



Current State of Charge: EV Charging Investments & Opportunities for NH Communities

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Electric Vehicles – “EVs”
EV Charging Equipment – “EVSE”



Types of Electric Vehicles (EVs)

Battery Electric Vehicles (BEVs) powered solely by an electric battery; 110 - 520 miles of range

Plug-in Hybrid Electric Vehicles (PHEVs) powered by both an electric motor and a gasoline engine; 20 - 126 miles electric range; 50+ mpg

Both BEVs and PHEVs are considered Plug-in Electric Vehicles (PEVs) and require electricity to charge (or “fuel”) the electric battery.





Mainstream Automakers are investing in electrification

Today, there are 60+ different models of EVs available in the Northeast alone – and more on the way!

<https://driveelectricus.com/explore-electric-cars/?>



The Market is Growing



Types of Charging

Level 1

2 to 5 miles of range per hour of charging (full charge in 11-20 hrs.)

Standard 120v AC Wall Outlet

1.4 kW – 2.4 kW



Level 2 (J1772)

10 to 25 miles of range per hour of charging (full charge in 8 hrs.)

Requires 240v outlet and dedicated 20- to 80-amp circuit – the same kind used by a clothes dryer or stove

3 kW to 19 kW (Avg 9.6 kW)



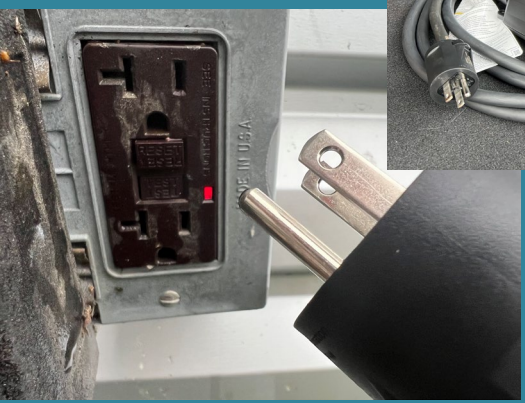
DCFC

60 to 80 miles of range per 20 minutes of charging*

Generally requires three-phase 480v AC electric circuit

Needs to be mounted on an equipment pad

50 kW – 150 kW – 350 kW



DC Fast Chargers

DCFCs range from 50 to 350 kilowatts

There are three different plug types that are used by different vehicle manufacturers:



SAE Combined Charging System (e.g., BMW, GM, VW)



CHAdeMO (i.e., Nissan Leaf)

