

MD-NJ-PA-WV CHARGING AHEAD PARTNERSHIP

I-81 AND I-78 FREIGHT CORRIDOR

September 2024



U.S. Department of Transportation
Federal Highway Administration



i. Project Narrative

The Maryland Department of Transportation (MDOT), in partnership with the Pennsylvania Department of Transportation (PennDOT), the New Jersey Department of Environmental Protection (NJDEP), and the West Virginia Department of Transportation (WVDOT), through the MD-NJ-PA-WV Charging Ahead Partnership (“the Partners”) aims to align interjurisdictional plans, public outreach and emission reduction priorities to strategically and holistically deploy alternative fueling infrastructure along the I-81 and I-78 corridors. As designated Alternative Fuel Corridors (AFCs), I-81 and I-78 are nationally significant corridors for commuter travel and freight movement, supporting critical supply chain and first-and-last-mile freight service connections through West Virginia, Maryland, Pennsylvania, and New Jersey. The Partners request funding support from the Federal Highway Administration’s (FHWA) Round 2 *Charging and Fueling Infrastructure (CFI) Discretionary Grant Opportunity*, to execute the Project in two distinct parts: 1) \$880,000 in federal funding support from the CFI Community Program will be utilized to execute a zero emissions medium and heavy-duty vehicle (ZE-MHDV) charging/fueling deployment analysis (Visioning Plan) and 2) \$18,601,737 from the CFI Corridor Program will support deployment of alternative fueling infrastructure (the Deployment Project). In total, the Project requests \$19,481,737 in CFI Program funding support.

Community Program: Visioning Plan

MDOT, PennDOT, NJDEP, and WVDOT are requesting \$880,000 in CFI Community Program funding to commission a contractor to develop a corridor Visioning Plan, which will identify best practices, engage the public, and establish interoperable and interjurisdictional standards. Invaluable insights gained through public engagement will inform the Partners’ strategic efforts to deploy a comprehensive network of alternative fueling and charging infrastructure for medium and heavy-duty vehicles on or near the I-81 and I-78 corridors. The Visioning Plan will support and facilitate freight movement, modernize freight infrastructure and MHDV driver amenities, and help advance the decarbonization goals for the corridor, the Partners, and private sector contributors such as charging and fueling companies. The Visioning Plan will help the Partners identify the best fit areas for near-term electric vehicle charging station deployment based on public access, energy saving opportunities, emissions reduction optimization, and operational success. It will also examine the longer-term need for hydrogen fueling infrastructure deployment.

Corridor Program: Charging Infrastructure Deployment

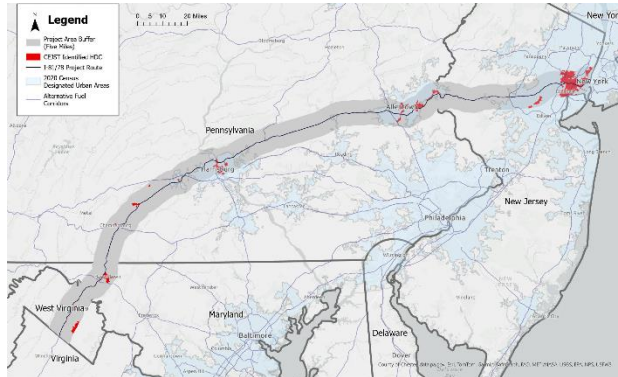
Additionally, MDOT, PennDOT, and NJDEP request \$18,601,737 in Corridor Program federal funding to support deployment of six electric truck charging depots with at least eight ports each, (final number of ports needed determined during the planning process) estimated to reduce a minimum of 547 short tons of GHG emissions annually. WVDOT will not engage in the Deployment Project aspect of the MD-NJ-PA-WV Charging Ahead Partnership.

i. Project Location

I-81 and I-78 are key corridors for the deployment of alternative fueling technologies due to the high volume of freight traffic on these highways and will be the primary areas of focus for the Visioning Plan and the Deployment Project (Figure 1). I-81 and I-78 are federally designated electric AFCs and Freight EV Corridors for all Partners. This corridor is also designated as a Phase

1 priority under the National Zero-Emission Freight Corridor Strategy¹ for Maryland, Pennsylvania, and New Jersey.

Figure 1: Project Area of I-81 & I-78



The Visioning Plan will leverage regional planning efforts to inform strategic site area identification for electric vehicle charging and hydrogen refueling hubs. Once priority areas are identified, Partners will execute the Deployment Project for six charging infrastructure sites, each with at least eight ports, in locations that serve local fleet needs and build out connections to a regional network of freight truck charging infrastructure.

Vendors will assist with final site selection during the Deployment Project. Though the Deployment Project will focus on electric vehicle charging, the Partners are interested in future hydrogen pursuits as this fuel may be critical to the decarbonization of long-haul freight movement. Charging deployment was prioritized in the near term to meet AFC designations and due to the Partners' previous experience with National Electric Vehicle Infrastructure (NEVI) charging station deployments. Exploring hydrogen for the Visioning Plan will allow the Partners to plan for hydrogen AFC designations in the future.

The Visioning Plan will consider protocols and criteria similar to those adopted for two previously completed US Department of Energy (DOE)-funded charging site planning studies: 1) East Coast Commercial ZEV Corridor Project² along Interstate 95 and 2) the Northeast Freight Corridor Charging Plan regional study³. Criteria for consideration include site readiness, stakeholder feedback, benefits to historically disadvantaged communities (HDCs), emissions reduction optimization, Americans with Disabilities Act (ADA) compliance, and safety (Table 1). In line with objectives of Section IV of Corridor Program guidelines, Partners plan to prioritize sites that integrate comfort amenities such as restrooms, showers, and food options. In line with Section III of Corridor Program objectives, stakeholder feedback from freight operators will be incorporated when considering any additional amenities. Further information on safety, environmental considerations, community benefits, and other project criteria are included in the [Merit Criteria](#) section of this application. In line with Sections V and VI of the Corridor Program, Partners will evaluate infrastructure providers for quality of products and services. Infrastructure products that are responsive to technological advancements will be prioritized. Equipment suppliers will undergo a competitive bid process where criteria such as flexibility to accommodate future advancements, including vehicle-to-grid and autonomous vehicles, and long-term operation and maintenance services will be considered by Partners during procurement. In line with Section VII of the Corridor Program, the Partners, with support from CALSTART, estimated the amount of

1 [National Zero-Emission Freight Corridor Strategy \(driveelectric.gov\)](https://driveelectric.gov)

2 [EP-ACT - East Coast Commercial ZEV Corridor](#)

3 [Northeast Freight Corridor Charging Plan - Vermont Clean Cities Coalition \(uvm.edu\)](https://www.uvm.edu)

emissions that will be reduced through the use of the proposed infrastructure. Please refer to [Table 10 in the Project Merit Criteria section 2](#) for more information.

Table 1: Visioning Plan Criteria

VISIONING PLAN CRITERIA	OVERVIEW
Site Readiness and Emissions Reduction Optimization	<ul style="list-style-type: none"> - Align sites with current freight activity centers. - Align sites with routes experiencing high freight vehicle utilization and traffic.
Benefits to Historically Disadvantaged Communities	<ul style="list-style-type: none"> - Incorporate stakeholder feedback into site selection process. - Prioritize sites which avoid negative impacts to Historically Disadvantaged and designated J40 Communities. - Prioritize sites posing air quality benefits to disadvantaged communities (DACs) and non-attainment areas.
ADA Compliance and access	<ul style="list-style-type: none"> - Prioritize depot site and design that provide equal opportunity and access to people with disabilities. Include station availability indicators.
Safety	<ul style="list-style-type: none"> - Prioritize sites that pose no dramatic impact to current traffic or use conditions; sites that elevate National Roadway Safety Strategy (NRSS) goals will be prioritized
Fuel Type and Station Design	<ul style="list-style-type: none"> - Evaluate sites for best fit with hydrogen or electric charging. - Complement station design with the state-level NEVI deployment plans by supporting the need for charging depots with high clearances, pull-through stalls, nozzle type, and/or DCFC power levels greater than 150kW.

II. Community-based Infrastructure and Access

The Visioning Plan will include a framework for a publicly accessible charging corridor deployment that prioritizes community needs and the preservation of local culture, history, and assets. The analysis will consider infrastructure needs along highways and other freight locations in the region, which will be informed by input from stakeholders, electric utilities, state and local governments, Clean Cities and Communities coalitions, industry partners, the National Renewable Energy Laboratory (NREL), and other technical experts. By leveraging state-of-the-art, federally funded analyses, the Partners will accelerate the pace of urgently needed infrastructure deployment, thereby maximizing the air pollution reductions, transformative industry impacts, and benefits to communities proximate to the project area. The proposed approach will also consider regional needs of the I-95 corridor, a major focus area of Phases 1 and 2 of the National Zero Emission Freight Corridor Strategy. The East Coast Commercial ZEV Corridor project team is expected to provide key recommendations for complementary infrastructure locations as part of a final report in 2025, which will be considered as part of the Visioning Plan.

