

# ATTACHMENT 1 – TECHNICAL REQUIREMENTS

Funding for any agreement resulting from this Notice of Funding Opportunity (NOFO) will be paid entirely from National Electric Vehicle Infrastructure (NEVI) Formula Program funds. All applicable requirements of ***Title 23 United States Code (U.S.C)*** and ***2 Code of Federal Regulations (CFR) Part 200*** apply to the administration of these funds, which include, but are not limited to: ***23 CFR 680***; the ***Davis-Bacon Act***; the ***Americans with Disabilities Act of 1990 (ADA)***; ***Title VI of the Civil Rights Act of 1964***; the ***National Environmental Policy Act of 1969 (NEPA)***, including an initial NEPA meeting before NEPA process starts; and the ***Build America, Buy America (BABA) Act***. EV chargers funded under any agreement resulting from this NOFO will be covered by the ***Build America, Buy America Implementation Plan to Enhance Buy America for Electric Vehicle (EV) Chargers***. The Awardee must also comply with all other federal, state, and local laws, standards, and requirements.

In addition to the above, Awardees must comply with the following technical requirements.

1		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
1.1	<b>Distance from Alternative Fuel Corridor</b>	The project site shall be within a maximum driving distance of 1 mile from the Alternative Fuel Corridor (AFC). The measurement of the distance shall begin from the end of the nearest interstate off-ramp to the charging station and conclude at the charging station entrance.
1.2	<b>Access to Restrooms</b>	The project site shall include publicly accessible, ADA-compliant restrooms located at the project site or within 1,000 feet from the charging station. The restrooms must be reachable via accessible sidewalks or pavement.
1.3	<b>Site Accessibility</b>	The project site shall be accessible to the public and reachable from a public road 24 hours per day, 7 days per week, throughout the year. Access to the project site must have adequate traffic control measures, such as signage, signals, striping, etc. These sites may be situated on private property.
1.4	<b>ADA Compliance</b>	All site facilities, amenities, or other project features shall be ADA compliant and located within 1,000 feet of the chargers. The project site shall adhere to ADA requirements, incorporating a minimum of one ADA-compliant parking space equipped with access to electric vehicle supply equipment (EVSE) infrastructure. The ADA-compliant parking space shall adhere to the requirements specified by <b><i>the US Access Board</i></b> .
1.5	<b>Site Signage</b>	The project site shall have clear signage that indicates the site's location and the locations of the charging ports within the site. Signage offering directional guidance to the charging site shall also be deployed along the roadway, following the <b><i>11th Edition of the Manual on Uniform Traffic Control Devices for Streets and Highways</i></b> , as applicable. The Applicant is responsible for obtaining all permits and approvals related to signage.

1		
ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS		
1.6	<b>Safety Lighting</b>	The project site shall provide lighting to illuminate all EV chargers and corresponding parking spaces. Lighting levels and requirements shall be consistent with existing jurisdictional and zoning requirements.
1.7	<b>Cell Phone Service</b>	The Awardee shall make certain there is adequate cell phone service available at the project site. This may include an open access Wi-Fi hotspot.
1.8	<b>Trash Cans</b>	The project site shall have trash cans available to site users. The trash cans shall be emptied and maintained on a regular basis to prevent overflow.
1.9	<b>Snow Removal</b>	The Awardee shall provide snow removal service at the project site when snow accumulates above 2 inches.
1.10	<b>Security Cameras or On-Site Staff</b>	The Awardee shall ensure security through either security cameras or on-site staff. The security cameras shall fully cover the project site, including the EV chargers, EV infrastructure equipment, and parking area. High-definition, color cameras shall be used and footage from the cameras shall be stored for at least 30 days, complying with cybersecurity and data management requirements.
1.11	<b>Physical Security to protect pedestrians and EVSE</b>	All EVSE shall be physically secured to prevent unauthorized access, and EVSE and pedestrians must be protected from being hit by vehicles from inside and outside of the site (i.e. bollards, sidewalks, etc.).

2		
ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS		
2.1	<b>Range of Operating Temperature</b>	EV chargers shall be capable of operating over an ambient temperature range of minus 22 degrees to 122 degrees Fahrenheit.
2.2	<b>Charger Locks and Tamper Prevention</b>	The EV chargers shall incorporate security features to deter tampering. Features shall include the use of locks on enclosures and tamper-resistant screws.
2.3	<b>Weather Resistance</b>	The EV chargers shall be constructed to withstand harsh weather conditions, such as snow, heavy rains, extreme temperatures, and high winds. All above-ground structures, cabinets, and enclosures shall be designed in accordance with local building code standards, and EV charger enclosures shall have a minimum rating of IP54 or equivalent.
2.4	<b>Range of Output Current</b>	All charging ports shall be able to provide output currents up to at least 350 amps of direct current (ADC).

