

DRIVE ELECTRIC PA COALITION MEETING

PREPARING & PLANNING FOR EV CHARGING INFRASTRUCTURE FUNDING

APRIL 21, 2022

- ❑ Background on **BIL – NEVI - AFC**
- ❑ Understanding Our Charging Gaps and Needs
- ❑ NEVI State Plan Outline
- ❑ Review of April Outreach Sessions



Background on BIL – NEVI - AFC



Today's Focus (NEVI)

[Division J]

[NEW] National Electric Vehicle Formula Program (formula and discretionary*) Infrastructure

Purpose	Strategically deploy electric vehicle (EV) charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability
Funding	\$5 B (FY 22-26) in advance appropriations from the GF
Recipients	<ul style="list-style-type: none"> • States (including DC and Puerto Rico)
Distribution formula	<ul style="list-style-type: none"> • Same shares as Federal-aid highway apportionments
Other key provisions	<ul style="list-style-type: none"> • Funded projects must be located along designated alt fuel corridors • Sets aside 10% of funding for discretionary grants to State and local governments that require additional assistance to strategically deploy EV charging infrastructure • State must submit plan to DOT describing planned use of funds • If State doesn't submit plan (or carry it out), DOT may withhold or withdraw funds and redistribute within the State, or to other States • Establishes DOT-DOE Joint Office of Energy and Transportation • Requires DOT to designate national EV charging corridors to support freight and goods movement

* Program sets aside funds for discretionary technical assistance grants; also if DOT withholds or withdraws funding from a State, DOT may award funds to local governments in the same State.

§ 11401

[NEW] Charging and Fueling Infrastructure (discretionary)

Purpose	Deploy electric vehicle (EV) charging and hydrogen/propane/natural gas fueling infrastructure along designated alternative fuel corridors and in communities
Funding	\$2.5 B (FY 22-26) in Contract Authority from the HTF
Eligible entities	<ul style="list-style-type: none"> • State or political subdivision of a State • MPO • Local government • Special purpose district or public authority with a transportation function • Indian Tribe • Territory
Eligible projects	<ul style="list-style-type: none"> • Acquisition and installation of publicly accessible EV charging or alternative fueling infrastructure • Operating assistance (for the first 5 years after installation) • Acquisition and installation of traffic control devices
Other key provisions	<ul style="list-style-type: none"> • Requirement to redesignate alternative fuel corridors and establish a process to regularly redesignate these corridors • Set-aside (50%) to install EV charging and alternative fueling infrastructure on public roads or in other publicly accessible locations, such as parking facilities at public buildings, schools, and parks



CLEAN SCHOOL BUS PROGRAM

- **Clean School Bus Program (EPA)**
 - ***\$5 billion over 5 years*** (FY 2022-2026)
 - Half of the funding (\$2.5 billion or \$500 million/year) is for “zero-emission school buses”
 - Half of the funding is for “clean school buses” (i.e., low-emission)
 - ***Eligible applicants***
 - State or local governmental entities
 - Eligible contractors
 - Nonprofit school transportation associations
 - Tribes, Tribal organizations, or Tribally-controlled schools
 - ***Application***
 - Expected to open in April
 - Open for a 3-month period

Program one-pager available at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013NR1.pdf>

Additional information available at <https://www.epa.gov/cleanschoolbus>



HOW MUCH NEVI FUNDING FOR PA?

- National Electric Vehicle Infrastructure (NEVI) Formula Program
 - **\$171.5 million to PA over 5-year period**
 - **\$25.4 million to PA in FY2022**
- Discretionary Grant Program for Charging and Fueling Infrastructure:
 - **\$2.5 billion across all states**

Estimated to equate to **40 or more new fast charge stations a year** (assuming new charging facility at \$600k each with a 20% match)



NEVI FOCUS ON DC FAST CHARGING

KNOW YOUR EV CHARGING STATIONS

AC Level One



VOLTAGE

120v 1-Phase AC

AMPS

12–16 Amps

CHARGING LOADS

1.4 to 1.9 kW

CHARGE TIME FOR VEHICLE

3–5 Miles of Range Per Hour

AC Level Two



VOLTAGE

208V or 240V 1-Phase AC

AMPS

12–80 Amps (Typ. 32 Amps)

CHARGING LOADS

2.5 to 19.2 kW (Typ. 7 kW)

