

West Virginia

NATIONAL ELECTRIC VEHICLE INFRASTRUCTURE (NEVI) DEPLOYMENT PLAN

July 28, 2022





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1 Introduction

The West Virginia National Electric Vehicle (EV) Infrastructure Deployment Plan (Plan) overviews how West Virginia intends to use the National Electric Vehicle Infrastructure (NEVI) Formula Program funds. The program's purpose is to expand access to electric vehicle charging by:

- Accelerating equitable adoption of EVs, including for those who cannot reliably charge at home.
- Reducing transportation-related greenhouse gas emissions and help put the U.S. on a path to net-zero emissions by no later than 2050.
- Positioning U.S. industries to lead global transportation electrification efforts and help create family-sustaining union jobs that cannot be outsourced.

Additionally, West Virginia legislature passed House Bill 4797 in June of 2022. It directs the West Virginia Department of Transportation (WVDOT) to create the EV Infrastructure Development Plan for the State. It states the plan:

“..shall take a holistic approach, considering the future charging infrastructure needs of school systems, public transportation, counties and municipalities, and other public and private users.”

To meet both federal and State goals, West Virginia will need access to new publicly available EV chargers. The West Virginia EV Infrastructure Development Plan is the State's road map to invest the NEVI Formula Program funds.



NEVI program funds are apportioned from the Infrastructure Investment and Jobs Act (IIJA), sometimes referred to as the Bipartisan Infrastructure Law (BIL). This Plan was developed using guidance provided by the NEVI program to create a framework to support build-out of the public EV charging network in the State.



Key Elements of NEVI program in West Virginia:

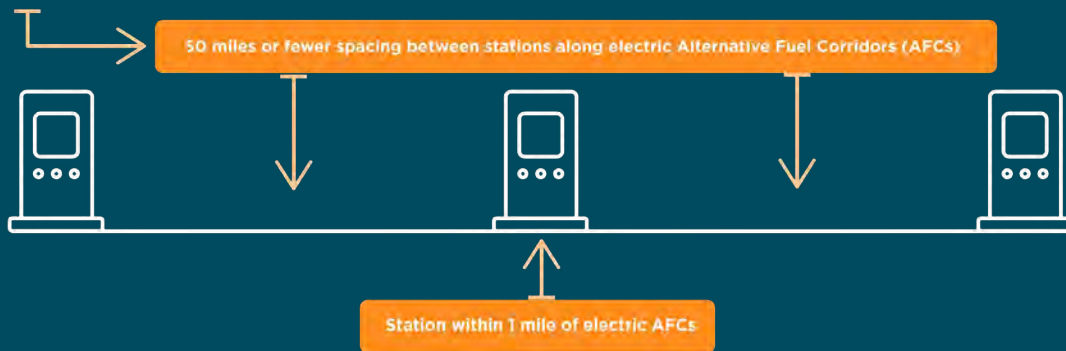
- ▶ *Five-year program*
- ▶ *Estimated \$45.7 million will be apportioned to West Virginia over five years*
- ▶ *Estimated 912 new public charging ports will be constructed, increasing the public EV charging network by 3,145%*

The program will be implemented in two phases over the five-year program in West Virginia. Phase 1 is focused on build-out of NEVI-required stations along the designated electric Alternative Fuel Corridors (AFC) in the State. The NEVI program requires electric AFCs in each state to have a spacing of 50 miles or fewer between EV charging stations. The goal is to provide reliable regional and interstate EV travel across the U.S. It is estimated that Phase 1 will take two fiscal years to complete.

Phase 2 will be focused on community-based public EV charging. Criteria for site selection during this phase will be based on community input and priority setting. The NEVI program requirements for this phase include a station must be on any public road or in other publicly accessible locations that are open to the general public or to authorized commercial motor vehicle operators from more than one company. The focus for this phase will be on increasing access to EV charging and EV-related jobs, particularly in historically disadvantaged communities.

Figure 1. Phases

PHASE 1: ELECTRIC AFC CHARGING



PHASE 2: COMMUNITY-BASED CHARGING



IMPORTANT YEAR 1 SCHEDULE MILESTONES

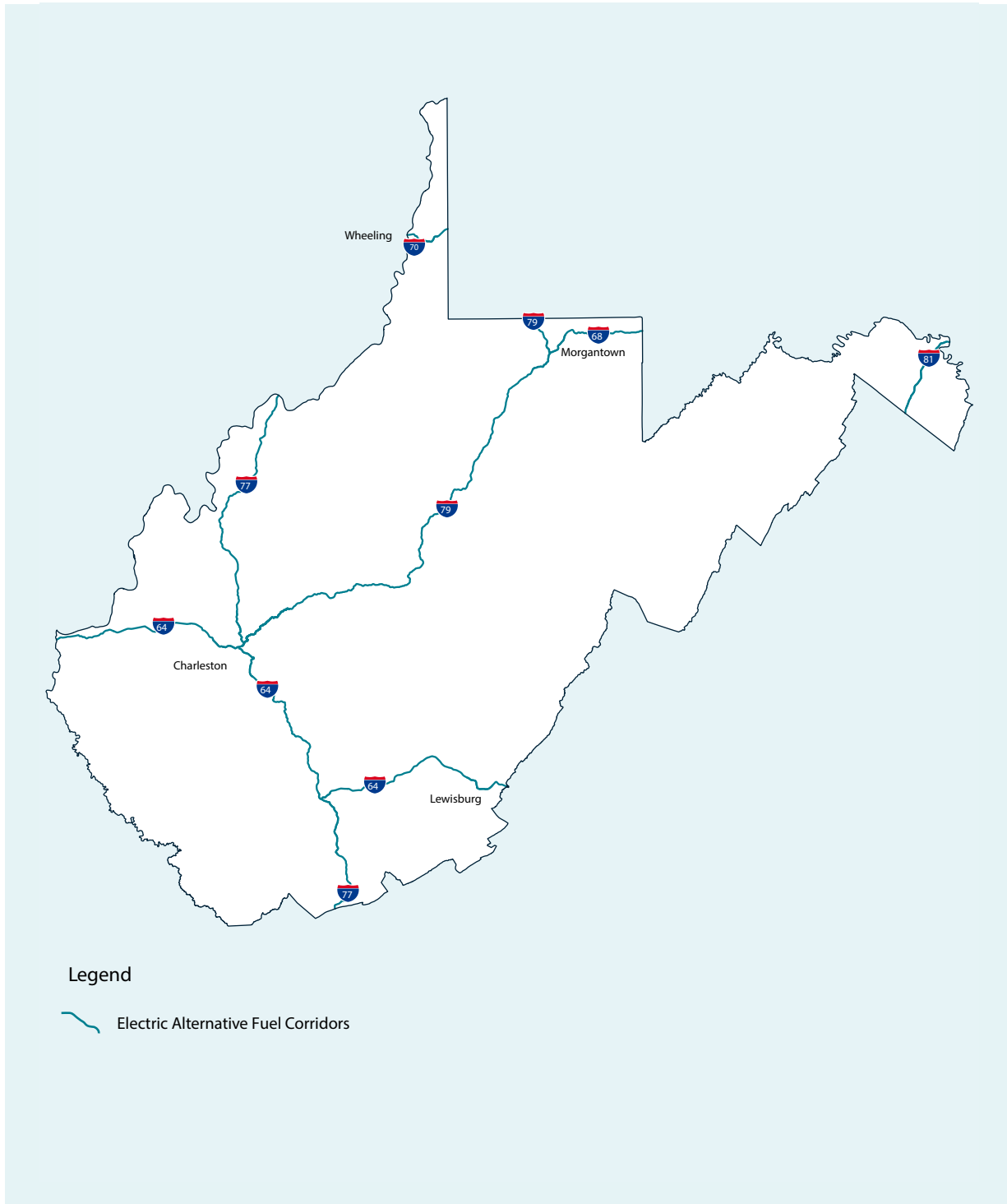
In West Virginia, NEVI program funds will be administered by the WVDOT Division of Highways. The NEVI program requires each state to submit an EV Infrastructure Deployment Plan. This Plan satisfies this requirement.

Each state plan must be approved by the Joint Office of Energy and Transportation (Joint Office) before NEVI funds can be distributed to each respective state. Each year during the five-year program, the plan will be updated to document program progress in West Virginia and meet NEVI program requirements related to reporting. Table 1 highlights key dates for the first fiscal year of the NEVI program in West Virginia.

Table 1. Anticipated NEVI Implementation by WVDOT

Anticipated Date	Milestone
May – July 2022	Development of Plan
August 2022	Plan Submitted to Joint Office
September 2022	Plan to be Approved by Joint Office
Winter 2022/2023	Publish Solicitation for Phase 1 AFCs
Spring 2023	Award Contracts for Phase 1 AFCs

Figure 2. West Virginia Electric Alternative Fuel Corridors





2 State Agency Coordination



Interagency coordination will be a critical part of West Virginia's path to success for the NEVI program. WVDOT will lead NEVI program coordination in West Virginia and work closely with other agencies to ensure all elements of the program are implemented in accordance with federal and state requirements as well as community priorities.

COORDINATION WITH OTHER STATE AGENCIES

WVDOT will be the lead agency administering the NEVI program in West Virginia.

Responsibilities include receiving funds from the Federal government, managing program administration, and overseeing program compliance with federal and State requirements.

WVDOT is also the lead agency for the Volkswagen Environmental Mitigation Trust Settlement program. One of four funding priorities for the settlement program is EV charging equipment. The Volkswagen and NEVI programs will be coordinated to support the shared goal of increasing public access to EV charging.

WVDOT will also work closely with the West Virginia Office of Energy (WVOE). WVOE is responsible for the State's Alternative Fuel program. This program includes research, planning, and funding for alternative fuel infrastructure. WVDOT and WVOE will coordinate infrastructure implementation as well as public engagement with stakeholders and the general public.

Economic development and workforce training will also be a focus with the NEVI program. WVDOT will coordinate with the West Virginia Department of Economic Development (WVDED). WVDED will also be leading the focus on small business opportunities through the Small Business Development Center (SBDC) as well as tourism through implementation of the Tourism Development Act. The goal is to support visitors, businesses, and residents by providing access to public EV charging.

