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Paul J. Miller, Executive Director

August 22, 2022

Stephanie Pollack, Acting Administrator
Federal Highway Administration
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

Re: *Notice of Proposed Rulemaking on National Electric Vehicle Infrastructure Formula Program, Docket No. FHWA-2022-0008*

Dear Acting Administrator Pollack:

The Northeast States for Coordinated Air Use Management (NESCAUM) offers the following comments in response to the notice of proposed rulemaking (NPRM) issued by the Federal Highway Administration (FHWA) in 87 Fed. Reg. 37262 (June 22, 2022). The proposed rule identifies minimum standards and requirements for the implementation of National Electric Vehicle Infrastructure (NEVI) Formula Program projects and projects for the construction of publicly accessible electric vehicle (EV) chargers that are funded under title 23 of the United States Code. Effective implementation of the NEVI Formula Program is critical to establishing a public charging network that is reliable, accessible, convenient, and equitable for all EV drivers, which is needed for our member states to meet their air quality and climate goals. Clear federal requirements and guidance are paramount in achieving such a network. NESCAUM appreciates the opportunity to provide input to further enhance the proposed minimum standards and requirements developed by FHWA.

NESCAUM is the regional association of air pollution control agencies in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. NESCAUM serves as a technical and policy advisor to its member agencies on a wide range of air pollution and climate issues. NESCAUM also facilitates and guides the Multi-State Zero Emission Vehicle (ZEV) Task Force, which now includes 17 states, the District of Columbia, and the Canadian province of Quebec. Established in 2013, the Task Force drives ZEV adoption through analysis and peer-to-peer discussion of innovative policies and programs, rapid dissemination of tested models, and development of consensus recommendations for state action. With NESCAUM's support, the Task Force has developed two action plans for accelerating adoption of light-duty ZEVs, a regional strategy for charging infrastructure deployment, and more recently an action plan for accelerating adoption of medium- and heavy-duty ZEVs.[1]

[1] *See* ZEV Task Force, *Multi-State ZEV Action Plan*, 2018, www.nescaum.org/documents/2018-zev-action-plan.pdf; NESCAUM, *Northeast Corridor Regional Strategy for Electric Vehicle Charging Infrastructure 2018 – 2021*, May 2018, www.nescaum.org/documents/northeast-regional-charging-strategy-2018.pdf; and ZEV Task Force, *Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle Action Plan*, 2022, https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zero-emission-vehicle-action-plan/.

To promote the deployment of reliable and consumer friendly EV public charging networks, NESCAUM worked with the ZEV Task Force to develop a consensus set of model grant agreement and procurement contract provisions and interoperability recommendations for publicly funded charging stations. These recommendations are presented in the following three documents available on NESCAUM's website:

> **Building Reliable EV Charging Networks: Model State Grant and Procurement Contract Provisions for Public EV Charging, May 2019:** Recommendations to help ensure that publicly funded public charging stations address important consumer access and use issues, such as open access, payment options, accessibility, pricing transparency, uptime, customer support, operation, maintenance, and repairs.[2]
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> **Electric Vehicle Charging Interoperability: Recommendations for State Policy Makers, May 2020:** Recommendations to support the compatibility of key system components that allow vehicles, charging stations, charging networks, and the grid to work together as part of a seamless charging system.[3]
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> **Collecting EV Charging Utilization Data: Model Language for State Grant and Procurement Contracts, April 2021:** Recommendations for establishing uniform data collection and reporting standards to create a larger dataset and lay the foundation for a centralized data warehouse.[4]

Many of the comments on FHWA's proposed minimum standards and requirements provided below are informed by recommendations included in these three documents.

Installation, Operation, and Maintenance by Qualified Technicians of Electric Vehicle Charging Infrastructure (§ 680.106)

Number of Chargers

The proposed regulation includes a requirement for a minimum of four charging ports, capable of simultaneously charging four EVs at each charging station funded under the NEVI program. FHWA requests comments on whether there should be a different number of required charging ports.

Ideally, charging stations would be operational 100 percent of the time, but it is impossible to avoid downtime during routine maintenance and unexpected equipment failures. In addition to establishing uptime and maintenance requirements, building redundancy into the network in the form of multiple charging ports at each site is another electric vehicle supply equipment (EVSE)

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[2] NESCAUM, *Building Reliable EV Charging Networks: Model State Grant and Procurement Contract Provisions for Public EV Charging*, May 2019, https://www.nescaum.org/documents/model-contract-provisions-for-public-evse-5-24-19.pdf/.
[3] NESCAUM, *Electric Vehicle Charging Interoperability Recommendations for State Policy Makers*, May 2020, https://www.nescaum.org/documents/ev-charging-interoperability-reccomendations_5-1-20.pdf/.
[4] NESCAUM, *Collecting EV Charging Station Utilization Data: Model Language for State Grants And Procurement Contracts*, April 2021, https://www.nescaum.org/documents/evse-data-collection-model-contract-provision-for-public-evse-4-16-21.pdf/.

deployment practice that states can implement to increase functionality and reliability. Additional ports can also help alleviate congestion at charging stations during periods of high demand, further improving the experience for EV drivers.