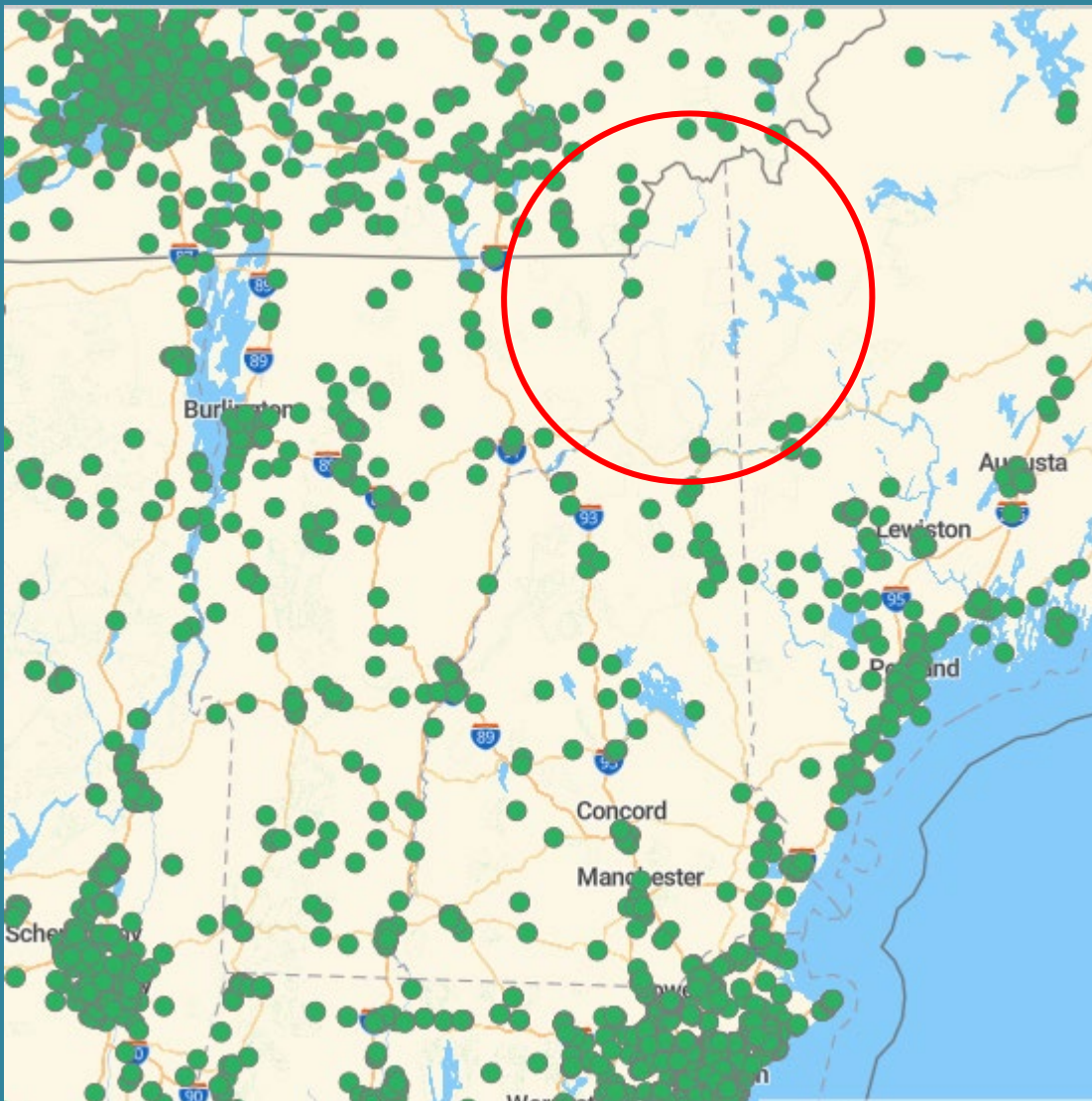


Tesla (used exclusively by Tesla)

Most new non-Tesla chargers come equipped with both SAE CCS and CHAdeMO plugs.

Learn more  USDOE Resource EV Charger Selection Guide:
https://afdc.energy.gov/files/u/publication/EV_Charger_Selection_Guide_2018-01-112.pdf





Current data as of 11/02/22

Source: <https://afdc.energy.gov/stations/#/find/nearest>

Level 2 EVSE in NH

There are currently **135 Level 2 charging locations in NH** (147 including Tesla) and over 47,000 universal level 2 locations in the US.

For reference, charging infrastructure in neighboring states:

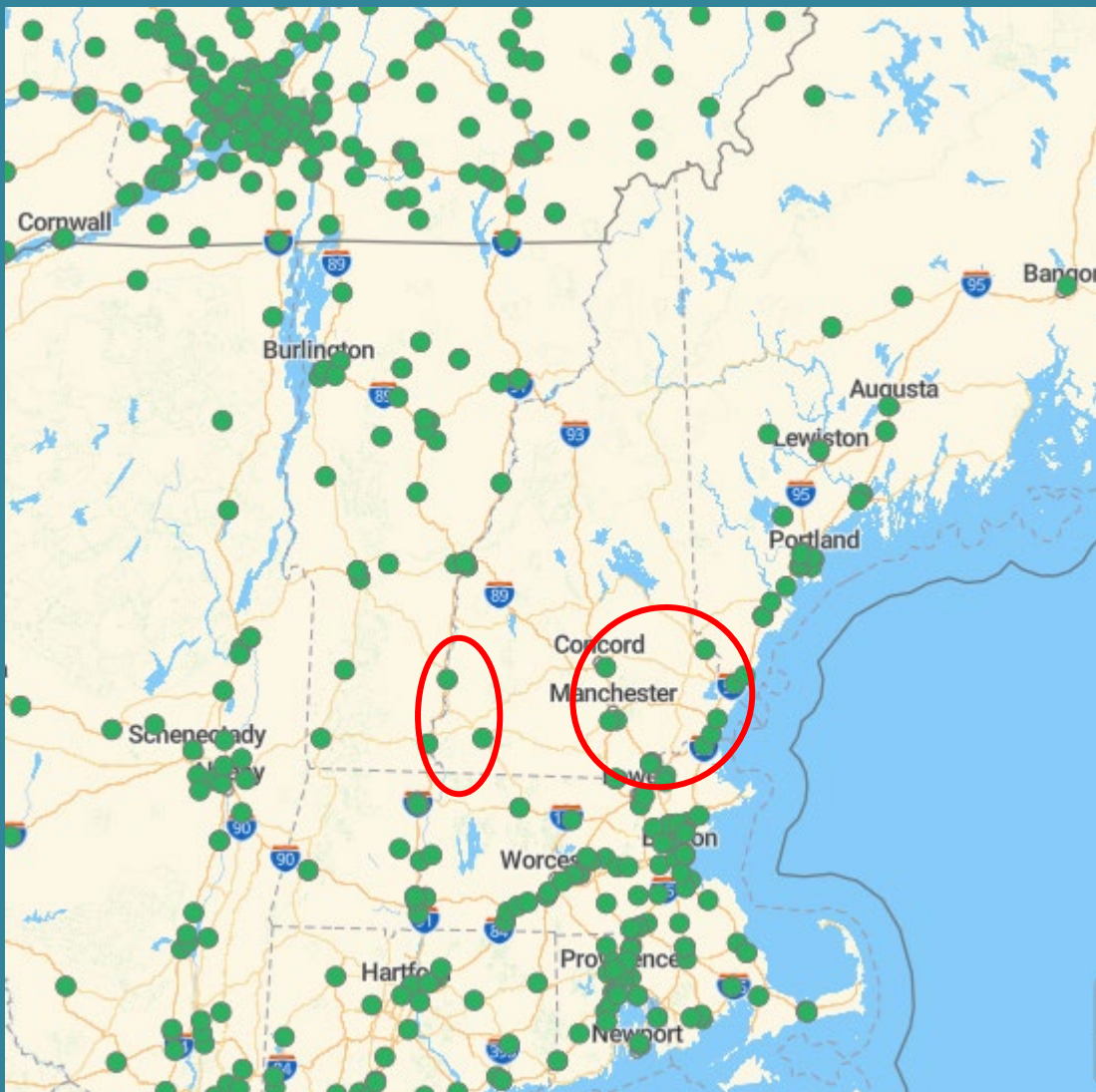
- Vermont – 265 locations
- Maine – 308 locations
- Massachusetts – 2,117 locations

DCFC Infrastructure in NH

There are currently **17 universal DCFC locations** in New Hampshire (28 including Tesla), and nearly 5,000 universal DCFC locations in the US, with billions of dollars of planned investment.

For reference, DCFC infrastructure in neighboring states:

- Vermont – 38 locations
- Maine – 42 locations
- Massachusetts – 90 locations



Current data as of 11/02/22

Source: <https://afdc.energy.gov/stations/#/find/nearest>

Volkswagen Trust Funding

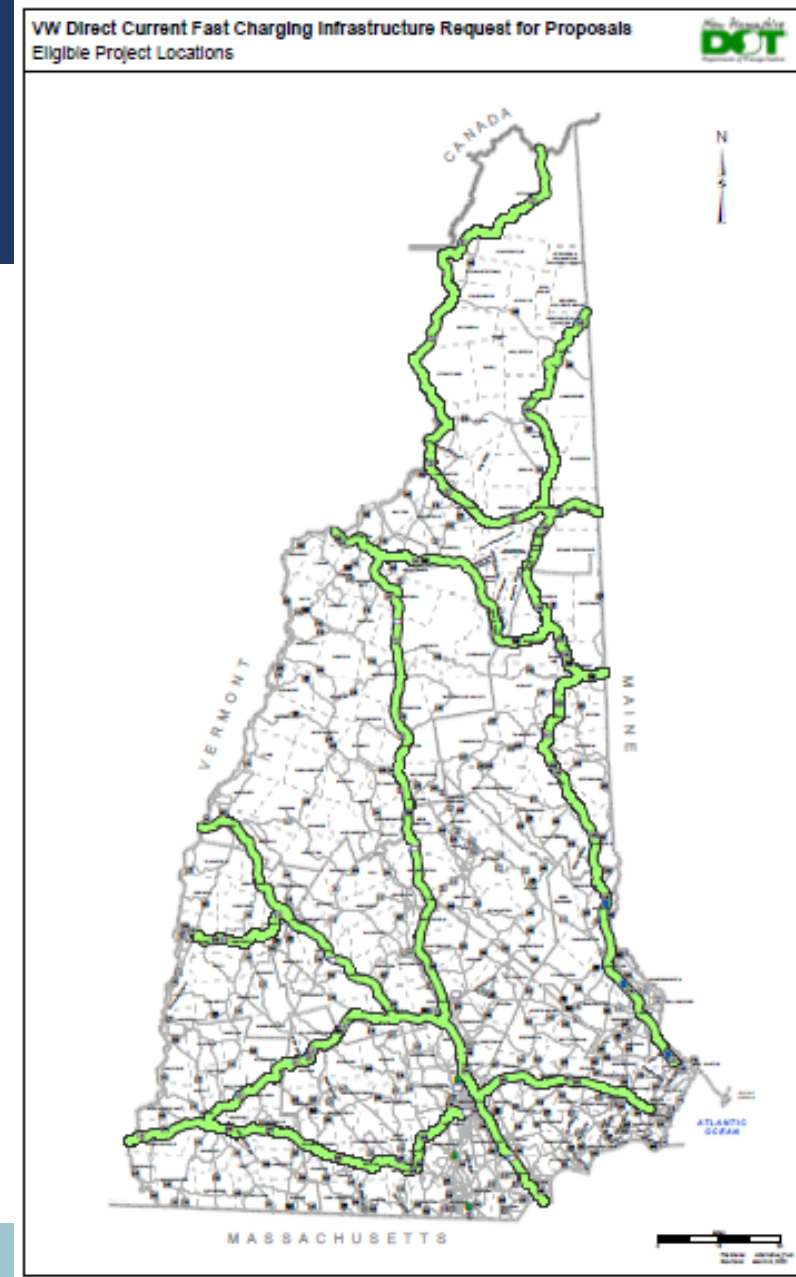


VOLKSWAGEN TRUST FUNDS: NH MITIGATION PLAN

- Approximately \$31 million – 15% (~\$4.6 million) dedicated to EVSE Lead Agency: **NHDES**
 - September 2021– DCFC Request for Proposals (RFP) – *Closed 02/25/22*
 - Eligible Costs: up to 80%, or up to 100% for EVSE located on state or local gov-owned property
 - NHDES received 30 proposals from 14 applicants for 53 proposed EVSE deployment options ... **43 of the proposed options - representing 35 sites across 25 NH towns and cities - met the minimum qualifications of the RFP.**
 - These proposals have been formally evaluated by a Scoring Committee comprised of reps from NHDOE, DOT & DES, and are in the contract negotiation process – *they are confidential until contracts are awarded*
 - **10/19/22 NH Exec. Council Approved 1st Award: Errol General Store on Route 16**
- For Reference: NHDES Volkswagen Mitigation Trust Webpage:
<https://www.des.nh.gov/business-and-community/loans-and-grants/volkswagen-mitigation-trust>

VW TRUST FUNDS: DCFC RFP

- Publicly Accessible Sites:
 - ≥ 2 DCFC + L2 – networked!
 - ≥ 50 kW DCFC
 - Connectors: CCS & CHAdeMO
- 9 Travel Corridors
 - US 3
 - US 2
 - Route 16
 - US 302
 - I-93
 - I-89
 - Route 11 / 103
 - Route 9 / 202
 - Route 101



NH's 12 FHWA Designated EV Corridors

- I-89
- I-93
- I-95
- F.E. Everett Turnpike
- Spaulding Turnpike/NH SR-16
- US-302
- US-2
- US-4
- NH SR-9
- NH SR-11
- NH SR-12
- NH SR-101

GSCCC Newsletter Article for more details:

<https://www.granitestatecleancities.nh.gov/happening/documents/news-20200910.pdf>





National Electric Vehicle Infrastructure (NEVI)

A program funded by the BIL

BIL: EV & INFRASTRUCTURE PROGRAMS

- **National Targets: EVs are 50% of new car sales + 500,000 EV chargers by 2030**
- BIL invests a total of \$7.5 billion in clean transportation infrastructure
 - \$5 billion NEVI formula funding
 - \$1 billion per year for 5 years beginning FY 2022 (Oct 1)
 - NH 5-year formula funding = \$17,271,581
 - Cost-share: 80% federal – 20% private or state funds (NHDOT expects most from private sector)
 - \$2.5 billion discretionary grant funding divided between corridor & community charging/fueling (H2, LPG, NG) – *national, finite – guidance anticipated by mid-November!*
 - Focus: rural + access in underserved/overburdened/disadvantaged communities