Lastly, WVDOT will work closely with utility

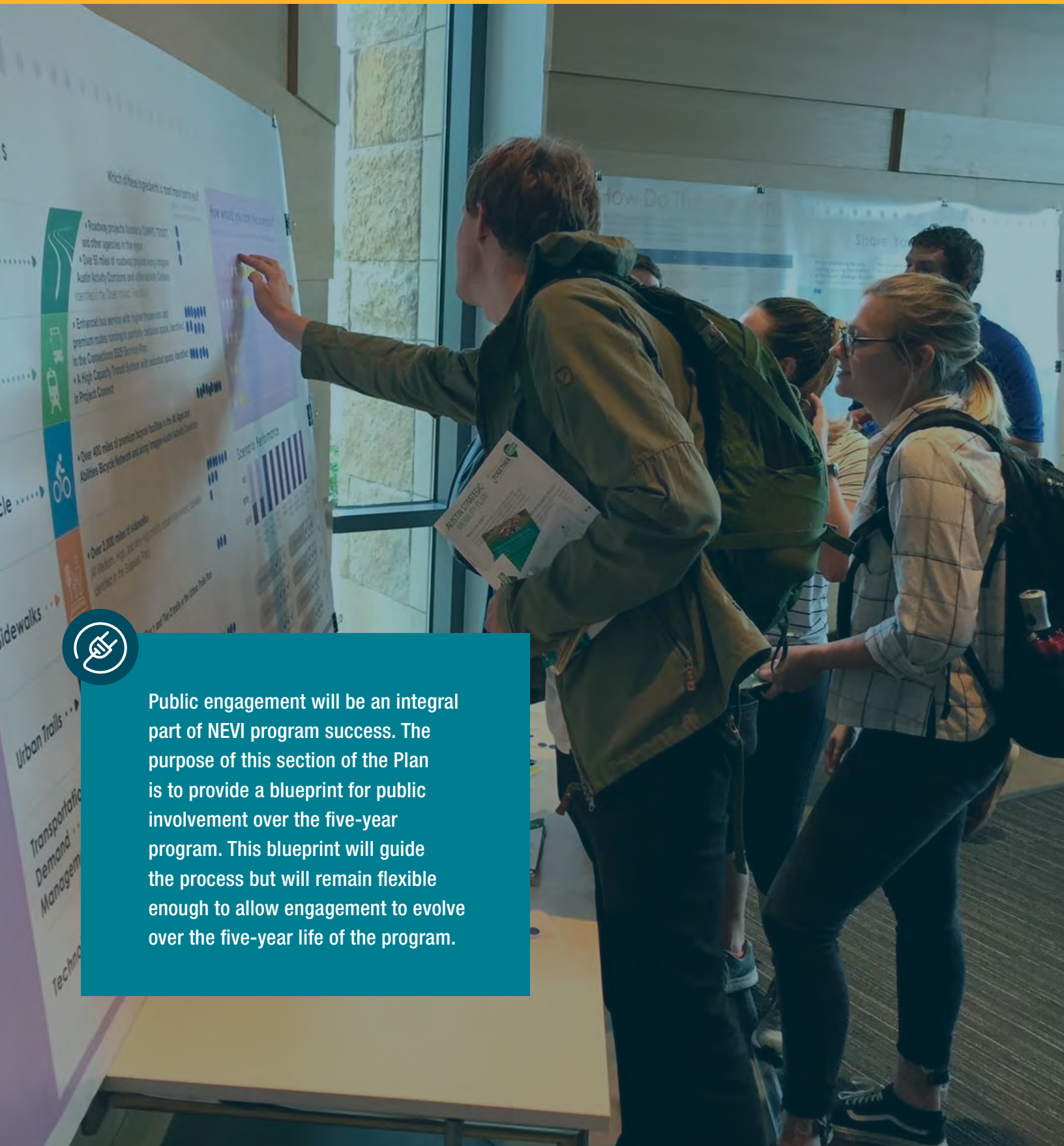
partners across the state, including the State's regulated utilities. The focus will be on coordinating investments to grid improvements that support the NEVI-funded EV stations as well as coordinating EV charging investments utilities are making themselves.

U.S. - MADE SUPPLY EQUIPMENT

WVDOT is prepared to adhere to Buy America requirements following guidance of the Federal Highway Administration (FHWA) and the Joint Office for the NEVI program. However, WVDOT also asks for continued focus on providing a flexible definition of Buy America. Given supply chain disruptions and the current marketplace production of EV chargers, using the current guidance for Buy America may delay deployment of infrastructure, limit competition, and increase program costs. WVDOT will continue to work with FHWA, the Joint Office, and State agency partners to comply with the latest program guidance over the five-year program.



3 Public Engagement



Public engagement will be an integral part of NEVI program success. The purpose of this section of the Plan is to provide a blueprint for public involvement over the five-year program. This blueprint will guide the process but will remain flexible enough to allow engagement to evolve over the five-year life of the program.

STAKEHOLDERS INVOLVED IN PLAN DEVELOPMENT

During the development of this plan, stakeholder engagement focused on inter-agency coordination and industry outreach. After the plan is approved, WVDOT will conduct a larger outreach effort that is outlined later in this section.

In June of 2022, a listening session was hosted with the West Virginia Electric Auto Association (WVEAA). Members of the association shared their goals, needs, and EV opportunities in West Virginia. The input received has been incorporated into this plan. Additionally, future NEVI program outreach will be coordinated with WVEAA members as well as other stakeholder groups across the State.

Year 1 Public Engagement Schedule

A tentative public engagement schedule has been developed for the West Virginia NEVI program.

Table 2. Public Engagement Dates

Anticipated Date	Milestone
August 2022	Plan Submitted to Joint Office
September 2022	Plan to be Approved by Joint Office
Fall 2022	Virtual Public Information Sessions to Confirm Phase 1 priorities
Winter 2022/2023	Publish Solicitation for Phase 1
Spring 2023	Award Contracts for Phase 1 and Host Public Information Sessions to Set Priorities for Phase 2



PUBLIC OUTREACH

Public engagement activities for NEVI will include in-person and virtual public meetings as well as surveys, a program website, social media, and regular reporting. Each of these activities is described briefly below.



Public Information Sessions

WVDOT will host virtual and in-person public information meetings to provide information on the NEVI program. The purpose of these meetings is to share updates about ongoing program implementation as well as business and workforce development opportunities associated with the program.



Educational Activities

In partnership with other organizations, WVDOT will conduct educational activities around the State. These activities will take place at community events, like the EV promotional events.



Webpage

WVDOT will create and maintain a webpage specifically devoted to the NEVI program in West Virginia. The webpage will serve as the central repository for information about the program, including procurement documents, reports, and upcoming events.



Social Media

Social media content and a social media schedule will be developed to share information about the NEVI program and create dialogue and awareness.



Issue Tracking and Summary Report

The primary purpose of public engagement is to inform the public and to understand and respond to community priorities. Input and progress will be documented regularly over the five-year program. At a minimum, WVDOT will create an annual NEVI plan update to report progress and communicate priorities for the upcoming fiscal year of the program.



4 Plan Vision and Goals



The overall goal for the West Virginia NEVI program is to expand access to clean energy in the future through a growing network of publicly accessible EV chargers and to ensure equitable access to this network, particularly for historically disadvantaged communities.

The West Virginia EV Infrastructure Plan will use NEVI formula program funding in a cost-efficient way that creates a reliable and accessible public EV charging network. The plan will have two phases. Phase 1, in accordance with NEVI program guidance, will first build EV charging stations every 50 miles along the electric AFCs. The priority for this phase is interstate and regional travel. After the NEVI requirements of Phase 1 are met, Phase 2 will focus on community-based charging. The priority for this phase will be expanding local access to reliable public EV charging.

THE GOALS OF THE WEST VIRGINIA NEVI PROGRAM ARE:



Build a reliable and easily accessible EV charging network

As part of the plan, corridors will be built out in segments to be immediately useful for travel and priority will be given to corridors that do not have existing chargers. As EV adoption and deployment continues in West Virginia, the State will continue efforts in creating a network of EV chargers that are accessible and connected.



Increase overall network reliability

Through data collection requirements in the solicitation process, various performance metrics will be required to ensure the charging infrastructure is operational at least 95 percent of the time. The charger locations and real-time operational status will be available to drivers for seamless trip planning.



Ensure equitable location of EV chargers, particularly in historically disadvantaged communities

For the entire five-year program, disadvantaged communities and rural areas of the State will be prioritized for EV charging infrastructure. Education is a key component of EV deployment and West Virginia will continue to ensure equitable and community-backed decision-making processes to ensure that chargers are installed to meet the needs of communities that have historically been under-funded and under-invested.



Expand access to economic opportunities

A portion of the West Virginia NEVI program will focus on jobs, skills training, as well as business development investments to develop and train local workers in Electric Vehicle Supply Equipment (EVSE) construction and maintenance.

5 Contracting



WVDOT will manage the NEVI program and work with third-party entities to construct, operate, and maintain EV chargers installed with NEVI funds. To do this, WVDOT will manage a competitive bidding and contracting process for NEVI-funded EV stations. Community priorities and federal and State requirements will be incorporated into the contracting process to ensure compliance and goals are achieved.

WVDOT will contract with third-party entities to develop EV infrastructure in West Virginia. Phase 1 contracting will focus on the selection of a third-party vendor or vendors to implement stations along the electric AFCs. Phase 2 contracting will focus on the selection of more than one third-party vendors to implement stations throughout West Virginia.

The contracting strategy for charging includes a variety of topics that are discussed below. The formal contract will include further detail than what is provided.

- **Solicitation** – The solicitation will include the information required as a part of the federal requirements and guidelines. The priorities and selection criteria will be provided as a part of the solicitation.
- **Proposals** – Applicants will provide the specific location/site, status of site negotiation, number of existing and proposed chargers, and DCFC power-level capabilities. Phase 1 solicitations will also require applicants to document the distance between NEVI-compliant charging stations. Applicants can choose to upgrade existing charging stations, build out existing charging stations further (particularly if a conduit already exists for expansion), and build new charging stations. Preference will likely be given to new charging stations given the implications of new service areas but both cases will be considered when evaluating applications. Proposals should include standard components including schedule, scope of work, budget, terms and conditions beyond what is included in the grant solicitation, regular project management calls/reports, and compliance reviews during construction, as well as periodic reviews to ensure ongoing operations and maintenance after award.
- **Small Businesses Enterprise (SBE)/Disadvantaged Business Enterprise (DBE)** – Opportunities for small businesses will be provided based on 23 U.S.C. 304. A DBE goal will be required and preference will be given for meeting said goal. DBE partners must be clearly stated in an application and a fee estimate must be provided for the SBE/DBE as a part of the budget.
- **Funding** – The proposal must include clarification from the applicant of how the remaining 20 percent of funding (based on the 80 percent federal funding match) will be provided. If awarded through the NEVI program, the remaining 20 percent must come from non-State sources.
- **Other stipulations** – A variety of stipulations may be included as a part of the grant solicitation or be listed as evaluation metrics for the proposals submitted. These can include level of public access, operating hours, multiple forms of payment (cash, credit, debit), availability of customer support and assistance in multiple languages, adequate safety measures (lighting, visibility), Americans with Disabilities Act (ADA) accessibility, and data sharing and monitoring provisions.