III. Additional Project Information

Community Program Focus Area: Community Fleets and Freight

The proposed project aligns with the Community Fleets and Freight focus area. The I-81/78 corridors support a variety of MHDV movements, including short, medium, and long-distance freight city-pairs and potentially including municipal fleets and hybrid deployments. While this freight traffic is integral to the local economies of these states and to the national economy overall, the MHDVs hauling the freight are responsible for an outsized portion of harmful particulate matter and greenhouse gas (GHG) emissions: 45% of on-road NOx emissions and 57% of direct PM2.5 emissions.¹ Moreover, MHDVs emit over 400 million metric tons of CO_{2e} per year in the U.S., representing the second-largest contributor to transportation sector GHG emissions.² The

charging station Deployment Project is anticipated to displace nearly 920,000 gallons of diesel for MHDV annually, demonstrating a significant, near-term opportunity.

The primary focus of the Deployment Project is to enable electrification of MHDV fleets that heavily utilize the I-81 and I-78 corridors. Through the Visioning Plan, this project will tailor site-area selection to the needs of MHDVs. Considerations for co-location of light duty infrastructure may also be evaluated by Partners to promote electrification of all vehicles utilizing the corridor. As usage will be one of the priority criteria for activity center and site selection, light duty infrastructure options will be considered upon evaluation of site options and available budget. The Project seeks to both establish hubs and connect them across the multi-state freight corridor.

Corridor Program Focus: Build-Out of AFCs and Zero-Emissions Corridors for MHDVs

In line with Section VIII of the Corridor Program requirements, the Partners seek to deploy charging infrastructure that will build-out and improve upon established AFCs. The Joint Office’s National Zero-Emission Freight Corridor Strategy identifies the northeast and mid-Atlantic region as a priority location where investments in charging and hydrogen fueling infrastructure for zero-emission trucks are critical to meet the needs of a growing market and catalyzing broader public and private investment. The Visioning Plan will identify segments of I-81 and I-78 as key priority areas for class 4-8 alternative fuel infrastructure deployment⁴. The segments of the I-81 and I-78 corridors running through Maryland, Pennsylvania, and New Jersey are all identified as Phase 1 priority corridors based on freight volumes. The segment of I-81 running through West Virginia is identified as a Phase 3 priority. Pursuant to the strategy, corridor buildout needs to occur between 2024 and 2027 for Phase 1 and 2030-2035 for Phase 3. Planning and project development must begin as soon as possible to fit that timeline, especially given the need for electric grid enhancements. AFC designations for the proposed project area are summarized in Table 2 below.

Table 2: I-81 and I-78 AFC Corridor Designations

CORRIDOR DESIGNATION	MARYLAND	PENNSYLVANIA	NEW JERSEY	WEST VIRGINIA
	I-81	I-78 & I-81	I-78	I-81
AFC-Electric	Yes	Yes	Yes	Yes
Freight EV Corridors	Yes	Yes	Yes	Yes
National ZE Freight Corridor Strategy	Phase 1	Phase 1	Phase 1	Phase 3

This proposal also complements other strategic federal investments made in the northeast mid-Atlantic region this year. On July 11th, the DOE awarded a \$208 million domestic manufacturing conversion grant to Volvo Technology of America to fast-track production of battery electric and fuel cell electric trucks. This grant was awarded to plants located in cities connected by the project corridor: Hagerstown, Maryland and Macungie, Pennsylvania. On July 22nd, the Environmental Protection Agency (EPA) granted \$248.9 million to New Jersey, Connecticut, Delaware, and Maryland for development of approximately 20 truck charging depots along I-95 spanning those states. This proposal complements EPA’s investment in truck charging infrastructure in the region, supporting utilization of the charging depots and catalyzing market transformation. Specifically, this CFI investment will create a beneficial ‘network effect’ and enable greater utilization and

⁴ [Medium- and Heavy-Duty \(MHD\) Update \(transportation.gov\)](https://www.transportation.gov/medium-and-heavy-duty-mhd-update)

market transformation, amplifying the benefits of charging depots installed under this application, particularly given the interconnected nature of freight transportation in the region. Layering this CFI grant on top of DOE and EPA investments would build exponential momentum towards fulfilling the national strategy to scale-up zero-emission charging/refueling depots and the trucks that will use them. Specific fleet commitments are under development as part of an MOU.

ii. Budget Information: Grant Funds, Sources and Uses of All Project Funding

Table 3: Project Budget by Component (Community Program)

COMMUNITY PROGRAM PROJECT COMPONENT (PRE- NEPA TASKS)	FEDERAL	NON-FEDERAL MATCH (FROM STATES)	TOTAL
Feasibility Analysis	\$360,000	\$90,000	\$450,000
Site Area Identification	\$280,000	\$70,000	\$350,000
Community Outreach/Education	\$240,000	\$60,000	\$300,000
Total	\$880,000	\$220,000	\$1,100,000

Table 4: Local Match by State (Community Program)

STATE	MATCH AMOUNT	SOURCE
Maryland	\$46,000	As is the practice with the National Electric Vehicle Infrastructure program (NEVI), the non-federal match for the deployment phase of this project is expected to come from private sector partners submitting proposals as part of competitive solicitation processes implemented based on each state’s procurement rules. Also, like NEVI, the solicitation will specify that applicants must agree to operate and maintain depots for five years at agreed upon performance levels. The non-federal match for MD will be funded through Capital Budget; for PA through Capital Budget; for NJ, RGGI Auction funds; and for WV through State Roads Fund.
West Virginia	\$30,000	
New Jersey	\$66,500	
Pennsylvania	\$77,500	
Total	\$220,000	

Table 5: Project Budget by Funding Source (Corridor Program)

STATE	FEDERAL	NON-FEDERAL: PRIVATE PARTNERS	NON-FEDERAL: STATE	TOTAL COST
Maryland	\$3,413,622.75	\$696,761.28	\$90,644.41	\$4,267,028.44
New Jersey	\$6,109,245.50	\$1,393,522.56	\$133,788.82	\$7,636,556.88
Pennsylvania	\$9,078,868.26	\$2,090,283.84	\$179,433.22	\$11,348,585.32
Total	\$18,601,736.51	\$4,180,567.68	\$403,866.45	\$23,252,170.64

Table 6: Charger & Utility Upgrades Cost by State (Corridor Program)

STATE, NUMBER OF DEPOTS WITH 4X 350KW CHARGERS	CHARGERS	CONSTRUCTI ON	UTILITY UPGRADES	TOTAL
Maryland: 1 Depot	\$581,952.00	\$1,842,000	\$809,220.00	\$3,233,172.00

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New Jersey: 2 Depots	\$1,163,904.00	\$3,024,000.00	\$1,618,440.00	\$5,806,344.00
Pennsylvania: 3 Depots	\$1,745,856.00	\$4,536,000.00	\$2,427,660.00	\$8,709,516.00
Totals	\$3,491,712.00	\$9,402,000.00	\$4,855,320.00	\$17,749,032.00

Table 7: Deployment Budget by Component (Corridor Program)

COMPONENT	FEDERAL (80%)	NON-FEDERAL (20%)	TOTAL
PRE-NEPA			
Project Management & NEPA	\$1,215,465.79	\$303,866.45	\$1,519,332.24
Workforce Development	\$400,000.00	\$100,000.00	\$500,000.00
Chargers	\$2,793,369.60	\$698,342.40	\$3,491,712.00
POST-NEPA			
Construction	\$7,521,600.00	\$1,880,400.00	\$9,402,000.00
Utility Upgrades	\$3,884,256.00	\$971,064.00	\$4,855,320.00
Operations & Maintenance	\$696,761.30	\$174,190.30	\$870,952.00
Contingency & Power Upgrade Reserve	\$2,090,283.84	\$522,570.96	\$2,612,854.80
Totals	\$18,097,736.53	\$4,524,434.11	\$23,252,170.64

Budget Narrative

Table 8: Budget Narrative

COMPONENT	DESCRIPTION
Project Management & NEPA	Estimates derived roughly from an industry standard of 7% and previous project experience.
Workforce Development	Estimates based on certifying a class of 10-15 individuals through SAE International’s EVSE Technician Certification program, per state.
Chargers	To determine the budget for deployment of electric charging infrastructure, we assumed based on range considerations that six charging depots with eight ports each would constitute buildout of the corridor. We divided these sites between Partners based on the corridor mileage breakdown across states.
Construction	We divided these sites between Partners based on the corridor mileage breakdown across states. For electric charging depots, we used a cost estimator tool provided by Atlas Public Policy. We used the estimator to calculate costs of charging equipment, installation costs, and utility upgrades for a depot with four dual-port chargers, each with 350 kW charging capacity. Power capacity requirements were determined based on projected usage, but the Contingency and Power Usage Reserve allows flexibility should the Visioning Plan identify additional or different needs.
Utility Upgrades	Estimates derived from industry standards and previous project experience.
Operations & Maintenance	Estimates derived from industry standard of 5% and previous project experience.
Contingency & Power Upgrade Reserve	Estimates derived from industry standard of 15% and previous project experience.