CHARGE TIME FOR VEHICLE

10–20 Miles of Range Per Hour

DC Fast Charge



VOLTAGE

208V or 480V 3-Phase AC

AMPS

<125 Amps (Typ. 60 Amps)

CHARGING LOADS

50 – 350kW

CHARGE TIME FOR VEHICLE

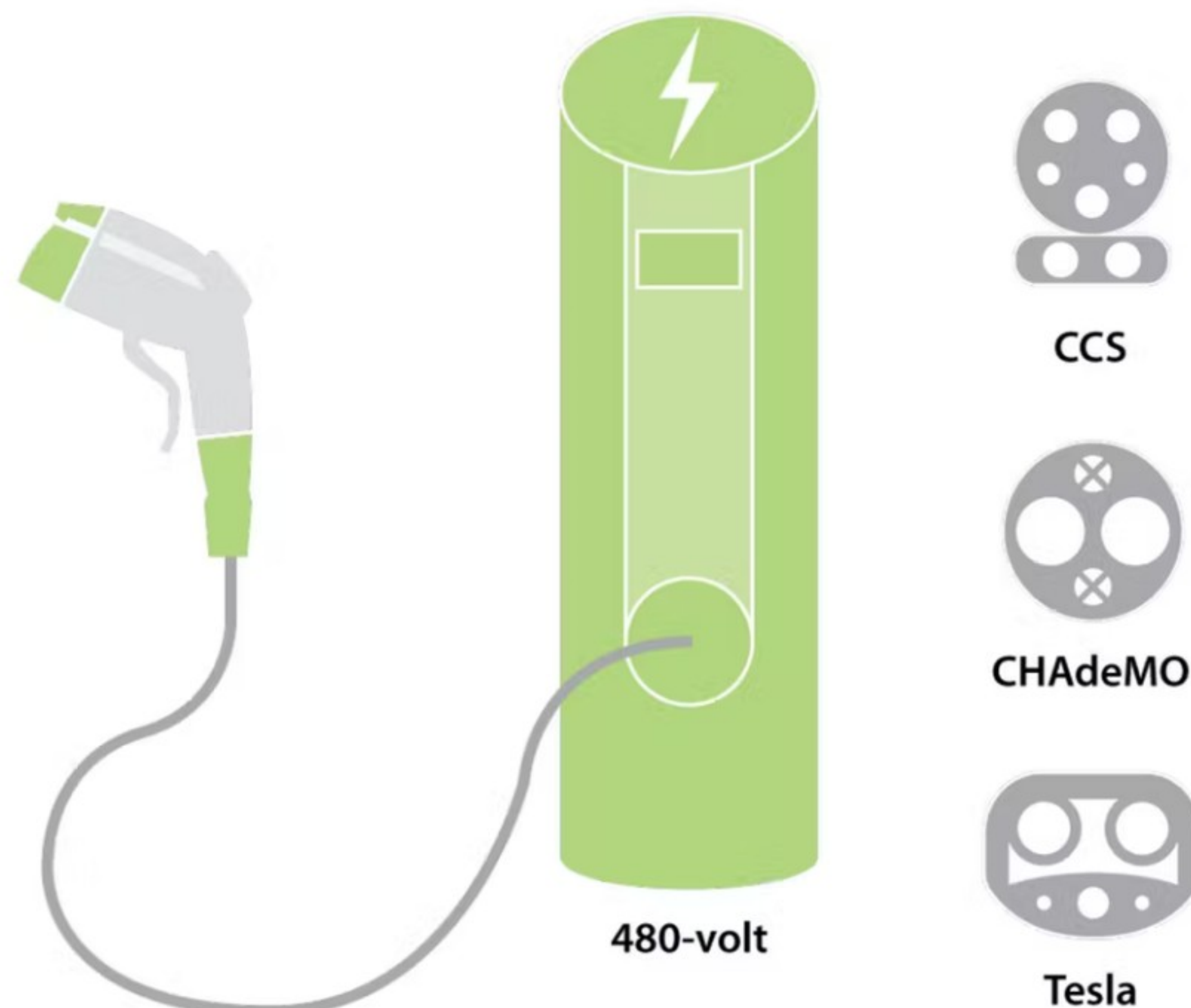
80% Charge in 20–30 Minutes