In general, NESCAUM supports requiring four charging ports at each site. However, NESCAUM recommends that FHWA provide flexibility to allow less than the four-port minimum under limited circumstances when site characteristics make the business case of station ownership challenging. For instance, charging stations located in remote areas may experience low EV traffic, high utility infrastructure costs, high demand charges, etc. Thus, exceptions should be granted on a case-by-case basis when such economic challenges are adequately demonstrated.

Connector Type

The proposed regulation includes a requirement that DC Fast Charging (DCFC) stations connect and communicate with EVs through Combined Charging System (CCS) plugs. NESCAUM supports CCS plugs as the standard for federally funded DCFC stations. Selecting a single standard simplifies investment in public DCFC charging stations and creates consistency for EV drivers, which will lead to greater consumer acceptance and deployment of EVs. Requiring CCS plugs is also consistent with California's proposed Advanced Clean Cars II (ACCII) regulations, which will require the CCS standard for 2026 and subsequent model year vehicles that are DCFC capable. Industry is mostly aligned with CCS as the standard, with 51 of 59 vehicle models produced in 2022 using the CCS port (6 use Tesla and 2 use CHAdeMO).[5]

Payment Methods

The proposed standards indicate that, at a minimum, payment options must include a contactless payment method that accepts major debit and credit cards along with Plug and Charge payment capabilities using the International Organization for Standardization (ISO) 15118 standard.[6] Non-contactless payment methods are not included as a minimum requirement. The FHWA requests feedback on whether non-contactless payment methods should be required and whether the proposed payment methods meet the needs of the unbanked and underbanked.

NESCAUM urges the FHWA to consider adding a required payment option for credit and debit cards with Europay, Mastercard, and Visa (EMV) chips. Ensuring an equitable transition to EVs necessitates enabling EV drivers to pay for charging with the payment method(s) they typically rely on for day-to-day transactions. It should be fast, convenient, and accessible. FHWA's proposed standard does not achieve these goals. While the use of contactless credit and debit cards (also referred to as cards that allow tap payment) is steadily expanding, credit and debit cards with this capability are far from ubiquitous. Both Visa and Mastercard report that less than 25% of their cards in circulation have tap capabilities. Furthermore, the use of mobile payment options, which often offer tap payment, is not yet widespread.[7]

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[5] California Air Resources Board, *Public Hearing to Consider the Proposed Advanced Clean Cars II Regulations, Staff Report: Initial Statement of Reasons*, April 2022, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/isor.pdf.

[6] ISO 15118 is a communication protocol that is certified by the International Organization for Standardization (ISO) and standardizes communication between an EV and EVSE.

[7] California Air Resources Board, *Electric Vehicle Supply Equipment Standards Technology Review*, February 2022, https://ww2.arb.ca.gov/resource/documents/evse-technology-review.

Importantly, tap payment is also less likely to be accessible to unbanked and underbanked individuals, a designation that accounts for more than 23% of adults in the United States. Unbanked and underbanked individuals tend to rely on prepaid cards, which often have EMV chips, but do not currently come equipped with tap capabilities.[8] Requiring an EMV credit/debit card chip reader would significantly broaden the accessibility of charging stations at a modest incremental cost until such time as contactless payment methods are ubiquitous.

Requiring multiple payment options also ensures redundancy and increases the likelihood that EV drivers will have the ability to use at least one option to pay for a charging session. However, even when multiple options are offered, EV drivers may still encounter payment obstacles. To minimize the risks of EV drivers being unable to pay for charging sessions, NESCAUM recommends requiring an option to pay by phone. The availability of real time customer service can further broaden accessibility and support EV drivers new to public charging.

Long-Term Stewardship

The proposed regulation includes a required five-year time frame for states to maintain charging infrastructure in compliance with federal standards and requirements. FHWA requests feedback on whether this is an appropriate timeframe.

NESCAUM supports the minimum five-year timeframe. In addition, NESCAUM recommends that a required operations and maintenance plan be added to the regulation (see below). This would enable states to evaluate whether recipients of public funding have planned for the expense and administrative work required to maintain charging stations in good working order over this timeframe.