- iii. **Project Merit Criteria:** *The merit criteria pertaining to the proposed Community and Corridor Programs are discussed in the following sections.*

Merit Criteria #1: Safety

1. Promoting Positive Safety Through Site Design

The Partners will explore site design considerations and the potential safety risks and mitigation strategies associated with deploying electric MHDVs charging or hydrogen fueling depots. The Visioning Plan will develop a physical safety plan that incorporates safety features into site planning, electrical equipment (e.g., placement, charger compatibility, and capacity needs), fire prevention, pedestrian and vehicular access and circulation, lighting, and security (such as illegal surveillance and tamper prevention) for new electric vehicle supply equipment (EVSE) sites.

Additionally, depots will likely be located at existing truck parking facilities, lots and/or sites owned by third parties, including truck stops and warehouses, rather than in new right-of-way, which will minimize roadway disturbance. The Partners will also promote safety in site design via the terms and conditions of subgrant agreements. Table 9 summarizes safety considerations.

Table 9: Project Safety Considerations

SAFETY CONSIDERATIONS	
Equipment	<ul style="list-style-type: none"> - Equipment will comply with the National Electric Code (NEC) standards, including requirements for charge circuit interrupting devices (CCID) and ground fault circuit interrupters (GFCI) to protect against the risks of electrical shock or fire. - Bollards shall be placed to protect the charging depot equipment. Any standalone charging depot bollards should be 3- to 4-feet high with concrete footings placed to protect the EVSE from accidental impact and to prevent damage from snow removal equipment.
Infrastructure	<ul style="list-style-type: none"> - National Fire Protection Association standards and guidelines will be incorporated, including hydrants, extinguishers, and standpipes. The infrastructure will be certified by an Occupational Safety and Health Administration nationally recognized testing laboratory and certified to the appropriate Underwriters Laboratories (UL) standards for EV charging system equipment.
Parking Spaces	<ul style="list-style-type: none"> - Parking spaces shall be adequately lit from dusk to dawn and located safely away from the flow of traffic. Charging equipment will not interfere with passenger or freight loading and unloading or impact adjacent traffic. - Charging depots will be in parking spaces designated for electric vehicles only and will be clearly marked with appropriate signage and floor paint outlining the parking spots. Signage will be visible above parked cars and comply with the visibility, legibility, size, shape, color, and reflectivity requirements contained within the Federal Manual on Uniform Traffic Control Devices as published by the FHWA.
Security Features	<ul style="list-style-type: none"> - Specific guidance to manage trip hazards will be provided, such as a cable management system. - Security features such as motion detectors, cameras, locked electrical enclosures, anti-vandalism hardware and/or graffiti-resistant coatings will be considered.
ADA Compliance	<ul style="list-style-type: none"> - The depots will meet Americans with Disabilities Act (ADA) compliance guidelines and will follow all applicable laws, ordinances, regulations, and standards.
End Users	<ul style="list-style-type: none"> - Depots will provide equipment safety warnings and user instructions through clear signage and/or speech outputs to inform people recharging vehicles on how to operate the charging equipment properly and safely.

Subcontractors will be required to ensure that all charging infrastructure will be installed and maintained by qualified electricians who have obtained Electric Vehicle Infrastructure Training Program (EVITP) certification and who are competently trained on NEC and NFPA standards, emergency response plans, and emergency shutoffs. Trained electricians will perform preventative maintenance, including regular inspection and testing or calibration. This will ensure that on-site installation, maintenance, and operations are performed by a well-qualified, highly skilled, certified, licensed, and trained workforce, promoting a safe and reliable network of EVSE.

2. Prevention of Negative Impacts to Safety

Partners will adhere to each state’s purchasing and minimum safety requirements regarding the procurement of EV charging equipment. The Partners will adhere to current best practices employed by state and federal peers to ensure that the identified EVSE needs do not generate greater safety risks to users, vendors, and adjacent communities relative to standard gasoline fueling infrastructure. Partnering states have enacted policies relevant to this grant with minimum safety parameters for EVSE deployment, as summarized in the table below.

PARTNER STATE	STATEWIDE POLICIES AND REGULATIONS ON EVSE DEPLOYMENT
New Jersey	Statewide Municipal EV Ordinance (P.L. 2021, c. 171) provides consistent permitting guidance among all state municipalities mandating minimum safety parameters for each type of EVSE location, designates EVSE and make-ready parking spaces as a permitted accessory use, and sets installation and parking requirements for EVSE.
Pennsylvania	Charging depots must include accessibility guidelines according to the PennDOT Design Manual Part 2, Contextual Roadway Design.
Maryland	A state law enacted in 2024 in MD (SB 951) established an interagency working group chaired by the Public Service Commission to "develop a framework for reliability and reporting standards for EV charging stations" with a final report due to the relevant State House and Senate Committees by 11/1/24. This framework could serve as the basis for new policies and regulations on EVSE deployment and performance. State law requires that EV charging spaces must have signage that indicates the charging space is only for EV charging.

A subsequent benefit to widespread EV adoption comes from the improved safety technologies provided with EVs on the market today. Self-stop assistance, surrounding assistance, and pedestrian identification are just some of the many features that come standard with newer electric vehicles. Improved access to EV charging will power these systems, amplifying safety benefits for all travelers and adding an additional layer of protection to prevent injuries and fatalities.

3. Creating Positive Safety Benefits for All Users through Design

The Project will follow FHWA guidelines, be ADA compliant, and incorporate the five objectives of the National Roadway Safety Strategy (NRSS) to ensure that deployment of new infrastructure will positively enhance safety benefits for all roadway users of the depots. The Partnering states’ Strategic Highway Safety Plans (SHSP) all align with the U.S. Department of Transportation’s Safe Systems Approach that aspires to achieve zero roadway fatalities and understands roadway safety to be a shared responsibility built on safe road users, safe vehicles, safe speeds, safe roads, and post-crash care. The SHSPs will collectively form the foundation for developing new depots that is proactive towards safe design, understands that human error is inevitable, and strives to eliminate the risks of serious injury or death on the transportation system. The following site design

considerations will support a Safe Systems Approach and ADA compliance.

DESIGN CATEGORY	SITE DESIGN ELEMENTS
Roadway Safety for Site Ingress and Egress	Roadway design for the Project’s Visioning Plan efforts will identify elements that ensure sufficient visibility and sight distance, allow for adequate space to safely accelerate and merge onto interstates (and to safely diverge from interstates and decelerate into slower speed on-site circulation and parking areas), provide sufficient lighting and signage, and minimize the number of traffic conflict points.
Pedestrian Safety	Pedestrian safety design elements will include highly visible crosswalks, adequate lighting throughout the sites, traffic control signage, and traffic calming to minimize vehicle speeds in areas where substantial pedestrian activity is likely.
ADA Compliance	ADA compliance will be strictly incorporated so that the infrastructure is accessible and usable to people with disabilities, including dedicated parking spaces; adequately safe space to enter and exit a vehicle; unobstructed access to charging equipment; free movement about the depots and vehicle connection points; curb ramps connecting to walkways; and clear, unobstructed paths to ancillary buildings.

Merit Criteria #2: Climate Change, Resilience, and Sustainability

1. Reducing Transportation Sector Greenhouse Gas Emissions

Supporting this ZEV transition is paramount since, nationwide, trucks comprise about 10% of roadway vehicles but contribute 30% of GHG emissions, 57% of particulate matter (PM2.5) emissions and are a major contributor to NOx and SOx emissions. This Project builds upon existing commitments the Partners have made to transition to zero emission (ZE) goods movement. Advancing the adoption of electric equipment infrastructure for ZE-MHDVs is a core initiative of the partnering states’ Priority Climate Action Plans (PCAPs)^{5,6,7,8}. GHG emissions reductions in the transportation sector will in part be led by accelerating ZE-MHDV sales.