2		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS														
2.5	Output Current Limit	<p>The output current may be the lower of 350 ADC or the current required to reach 150 kW based on the output voltage (Figure 1). The EVSE shall be capable of outputting at least one voltage and current combination that reaches 150 kW. This is satisfied by operating at any point along the line in Figure 1 below.</p> <p><b>Figure 1: Required Operating Output</b></p> <table border="1"> <caption>Data points for Figure 1: 150 kW Limit</caption> <thead> <tr> <th>Output Current (ADC)</th> <th>Output Voltage (V)</th> </tr> </thead> <tbody> <tr> <td>150</td> <td>1000</td> </tr> <tr> <td>200</td> <td>750</td> </tr> <tr> <td>300</td> <td>500</td> </tr> <tr> <td>400</td> <td>375</td> </tr> <tr> <td>500</td> <td>300</td> </tr> <tr> <td>600</td> <td>250</td> </tr> </tbody> </table>	Output Current (ADC)	Output Voltage (V)	150	1000	200	750	300	500	400	375	500	300	600	250
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150	1000															
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2.6	North American Charging Standard Connectors	<p>The direct current fast charging (DCFC) charger(s) must be capable of charging any J3400 North American Charging Standard (NACS) compliant vehicle. A minimum of 4 permanently attached NACS connectors and 4 permanently attached J1772 CCS1 connectors are required at the project site.</p>														
2.7	Emergency Shut Off	<p>All EVSE must have an emergency stop (E-Stop) button that will stop power from the charging port when activated.</p>														
2.8	NEVI Port Power Sharing	<p>The project site shall have a minimum of 4 NEVI compliant charging ports. Additional charging ports that do not meet the NEVI requirements are allowed, but these additional non-NEVI ports are ineligible for NEVI funding. Power sharing between the NEVI ports and the non-NEVI ports is allowed as long as the 150 kW continuous and simultaneous power requirements for the NEVI ports are met. The full cost of the utility upgrades to support all charging ports is an eligible expense. The cost of any equipment that supports only the non-NEVI ports are an ineligible expense. The cost eligibility of any shared equipment that supports both the NEVI and non-NEVI ports shall be prorated based on the proportion of the power rating of the equipment that can supply the NEVI ports simultaneously. If the site contains both NEVI ports and non-NEVI ports, signage shall be provided to clearly identify the NEVI ports.</p>														

2		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
2.9	<b>Minimum Power Supply and Battery Energy Storage System Requirements</b>	<p>A Battery Energy Storage System (BESS) may be installed at any site to control demand charges or provide back-up power. For some sites, based on the expected use over the 5-year O&amp;M period, a BESS may also be used to supplement the power supply from the grid. When less than 150 kW per port of grid capacity is installed, failure of the BESS to meet the power delivery request of a charging vehicle up to 150 kW per port will be assessed as an outage of the relevant port(s) and shall count against the minimum uptime requirement for the port(s). The minimum grid capacity per port and minimum BESS size requirements for each site are given at the end of this document in Table 4-3</p> <p>The required size of an installed BESS depends on how the BESS is connected to the charging ports. If each port has a dedicated BESS that is not connected to any other port, then the “Dedicated” requirement must be met, which is the first number in the table. If the BESS is shared among all ports, then the “Shared” requirement must be met, which is the second number in the table. If there is only a single number in the table, then that applies to both “Dedicated” and “Shared” BESS configurations. BESS size requirements may be interpolated for installed grid capacities not shown in Table 4-3, so long as the minimum grid capacity is met.</p>

3		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
3.1	<b>Cybersecurity and Data Management Plan</b>	<p>The Awardee shall develop a written cybersecurity plan. The plan shall adhere to the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF). The plan shall outline cybersecurity best practices to be used through all phases of the project and include the EV charging and supporting infrastructure. The plan shall include security and privacy measures to be implemented, a description of how the entire system will be safeguarded against cyberattacks, and a description of how data will be securely stored, transmitted, and protected from unauthorized access, modification, or destruction. In addition, the document will detail the expected threat surface and specify the NIST 800-53 controls to be implemented for risk reduction. The plan shall establish roles for project governance and oversight. The plan shall include the approach to data segmentation to physically or logically isolate the EV charging station(s) from all other IT, OT, and IoT devices that may be present.</p>
3.2	<b>Cybersecurity Event Management Team</b>	<p>The Awardee shall establish a Cybersecurity Event Management Team (CEMT) made of Awardee staff members who will be responsible for responding to any cybersecurity events that may occur during any phase of the project. The Awardee shall develop a Cybersecurity Event Management Plan that outlines the processes that will be followed in response to an event, including notifying CEMT of an event.</p>
3.3	<b>Data Segmentation</b>	<p>Data networks used by the charging network shall be segmented to minimize the risk of unintended damage, unauthorized access, data loss, lack of service, privacy breaches, or other issues resulting from unprotected connections.</p>

3		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
3.4	<b>Cybersecurity Operations</b>	Cybersecurity operations shall adhere to and maintain certification for System and Organization Controls (SOC 2) and conduct an annual SOC 2 audit.
3.5	<b>Risk Assessment Schedule</b>	The Awardee shall provide a schedule for regular risk assessments and process reviews. Risk assessment read-out reports shall be provided to NDDOT once per year. A baseline risk assessment shall be part of Task 3 of the Scope of Work (NOFO, Attachment 2) and shall include penetration testing. Risk assessments shall include vulnerability scans using the MITRE or Cybersecurity and Infrastructure Security Agency (CISA) Common Vulnerability and Exposures (CVE) database and a report summarizing results and actions for mitigating new or existing vulnerabilities. Regularly scheduled security patching shall be provided by qualified personnel.
3.6	<b>Cybersecurity Event Notification</b>	The Awardee shall inform NDDOT of any cybersecurity event that requires notification to any person under federal or state law, including data breaches or incidents affecting an electric utility, within 24 hours of the Awardee's discovery of the event.