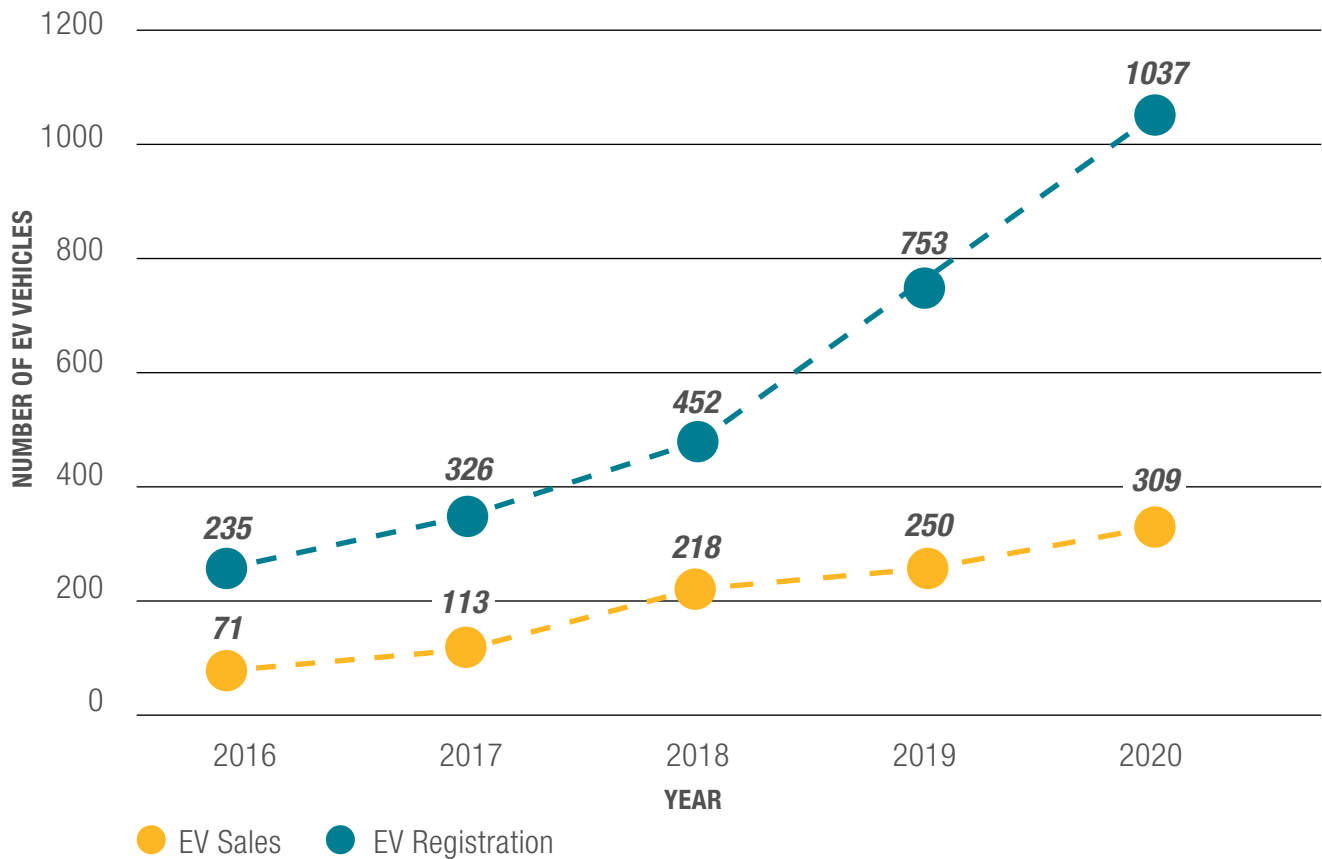
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Existing and Future Conditions Analysis



This section of the plan analyzes existing and future conditions specific to West Virginia regarding EV infrastructure, State geography and climate conditions, and existing EV charging locations. Specific risks and challenges are also summarized.

Figure 3. Existing EV Ownership



As of June of 2022, 14 stations and 28 EV ports that are publicly accessible; these numbers exclude Tesla EV ports because the Tesla network is currently available only to Tesla owners. DCFC ports make up 14% of the public charging network in the State. 86% of the network is Level II EV ports.

Overall, the average number of EV ports per station in the State is two. The minimum number of NEVI-program required ports per station along the AFCs is four.

Currently, 83% of the public EV ports (Level II and DCFC) in West Virginia are within one mile of an electric AFC. However, no stations meet the NEVI station requirements of four or more ports with 150KW capacity within one mile of an electric AFC.

Tables 3. Existing Publicly Accessible EV Ports in West Virginia¹

	EV Ports Statewide	EV Ports within 1 mile of AFCs	AFC EV Port share of Statewide EV Ports
Level II	4	3	75%
Level III/DCFC	24	21	88%
Total	28	20	71%

1. Data excludes Tesla-network chargers

INDUSTRY/MARKET CONDITIONS

GRID CAPACITY

West Virginia's electricity is coordinated by the PJM Interconnection, a regional transmission organization (RTO) that operates a competitive wholesale electricity market for part or all of 13 states. West Virginia and all state areas that border West Virginia are within the PJM Interconnection network.

In 2020, according to the U.S. Energy Information Administration (EIA), West Virginia ranked second in the nation for coal production, and coal-fired power plants contributed 88 percent of the State's net electricity generation. Renewable energy, namely hydroelectric power and wind energy, contributed 6% of net electricity generation, and natural gas contributed roughly 3%. West Virginia's crude oil production, including natural gas, reached an all-time high in 2020 due to drilling in the State's northern panhandle. Subsequently, the State ranked fifth in the nation for natural gas marketed production in 2020.

In 2020, the EIA reported that West Virginia's net electricity generation was 56,661,533 megawatts per hour. West Virginia ranked fifth in the nation for total energy production in 2019.

ELECTRIC UTILITIES THAT SERVICE THE STUDY AREA

Residents of West Virginia primarily receive electricity from four investor-owned companies: Appalachian Power Company, Wheeling Power, Monongahela Power Company, and Potomac Edison Company. According to the Public Service Commission (PSC) of West Virginia, these companies account for 96% of residential electric sales and 98% of commercial electric sales. Furthermore, the PSC regulates rates and charges for these companies as well as the reasonableness of their acts, practices, and

services. Additionally, five independent non-generation electric companies purchase wholesale power from suppliers served by PJM Interconnection and distribute that power at retail rates to residential, commercial, and industrial customers. These companies are the Harrison Rural Electrification Association, Black Diamond Power Company, Craig-Botetourt Electric Cooperative, New Martinsville Municipal Utilities, and Philippi Municipal Electric.

EV OWNERSHIP/AVAILABILITY

In 2020, West Virginia ranked number 44 of the 50 states for EV sales. In 2020, electric vehicles sales, including battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV) accounted for less than 1% of all car sales in the State.

While EV sales and ownership are low in West Virginia compared to other states, West Virginia is ranked number four in the country for the number of charging ports per 100 EVs. Existing access relative to potential demand is relatively high when compared to other states.

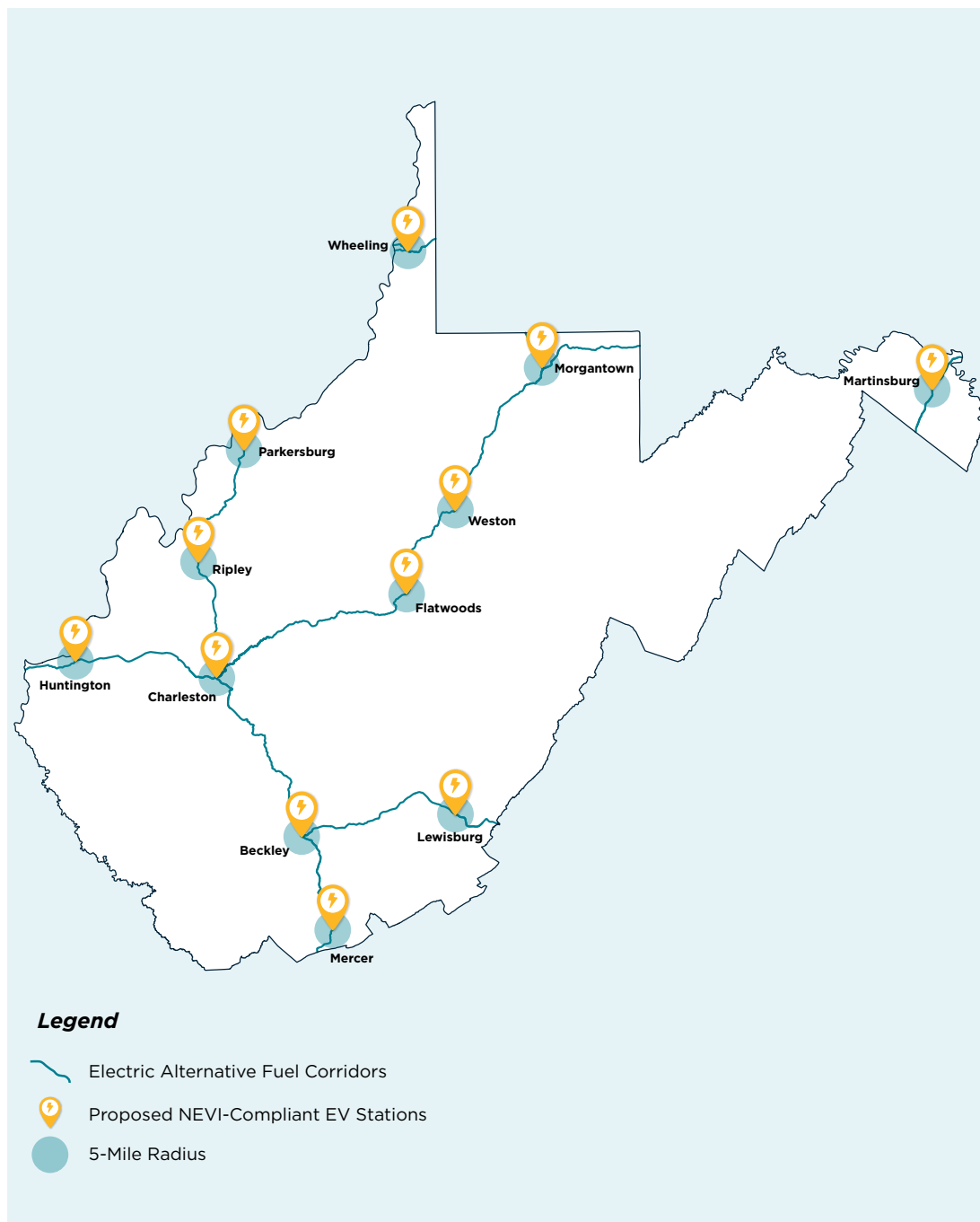
Two regulatory conditions are impacting EV sales and potentially reducing demand for EVs. West Virginia currently does not allow direct-to-consumer sales. Changing this restriction would help EV sales increase, as many auto manufacturers are moving to direct-to-consumer sales business models. Additionally, West Virginia charges an additional registration fee for new alternative fuel vehicles. Adjusting registration fee costs may also be a way to increase EV sales. It should be noted that the higher registration fee for EVs is done in part to offset lost revenue from gas-tax collection to pay for transportation infrastructure. All states are developing policy strategies and researching how to make these adjustments as EVs increase as a share of total vehicles on the road.



FUTURE NEEDS

To meet the station spacing requirements of NEVI, stations must have at least four 150KW Level III chargers. Additionally, the stations need to be within one mile of an electric AFC and stations must be spaced no more than 50 miles. Based on these requirements, it is estimated that West Virginia will need at least 12 NEVI-compliant stations. Figure 4 below illustrates the approximate location that new NEVI compliant stations need to be placed to meet the NEVI program requirements along electric AFCs.

Figure 4. Future Electric AFC EV Stations



ALTERNATIVE FUEL CORRIDORS (AFCs)

The FHWA has created the Alternative Fuel Corridors program. The goal of the program is to create a national network of charging and fueling infrastructure along the National Highway System (NHS). The AFCs used for this plan include those approved by FHWA from Rounds 1 through 6. Additionally, AFC corridor segments are designated as “Ready” or “Pending.” Ready means the corridor meets the AFC requirements for EV station spacing distance and proximity to AFCs. In West Virginia, I-81 is designated as Ready. All other Electric AFCs are designated as Pending. When Phase 1 of the West Virginia NEVI program is complete, all of the AFCs will be designated as Ready.