To support this, both Maryland and New Jersey have adopted California’s Advanced Clean Trucks (ACT) Rule setting targets for the composition of new truck sales to be gradually increased through 2035. Under this regulation, manufacturers are required to ensure 75% of class 4 through 8 truck sales and 40% of class 4 through 8 truck tractor sales will be ZE by 2035. In Maryland alone, the International Council on Clean Transportation estimates ACT-driven cumulative tank-to-wheel reductions by 2050 of 13.6% of CO2e emissions (1.49 million metric tonnes/year), 12.4% of NOx emissions (1,810 short tons/year), and 8.6% of PM2.5 (20 short tons/year).⁹ In New Jersey, ACT implementation would contribute to reductions in CO2e emissions (0.44 million metric tonnes/year), NOx emissions (1,300 short tons/year), and PM2.5 (40 short tons/year) by 2040. Achievement of ACT sales targets is contingent on availability of clean truck charging facilities, underscoring the importance and urgency of the deployment investments proposed herein.

Additionally, Deployment Project partner states (Maryland, New Jersey, and Pennsylvania)—along with 14 other states, the District of Columbia, and Quebec—are signatories to the Multi-

5 <https://www.epa.gov/system/files/documents/2024-03/nj-pcap.pdf>

6 <https://www.epa.gov/system/files/documents/2024-03/7200-re-dep5710-pa-priority-climate-action-plan.pdf>

7 <https://www.epa.gov/system/files/documents/2024-03/mde-state-of-maryland-cprg-priority-climate-action-plan.pdf>

8 <https://www.energywv.org/assets/files/CPRG/WV-Priority-Energy-Action-Plan.pdf>

9 <http://theicct.org/benefits-ca-multi-state-reg-data/>

State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding (MOU), which pledges that the participating states will strive to ensure that 30% of new trucks and buses will be ZE by 2030, scaling up to 100% by 2050^{10,11}. The MOU urges the decarbonization of MHDVs and investment in charging infrastructure to reduce GHG emissions and to address environmental justice issues, as evidenced by disproportionate air quality impacts of MHDV emissions on communities near freight corridors. An Action Plan followed the MOU, which described strategies and recommendations for planning and deploying public EV charging infrastructure. The Deployment Project will strongly support the goals of the MOU and strategies of the Action Plan by creating the electric infrastructure that will resonate with goals to increase sales of electric trucks and buses. The Project also exemplifies the type of interagency coordination recommended in the MOU to support the expansion of ZE-MHDVs and deployment of electric vehicle charging infrastructure.

The Deployment Project will complement infrastructure investments described in state-level NEVI Plans and will support the sales targets for ZE-MHDVs. The Visioning Plan will establish target areas along I-81 and I-78—informed by a combination of equity and emissions analyses and economic impacts around freight activity centers—where new ZE-MHDV charging or hydrogen fueling depots can be located at space intervals appropriate for electric vehicle ranges to support medium-haul freight or hydrogen fuel to support long-haul freight. Strategic, publicly accessible sites for the deployment of EV charging infrastructure for ZE-MHDVs provides a significant opportunity to decarbonize the transportation sector along these major freight corridors. The Deployment Project proposes to deploy six ZE-MHDV charging depots (one in Maryland, three in Pennsylvania, and two in New Jersey), each with a minimum of 8 ports, which will contribute to the emissions reductions shown in the table below, according to the Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) CFI Emissions Tool.

Table 10: Annual Emissions Reductions, per AFLEET CFI Emissions Tool

Infrastructure Investment	GHGs (short tons)	CO (lb)	NO _x (lb)	PM10 (lb)	PM2.5 (lb)	VOC (lb)	SO _x (lb)	Fuel Dispensed (fuel unit)	Fuel Unit
DCFC EVSE (MD:1 depot)	91.2	304.9	481.3	4.1	3.7	23.1	0.9	208,000	kWh
DCFC EVSE (PA:3 depots)	273.5	873.0	1,388.1	11.7	10.6	69.8	2.6	624,000	kWh
DCFC EVSE (NJ:2 depots)	182.3	638.0	1,018.3	8.2	7.9	49.5	1.7	416,000	kWh
Project Total	547.0	1,815.9	2,887.7	24.0	22.2	142.4	5.2	1,248,000	kWh

2. Climate Change Resilience and Flood Risk Mitigation: Advancing the National Climate Resilience Framework

The Visioning Plan will prepare proposed target areas through adaptation to climate change and incorporation of best practices identified in state-level resiliency and hazard mitigation frameworks and the National Climate Resilience Framework. The Partners will use these frameworks, along with existing state mapping tools and climate projections, to assess potential

10 <https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zev-action-plan-dual-page.pdf>

11 <https://www.nescaum.org/documents/mhdv-zev-mou-20220329.pdf>

impacts to disadvantaged communities, with a focus on natural hazards and the need to prevent, respond to, and recover from disruptions.

The Visioning Plan will identify Federal Emergency Management Agency (FEMA) designated flood zones within target areas and proactively identify project elements that avoid short-term and long-term adverse impacts to floodplains and avoid or minimize development within wetlands or floodplains in accordance with Executive Order 13690¹². Climate resilience features will be incorporated into the site planning and installation efforts to protect new infrastructure against natural disasters such as flooding and other extreme weather events. The I-81 and I-78 corridor is mostly inland but features elevation changes and crosses numerous streams, rivers, and other waterbodies prone to fluvial and flash flooding. The Visioning Plan will perform a screening of areas with special flood risks and where adequate mitigation may not be feasible. During the Deployment Project, the Partners will stipulate that water crossings and lowest floor elevations serving selected sites be positioned above the 100-year floodplain and that weather-resistant materials be used to protect assets against heavy rainfall and wind. As the region’s residents face threats from the devastating impacts of extreme rainfall events, which are expected to continue to intensify in their frequency and severity, the Partners must continue to protect public safety. For instance, NJDEP adopted the Inland Flood Protection rule in July 2023¹³, which ensures that areas at most significant risk are better defined and that new and reconstructed assets in these areas are designed and constructed using the best available, climate-informed precipitation data.

3. Environmental Justice Focus in Planning & Delivery

According to an [analysis by the EPA](#), disadvantaged communities experience higher exposure to the negative impacts of climate change and pollution. Racial and ethnic minority communities are especially vulnerable to these effects. As global temperatures increase, Black and African American populations are more likely to experience temperature-related deaths and childhood asthma diagnoses compared to other demographic groups. The Partners recognize that many burdens from transportation and energy systems have historically been disproportionately borne by disadvantaged communities, and therefore it is important to emphasize equity considerations when planning EVSE investments and avoid furthering any existing disparities. Environmental justice (EJ) will be a vital factor guiding the Visioning Plan, which will outline site needs so that the deployment of new depots primarily benefits communities particularly impacted by climate change and poor air quality. The Partners will ensure that they are coordinating and communicating with underserved, overburdened, and disadvantaged communities as defined by the U.S. DOT’s Transportation Disadvantaged Census Tracts and EV Charging Justice40 Maps. Accordingly, site selection will be conducted in coordination with identified project partners and will prioritize sites that will benefit a disadvantaged community according to the Justice40 Initiative criteria. The table below represents the Partners’ frameworks for addressing EJ in infrastructure planning.

PARTNER STATE	ENVIRONMENTAL JUSTICE COUNCILS AND PROGRAMS
New Jersey	Executive Order No. 23 directs NJDEP to develop guidance for all New Jersey state departments to incorporate EJ considerations into their actions. The order directs NJDEP to

¹² [E.O. 13690: Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input \(2015\) | Department of Energy](#)

¹³ <https://dep.nj.gov/inland-flood-protection-rule/>

	facilitate the Environmental Justice Interagency Council (EJIC). Through forums such as the EJIC, NJDEP maximizes the benefits of its investments to disadvantaged communities by holding regular meetings with representatives from EJ communities. Through the publishing of Furthering the Promise: A Guidance Document for Advancing Environmental Justice Across State Government , NJDEP provides a framework for Executive Branch agencies and departments on how to consider environmental and health impacts of their programs and policies in overburdened communities. It seeks to bring state agencies and departments together to tackle complex environmental justice issues related to quality of life, including housing, health, transportation, and strategic enforcement actions.
Pennsylvania	The Pennsylvania Department of Environmental Protection (DEP) created the Climate Action for Environmental Justice Communities (CAEJC) Program. Through the CAEJC, DEP has engaged EJ communities through workshops and discussions to identify community priorities for weatherization, public and active transportation, and industrial air pollution.
Maryland	Maryland Governor Moore’s new Climate Pollution Reduction Plan Executive Order includes the directive to advance environmental justice. Additionally, MDOT is part of the Maryland Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC), which bases its strategic EV infrastructure planning on equitable investment in EJ and rural communities.
West Virginia	West Virginia Department of Environmental Protection’s (WVDEP) Office of Environmental Advocate hosts quarterly, public town hall meetings regarding EJ issues.