4		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
4.1	<b>Monthly Preventative Maintenance</b>	The Awardee shall perform monthly preventative maintenance on the EVSE infrastructure. This shall include checking for damage and vandalism and replacing any damaged or deteriorated cables or connectors.
4.2	<b>Customer Service</b>	The Awardee shall provide a customer service phone number. The Awardee shall also provide a website or text message number to report problems or issues with the EV chargers or project site. These shall be available 24 hours a day, 7 days a week, and posted clearly and visibly at the charging stations. All contact methods must connect the customer to the Awardee and must provide access for users that have limited English proficiency and for people with disabilities.

5		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
5.1	<b>Emergency Management Plan</b>	The Awardee shall develop an emergency management plan outlining actions the Awardee will take in the event of a natural disaster or other declared emergency. The Emergency Management Plan shall be aligned and referenced to practices defined in 3.2, Cybersecurity Event Management Team, and 3.6, Cybersecurity Event Notification.

6		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
6.1	<b>Annual Safety Training</b>	The Awardee shall provide annual safety training to all on-site staff, staff operating and maintaining the EVSE infrastructure, and local emergency personnel. The training shall address subjects like electrical safety, shutdown procedures, and firefighting techniques relevant to EVs and/or EV charging emergencies.
6.2	<b>Qualified Workforce Training and Technician Documentation</b>	The Awardee shall verify that the workforce installing, maintaining, and operating chargers has appropriate licenses, certifications, and training to verify that charger installation and maintenance is performed safely by a qualified and increasingly diverse workforce of licensed technicians and other laborers per 23 CFR 680.  Workforce training is encouraged to target recruiting, training, and hiring individuals from disadvantaged communities.

7		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
7.1	<b>Community Engagement Outcomes Report</b>	The Awardee must supply any relevant information regarding community engagement to support NDDOT’s development of the Community Engagement Outcomes Report per 23 CFR 680.112 (d).

Table 4-3. Minimum BESS Usable Capacity per Port

			Installed Grid Capacity per Port (kW) and Minimum BESS Usable Capacity per Port (Dedicated / Shared kWh)						
Cluster	Utilization 150kW	Minimum Grid Capacity per Port	15 kW	30 kW	50 kW	75 kW	100 kW	125 kW	150 kW
94 – A	8%	15 kW	181/135 kWh	120 kWh	100 kWh	75 kWh	50 kWh	25 kWh	0 kWh
94 – B	15%	30 kW	–	188/120 kWh	105/100 kWh	75 kWh	50 kWh	25 kWh	0 kWh
94 – C	24%	50 kW	–	–	199/110 kWh	92/75 kWh	50 kWh	25 kWh	0 kWh
94 – D	21%	30 kW	–	320/213 kWh	158/100 kWh	78/75 kWh	50 kWh	25 kWh	0 kWh
94 – E	23%	50 kW	–	–	185/100 kWh	85/75 kWh	50 kWh	25 kWh	0 kWh
94 – F	74%	150 kW	–	–	–	–	–	–	0 kWh
94 – G	28%	50 kW	–	–	261/163 kWh	121/78 kWh	53/50 kWh	25 kWh	0 kWh
94 – H	24%	50 kW	–	–	199/110 kWh	92/75 kWh	50 kWh	25 kWh	0 kWh
94 – I	31%	50 kW	–	–	323/233 kWh	146/87 kWh	63/50 kWh	25 kWh	0 kWh
94 – J	38%	75 kW	–	–	–	218/157 kWh	88/50 kWh	25 kWh	0 kWh
94 – K	91%	150 kW	–	–	–	–	–	–	0 kWh
29 – A	23%	50 kW	–	–	185/100 kWh	85/75 kWh	50 kWh	25 kWh	0 kWh
29 – B	26%	50 kW	–	–	226/130 kWh	106/75 kWh	50 kWh	25 kWh	0 kWh
29 – C	67%	150 kW	–	–	–	–	–	–	0 kWh
29 – D	28%	50 kW	–	–	261/163 kWh	121/78 kWh	53/50 kWh	25 kWh	0 kWh
29 – E	9%	15 kW	193/135 kWh	120 kWh	100 kWh	75 kWh	50 kWh	25 kWh	0 kWh
29 – F	4%	15 kW	135 kWh	120 kWh	100 kWh	75 kWh	50 kWh	25 kWh	0 kWh