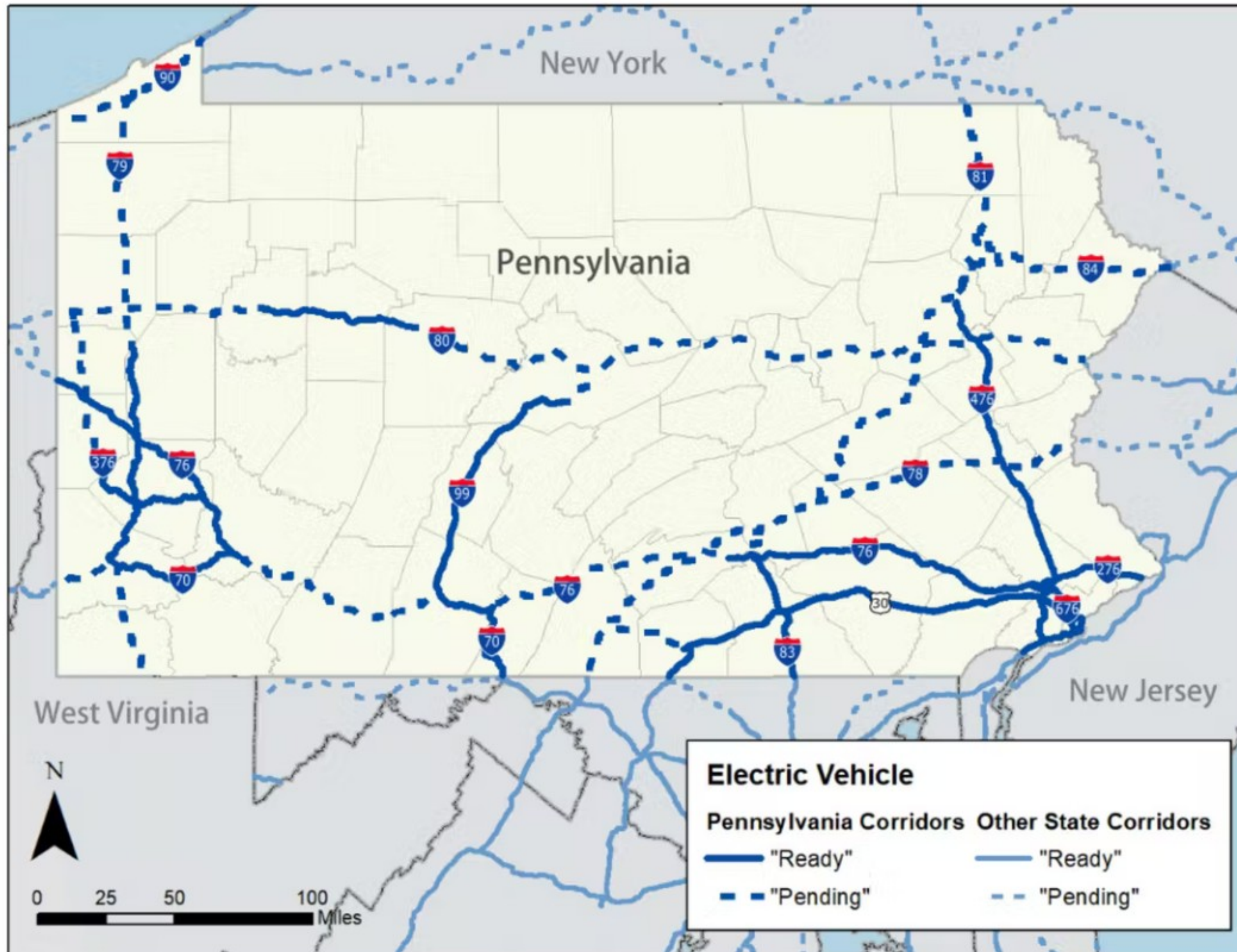
NEVI QUALIFYING FAST CHARGERS

- Public (Tesla doesn't count now)
- 4 ports
- CCS Connectors
- At least 150kw power per port (600kw total)
- Within 1-mile of highway

DC Fast Charging



ALTERNATIVE FUEL CORRIDORS (AFC)