4. Avoidance of Adverse Impacts to Air Quality, Wetlands, and Endangered Species

The Project will include formal compliance with FHWA’s NEPA requirements—including any environmental concerns such as impact on local wetlands or endangered species—to screen for any potential adverse environmental impacts. The Partners anticipate that, as a pre-construction activity, the Visioning Plan will qualify as a Programmatic Categorical Exclusion (PCE) and will work expeditiously with FHWA for PCE agreement. The Visioning Plan will explore the feasibility of existing facilities (e.g., truck stops, travel plazas, and rest areas) as a priority consideration for site selections, rather than new, undisturbed land. Additionally, the Partners will work to mitigate potential harms and construction-related impacts on local communities - such as air quality - by conducting community engagement to inform the site selection criteria, encourage the use of community benefits agreements and other collaborative problem-solving tools, and avoid routing additional truck traffic to already overburdened communities. The Visioning Plan will be a due diligence step to evaluate the feasibility of using existing land, identify potential modifications that may be required, and develop strategies to mitigate against adverse impacts. As part of the Deployment Project, environmental studies for NEPA approval will be performed for site-specific projects, such as floodplain mapping; wetland and forest stand delineations; and rare, threatened, and endangered species surveys.

This new infrastructure will support the transition to a future fleet of ZE-MHDVs that will reduce air pollution and improve air quality, particularly for disadvantaged communities disproportionately impacted by emissions from internal combustion engine (ICE)-based MHDVs.

Merit Criteria #3: Equity, Community Engagement, and Justice40

1. Equity Analysis

The Partners are committed to applying an extensive equity lens when developing infrastructure investments. The I-81 and I-78 corridors traverse a diverse range of communities. Within a five-mile buffer zone of the I-78 corridor from Newark, New Jersey to Union Township, Pennsylvania,

and I-81 from Union Township, Pennsylvania to Ridgeway, West Virginia, approximately 316 Census tracts are Census-designated disadvantaged communities, based on the Climate and Economic Justice Screening Tool (CEJST). Altogether, these disadvantaged communities comprise a total population of 1,193,503, compared with a total population of 4,054,467 within the entire five-mile buffer zone in 839 tracts. Many of these communities are disproportionately impacted by air pollution and high rates of asthma with some tracts at the 99th percentile, nationally. Low- to moderate-income (LMI) neighborhoods in the Visioning Plan area comprise 258 Census tracts with 1,025,630 residents. Additionally, 105 Census tracts comprising 609,375 people in the Visioning Plan area are in rural communities. Specific site locations continue to be vetted, and the Project will prioritize deployment so that at least 40% of the benefits from these new investments go to disadvantaged communities, LMI neighborhoods, and rural areas. The Project’s investments will fill gaps in ZE-MHDV charging infrastructure to facilitate ZEV usage, ultimately contributing to better air quality, expanded transportation access, and improved quality of life for disadvantaged and rural communities.

2. Meaningful Public Engagement

While the freight transportation industry employs millions of workers nationwide, it has had devastating health impacts on frontline communities, including communities near major trucking corridors that are overburdened with air pollution from ports and other nearby freight facilities. These circumstances have led [community advocates to call for ZE freight movement](#) in overburdened communities and across the sector¹⁴. This Project is a response to these calls for meaningful action to reduce air pollution from freight travel.

The Project investments funded by this grant will address the region’s transportation electrification needs and will complement the state-level NEVI deployment plans by supporting the need for charging depots with high clearances, pull-through stalls, and/or DCFC power levels greater than 150kW. These NEVI plans were developed in coordination with diverse stakeholders including representatives from the environmental, environmental justice, workforce/labor, transportation, local government and business sectors. Additionally, EVSE vendors, Original Equipment Manufacturers (OEMs), utilities, advocacy groups, community-based organizations Metropolitan Planning Organizations, Rural Planning Organizations, and Transportation Management Association staff provided input. These groups have emphasized the following:^{15,16,17,18}

- Incorporate equity when conveying the benefits provided by transportation electrification projects to the environment, health, labor/workforce, and mobility.
- Support the electrification of MHDVs in EJ areas and rural areas to reduce the health impacts from these high emissions-vehicles.

14 <https://www.nj.com/essex/2024/06/1-in-3-nj-live-near-an-nj-warehouse-and-its-pollution-what-will-it-take-to-make-it-stop.html>

15

https://www.nj.gov/transportation/contribute/business/procurement/ConstrServ/documents/NEVIPlanupdates_V17_FINALUPL OADED.pdf

16

https://www.penn.dot.pa.gov/ProjectAndPrograms/Planning/EVs/Documents/PA%20NEVI%202023%20State%20Plan%20Update%20FINAL%20update92523changes_CLEAN.pdf

17 https://evplan.md.gov/wp-content/uploads/2023/10/MD_Zero_Emission_Vehicle_Plan_2023_rd04_04_web.pdf

18 https://transportation.wv.gov/highways/Planning/NEVI/Documents/WV%20NEVI%20PLAN_9-28-23%20Final.pdf

- Locate EVSE at warehouses, parking areas, and other truck-attracting facilities and near known fleet operating routes or hubs to promote conversions to electric.

As part of the Community Program to support the Project’s Visioning Plan, community engagement will entail the following:

- Development of educational materials, guidance, and in-person and virtual events to share details of the Partner efforts with identified Low-Income/Disadvantaged Communities (LIDAC), EJ areas, labor unions, freight industry labor and other business communities, state partners, municipalities, and the public.
- Ensure community members, particularly residents of LIDACs and EJ areas, have opportunities to provide feedback on the Visioning Plan via public meetings, listening sessions, and digital forums. Establish protocols for collecting and sharing feedback publicly. Partners will work with LIDAC representatives, EJ groups, and/or advisory councils to ensure the methods for collecting this feedback account for various linguistic, cultural, institutional, geographic, and other perspectives.

Public engagement will continue throughout the lifecycle of deployment contracts. Partners will encourage vendors to include community benefits agreements and/or other collaborative problem-solving tools in their proposals to mitigate potential harms. Once the deployment is in progress, the Partners will meet with experts and community members to seek feedback on the program. Partners will continually collect data and reports from the selected contractors, in line with federal requirements for regular reporting on the Project’s progress. The data and reporting will be used to inform the Partners about the effectiveness of the Deployment Project and whether to make any adjustments, especially on local community engagement. Through continuous outreach to community leaders and environmental justice advocates, the deployment will create a synergistic relationship between charging depots installers and communities.

3. Clean, Affordable Transportation

The partnering states are committed to accelerating the adoption of ZE-MHDVs that will make use of the Project investments. These states have arranged a combination of vouchers, rebates, and grant programs to defray purchasing and operating costs of electric vehicles, as shown in the table below.

PARTNER STATE	STATEWIDE ALTERNATIVE FUELING INCENTIVES
New Jersey	<ul style="list-style-type: none"> • Invested \$300 million for over 1,200 electric MHDVs since 2019 through programs including the New Jersey Zero Emissions Incentive Program and the Diesel Modernization Program.
Pennsylvania	<ul style="list-style-type: none"> • Using settlement funding from the Volkswagen Environmental Mitigation Trust, provides rebates to replace class 4 through 8 freight trucks, port drayage trucks, and buses with technologies including electric and alternative fuels.
Maryland	<ul style="list-style-type: none"> • Volkswagen Environmental Mitigation Trust provides settlement funds to replace class 4-8 freight trucks, port drayage trucks, and buses with electric and alternative fuels. • Incentivizes the purchase of ZE-MHDVs for commercial and industrial use through grants that are offered to commercial fleets, organizations, and communities. <ul style="list-style-type: none"> ○ Awardees receive 75% of the value difference between the purchased ZEV and the cost of a conventional fuel vehicle.

	<ul style="list-style-type: none"> ○ Dedicated \$6.5 million in ZE-MHDV grant funding for fiscal year 2024.
West Virginia	<ul style="list-style-type: none"> • Reimburses 10% of purchasing, maintenance, and operation costs to counties that convert their school bus fleets to alternative fuels including electric.

Partners will work with their respective public utilities commissions to determine the feasibility of rates tailored to commercial EV charging such as innovations used by San Diego Gas & Electric’s Electric Vehicle High Power Charging Rate (EV-HP) program, which replaces demand pricing with time-of-use pricing and can produce [50% cost savings](#) for fleet operators and drivers. The Project also promotes the creation of good-paying jobs, as explained in section 4 of the Project Merit Criteria.

4. Efficient, Safe Multimodal Transportation

While the Partners continue to refine specific site locations for infrastructure investment, decision-making will account for the potential to connect the proposed locations to the multimodal transportation system. Intercity bus service that uses I-81 and I-78 with potential to transition to ZE fleets will benefit from the new infrastructure, since the depot spacing will be designed to service medium- and heavy-duty vehicles.

