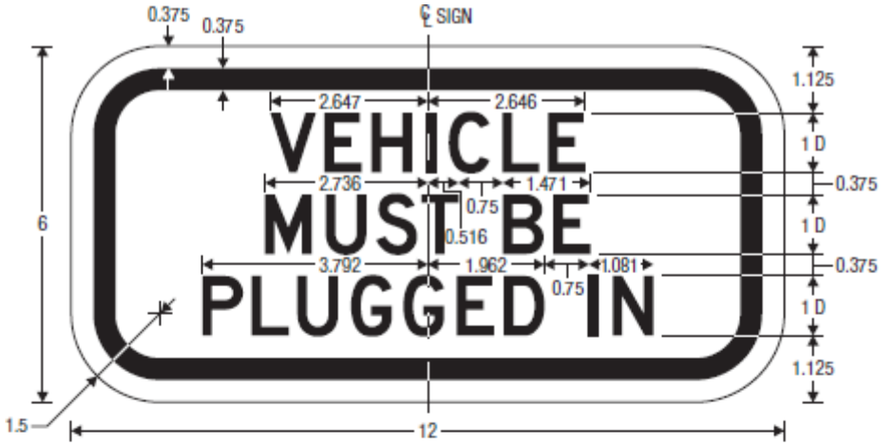
NO PARKING EXCEPT WHILE CHARGING

UPPER LEFT SECTION
COLORS: LEGEND, BORDER — WHITE (RETROREFLECTIVE)
BACKGROUND — RED (RETROREFLECTIVE)

UPPER RIGHT SECTION
COLORS: LEGEND, BORDER — RED (RETROREFLECTIVE)
BACKGROUND — WHITE (RETROREFLECTIVE)

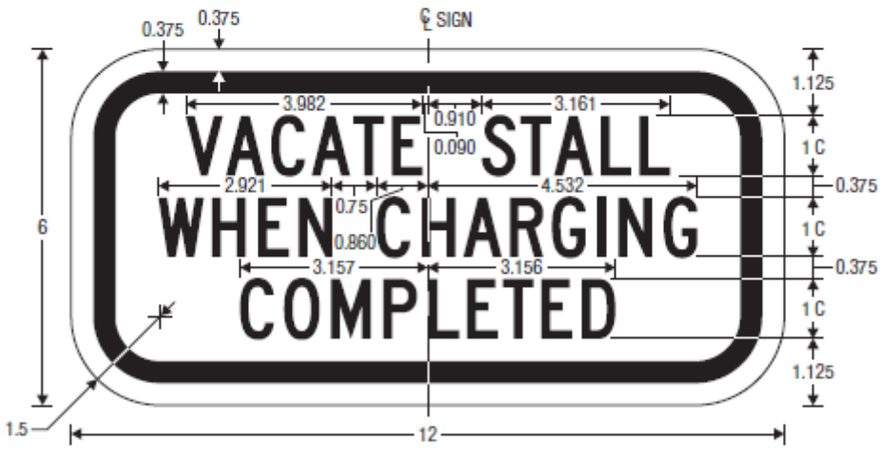
* Reduce character spacing 40%.
** Reduce character spacing 60%.
*** Type D Arrow.

LOWER SECTION
COLORS: LEGEND, BORDER — RED (RETROREFLECTIVE)
BACKGROUND — WHITE (RETROREFLECTIVE)



R7-113aP

VEHICLE MUST BE PLUGGED IN (Plaque)



R7-113bP

VACATE STALL WHEN CHARGING COMPLETED (Plaque)

COLORS: LEGEND, BORDER — BLACK (RETROREFLECTIVE)
BACKGROUND — WHITE (RETROREFLECTIVE)