Tables 4. Electric AFC Ready and Pending

Corridor	Miles	Start	End	AFC Ready or Pending?
I-64	15 Miles	Kentucky State Line	Huntington	Pending
I-64	44 Miles	Huntington	Charleston	Pending
I-64	61 Miles	Charleston	Beckley	Pending
I-77	31 Miles	Beckley	Princeton	Pending
I-77	9 Miles	Princeton	Virginia State Line	Pending
I-64	49 Miles	Beckley	Lewisburg	Pending
I-64	15 Miles	Lewisburg	Virginia State Line	Pending
I-77	36 Miles	Charleston	Ripley	Pending
I-77	38 Miles	Ripley	Parkersburg	Pending
I-77	11 Miles	Parkersburg	Ohio State Line	Pending
I-79	66 Miles	Charleston	Flatwoods	Pending
I-79	32 Miles	Flatwoods	Weston	Pending
I-79	50 Miles	Weston	Morgantown	Pending
I-79	11 Miles	Morgantown	Pennsylvania State Line	Pending
I-68	24 Miles	Morgantown	Maryland State Line	Pending
I-70	5 Miles	Ohio State Line	Wheeling	Pending
I-70	9 Miles	Wheeling	Pennsylvania State Line	Pending
I-81	13 Miles	Virginia State Line	Martinsburg	Ready
I-81	13 Miles	Martinsburg	Maryland State Line	Ready

STATE GEOGRAPHY, TERRAIN, CLIMATE AND LAND USE PATTERNS

West Virginia is bordered by Virginia, Kentucky, Ohio, Maryland, and Pennsylvania. The entire State is part of the Appalachian Mountains, with forest covering more than three fourths of the land and an average elevation of 1,500 feet above sea level. Within the system, the State's terrain is subdivided into the Appalachian Plateau Province and the Ridge and Valley Province. The Appalachian Plateau Province covers the western two thirds of the State and drains into the Ohio River Basin. The eastern edge and panhandle of the State falls within the Ridge and Valley Province and drains into the Potomac River Basin.

West Virginia has a humid continental climate except for along the eastern panhandle, which has a marine modification. Mean temperatures range from 56 °F in the south, 52 °F in the north, and 48 °F in the mountainous regions. January is the coldest month and July is the warmest. Average annual precipitation ranges from 60 inches in the mountains to 35 inches in the rain shadow east of the mountains. Snowfall makes up 8% of total precipitation. Flooding and heavy snow are the most common natural disasters in the State.

West Virginia is a rural state. 51% of the population lives in rural areas, with 49% living in urban areas. Most of the counties in West Virginia are designated as rural. With a more dispersed population and longer destinations between many destinations, supporting EV charging in all parts of the State will be important. It will support not only inter-state and regional travel, but local travel, too.

STATE TRAVEL PATTERNS, PUBLIC TRANSPORTATION NEEDS, FREIGHT AND OTHER SUPPLY CHAIN NEEDS

WVDOT is aligned with NEVI program goals and is focusing on creating a reliable statewide network of EV chargers. Below is a summary of State travel patterns, freight needs, and supply chain considerations as they relate to EV charging network implementation in the State.

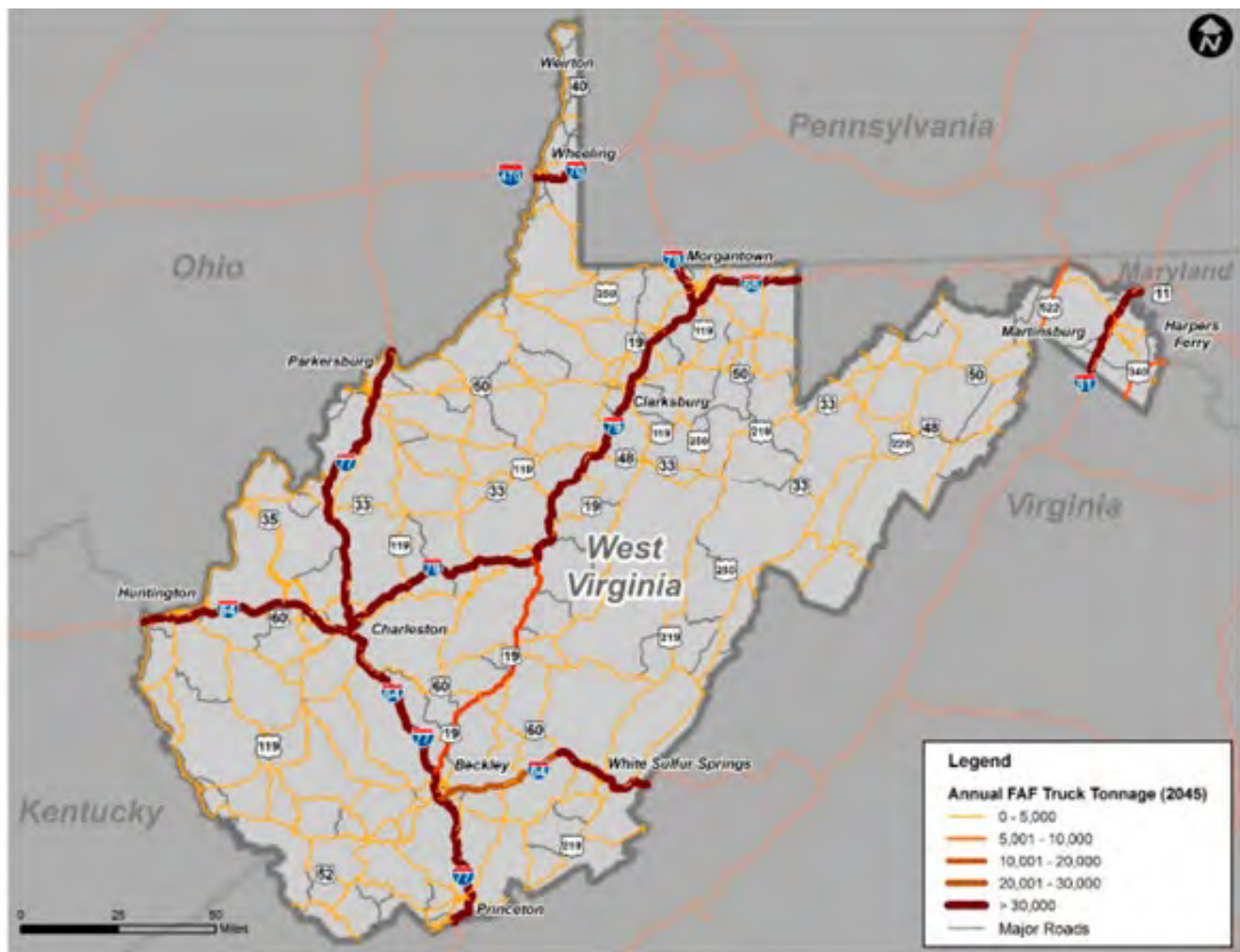
STATE TRAVEL PATTERNS

As of 2019, West Virginia has approximately 39,000 miles of public roads and 19 billion vehicle miles traveled (VMT). Of these totals, there are 555 miles of Interstate System carrying approximately 6 billion VMT per year. West Virginia has a VMT per capita of 10,600, which surpasses the national average of 9,800. This is likely a function of the rural nature of the State and the longer travel distances needed for both local and regional travel.

West Virginia's roadway network is the backbone for moving the State's freight, and there are 302 miles of the National Highway Freight Network (NHFN) in the State. Within the NHFN, there are 285 miles of Primary Highway Freight System (PHFS) routes. This includes 119 miles of I-64 and 39 miles of I-77 in the western part of the State, 14 miles of I-70 in the north, and 26 miles of I-81 in the northeast corner. Additionally, there are 17 miles of intermodal connectors that join to the PHFS surrounding Huntington.

Coal is the most transported good moved to, from, and within West Virginia. Most of the freight shipped from West Virginia goes to Virginia, North Carolina, Maryland, Pennsylvania, and Ohio. The majority of inbound products come from Ohio and Kentucky. West Virginia has a special transportation network called the Coal Resource Transportation System that allows coal haulers to purchase permits that increases the maximum gross vehicle weight (GVW) to 120,000 pounds. By 2045, West Virginia expects over 30,000 tons of annual freight flow along all major interstates within the State, as shown below.

Figure 5. Annual Freight Analysis Framework (FAF) Truck Tonnage (2045)



There are seven public transportation agencies that receive direct funding from the Division of Multimodal Transportation Facilities' Public Transit Division. The largest public transportation agency in West Virginia is the Kanawha Valley Regional Transportation Authority (KRT), in Charleston. KRT operate buses and vans throughout the Charleston metro area along U.S. and State highways. Another large agency, the Mountain Transit Authority (MTA), services Greenbrier, Nicholas, Pocahontas, and Webster counties with seven regular bus routes and 250,000 miles covered per year. The Potomac Valley Transit Authority (PVTa) operates bus routes in Grant, Hampshire, Hardy, Mineral, and Pendleton counties.

WVDOT anticipates that supply chain issues and shortages of personnel and equipment will increase the difficulty of current roadway work as well as the implementation of future projects. Currently, there have been delays in obtaining generators, guardrails, and steel needed for projects. Additionally, WVDOT has noticed the effects of inflation with an increase of 20% for the transportation construction industry. As such, the agency will work with vendor and private-sector partners to encourage speedy installation and to mitigate as much of the construction cost risk as possible.

SUPPLY CHAIN NEEDS

During the COVID-19 pandemic, labor force participation became a challenge and has had difficulties recovering to pre-pandemic levels. This, in conjunction with ongoing supply chain issues and overall material shortages, will present challenges in implementation moving forward. WVDOT recognizes the potential barriers that may influence the ultimate deployment in terms of speed and timeline. The agency will work with vendors and third-party partners to encourage speedy installation and to minimize construction delays.

KNOWN RISKS AND CHALLENGES

Deployment of a program of this scope and scale has inherent risks and challenges. WVDOT is focused on four key risk and challenge factors.

- **Site Conditions** – Site conditions will vary across the State of West Virginia. For example, in more remote areas of the State, there may be a need for utility upgrades and enhanced wireless cellular coverage for data transmission.
- **Supply Chain** – Significant numbers of Electric Vehicle Supply Equipment (EVSE) along with electrical transformers and other components will be needed to deploy this plan. Based on the statewide and nationwide deployment, significant delays in acquiring needed equipment may occur.
- **Skilled Labor** – Labor shortages for supportive industries like electricians and installers could contribute to further delays of equipment installation.
- **Safety Risks and Considerations** – There are certain safety-related risks during the installation of equipment or directly by users and the general public. Ensuring safe deployment is a priority and is a known challenge.

7 EV Charging Infrastructure Deployment



Over the five-year NEVI program, it is estimated that the number of public EV ports will increase in West Virginia by 3,145%. To achieve this projected outcome and meet the goals and requirements of the NEVI program, WVDOT will work with the public and third-party partners. The goal is to create a convenient and reliable public EV charging network that is accessible for visitors and residents in West Virginia.