5. Addressing Challenges in Rural Communities

The Deployment Project supports the Rural Opportunities to Use Transportation for Economic Success (ROUTES) initiative by helping to expand transportation options and reduce lifecycle vehicle ownership costs. As mentioned, 609,375 people live in rural areas within five miles of the Project area. Rural communities commonly face transportation insecurity challenges such as more limited access due to long driving distances to opportunities and services, and cost burdens associated with maintenance and fuel expenses. Charging Forward, the Rural EV Toolkit prepared by U.S. DOT, notes that replacing fossil fuel vehicles with electric vehicles can produce significant maintenance and fuel cost savings, relieving transportation cost burdens facing rural areas. This is attributable to residents in rural areas typically driving longer distances than residents in urban areas, which generates greater fuel costs. These areas are also less likely to see private investment for EV infrastructure due to their lower density populations and perceived lower potential for EVSE utilization. Partners will collaborate to coordinate consistent EV education messaging and outreach campaigns. By introducing ZE-MHDV charging depots to sustain medium-haul travel along I-78 and I-81, the Project will fill gaps in the transportation system and will enhance the viability of electric vehicle use through and within rural areas.

6. Integrating Land Use, Economic Development, and Transportation Planning

Long-range transportation plans^{19,20,21,22} covering the Project area encourage the integration of transportation planning, land use, and economic development. The Deployment Project is particularly focused on catalyzing the transition of commercial and industrial-based MHDV fleets from fossil fuels to battery electric power. To support freight activity that comprises many MHDVs on the interstate system, the selected locations of new charging depots for deployment will in part be based on the feasibility of siting these depots near economic activity centers such as intermodal

19 <https://transportation.wv.gov/highways/Planning/LRTP/Documents/Final-Plan-Signed.pdf>
 20 <https://www.nj.gov/transportation/works/njchoices/pdf/2030plan.pdf>
 21 <https://www.dot.state.pa.us/public/PubsForms/Publications/Pub%20394.pdf>
 22 https://hepmo.com/wp-content/uploads/2023/01/Direction_2050_HEPMPO_LRTP_FINAL.pdf

freight terminals, marine terminals, logistics centers, and retail. This integrated framework will enhance the transport of people and goods by making recharging a convenient activity.

Merit Criteria #4: Workforce Development, Job Quality, and Wealth Creation

1. Creating Good-Paying Jobs and a High-Quality Workforce

Workforce development is a key component in the expansion of EV infrastructure throughout the Project region. Having a skilled workforce capable of safely and efficiently building the ZE-MHDV charging infrastructure is essential to meeting vehicle electrification goals in Partner states. Electric vehicles and their charging infrastructure offer an opportunity to develop an emerging technologies pipeline in trade and technology schools, universities, the workforce, and communities. Particularly given that ZE-MHDV charging equipment is a nascent market, this is an opportunity to create high-quality, local jobs. To address this constraint and provide equitable economic opportunities for underrepresented groups, the Partners will collaborate with education providers related to workforce development and training activities. This collaboration aims to expand access to job training for the safe installation, testing, and maintenance of charging equipment, culminating in the acquisition of EVITP certification. A summary of some state-specific workforce initiatives and programs are summarized in the table below.

PARTNER STATE	STATE WORKFORCE DEVELOPMENT APPROACHES
New Jersey	<ul style="list-style-type: none"> • New Jersey supports the creation and expansion of pre-apprenticeship and apprenticeship programs through its PACE and GAINS grant programs. • NJDEP engages with representatives from communities, labor organizations, chambers of commerce, community colleges, technical schools, universities, training organizations, and industry to develop additional measures to expand support for workforce development programs including the Automotive Technology Program offered by Brookdale Community College and programs at Rutgers University, the International Brotherhood of Electrical Workers (IBEW), the Atlantic County Workforce Development Board, and at state vocational-technical schools.
Pennsylvania	<ul style="list-style-type: none"> • Since NEVI Round 1B, PennDOT has established a local hiring preference requirement in all PennDOT-funded charging depot projects, which requires that at least 50% of Davis-Bacon Act covered labor activities be performed by individuals whose residence is within 50 miles of the project location.
Maryland	<ul style="list-style-type: none"> • Maryland created the Department of Service and Civic Innovation, which offers a Climate Corps program that provides workforce training, including EV-related work, and access to well-paying green jobs after service completion.

For the Community Program, the Visioning Plan will involve planning and design tasks that require a range of technical skills. Partners will open contracting and subcontracting opportunities throughout Visioning Plan activities that will be available to small, woman-owned, and minority-owned businesses to create a more equitable environment for the regional workforce.

Through the RFP process, Partners will solicit vendors to develop a skills training curriculum focusing on the construction, operations, and maintenance of EVSE. A budget of \$500,000, requested through the Corridor Program, is proposed to support the training curriculum. Also, for the Corridor Program, bidding firms selected to deploy the investments must agree that they will build the depots in compliance with the Davis-Bacon Act on prevailing wage rates. In line with

the NEVI Infrastructure Standards and Requirements, this project will additionally support workforce development from the demand side by contracting with firms who will use EVITP-trained electricians to install, operate, and maintain the EVSE. The Partners support worker choice to participate in unions. Procurement will consider firms that maintain strong relationships with trade unions such as the IBEW and United Electrical, Radio and Machine Workers of America.

2. Workforce Development Investment for Underrepresented Populations

Federal funding support of the Project through the CFI Program presents a unique opportunity to advance workforce development, enhance job quality, and help local communities create and retain wealth by accelerating a long-term transition from fossil fuel powered MHDVs to ZE vehicles. The Corridor Program will fill a void in decarbonization infrastructure for MHDVs along two major freight corridors of the eastern United States, in turn generating good-paying jobs in the energy and transportation sectors while expanding roles for existing workers. The Partners will review bidding firms’ hiring practices, diversity initiatives, and workforce development histories that indicate a commitment to building and retaining underrepresented populations as being integral to their workplace cultures. The firms must demonstrate their commitment to recruiting and retaining employees from local, underrepresented, and underserved communities and training workers to become EVITP-certified.

3. Hiring Policies That Promote and Retain Underrepresented Populations

In line with stakeholder feedback, this training will offer opportunities for LIDAC members and the communities with planned charging sites to receive specialized workforce training with a direct path towards high-quality employment. The focus on DACs included in this grant will help build a local hiring pool of qualified electricians and will facilitate on-the-job training that will be applicable to MHD charging projects built outside of this Deployment Project, thereby encouraging job retention and enabling long-term career pathways. The Deployment Project will build on existing workforce development strategies, ensuring funds lead to high-quality jobs, “high road” labor practices, and a diverse, skilled workforce.

4. Promoting Local, Inclusive Development and Entrepreneurship

PARTNER STATE	STATEWIDE POLICIES AND INITIATIVES TO SUPPORT DBES
New Jersey	New Jersey’s Council on the Green Economy was established in 2021 and developed a report defining pathways for green job creation and development of workforce capacity, including in the transportation sector. New Jersey’s electric vehicle infrastructure projects will be developed to align with the Council’s recommended approaches for developing well-paying jobs and supporting small and disadvantaged business enterprises.
Pennsylvania	PennDOT maintains a Disadvantaged Business Enterprise (DBE) Program to ensure that DBEs have equal opportunities to receive and participate in U.S. DOT-assisted contracts.
Maryland	In 1978, the Maryland General Assembly enacted legislation to create the Minority Business Enterprise (MBE) Program to ensure small, minority-, and women-owned firms can participate fully and fairly in both state- and federally-funded projects. Current regulations set the DBE Program's statewide aspirational goal at 26% across 70 participating agencies and departments, including MDOT.

Following the recently-updated [New Jersey Disparity Study](#), [Maryland](#) and [Pennsylvania](#) are currently updating their statewide disparity studies, which will compare businesses receiving work

from these states with those who are available. These studies will determine the presence of racial and/or gender discrimination in markets in which the states conduct business. They will also provide the legal framework that authorizes state MBE, DBE, and women business enterprise (WBE) programs and ensure that preferences are evidenced-backed and can withstand strict scrutiny. Lastly, the studies will be used by both the states and the U.S. DOT to set and evaluate DBE/MBE/WBE participation goals. Collectively, these studies will identify and open new opportunities for minority-, women-, and veteran-owned businesses to contract with the region to provide goods and services.

Merit Criteria #5: CFI Program Vision

Funding will enable the Partners to leverage federal funds to prepare a unified Visioning Plan. The Visioning Plan will determine optimal areas for new ZE-MHDV charging or hydrogen fueling depots. Deployment of this expanded, publicly accessible infrastructure will fill the existing absence of electric charging technology for MHDVs, creating a ZE freight corridor along I-81 and I-78, and significantly contributing to decarbonization of the national transportation system. The Community Program and Corridor Program designs and outcomes of the Project align with the CFI Program Vision.