Uptime and Maintenance and Repair Planning

A requirement that charging ports have an average annual uptime of greater than 97% is included in the proposed regulation. NESCAUM strongly supports the establishment of an uptime standard. Equally important is the inclusion of a requirement for robust maintenance and repair planning to minimize charger downtime and ensure uptime requirements are met. Recipients of public funding should be required to submit a clear plan prior to award of funding that establishes responsibility for station maintenance and repair and that ensures the availability of adequate resources to periodically inspect station equipment and detect and address problems before they result in downtime. Requiring maintenance and repair plans can ensure that station providers have anticipated the costs and administrative work required to maintain charging stations in good working order.

Maintenance and repair plans can also establish responsibility for addressing weather conditions that could impact access to charging services. For example, in regions where snow is a common occurrence during winter months, an approved maintenance plan should include provisions for timely snow removal, and inaccessibility due to snow accumulation should not be excused.

[8] Ibid.

Optimal maintenance notwithstanding, charging stations may occasionally malfunction. In such an event, efforts to restore operation of the charger should be initiated within 24 hours following notice of a reported issue. For model provisions on these topics, please see page 7 of **Building Reliable EV Charging Networks: Model State Grant and Procurement Contract Provisions for Public EV Charging**.[9]

Qualified Technician

The proposed regulation includes a requirement that except for graduates of apprenticeship programs, all electricians installing, maintaining, and operating EVSE must be certified through the Electric Vehicle Infrastructure Training Program (EVITP). FHWA requests comments on whether there should be an alternative to the proposed requirement of certification through the EVITP, such as a U.S. DOL-recognized Registered Apprenticeship EVSE training program.

NESCAUM generally supports establishing required qualifications for the technicians who install, service, maintain, and repair federally funded charging infrastructure. The reliability of the public charging network will be significantly enhanced if technicians have appropriate EVSE-specific training and credentials, or corresponding on-the-job experience. Establishing a set of uniform and consistent requirements for technicians will prompt development and expansion of existing training and apprenticeship opportunities and, if those opportunities are both affordable and widely available, will help to ensure an inclusive workforce.

However, NESCAUM recommends that FHWA carefully consider whether the proposed requirements for receiving training through EVITP or a registered apprenticeship program will support and enable rapid growth of an equitable and inclusive workforce. EVITP training and certification must be widely available across all states to enable growth in the number of qualified technicians to keep pace with project implementation and avoid bottlenecks. EVITP programs must also be easily accessible and affordable for all potential participants, regardless of income and place of residence.

In addition, FHWA should consider whether technicians who have acquired skills through on-the-job project experience could demonstrate their qualifications to install and maintain federally funded charging stations, particularly in the first year or two of the program when a lack of EVITP-certified technicians will limit the pace of charger deployment. Allowing qualified licensed electricians without an EVITP certification to install chargers, at least during the first year of the NEVI program, will help prevent bottlenecks and enable rapid buildout of the charging network.

Customer Service

The proposed regulation includes a requirement that EV charging customers have a mechanism to report outages, malfunctions, and other issues with charging infrastructure.

NESCAUM recommends that FHWA revise the customer service requirement to include posting a clearly visible toll-free phone number near every plug that drivers can call to reach customer

[9] NESCAUM, *Building Reliable EV Charging Networks: Model State Grant and Procurement Contract Provisions for Public EV Charging*, May 2019, https://www.nescaum.org/documents/model-contract-provisions-for-public-evse-5-24-19.pdf/.

support staff. Timely customer service support to assist EV drivers is important to address unexpected operational problems with charging stations. Drivers encountering problems charging their vehicles need to be able to reach a real person who can assist them immediately by running remote diagnostics on the equipment and running a remote restart when necessary. Customer service representatives can also help guide EV drivers with real time instructions for operating equipment.

Interoperability of Electric Vehicle Charging Infrastructure (§ 680.108)

Charger-to-EV Communication
The proposed regulation would adopt and promote industry standards consistent with the standards outlined in ISO 15118. FHWA requests comment on the proposed reference to ISO 15118.

NESCAUM supports the adoption of ISO 15118 as the standard for charger-to-EV-communication. Widespread adoption of ISO 15118 could set the stage for the introduction of Plug and Charge, a communications protocol that allows the vehicle to authenticate a charging session without use of any credentials. An EV driver could initiate and pay for a charge by simply plugging the vehicle into the charger. While this would provide unparalleled convenience for the EV driver, it requires all components of the market to be aligned. ISO 15118 will need to be integrated into both the charger and the vehicle.

ISO 15118 can also facilitate vehicle-to-grid (V2G) integration, allowing EVs to discharge electricity to the electric grid during periods of high demand. V2G provides benefits to the electric grid while also potentially creating value for EV drivers. FHWA's minimum standards and requirements can help galvanize the market around ISO 15118 as the consensus communication protocol, unlocking the benefits of plug-and-charge and V2G capabilities.