Deployment of the NEVI funds for implementation will occur in two phases. Phase 1 will build out the EV charging stations along the electric AFCs as required by the NEVI plan. It is estimated that this phase will require 12 stations, each with four ports. Based on initial cost estimates, it is projected to require funding from FY2022 and FY2023 of the NEVI program to build out the NEVI AFC station requirement.

Phase 2, as previously described in this Plan, will focus on community-based charging. Site selection will be based on NEVI requirements and selection criteria based on statewide priorities and public input.

Phase 1 and 2 implementation will use a competitive solicitation process managed by WVDOT. Phase 1 will include one funding grant application cycle for FY2022 and FY2023. Third-party vendors will be selected for Phase 1. Once AFCs have met the NEVI requirements and are designated as “Ready,” the West Virginia NEVI program will move to annual solicitation cycles for the remaining three fiscal years of the program. Figure 5 shows the electric AFCs with proposed station locations to meet the 50-miles or less requirement.

Figure 6. Electric AFCs with the Proposed Station Locations



STATION STANDARDS

For stations funded as part of Phase 1, the typical standards will be:

- 150-350kW Max Power
- Access to 3 phase 480-volt power (typically 1000 amps, 660 kva)
- Site must include a minimum of four 150kw DCFC ports with Combined Charging System (CCS) ports (three parking spaces for general use and one parking space with ADA-compliant access)

Additional standards for all stations will include:

- 45-minute charging time limit
- Idle fee after charging is complete/time limit is exceeded
- Safety lighting, restrooms, ADA accessibility
- Standard bollards and charger protection
- Open to the public and accessible 24/7 to both chargers and amenities
- Plug to Charge preferred (payment handles by vehicle when plugging in) but payments by phone/app/card will also be required
- Adequate signage to charger stations
- Spaces marked EV only
- Signs recommending charging to 80%
- Vendor required to make usage data per location available to WVDOT as needed
- Signage directing users to charging locations from the AFCs
- Real-time data sharing, including location, charger status, and fees available online. See Strategies for EVSE Data Collection & Sharing Section for additional data sharing requirements.

For stations funded as part of Phase 2, the typical standards will be:

- J1772 Connector (industry standard)
- 6.6kW-19.2kW Max Power for Level II chargers
- 50kW-350kW Max Power for Level III chargers
- Same requirements for number of chargers, signage, markings, payment options, and data sharing as Phase 1



FUNDING SOURCES

The NEVI formula program will fund an estimated \$45,683,164 for West Virginia over five years under the IIJA. For FY2022, a portion of the NEVI formula program state apportions are to be applied to administrative takedown and set-aside funds. After these appropriations, West Virginia's NEVI federal funding for FY2022 is estimated to be \$6,761,785. It is assumed in FY2023-2026, the set-aside funds will be approximately 10% of West Virginia's total NEVI formula program funds.

Each project that receives NEVI formula funding is eligible to receive 80% federal share of the cost of the project. The remaining 20% is to be funded by a non-federal source. For the West Virginia NEVI program, the 20% match will be the responsibility of the third party vendors. The operation and maintenance of projects are eligible costs for federal funds. These costs will be covered for the first five years of station operations and will be funded as part of the 80% federal share of a project's costs.

Table 5. NEVI Formula Program Funding Plan

	Total Site Costs	Total O&M (Five Years)	Total Site Costs and O&M	Federal Share (80%)	Grant Applicant Share (20%)
Phase 1	\$16,800,000	\$1,200,000	\$18,000,000	\$14,400,000	\$3,600,000
Phase 2	\$31,080,000	\$2,280,000	\$33,360,000	\$26,688,000	\$6,672,000
Total	\$47,880,000	\$3,480,000	\$51,360,000	\$41,088,000	\$10,272,000

PHASE 1 INFRASTRUCTURE DEPLOYMENT

The approximate location of proposed Phase 1 new charging station installations are listed in Table 6 and shown previously in Figure 6.

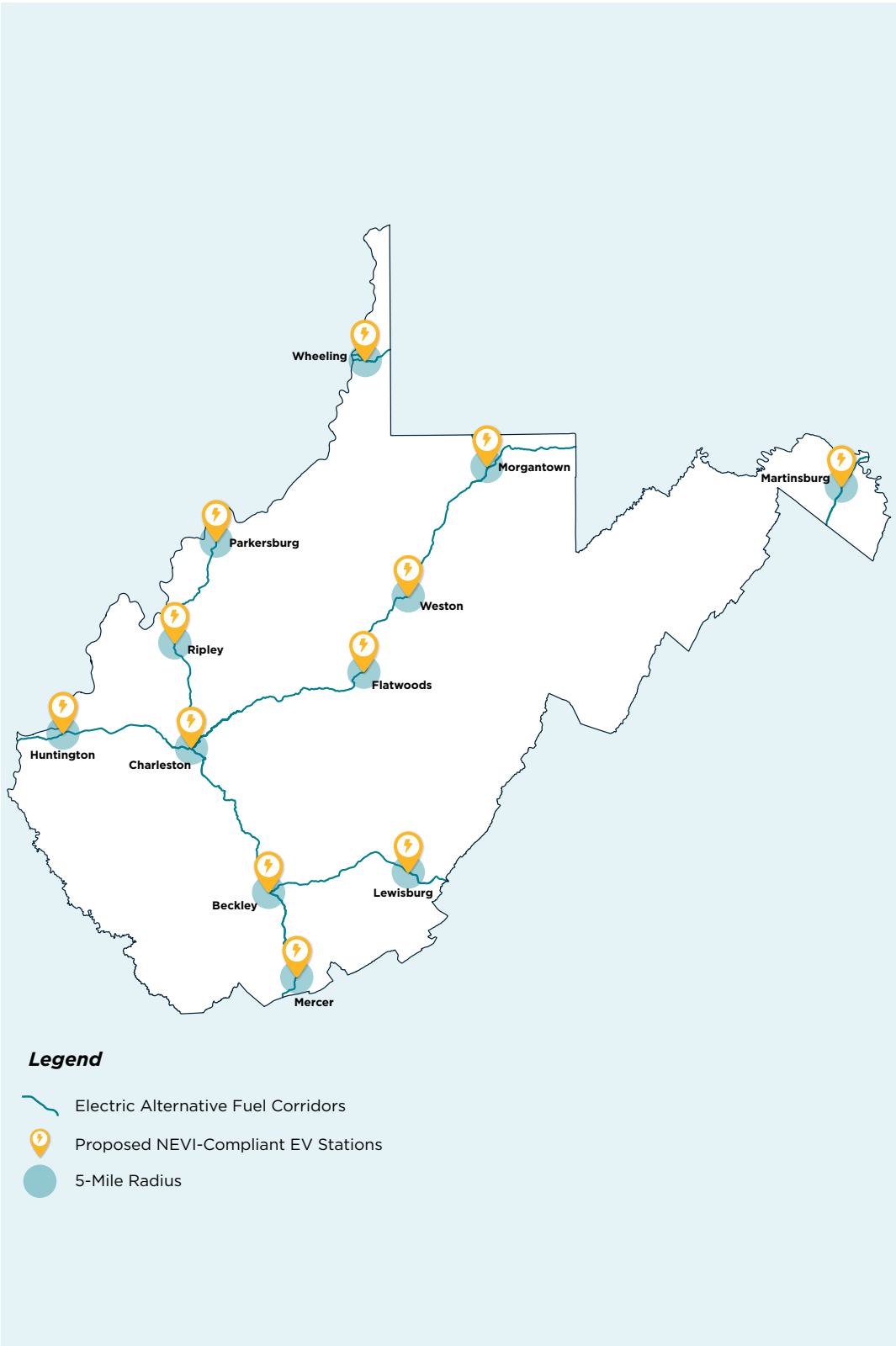
Table 6. Proposed EV Charging Stations

EV Charging Station Location Unique ID*	City Charging Station Location	AFC Signage	Route Name	County	Located in Disadvantaged Community (DAC)
1	Beckley	Ready	I-64	Raleigh	Yes
2	Charleston	Ready	I-64	Kanawha	Yes
3	Huntington	Ready	I-64	Cabell	Yes
4	Morgantown	Ready	I-79	Monongalia	No
5	Parkersburg	Ready	I-77	Wood	No
6	Ripley	Ready	I-77	Jackson	No
7	Princeton	Ready	I-77	Mercer	No
8	Lewisburg	Ready	I-64	Greenbrier	Yes
9	Flatwoods	Ready	I-79	Braxton	Yes
10	Weston	Ready	I-79	Lewis	No
11	Wheeling	Ready	I-70	Ohio	No
12	Martinsburg	Ready	I-81	Berkeley	Yes

*Sites 1 through 4 are priority sites identified as part of the Volkswagen Environmental Mitigation Trust Settlement Beneficiary Mitigation Plan. For more information about the mitigation plan, see the Trust Settlement site. go.wv.gov/volkswagen



Figure 7. AFC Buildout



UPGRADES OF CORRIDOR PENDING DESIGNATIONS TO CORRIDOR READY DESIGNATIONS

WVDOT will continue to manage electric AFC designation and status with FHWA and incorporate any needed station additions to meet NEVI requirements over the five-year program. AFC designation and whether NEVI requirements are met will be evaluated annually. If additional stations are needed, they will be incorporated into the grant cycle for that fiscal year.

Increases of Capacity/Redundancy along Existing AFC

The charging time for EVs depends primarily on their battery capacities, which is expressed in terms of kilowatt-hours (kWh), and a charger's power, which is given in kW. An EV with a higher battery capacity is comparable to a conventional car with a larger gas tank; a higher battery capacity allows an EV to store more charge, so it can travel more miles before needing a recharge. When selling EVs, manufacturers will provide battery capacities based on laboratory tests in controlled conditions.

Different EV chargers provide different amounts of electricity to EVs. Theoretically, the charging time of an EV can be calculated by dividing its battery capacity by the charging power of the charger being used, but factors like an EV's external temperatures and battery life can cause EV charging times to diverge from manufacturers' estimates. EV's in extremely cold temperatures and EV's with nearly full batteries will start to charge slower. Conversely, if EV's are in hot temperatures or have nearly depleted batteries, they will start to charge faster. Depending on an EV's initial battery level when it begins charging, the charging time will vary based on an EV's "charging curve"; EV's do not charge at the same rate at every battery level.

Manufacturers typically recommend drivers to charge their EVs to 80% instead of 100%, since charging occurs the quickest between battery levels of 10% and 80%. Additionally, drivers do not actually have access to EVs' full battery capacities because EVs' management systems prevent batteries from reaching 0% or 100% to preserve long-term battery life. While battery life will naturally deteriorate over time, most EV batteries are estimated to last well over a decade. The Environmental Protection Agency (EPA) offers several resources to give drivers a more accurate idea of their mileage, which in turn can provide a better estimate of charging time. Drivers can use the EPA's Trip Calculator to estimate how much electricity their specific EV would need to make a trip based on the trip's percentage of city driving. The EPA also has a database of EVs' observed mileage based on user-submitted data.