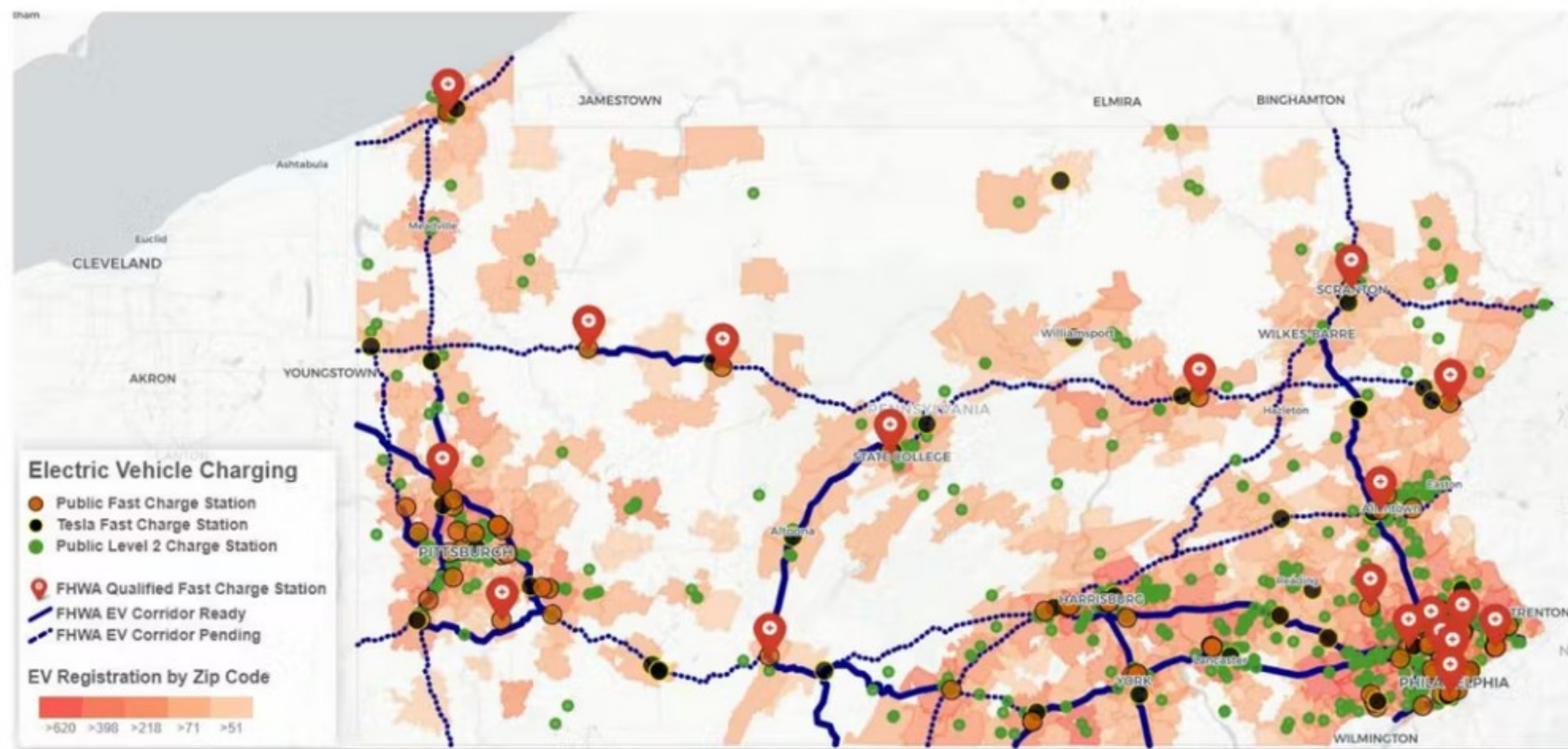


- AFC is a plan for build-out of DC fast chargers (DCFC)
- PennDOT has nominated corridors over 5 rounds - includes all interstates
- Only non-interstates nominated are portions of US 30 and US 15
- AFC corridors designated as either "Pending" or "Ready" based on older criteria
- "Ready" means qualifying stations not more than 50 miles apart
- NEVI funding can be applied to all AFC corridors (Pending or Ready)
- NEVI funding must be applied to AFC until a "Build-Out" certification by FHWA