Data Submittal (§ 680.112)

The proposed regulation outlines minimum data submittal requirements for projects funded under the NEVI program. Collection of EVSE utilization data can deliver many benefits to planners, policymakers, and EV drivers. Data about station utilization is essential for helping policymakers evaluate EVSE deployment, improve program effectiveness, and ensure that public funding is equitably and efficiently distributed. Collection of aggregated EVSE utilization data also can help assess trends in the returned value on investments in charging infrastructure and provide deeper insights into charging behaviors across various settings and use cases. In turn, these data can be used to identify gaps in the charging infrastructure ecosystem and inform strategic investments designed to fill those gaps and meet the needs of EV drivers.

NESCAUM strongly supports the establishment of minimum standards and requirements for data submittal, and recommends inclusion of the following additional information about charging sessions:

- charging session ID;
- plug ID;
- total transaction fee;

- total time plugged in; and
- total charging time.

Standardizing the collection and validation of EVSE utilization data can help improve the efficiency and effectiveness of publicly funded charging programs while reducing compliance burdens for obligated parties. To help achieve these outcomes, Atlas Public Policy has developed an EV charging use data specification[10] designed to ensure consistent data collection, validation, and reporting between state and federal EVSE programs such as NEVI. NESCAUM recommends that FHWA consider expanding data collection provisions to specify a standardized approach to the collection and validation of utilization data from charging stations deployed under the NEVI program.

Information on Publicly Available Electric Vehicle Charging Infrastructure Locations, Pricing, Real-Time Availability, and Accessibility Through Mapping Applications (§ 680.116)

Communication of Price

Under the proposed regulation, chargers would be required to display and base the price of an electric charge in dollar per kilowatt-hour ($/kWh). FHWA requests comments on how to best require the display and base the price of electrical charge in states that restrict the ability to display charge in $/kW, seeking specific comment on whether $/minute, $/mile, or some other display and base should be considered.

Providing EV charging on a $/kWh basis is the best way to create consistent and fair pricing, and therefore improve the user experience. To move the industry toward $/kWh as the national standard, $/minute and $/mile fees should not be allowed for publicly funded EV charging stations. However, as acknowledged by the FWHA, charging on a $/kWh basis is difficult or impossible in many states due to outdated or overly restrictive laws and regulations. NESCAUM recommends that FHWA provide technical assistance to state DOT officials in states where setting fees on a $/kWh basis is not currently feasible to help identify barriers to $/kWh pricing and regulatory changes that could address those barriers.

The proposed regulation does not include a requirement to ensure transparent communication of additional dwell-time fees for charging sessions at the charging site. FHWA requests comments on whether additional fees should be allowed or discouraged.

These fees can be an effective method of incentivizing drivers to move their vehicles when they are done charging, freeing up the charger for use by other drivers. Site hosts may have other reasons to implement parking or other fees, depending on the characteristics of the site, and states should coordinate with vendors on appropriate site-specific fees. FHWA should require all charging costs and other fees that will be assessed to be clearly displayed at the point of sale, and not just made available online, to enable informed consumer choice before initiating a charging session.

[10] Atlas Public Policy, *EV Charging Use Data Specification*, https://github.com/AtlasPublicPolicy/charging-use-spec/.

Third-Party Data Sharing About Charging Station Availability
The proposed regulation includes requirements for several data fields to be made available for free to third-party software developers, including the real-time status of each charging port and the real-time price to charge, among others.

NESCAUM supports FHWA's proposed requirement to share data about charging stations and their availability. Providing motorists with information about the operational status of networked charging stations in real-time through a smart phone app will help drivers better plan for charging stops by steering them away from charging stations that are not working or unavailable.

Periodic Updates to Minimum Standards and Requirements

EV and charging infrastructure technologies are evolving quickly, and the pace of EV adoption is also accelerating. As these changes occur, requirements for federally funded charging infrastructure projects may also need to evolve. To ensure that the minimum standards and requirements continue to be well-aligned with the current state of technology and the market, NESCAUM recommends that FHWA indicate how and when it will reconsider the minimum standards and requirements.

Thank you for the opportunity to provide input on FHWA's proposed minimum standards and requirements for the NEVI Formula Program and EV charging station projects funded under title 23 of the United States Code. These minimum standards and requirements will shape the development of a consistent and reliable national network of EV charging stations, boost consumer confidence, and accelerate the deployment of electric vehicles.

Sincerely,

Paul J. Miller
Executive Director

cc: NESCAUM Directors
Gary Jensen, Dawn Horan, FHWA
Lynne Hamjian, Cynthia Greene, EPA R1
Richard Ruvo, Kirk Wieber, Matthew Laurita, EPA R2