1A: Community Program: Equitable Expansion of the Deployment of Publicly Accessible EVSE Infrastructure

For the Community Program, the Visioning Plan will develop target areas through a multifaceted equity lens that intersects traffic volume, activity center (intermodal freight terminals, logistics centers), and distance from the AFCs (within five miles) with the presence of Justice40 areas including disadvantaged communities, LMI neighborhoods, and rural areas. At least 40% of the benefits will be realized in Justice40 communities. Target areas will balance these attributes with 50-mile spacing intervals for EV charging and 100-mile spacing intervals for hydrogen fueling based on the mileage ranges that these power sources can provide ZE-MHDVs while complementing state-approved NEVI Plans.

A systemwide replacement of fossil fuel MHDVs with ZE-MHDVs and ZE infrastructure will reduce air quality impacts that disadvantaged, LMI communities near major trucking corridors disproportionately experience. Investment in ZE infrastructure will make it more feasible to site clean depots accessible to LMI communities. Rural areas with greater proximity to candidate site locations near distribution hubs and intermodal facilities would benefit from improved access to transportation alternatives. Maryland's target area will consider the city of Hagerstown, which hosts the I-81 and I-70 interchange, freight rail lines, as well as a Volvo manufacturing facility. The Project's commitments to safety through design include prioritization of improvements and expansions to available parking at existing truck facilities, and providing safe parking spots for drivers to rest and take federally-mandated breaks. Consistent with the Corridor Program, the depots will be ADA-compliant, ensuring that persons with disabilities can access and use the new infrastructure. In addition to elements mentioned under the Safety section of the Project Merit Criteria, the equipment will include user interfaces and payment systems compliant with Section 508 of the Rehabilitation Act. The depots will also be publicly accessible and located within at least five miles of the interstates, and within one mile when feasible.

In the absence of federal funding, the market may not prioritize the installation of EV charging infrastructure in urban communities where real estate costs are relatively high, or in sparsely populated rural areas lacking access to transportation alternatives. If access to this infrastructure is dependent on market forces, then rural areas, underserved communities, and disadvantaged communities will experience delayed and diminished access to this clean energy technology, and the transportation infrastructure that is vital to a healthy, clean energy economy.

1B. Community Program: Focusing on Community Fleets and Freight

Presently, I-81 and I-78 lack the requisite infrastructure to support medium-haul freight movement for ZE-MHDVs. The I-81 and I-78 corridors from Maryland through New Jersey are listed in Phase 1 for the National Zero Emission Freight (ZEF) Corridor Strategy; and I-81 through West Virginia is identified as a Phase 3 priority. The ZEF Corridor Strategy will establish priority hubs along Phase 1 corridors by 2027 and expand established corridors with battery electric truck technology between 2030 and 2035 for Phase 3. The Project is an active step towards achieving these transformations.

The Visioning Plan will establish a framework to guide deployment of publicly accessible EV charging and/or hydrogen fueling infrastructure for ZE-MHDVs. The Visioning Plan will also create a blueprint for deployment that considers the range of vehicle fleets to benefit from decarbonization including commercial and industrial organizations as well as municipal services and intercity bus service.

2A. Corridor Program: Deployment of DCFC Charging Infrastructure to AFCs

FHWA designates the proposed corridor of I-81 from West Virginia through Pennsylvania, and I-78 in Pennsylvania and New Jersey as AFCs for electric vehicles – and as Freight EV Corridors. The Deployment Project area is also an EV corridor for freight activity based on their listings in the ZEF Corridor Strategy. The Deployment Project proposes to deploy six ZE-MHDV charging depots— one depot in Maryland, three depots in Pennsylvania, and two depots in New Jersey (each with a minimum of 8 ports)—along these highways, with an emphasis on developing each site to adequately charge ZE-MHDVs according to 50-mile intervals. Partners will prioritize sites that can best support the electrification of freight commerce vehicles and deliveries to retail and intermodal facilities.

2B. Corridor Program: Establishing Zero-Emission Corridors for MHDVs

If awarded through the CFI Corridor Program the Deployment Project will enable the Partners to initiate a massive scaling up of publicly-accessible EV charging, complementing NEVI-funded depots by filling essential gaps in ZE-MHDV infrastructure and contributing to the build-out of these AFCs. As a result, the Project will establish a ZE freight corridor that will adequately, conveniently, and reliably support the medium-haul freight movement of goods and connection to distribution hubs throughout the National Highway Freight Network.

Moreover, the fiscal year 2024 state-approved NEVI plans do not specifically focus on ZE-MHDV investments but do identify the need to incorporate freight electrification into future planning and deployment. As such, the Deployment Project complements but does not duplicate efforts of Partners' NEVI Plans. With interchange connections to I-95 from I-78, the Deployment Project

would also complement planned investments—supported through \$248.9 million in awarded funds from the EPA’s Climate Reduction Pollution Grant (CPRG) program—for public ZE-MHDV charging infrastructure along I-95 in Connecticut, New Jersey, Delaware, and Maryland.²³

iv. Project Readiness and Environmental Risk

Project Timeline and Milestones

The Project duration is expected to be 52 months, spanning Federal Fiscal Years 2025-2029. This timeline does not include five years of funded operations and management for the new infrastructure that is anticipated following construction.

COMMUNITY PROGRAM PROJECT ACTIVITY	MILESTONE	START DATE	END DATE
Pre-Visioning Plan Activity	Anticipated Notice of Award	1/2025	1/2025
	Grant Agreement	1/2025	3/2025
	NEPA Determination	3/2025	4/2025
Community Engagement and Education Program	Initiate RFI to stakeholders and conduct community outreach	3/2025	2/2026
Feasibility Analysis	Conduct Feasibility Analysis	4/2025	10/2025
Site Area Identification	Establish site target areas	10/2025	1/2026
Recommendations and Completion	Develop Visioning Plan recommendations and lessons learned, and close out Visioning Plan	1/2026	2/2026

CORRIDOR PROGRAM PROJECT ACTIVITY	MILESTONE	START DATE	END DATE
Pre-Deployment Project Activity	Anticipated Notice of Award	1/2026	1/2026
	Grant Agreement	1/2026	4/2026
	MOA Development & Execution	4/2026	6/6026
Community Engagement and Education Program	Initiate RFI to stakeholders and conduct community outreach	4/2026	4/2029
Infrastructure Deployment	RFP and Proposal Process	6/2026	9/2026
	Vendor Scoring and Selection	9/2026	11/2026
	NEPA Review	11/2026	2/2027
	Contract Signing	2/2027	4/2027
	Infrastructure Deployment Construction	4/2027	4/2029
Completion	Close out Deployment Project	4/2029	4/2029

Description of Statement of Work - Visioning Plan (Community Program)

SUBTASK	DESCRIPTIONS OF ACTIVITIES
Feasibility Analysis	<ul style="list-style-type: none"> Identify and describe project background, needs, objectives, and stakeholders Conduct stakeholder engagement Complete safety assessment of the zero-emission technologies under consideration Develop preliminary cost estimates Determine administrative and regulatory needs

²³ <https://www.epa.gov/inflation-reduction-act/states-new-jersey-connecticut-delaware-and-maryland>

	<ul style="list-style-type: none"> Summarize next steps
Site Area Identification	<ul style="list-style-type: none"> Identify target areas using factors such as transportation system gaps, presence of disadvantaged communities based on the Climate and Economic Justice Screening Tool (CEJST), rural areas, nonattainment areas for criteria air pollutants, centers of employment and freight activity, and traffic volumes. Conduct preliminary environmental review, identifying designated floodplain areas, wetlands, species surveys, historic and cultural resources. Identify development constraints, such as environmental risks, right-of-way acquisition considerations, permitting needs, and availability or potential to provide electrical infrastructure necessary to target areas. Conduct preliminary alternatives screening to rule out unviable areas.
Community Engagement and Education Program	<ul style="list-style-type: none"> Initiate a Request for Information (RFI) to solicit feedback from stakeholders on the Visioning Plan development. Ensure that RFI includes both digital and traditional outreach and communications methods. Digital outreach will include a dedicated webpage that serves as a hub and entry point for engagement, virtual workshops, e-blasts and newsletters, and targeted social media, including the potential for targeted advertisements. Traditional outreach tactics will include in-person workshops, public meetings, public presentations to community associations, and, as funding permits, focus groups and advertising.
Recommendations	<ul style="list-style-type: none"> Develop recommendations that are informed by the Visioning Plan and Community Engagement and Education Program. This final subtask of the Community Program will require consolidating all information gathered from the Visioning Plan into recommendations and lessons learned. This concluding task will require document review and drafting. The findings will be made publicly available, likely in a manner and through mechanisms established during the Community Engagement and Education Program.