MAPS AND INITIAL GAP ASSESSMENT

Interactive Map of Current Station Locations



<https://tmp-map.s3.amazonaws.com/dot-sample/pa-ev-stations.html>

Gaps will be changing as new stations are constructed

Corridor	Gaps (Current AFC Criteria)
I-70	>50 mi west of Bedford (into OH)
	>50 mi southeast of Bedford (into MD)
I-76	>50 mi west of Cranberry (into OH)
	Cranberry to Bedford Bedford to King of Prussia
I-78	Entire corridor
I-79	>50 mi north of Cranberry (to end of corridor in Erie*)
	>50 mi south of Cranberry (into VA)
I-80	Girard (OH) to Clarion
	Clarion to East Stroudsburg
	None: 44 mi East Stroudsburg to new station in Denville, NJ
I-81	Entire corridor
I-83	Entire corridor
I-84	Entire corridor
I-90	>50 mi. west of Erie (into OH)
	>50 mi. east of Erie (into NY)
I-95	Entire corridor
I-99	Bedford to State College
	>50 mi north of State College (onto I-80)
I-276	>50 mi. east of King of Prussia (onto I-95)
I-376	Entire corridor
I-476	>50 mi north of Plymouth Meeting (into NY)
	>50 mi south of Plymouth Meeting (into DE)
US-30	Entire corridor

Legend:

No Gap	(Light Green)
Gap on "Ready" Corridor	(Light Yellow)
Gap on "Pending" Corridor	(Light Orange)
Gap on "Ready" & "Pending" Corridor	(Light Blue)



PENNDOT EFFORTS UNDERWAY

1. Address National Electric Vehicle Infrastructure (NEVI) Program – AFC Focus

- [Rural Charging Toolkit](#) Issued Early February
- Initial [NEVI Plan Guidance](#) Issued February 10th
- ***Critical Technical Guidance is Expected on May 13th***
- State EV Infrastructure Plan Required to be submitted to FHWA by August 1st

2. Preparing for Discretionary Funding Beyond AFC

- Position our Planning Partners Take Advantage of Discretionary
- \$ and guidance [Nov]

National Electric Vehicle Infrastructure Formula Program

Bipartisan Infrastructure Law



Program Guidance

Federal Highway Administration
February 10, 2022



ESTABLISHING NEVI GOALS (DRAFT)

Strategically deploy a convenient, reliable, affordable, and equitable electric vehicle charging network to support range confidence for Pennsylvanians and visitors.

Construct a **consistent, robust charging network** to enhance availability when and where people need to charge.

Fund infrastructure that is **safe and convenient** for travelers.

Ensure EV infrastructure funding is distributed and applied in an **equitable** manner and provides benefits to all populations **including underserved and rural communities**.

Complement the NEVI formula program with proper training and diversity of the **workforce and job impacts**.

Develop a charging network to **support freight and goods movement** through the Commonwealth.



NEVI PLAN OUTLINE

- Introduction
- State Agency Coordination
- Public Engagement
- Plan Vision & Goals
- Existing & Future Conditions
- EV Charging Infrastructure Deployment
- Implementation
- Civil Rights
- Equity Considerations
- ***Labor & Workforce Considerations***
- Cybersecurity
- Program Evaluation
- Discretionary Exceptions



OUTREACH OVERVIEW AND NEXT STEPS

March/April

- Stakeholder Meetings: Planning Partners, Utilities, Local (PSATS, PSABS, County Commissioners, etc.), Electric Vehicle Charging Companies, Advocacy/Equity, Labor/Education, Environment

April 27th

- Legislative Webinar
- General Public Webinar - [Register for the Public Webinar](#)

May

- Additional Stakeholder Meetings: Manufacturers/OEMs, Commercial/Freight, Transit, Destinations