Chargers that will be installed as Phase 1 of this plan will be DCFC and have a minimum of 150kW output. DC Fast chargers provide DC power directly to the battery, increasing the charging speed when compared to a Level II (AC power) charger. In general for DC Fast Charging, to determine the charge time, the EV battery capacity (kWh) is divided by the charger output (kW). For example, a Tesla Model Y vehicle has a battery capacity of 75kWh, so it would take approximately 33 minutes to reach max charge using a 150kW charger. Another example, a Ford Mach-E with a standard range 68kWh battery capacity would take approximately 31 minutes to reach max charge using the same 150kW charger. The mileage range these vehicles could



reach on a full charge varies based on the car specifications. In this example, the Tesla Model Y would have a range of approximately 330 miles and the Ford Mach-E would have a range of approximately 230 miles. Many manufacturers recommend charging EV batteries to 80% rather than 100%, so these mileage ranges might be lower in practice.

This Plan aims to build out the Alternative Fuel Corridors in West Virginia with EV charging infrastructure approximately every 50 miles, so even vehicles with an approximate 150-mile range could reach the next charging station on less than a full charge.

Electric Vehicle Freight Considerations

After the NEVI Program requirements are met in Phase 1 of this Plan, EV chargers for freight are eligible to apply for funding as part of the competitive grant process of Phase 2 of this Plan. More information will be given pending the FHWA's release of additional NEVI Formula Program requirements for EV freight chargers.

Public Transportation Considerations

Purchasing electric buses generally involves purchasing the necessary charging equipment as well. Electric buses have high power requirements and typically require separate charging infrastructure from personal EVs. The majority of charging for public transit and school bus fleets will take place at fleet facilities that are not open to the public for general use.

There may be opportunities and a need to support off-site charging for public transportation vehicles. Additionally, public transit agency fleet facilities may be ideal sites for shared commercial or public charging, such as at a park-and-ride lot, so long as chargers at these locations are publicly accessible. WVDOT will coordinate with public transit agencies and school districts during the NEVI program engagement. If their projects meet the community goals and program requirements, they can be eligible and encouraged to participate in applying for NEVI funding.

FY22-26 INFRASTRUCTURE DEPLOYMENTS

The estimated number of chargers that could be implemented each year for Phase 1 and 2 of the West Virginia NEVI Plan are shown in Table 7.

Table 7. Infrastructure Deployment Plan By Fiscal Year

		DESCRIPTION	# of Sites	TYPE	SIZE	PORTS PER SITE	TOTAL PER SITE ESTIMATE	Total Cost Estimate
PHASE 1	FY2022	AFC DCFC	5	DCFC	150 kW	4	\$1,500,000	\$7,500,000
	FY2023	AFC DCFC	7	DCFC	150 kW	4	\$1,500,000	\$10,500,000
		DCFC	1	DCFC	50 kW	4	\$250,000	\$250,000
		Level II	8	LEVEL II	6.6-19.2 kW	4	\$35,000	\$280,000
PHASE 2	FY2024	AFC DCFC	0	DCFC	150 kW	4	\$1,500,000	\$0
		DCFC	43	DCFC	50 kW	4	\$250,000	\$10,750,000
		Level II	6	LEVEL II	6.6-19.2 kW	4	\$35,000	\$210,000
	FY2025	AFC DCFC	0	DCFC	150 kW	4	\$1,500,000	\$0
		DCFC	38	DCFC	50 kW	4	\$250,000	\$9,500,000
		Level II	41	LEVEL II	6.6-19.2 kW	4	\$35,000	\$1,435,000
	FY2026	AFC DCFC	0	DCFC	150 kW	4	\$1,500,000	\$0
		DCFC	38	DCFC	50 kW	4	\$250,000	\$9,500,000
		Level II	41	LEVEL II	6.6-19.2 kW	4	\$35,000	\$1,435,000



STATE, REGIONAL, AND LOCAL POLICY

The Appalachian Power Company, one of West Virginia's four investor-owned electricity companies, has created incentives for individuals to invest in EV chargers. The Appalachian Power Company offers a rebate for customers who have purchased or installed EV charging equipment in their homes as part of the Charge Forward Program. On a greater scale, the Appalachian Power Company has joined the National Electric Highway Coalition (NEHC), a collaboration and commitment by investor-owned electric companies across the U.S. to create a network of DCFC stations connecting major highway systems by the end of 2023. Each participating company is responsible for devising efficient, fast-charging deployment plans that do not interfere with existing DCFC stations or other coalition companies.

Beyond the Appalachian Power Company's EV initiatives, additional policies at the local, regional, and state levels can support the EV infrastructure deployment outlined in this Plan. This section outlines short-term, long-term, and on-going policies that can support the deployment of EV infrastructure as well as policies that support other important considerations based on NEVI program guidance (e.g. equity, workforce development, etc.).

Short-term

- Identify leads for program action items and include specific individuals and/or roles within an organization to implement actions.
- Create an educational and technical assistance program for EV charging that is accessible to stakeholders and West Virginia residents. Fact sheets and any additional educational content should be presented in multiple languages and available in different levels of technical detail for various audience members.
- Coordinate with WVDOT and local public works departments to develop universal signage and signage installation standards for EV infrastructure.
- Identify strategic locations for EV deployment, including State-owned properties and federally-owned lands. Work with the appropriate agencies to make deployment in these areas possible.
- Include EV considerations as a part of Metropolitan Planning Organization (MPO) long-range transportation plans. This step can help with regional EV network coordination.

Ongoing

- Work to streamline EV permitting at local jurisdictions. This can include the creation of permitting standards and guidelines, target timeframes for approval, and checklists. The development of website resources and electronic applications to speed up the permitting process is recommended.
- Work to ensure that once permitted, the installation of EVSE or chargers is speedy and efficient. This includes processes at the state and local level, as well as private processes (e.g., utilities) and ensuring that site planning, permitting, and utility coordination are streamlined and expedited.
- Organize a working group of stakeholders that assess the accessibility of EV charging and related barriers. Ensure this research focuses on the needs of low-income, rural, and disadvantaged communities.
- Ensure that zoning ordinances and building codes are updated to become more specific and enforceable to support EV charging station deployment. These changes should include site-specific requirements, such as parking ordinances.

8 Implementation



An important part of the public charging network in West Virginia is that it is reliable and easily accessible. This section covers topics that will be addressed over the five-year program to ensure EV stations funded by the NEVI program support this goal.

STRATEGIES FOR EVSE OPERATIONS & MAINTENANCE

Entities awarded contracts under the WVDOT NEVI program will be required to provide a cost and implementation plan for five years of operations and maintenance (O&M). Operations and maintenance costs should include comprehensive warranties for the EV chargers and associated electrical equipment. Operations and maintenance costs for five years at each station is estimated at 7% of the installation cost.

Table 8. Estimated Operations and Maintenance Costs for Proposed EV Stations

	# of Stations	Total O&M
Phase 1	12	\$2,800,000
Phase 2	216	\$6,955,000
Total	228	\$9,755,000

Monitoring of sites and individual ports will be required under this program. The station owners will be expected to report to the State regarding uptime availability of the individual ports, usage, and explain any downtime greater than 3%.

WVDOT will develop a program policy and funding provisions that will make maintenance and operations funding contingent on meeting uptime requirements. For example, operations and maintenance funds may be distributed as a reimbursement at the end of each fiscal year after station owners have submitted operations and maintenance reports documenting they met operation and performance requirements.

STRATEGIES FOR IDENTIFYING EV CHARGER SERVICE PROVIDERS AND STATION OWNERS

WVDOT will use existing solicitation methods to advertise, select, and award contracts for NEVI program applicants. Additionally, WVDOT will develop a list of other potential applicants that could be eligible to apply for the grant and work to ensure they receive grant notices. Examples include utility companies, city or county governments, and school districts.

WVDOT will also host industry forums. The purpose of the forums will be to answer grant application questions about the NEVI program, provide updates on program schedules, and answer other program-specific questions. The goal is to support a robust, diversified, and skilled marketplace for public EV charging implementation and operations in West Virginia.

STRATEGIES FOR EVSE DATA COLLECTION & SHARING

To ensure accountability and the implementation of a data-driven program, WVDOT will require regular reporting of charger utilization and reliability. Requirements will be compliant with NEVI program requirements. This reporting may include the following data points, collected quarterly or annually as required by FHWA and submitted to WVDOT. This data will be shared with the United States Department of Transportation (USDOT) and the United States Department of Energy (USDOE) as required by further NEVI Program guidance.

- **Summary report per EV charging station:**

- Location: Site name, EVSE ID number, address, city, zip, county,
- Operational uptime,
- Number of charge events,
- Number of unique vehicles,
- Average charge time per event (mins),
- Average kW per charge event,
- Total kW consumed,
- Gallons of gasoline and/or diesel fuel displaced,
- Estimated cumulative miles driven from charge,
- Estimated cumulative gallons of gasoline and/or diesel fuel displaced,
- Total monthly cost of electricity for charging station operator, and
- Monthly maintenance and repair cost.

- **Details per charging event:**

- Location: Site name, EVSE ID number, address, city, zip, county,
- Charge event date time,
- Time charging,
- Length of time connected,
- kW provided,
- Vehicle make, and model year (on events where available).

- **Additional data to be reported**

- EV charging station owners are required to share real-time data sharing on charger location, charger status, and fees publicly on online directories, including on the Alternative Fuel Data Center's Station Locator.



STRATEGIES TO ADDRESS RESILIENCE, EMERGENCY EVACUATION, SNOW REMOVAL/SEASONAL NEEDS

According to the National Oceanic and Atmospheric Administration (NOAA), West Virginia is afflicted with a variety of extreme weather events, such as floods, droughts, extreme temperatures, residual hurricane effects, tornadoes, ice storms, and snowstorms. While tornadoes occur on average two to five times a year, they are usually weak. The State experiences extreme precipitation due to its rugged topography, causing flooding, which is the State's costliest and most severe weather event. Precipitation is also projected to increase over this century with the largest increases occurring in the winter and the spring. Due to the frequency and severity of flooding, the West Virginia Emergency Management Division (WVEMD) has educated people about emergency preparedness, including measures that can be taken to protect properties. Some strategies to mitigate flood damage can be extended to EV chargers. For example, EV chargers should be installed above base flood heights when possible.

During emergency events, people rely on the performance, reliability, and accessibility of EV chargers. This Plan prioritizes implementing stations along major transportation routes, and future planning should ensure that EV charging stations located along major routes are prepared to serve intense periods of increased demand and withstand extreme weather conditions.

EVs, EV chargers, and EV cables are designed to be weatherproof, especially regarding water. EV charging ports are designed to flush water and drain when they are charged, and EV chargers and cables are designed to protect users from electric shock. Additional steps during charger installation can maximize their resistance to severe weather, such as watertight covers on any outlets and plugs.

WVDOT will continuously explore opportunities to incorporate emergency preparedness into NEVI program planning and implementation. Examples include the incorporation of EV stations along major routes as a scoring criteria or promotion of battery storage (an eligible expense with NEVI funds) as part of station development. Reliability is a goal for the NEVI program in West Virginia. Reliability includes the use of EV charging stations during emergency events.

STRATEGIES TO PROMOTE STRONG LABOR, SAFETY, TRAINING, AND INSTALLATION STANDARDS

The West Virginia Department of Economic Development (WVDED) will lead workforce training initiatives related to the NEVI program. Additionally, WVDOT will work with other partners across the State to create a skilled workforce, as well as new opportunities for business and employment.

