

ATTACHMENT 1 – TECHNICAL REQUIREMENTS

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 (exceptions as noted in NOFO)*; 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	Site Accessibility	The project site shall be accessible to the public and reachable from a public road. 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.
1.2	Distance from Community	The project site shall be within the specific driving distance from the intersection of the State Highway detailed in the NOFO.
1.3	ADA Compliance	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 <i>the US Access Board</i> .
1.4	Site Signage	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 <i>11th Edition of the Manual on Uniform Traffic Control Devices for Streets and Highways</i> , as applicable. The Applicant is responsible for obtaining all permits and approvals related to signage.
1.5	Safety Lighting	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.
1.6	Cell Phone Service	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.
1.7	Trash Cans	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.
1.8	Snow Removal	The Awardee shall provide snow removal service at the project site when snow accumulates above 2 inches.

1		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
1.9	Physical Security to protect pedestrians and EVSE	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	Range of Operating Temperature	EV chargers shall be capable of operating over an ambient temperature range of minus 22 degrees to 122 degrees Fahrenheit.
2.2	Charger Locks and Tamper Prevention	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	Weather Resistance	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	Range of Output Current	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>Figure 1: Required Operating Output</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
Output Current (ADC)	Output Voltage (V)															
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 2 permanently attached NACS connectors and 2 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		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
2.8	Minimum Power Supply and Battery Energy Storage System Requirements	<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&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). 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	Cybersecurity Operations	The Awardee shall adhere to and maintain certification for System and Organization Controls (SOC 2) and conduct an annual SOC 2 audit or maintain an ISO-27001 certification.

4		ADDITIONAL CHARGER REQUIREMENTS AND SPECIFICATIONS
4.1	Monthly Preventative Maintenance	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	Customer Service	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	Annual Safety Training	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.
5.2	Qualified Workforce Training and Technician Documentation	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.

Table 4-3. Minimum BESS Usable Capacity per Port

4-Port Utilization			Installed Grid Capacity per Port (kW) and Minimum BESS Usable Capacity per Port (Dedicated / Shared kWh)						
Community	Predicted 2032 Utilization	Minimum Grid Capacity per Port (kW)	15 kW	30 kW	50 kW	75 kW	100 kW	125 kW	150 kW
Williston	27%	50	-	-	240/140	113/75	50	25	0
Watford City	22%	50	-	-	172/100	92/75	50	25	0
Stanley	20%	30	-	295/190	145/100	75	50	25	0
Kenmare	10%	15	205/135	120	100	75	50	25	0
Minot	63%	150	-	-	-	-	-	-	0
Coleharbor	24%	50	-	-	199/110	92/75	50	25	0
Rugby	17%	30	-	220/120	110/10	75	50	25	0
Harvey	16%	30	-	204/120	108/100	75	50	25	0
Carrington	15%	30	-	188/120	105/100	75	50	25	0
Devils Lake	20%	30	-	295/190	145/100	75	50	25	0
Petersburg	14%	30	-	171/120	103/100	75	50	25	0
Grafton	8%	15	181/135	120	100	75	50	25	0
Bowman	14%	30	-	171/120	103/100	75	50	25	0
Linton	7%	15	169/135	120	100	75	50	25	0
Ellendale	5%	15	145/135	120	100	75	50	25	0
Wahpeton	11%	30	-	132/120	100	75	50	25	0

2-port Utilization			Installed Grid Capacity per Port (kW) and Minimum BESS Usable Capacity per Port (Dedicated / Shared kWh)									
Community	Predicted 2032 Utilization	Minimum Grid Capacity per Port (kW)	12.5 kW	18.75 kW	25 kW	37.5 kW	50 kW	62.5 kW	75 kW	100 kW	125 kW	150 kW
Williston	53%	150	-	-	-	-	-	-	-	-	-	0
Watford City	43%	75	-	-	-	-	-	-	274/222	107/222	28/25	0
Stanley	39%	62.5	-	-	-	-	-	343/277	229/170	91/50	25	0
Kenmare	19%	37.5	-	-	-	202/121	133/100	95/88	75	50	25	0
Minot	100%	150	-	-	-	-	-	-	-	-	-	0
Coleharbor	49%	75	-	-	-	-	-	-	341/302	131/113	34/25	0
Rugby	35%	62.5	-	-	-	-	-	281/204	185/118	77/50	25	0
Harvey	32%	50	-	-	-	-	344/257	235/154	154/90	67/50	25	0
Carrington	30%	50	-	-	-	-	303/210	205/128	138/84	60/50	25	0
Devils Lake	40%	62.5	-	-	-	-	-	359/295	240/183	95/50	25	0
Petersburg	28%	50	-	-	-	-	261/163	175/101	121/78	53/50	25	0
Grafton	16%	25	-	-	246/155	154/113	108/100	88	75	50	25	0
Bowman	29%	50	-	-	-	-	282/187	190/114	129/81	57/50	25	0
Linton	14%	25	-	-	209/135	131/113	103/100	88	75	50	25	0
Ellendale	11%	18.75	-	196/135	150/125	115/113	100	88	75	50	25	0
Wahpeton	22%	37.5	-	-	-	267/165	172/100	117/88	82/75	50	25	0