June

- Survey tool for feedback on components of the NEVI State Plan



APRIL OUTREACH RESULTS

- **Utilities**
 - Capacity mapping and cost recovery are essential for utilities to meet new demand.
 - Equity is a major consideration and utilities may play a role in encouraging equitable buildout.
 - PennDOT can partner by providing planning studies and EV density/adoption estimates.
- **EVSE Network Providers**
 - The market is already pivoting towards the new NEVI requirements.
 - Major deployment barriers include procurement, utility, and permitting concerns.
 - Support providers with routine engagement/communications and allow for input.
 - Heard interest from businesses looking to own & operate chargers as well.
- **Advocacy & Equity**
 - Provide ample opportunities for community input.
 - Leverage the Justice40 Initiative and non-attainment areas as starting points.
 - Ensure accessibility at all charging sites.
- **Food Merchants Association**
 - Simplify application processes & support utility regulation.
 - Ensure safety and accessibility are promoted.
 - Desirable site amenities.
- **Localities**
 - Partner on planning, business outreach, and education efforts.
 - Support localities with communication and identifying priority EV site locations.
- **Environment**
 - Ensure open access and diverse payment options at stations.
 - Consider on-site renewable energy and battery storage technologies.
 - Encouraging EV adoption via signage, messaging campaigns, and social media.
- **Labor & Education**
 - Must identify knowledge, skills, and abilities necessary for workforce development.
 - Apprenticeships and Career & Technical Schools are great places to start.
 - NEVI funds could support training with focus on transferable skills sets and outreach efforts to build job awareness.



Are there any additional items we should consider as we move forward with the NEVI plan?

Proactive surveying/outreach to current & prospective EV adopters to understand which amenities and locations are most desirable.

challenges of rural electrification

We have an immediate need for legislation on the state or local level to allow residential curbside charging for electric vehicles to increase equitability and access.

Urban areas need denser charging

We have an immediate need for legislation on the state or local level to allow residential curbside charging for electric vehicles to increase equitability and access.

WEX card access

Accessibility of charging stations for medium & heavy-duty vehicles

Urban infrastructure

Including saturation considerations for more EV-heavy thoroughfares to expand the definition of "Corridor Ready" and prevent long waits that will ultimately deter further EV adoption

Are there any additional items we should consider as we move forward with the NEVI plan?

Encourage opportunities for integrated technical solutions. To design, build, finance, operate and maintain facilities.

Building hub and spokes systems around large urban areas. Ensure “east-west” and “north-south” access.

Assistance for small business owners to apply for NEVI funding from PA

How are medium and heavy duty vehicles being included in the program?

Please make sure the plan includes a measurement and verification function for assessing the effectiveness of the charging infrastructure development program.

Need to address HOA's that are restricting the installation of chargers.

+1 for PA route 15 support!

I'd like to see public charging sited next to some fleet charging facilities to help share the infrastructure on the lines to save money and have better reliability

Cross-reference potential site options with DEP's Environmental Justice mapping tool:
dep.pa.gov/EJViewer

Are there any additional items we should consider as we move forward with the NEVI plan?

Remain agnostic on power charging level greater than 150kW

Some heavy traffic areas will need more than 4 plugs. Make sure there is capacity to expand when it is needed

Govt support for investment in US development of next-gen high energy battery technology (>100 kWh) for vehicles with high >500 mile range, which should reduce charging station density need.

Standards for charger availability; non-Tesla chargers seem to have very high downtimes which is a deterrent to purchasing non-Tesla EVs.

Providing a schedule for infrastructure deployments so that expectations can be managed and create anticipation of corridor completions, resulting in successes that can be celebrated and leveraged for more EV sales.

Ensuring public DC Fast charging infrastructure throughout suburban retail hubs

Ensure that concerns of rural service providers are addressed, particularly related to need to extend 3-phase power where it is not prevalent. DCFCs generally require 3-phase power and that's a big decision particularly for co-ops to extend it.

Service-level requirements for chargers, e.g., 99.9% availability

please add in Mansfield, PA and Williamsport, PA the I99 corridor to complete the North south portion in the middle of the state to the AFC

Are there any additional items we should consider as we move forward with the NEVI plan?

DC Fast charging may actually not be needed at retail hubs. Easier to use Level 2 charging while folks are shopping.

Consider funding being applied to operations and maintenance of charging to stations to support high-level of uptime, not just installation/HW costs

Ensure that on-going operation and maintenance of sites is clearly addressed. Nothing will kill things faster than having stations down when folks show up to charge. Beneficial financial model to operate/maintain stations is tough.

what year do you estimate AFC corridors can be completed (at 40 chargers per year) and thus, when can different locations potentially be considered?

Curbside charging creates more equitable access to charging for residents of multi-unit dwellings, residual NEVI funds could be prioritized for this use case because retrofitting MUDs is costly and often impeded by HOAs

Purchase incentive programs for lower income households in EJ communities (similar to down payment assistance but for EVs)

so...different locations may be options in 3-4 years?

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