Requirements for training certifications through the West Virginia NEVI program solicitation process can help ensure installation standards across EV charging infrastructure projects. The Electric Vehicle Infrastructure Training Program (EVITP) is one example of a training program that provides skill upgrades to help electricians meet the new demand for EV charging station installations. Partnerships with trade schools and community colleges, as well as State and local workforce development programs, particularly in disadvantaged communities, could provide training programs like this to West Virginia workers at a low or no-cost.

Lastly, one of the goals of this Plan is to create opportunities for small businesses to participate in the construction of West Virginia's EV charging network. As part of the solicitation process for the NEVI program, small and disadvantaged business requirements will be included to ensure opportunities for participation with implementation.



9

Civil Rights



There are two areas of focus for civil rights within the NEVI program. One area is the promotion and support of equal access to employment and business opportunities. The second area is enforcing federal and state laws and regulations that prohibit discrimination on the basis of race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. This chapter summarizes how both of these focus areas will be implemented for the West Virginia NEVI program.

The WVDOT Civil Rights Compliance Division will be responsible for leading NEVI activities related to civil rights. Specific programs managed by the Division are:

- Americans with Disabilities Act (ADA)
- Contract Compliance
- Disadvantaged Business Enterprise (DBE)
- Internal Equal Employment Opportunity (EEO)
- Labor Compliance
- Title VI

WVDOT Division of Highways and Civil Rights Compliance Division will work closely to share staff resources. The goal is to ensure State and federal requirements for the NEVI program are met by WVDOT, supporting agencies, and any awarded contracts for NEVI projects.



10 Equity Considerations



The Justice40 Initiative was created to deliver 40% of overall benefits of federal investments in climate and clean energy, including sustainable transportation, to disadvantaged communities (<https://www.transportation.gov/equity-Justice40>). Signed as Executive Order 14008, Justice40 has a myriad of programs that support this initiative, one of which is the NEVI program. As prioritized both in NEVI guidelines and Justice40, the Plan prioritizes charging infrastructure that serves lower-income and disadvantaged communities. WVDOT commits to at least 40% of NEVI program investments to disadvantaged communities.

IDENTIFICATION AND OUTREACH TO DISADVANTAGED COMMUNITIES (DACs) IN THE STATE

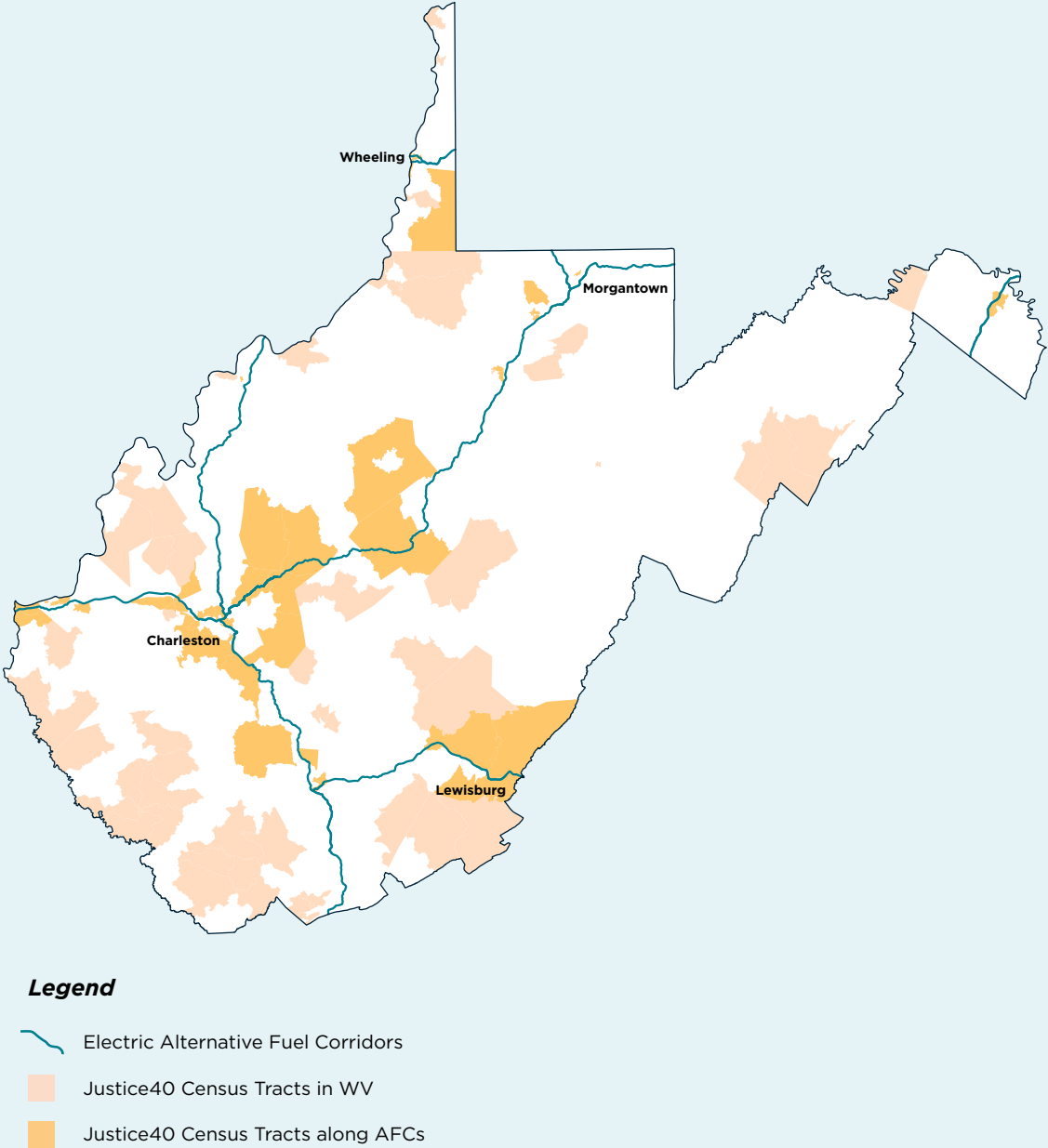
Transportation planning and associated infrastructure investments in West Virginia follow a decision-making process driven by performance measures and metrics. WVDOT and the State are committed to EV implementation throughout the State, especially those areas that have disadvantaged communities. This Plan adopts Interim Guidance for Justice40 that was used to identify disadvantaged communities. The interim definition for DACs includes 22 indicators that are grouped into six categories of disadvantaged characteristics: transportation access, health, environment, economic, resilience, and equity. The definition itself is consistent with the Office of Management and Budget and relevant statutory authorities. As of summer 2022, a tool was developed by the USDOT to indicate whether a proposed project is located in a DAC (<https://usdot.maps.arcgis.com/apps/dashboards/d6f90dfcc8b44525b04c7ce748a3674a>).

In West Virginia, 72% of the population lives in a census tract designated as a Justice40 community. Additionally, 43% of the State’s population is within a Justice40 designated community and along an AFC. For Phase 1 and Phase 2 NEVI implementation in West Virginia, priority and focus will be given to ensure job opportunities and infrastructure are in Justice40-designated census tracts.

Table 9. West Virginia Disadvantaged Communities (DACs)

	Population	% of Statewide Population
Statewide Justice40 communities	1,305,549	72%
Alternative Fuel Corridor Justice40 communities	781,208 (within 2 miles of AFCs)	43%

Figure 8. West Virginia Justice40 Disadvantaged Communities



PROCESS TO IDENTIFY, QUANTIFY, AND MEASURE BENEFITS TO DACs

The WVDOT Civil Rights Compliance Division will develop a tracking and reporting plan for the West Virginia NEVI program. The tracking and reporting will cover the following topics.

- **General Deployment and Access.** As infrastructure is deployed, WVDOT will refine and update the analysis to identify where there may be network gaps and develop an implementation plan to address gaps that exist within DACs. Data and maps will be developed so the deployment can be actively updated. Information regarding the location, deployment type, charge capacity, and overall coverage (and coverage within DACs) will be tracked.
- **Funding.** A critical piece to understanding the effects of EV deployment and DACs is provided through funding and financing. WVDOT will develop metrics to track investments across the State and whether they are made in DACs.
- **Air Quality.** In partnership with the WVDEP Division of Air Quality, WVDOT will monitor changes in air quality where data is available in DACs over the five-year NEVI program. The goal is to improve air quality, particularly in DACs, across the State.
- **Creation of a webpage and materials specific for EV information and assistance.** WVDOT will create, maintain, and update a repository of resources for those who are unfamiliar with EVs. These materials will be in English as well as other common languages spoken in West Virginia. Online website clicks and resource downloads will be tracked to understand how communities are continuing to engage with the NEVI program.



11

Labor and Workforce Considerations



Access to clean energy and technology, as well as creating opportunities for disadvantaged communities to participate and have access to these jobs are all key parts of the West Virginia NEVI program.



WVDOT and WVDED will be responsible for workforce training and education. Both agencies have programs, resources, and partnerships with school districts and universities across the State. They will be leveraged to support skills acquisition that can be quickly applied during the five-year NEVI program.

Also, within the WVDOT Civil Rights Compliance Division is the DBE Program. This program will focus on creating opportunities for small and historically disadvantaged business to participate in the NEVI program. For all West Virginia NEVI program solicitations, vendors will be required to submit a DBE performance plan. The DBE performance plan will identify the overall budget dedicated to supporting DBEs. The performance plan will also describe how DBEs will be engaged with vendor projects and the strategies for reporting compliance with the projects' DBE commitment.

For the West Virginia NEVI program, the WVDOT Civil Rights Compliance Division will create an annual report documenting labor and workforce activities. It will also track and report progress towards achieving DBE goals for the NEVI program.

12 Cybersecurity



A critical part of creating a reliable public EV charging network is network and data security. Today, data is not just information but a critical piece of infrastructure. The West Virginia NEVI program will establish standards for data sharing and management to ensure the public EV charging network is secure.

As part of the West Virginia NEVI program, WVDOT will focus on five policy topics:

- **Asset, Catalog, and Push Asset Data.** Cataloguing where chargers are located and pushing real-time data about charger availability is essential to ensure ease of travel, access, and reliability. WVDOT will require all vendors to participate in the latest national and industry open-data specifications to ensure the traveling public has accurate and timely data about the public EV charging network in West Virginia.
- **Open Data Specifications and Interoperability.** Hardware and software should work for customers, regardless of the vendor or system. Open-data standards will create a seamless marketplace for customers. WVDOT will work with FHWA and industry partners to incorporate the latest open-data specifications for the NEVI-funded EV network in West Virginia.
- **Data Management.** Data management will be important for WVDOT and third-party providers building and operating EV chargers funded by the NEVI program. WVDOT will develop policies for the data it receives and establish standards for data management grant recipients, particularly as it relates to data security and privacy. WVDOT will also consider cybersecurity strategies such as addressing user identity and access management, intrusion and malware detection, event logging and reporting, management of software updates, and secure operation during communication outages.
- **Data Capacity.** As part of the grant application process, proposals will need to document the EV charging providers have sufficient data capacity to meet operations and reporting requirements for the NEVI program. Additionally, WVDOT will create sufficient storage policies to ensure collected data is managed and maintained for the entire five-year program.
- **Data Privacy.** WVDOT will require vendors to adopt and maintain a data privacy policy. The policy will confirm customer privacy related data is collected, stored, used, and shared. Additionally, WVDOT will require that any data that is reported and shared as part of the NEVI program is anonymized. This requirement will ensure that data can be used to analyze trends and performance while also protecting consumer privacy.