Description of Statement of Work - Deployment Project (Corridor Program)

SUBTASK	DESCRIPTIONS OF ACTIVITIES
Community Engagement and Education Program	<ul style="list-style-type: none"> Will focus on ensuring meaningful participation with respect to the implementation and performance of the project. Will initiate an RFI to solicit feedback from stakeholders. Will include both digital and traditional outreach and communications methods like those described under the Community Program task.
Infrastructure Deployment	<ul style="list-style-type: none"> The Partners will work with vendors to base site locations on the outcomes of the findings of the Visioning Plan and Community Engagement. Site-specific environmental reviews for FHWA NEPA compliance will be performed during this period. RFPs will require that vendors commission a skills training curriculum focusing on the construction, operations, and maintenance of EVSE infrastructure. Final site design plans will be used for real property acquisition, construction, and installation. Relevant local, state, and federal permit applications will be submitted for approval and issuance. This task will include the procurement process for each Partner to contract with a private entity for acquisition, construction, and installation of the EV charging infrastructure.

Environmental Impact and NEPA, Energy Sources and Storage Needs, Utility Provider Engagement, and Right-of-Way Acquisition: Visioning Plan (Community Program)

The Visioning Plan is a non-construction project where the environmental impact is expected to be negligible. No major energy sources, land acquisitions, or public ROW will be required for the Visioning Plan. MDOT will complete the required National Environmental Protection Act (NEPA) processes and reviews required for this study. MDOT anticipates, as a pre-construction activity, this study would qualify as a Programmatic Categorical Exclusion (PCE) and will work expeditiously with FHWA for certification.

Deployment Project (Corridor Program)

Site-specific environmental reviews for FHWA NEPA compliance will be conducted as target areas identified under the Visioning Plan are narrowed to candidate site locations for deployment of the ZE-MHDV charging depots. The Partners intend to explore existing facilities such as truck stops, intermodal freight terminals, logistics centers, and warehouses and do not anticipate that right-of-way acquisitions will be necessary for the Deployment Project. Partners may consider requesting access easements to utilize private sites as necessary. Partners will confirm potential real property assessment needs for each site as part of the site selection and design process. Partners will initiate the NEPA process for specific sites in coordination with their respective state NEPA, Title 23, and Part 680 requirements and with respective state division and federal division offices.

The Partners will initiate conversations with utility providers within their respective states to introduce the Project and to identify utility infrastructure needs to support the Deployment Project, pending future award funding. Partners will collaborate with utility providers to develop utility upgrade designs that can support the new depots.

Planning Coordination & Approvals

The Project is a key component in the Partnering states' broader zero-emission goals and regional and national decarbonization goals. An I-81 and I-78 corridor that enables decarbonization and investment of charging infrastructure aligns with New Jersey and Maryland's ACT mandates and Multi-State Zero Emission MHDV Vehicle MOU, to which Maryland, Pennsylvania, and New Jersey are signatories. The Project complements the MHDV planning efforts contained in the [2022 Maryland State Freight Plan](#) and furthers implementation of the recommendation to build charging infrastructure. The [West Virginia State Freight Plan](#) calls for WVDOT to collaborate with other states for the implementation of MHDV charging infrastructure, including discretionary grant opportunities such as the CFI Program. The Project complements the [New Jersey State Freight Plan](#) and [Pennsylvania State Freight Plan](#) by proactively accelerating the adoption of EV charging infrastructure that both plans identify as an innovative trend in freight transportation.

Project Risks

As a non-construction activity, potential risks for the Visioning Plan are minimal. For any portion of the Visioning Plan requiring site visits, standard safety procedures will be followed. The Partners have broad experience managing federal grant awards and complex, large-scale projects, including EV charging projects, and are well-positioned to navigate and overcome challenges, as outlined below:

PROJECT RISK MITIGATION		
Risk	Risk Impacts	Mitigation Strategy
Greater than expected costs for charging depot equipment.	Decrease in cost effectiveness of emissions reductions.	Coordinate to develop subgrant agreements to ensure clearly scoped RFPs that are based on rigorous value engineering. Partners will share their experience with reputable, high-performing vendors to reduce uncertainty.
Lower than anticipated adoption of ZE-MHDVs reduces depot utilization.	Cumulative emissions reductions may be less than anticipated.	New Jersey and Maryland have adopted California's ACT Rule. Partnering states have created incentives to increase ZE-MHDV sales including rebates and grant programs. Partnering states are also signatories to the Multi-State Medium- and Heavy-Duty Zero Emission Vehicle MOU, pledging that 30% of new trucks and buses will be ZE by 2030, scaling to 100% by 2050.
Technology or market uncertainty around high-capacity ZE-MHDV chargers.	Uncertainty may cause delays, reducing cumulative GHG emission reductions.	RFPs will incorporate all technical standards developed by federal agencies and national labs such as the NREL.
Delayed availability of additional power supply from utilities.	Service connections and adequate system capacity may not be available to support charging capability.	Provide utility regulators and companies with a clear timeline of the needed capacity to support the charging depot investments and develop a mutually agreed upon schedule.
Limited workforce availability for charging depot installation, operation, and maintenance.	Construction delays.	Early coordination with potential vendors and local labor unions will develop a realistic construction schedule and factor in adequate cost estimate contingencies to account for labor rates and availability.
Difficulty obtaining permits.	The start of charging depot construction and operation may be delayed.	The Partners are committed to early and ongoing engagement with local stakeholders and regulatory authorities to understand zoning and permitting requirements. Partners plan to optimize existing facilities that will avoid disturbance of new land.
Environmental risks.	The start of charging depot construction and operation may delay.	Partners will prioritize siting depots at existing facilities to avoid disturbance of new land.
Community opposition to site development, such as eminent domain and equity issues.	Delays may diminish cumulative GHG emission reductions in the near-term.	The Partners have substantial experience engaging the public for large-scale projects. Partners plan to optimize existing facilities to avoid new right-of-way acquisition.

Inclusion and Consideration of DBEs

Fair contracting and subcontracting opportunities will be available to DBEs based on state policies and federal regulations. The Workforce Development, Job Quality, and Wealth Creation section of the Project Merit Criteria presents some statewide initiatives that will ensure the inclusion of DBEs. Statewide disparity studies will provide the legal framework for authorizing state MBE, DBE, and WBE programs and ensuring that preferences are evidenced-backed and can withstand strict scrutiny. The state and U.S. DOT studies will form the basis for opening opportunities for DBEs within the region to provide goods and services to deliver the Project.

Equity and Accessibility

Equity is a fundamental component of the Project and will be central to the successful delivery of the Project. Justice40 areas will be key inputs as the basis for specific site identification and EV charging investments.

The Partners propose a robust community outreach and engagement plan to provide an accessible, transparent, and cohesive strategy for informing, consulting, and empowering site-adjacent communities. The goals for the engagement strategy and plan include:

- Thoughtfully involve and collaborate with the full spectrum of community members and stakeholders.
- Provide resources to explore community ownership and community-led efforts.
- Empower the community—especially those who live and work in rural areas, EJ communities, and in hazard zones—to provide local knowledge and expertise.
- Eliminate barriers surrounding public engagement, including language, time of day, and location/mobility.

Digital outreach will include a dedicated webpage that serves as a hub and entry point for engagement, virtual workshops, e-mail blasts and newsletters, as well as targeted social media, with the potential for targeted advertisements.

23 CFR Part 680 requirements

The funding request to support the Project’s Visioning Plan and Community Engagement and Education Program through the CFI Community Program are non-construction activities, and the 23 CFR Part 680 requirements are not applicable to those tasks. For the funding request for the Deployment Project through the CFI Corridor Program, proposed sites will be designed to meet the minimum federal standards and the requirements under National Electric Vehicle Infrastructure (NEVI) Standards and Requirements (23 CFR Part 680). Partners will lead procurement efforts for infrastructure deployment within their respective states. The procurement processes will meet requirements of 23 CFR Part 680, with the following information to be shared publicly:

- Summary of the procurement process used.
- Number of bids received.
- Identification of the awardee.
- Proposed contract to be executed with the awardee.
- Financial summary of contract payments suitable for public disclosure, including price and cost data, in accordance with each respective State’s laws.
- Any information describing how prices for EV charging are to be set under the proposed contract, in accordance with each respective State’s laws.
- Compliance with the Davis-Bacon Act on prevailing wage rates.

During the procurement process, Partners will specify that resulting contracts will include provisions that EV charging infrastructure funded under the CFI Program and installed by the selected private partners must meet NEVI standards and requirements. Once each Partner selects a vendor(s) for their respective states, the Partners will provide program management to oversee the contracts and ensure the vendors meet contracting requirements.