13

Program Evaluation



The reporting and monitoring progress will be a regular part of the West Virginia NEVI program. The purpose of the program evaluation will be to document regulatory compliance and create public transparency about the benefits and impacts of the program.



WVDOT will evaluate the West Virginia NEVI program annually. Performance measures will be developed in partnership with the Joint Office, State agencies, the business community, and community members. During the Fall of 2022, WVDOT will develop key performance indicators (KPIs) for the five-year program. The indicators will be developed based on FHWA program guidance as well as public input. WVDOT will focus on four main topics:

- **Regulatory Compliance.** These KPIs will focus on documenting and reporting the federal and State regulatory and performance requirements for the NEVI program. Examples include the number of NEVI-compliant stations constructed each fiscal year and funding distributed each fiscal year.
- **Community Characteristics and Demographics.** These KPIs will document community characteristics about who is using the NEVI-funded charging network as well as access characteristics, like the population within a certain distance of stations.
- **Economic Impact.** This topic will focus on how NEVI funds are supporting the West Virginia economy. Example KPIs include jobs created, people trained, and number of small business or disadvantaged businesses supported by the NEVI program.
- **Equity.** In line with the Justice40 initiative at the federal level, this topic will focus on measuring impacts and benefits of the NEVI program in historically DACs. Example KPIs include the number of stations and chargers installed in DACs and the number of people hired that live in DACs. The WVDOT Civil Rights Compliance Division will take the lead developing and tracking these KPIs.



14

Discretionary Exceptions



West Virginia is a rural and mountainous state. WVDOT will focus on meeting the NEVI program requirements and ask for exceptions when deviations are needed to meet unique site, geographic, cost, or other technical conditions.

Over the course of the five-year NEVI program, there may be a need to adjust the federal NEVI program requirements for a particular site. WVDOT will work with the Joint Office to coordinate and receive approval for exceptions.

There are two exception requests for NEVI station locations along the electric AFCs. Both exceptions are for the 50-mile spacing requirement. A description of each exception is provided on the subsequent pages of this chapter.



EV DEPLOYMENT PLAN EXCEPTION REQUESTS

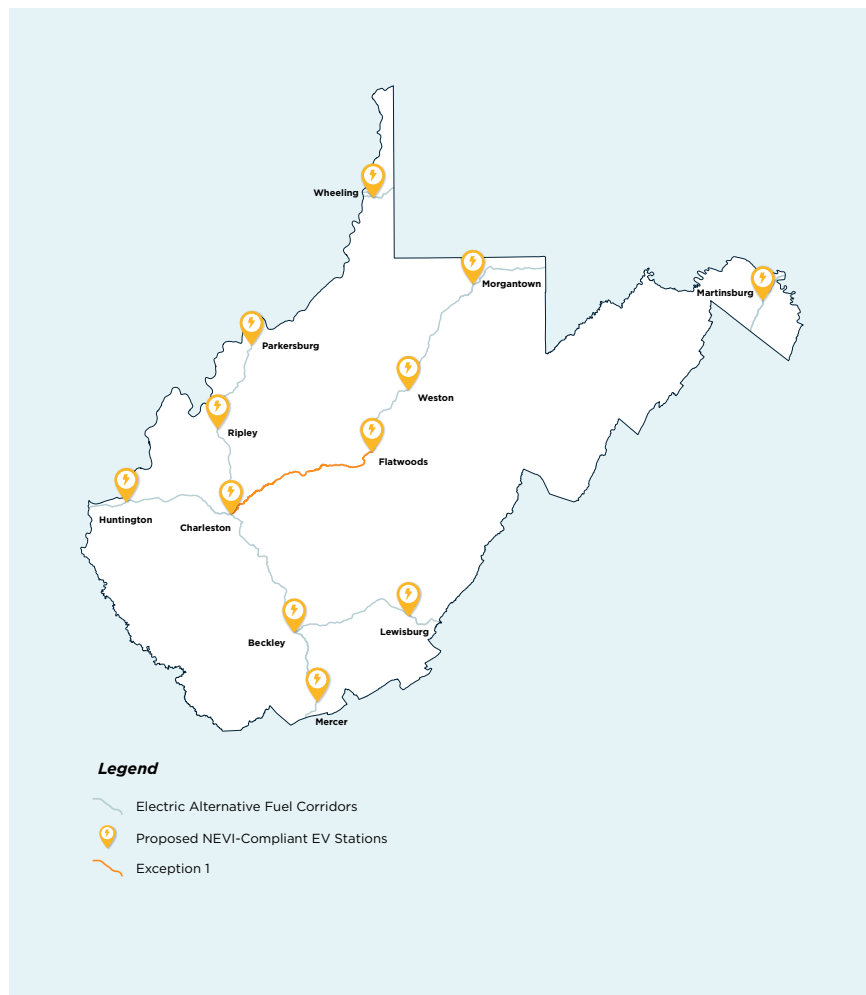
SUMMARY OF REQUESTS

Exception 1	Type	Distance of Deviation	Included in Round 6 AFC Nomination	Reason for Exception Request
Charleston to Flatwoods	50 miles apart	66.3 miles	Yes	Geography

JUSTIFICATION FOR EXCEPTION(S)

An exception to the 50-mile EV charging station spacing NEVI criteria is requested for stations proposed at Charleston and Flatwoods. Due to the existing geography and spacing of communities along the AFC corridor approximately 50 miles from Charleston, WV, Flatwoods is the closest community to Charleston that has the necessary services and amenities for an EV charging station. Flatwoods has various retail locations already developed within one mile of the AFC corridor, as well as regional draw due to its recreation areas and airport, and it is the preferred location for a NEVI-compliant charging station.

Figure 9. Exception 1



EV DEPLOYMENT PLAN EXCEPTION REQUESTS

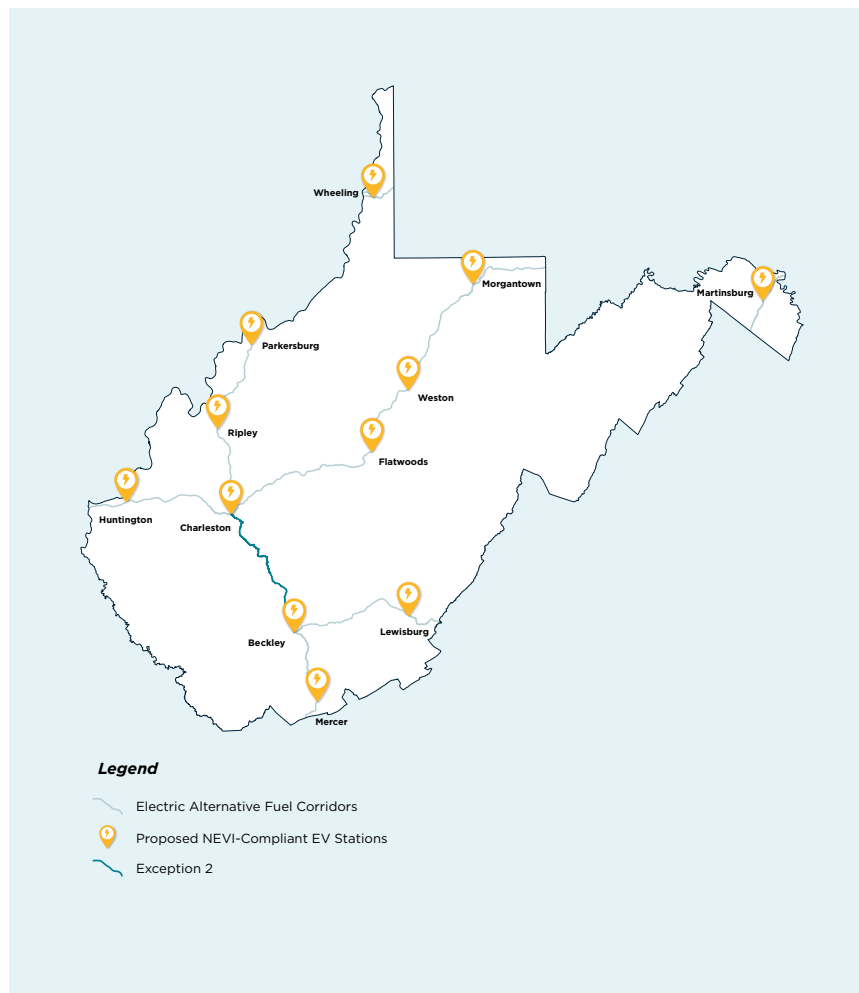
SUMMARY OF REQUESTS

Exception 2	Type	Distance of Deviation	Included in Round 6 AFC Nomination	Reason for Exception Request
Charleston to Beckley	50 miles apart	60.9 miles	Included in Round 5	Geography

JUSTIFICATION FOR EXCEPTION(S)

An exception to the 50-mile EV charging station spacing NEVI criteria is requested for stations proposed at Charleston and Beckley. Beckley is a large community in West Virginia located just over 50 miles from Charleston, but it is the preferred location for a NEVI EV charging station. Beckley has well developed retail, medical, and art destinations within one mile of the AFC corridor, as well as a regional draw due to the nearby airport, Tamarack, and New River Gorge National Park. Beckley is the closest community to Charleston that has the necessary services and amenities for a NEVI-compliant charging station.

Figure 10. Exception 2



Glossary of Terms



AADT – Annual Average Daily Traffic

ADA – American Disabilities Act

AFC –Alternative Fuel Corridors

BEV- Battery Electric Vehicles

BIL – Bipartisan Infrastructure Law

DACs – Disadvantaged Communities

DBE – Disadvantaged Business Enterprise

DCFC – Direct Current Fast Charging/Level III

EEO – Equal Employment Opportunity

EIA – U.S. Energy Information Administration

EPA – Environmental Protection Agency

EV- Electric Vehicle

EVITP – Electric Vehicle Infrastructure Training Program

EVSE – Electric Vehicle Supply Equipment

FAF – Freight Analysis Framework

FHWA – Federal Highway Administration

IIJA – Infrastructure Investment and Jobs Act

Joint Office – Joint Office of Energy and Transportation

KPI – Key Performance Indicators

KRT – Kanawha Valley Regional Transportation Authority

kWh – Kilowatt-hours

MPO – Metropolitan Planning Organization

NEHC – National Electric Highway Coalition

NEVI Formula Program – National Electric Vehicle Infrastructure Formula Program

NHFN – National Highway Freight Network

NHS – National Highway System

O&M – Operations and Maintenance

PHEV – Plug-in Hybrid Electric Vehicles

PHFS – Primary Highway Freight System

PSC – Public Service Commission of West Virginia

RTO – Regional Transmission Organization

SBE – Small Businesses Enterprise

USD OE – United States Department of Energy

USDOT – United States Department of Transportation

VMT – Vehicle Miles Traveled

WVDED – West Virginia Department of Economic Development

WVDEP – West Virginia Department of Environmental Protection

WVDOT – West Virginia Department of Transportation

WVEAA – West Virginia Electric Auto Association

WVEMD – West Virginia Emergency Management Division

WVOE – West Virginia Office of Energy