BIL: NATIONAL ELECTRIC VEHICLE INFRASTRUCTURE FORMULA PROGRAM (NEVI)

- Lead Agency = **NHDOT** Project Manager = **Mike Mozer**
- Funding priorities for the installation, operation, and maintenance of EV charging infrastructure – [FHWA's NEVI Program Guidance Document](#)
 - Locations = **FHWA-designated alternative fuel corridors**
 - Interstate and National Highway System
 - **Publicly accessible** – rural, underserved, and disadvantaged communities
 - **DCFC every 50 miles and within 1 travel mile from the highway** (*unless waiver granted*)
 - \geq four 150 kW DC output fast chargers with CCS ports capable of simultaneously charging four EVs

Once national network is fully built out, funds can be used on any public road or other publicly accessible location – flexibility to determine type and location

AUGUST 1ST, 2022 – NHDOT PUBLISHED: NH PLAN FOR EV INFRASTRUCTURE DEPLOYMENT

- [NHDOT's Deployment Plan](#) - approved by FHWA September 14, 2022
 - NHDOT intends to implement the Plan within 5-year federal funding cycle
 - Waiting on final rules to be released (ref: NEVI NPRM in Federal Register)
 - Hiring a Consultant to assist with the program
- **Initial Interstate Focus:** DCFC on I-93, I-95, and I-89
 - **Then:** NH-9, NH-12, NH-101, NH-9/US-202 from I-89 to Keene, NH-11, US-4/NH-9, NH-16, US-302 & US-2
- **FY 2023:** First Interstate RFP + nominate US-3 (from US-2 to Canada)
- **FY 2024:** RFPs for remaining locations. Construction of awarded locations expected to begin and continue thru FY 2025.
- **FY 2026:** By FY-end, all EV Charging Stations anticipated to be operational

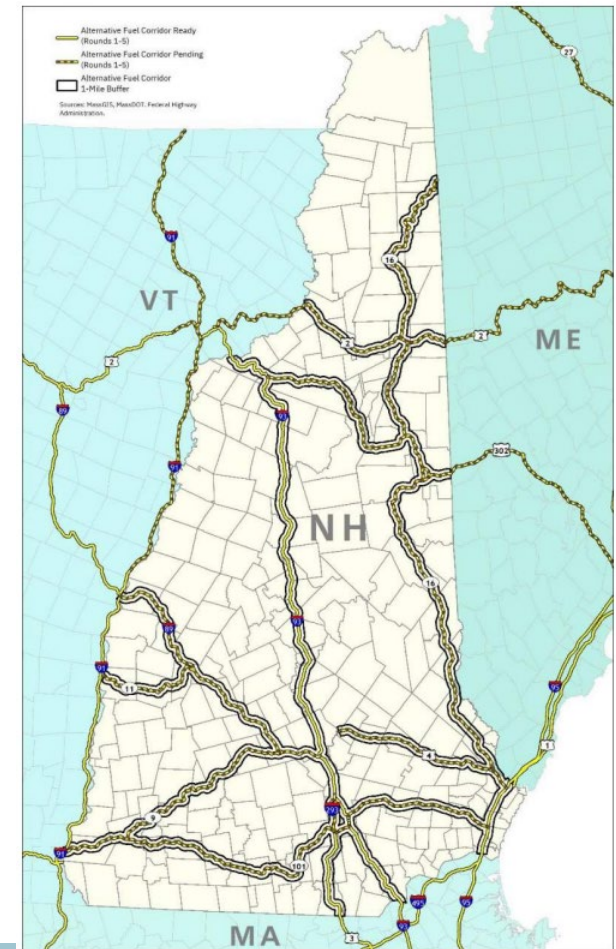


Figure 6. New Hampshire Existing AFC's

NH PLAN FOR EV INFRASTRUCTURE DEPLOYMENT CONT.

- Regular public updates on Plan implementation and opportunities for feedback
- Stakeholder and Public Surveys to be circulated
 - Seeking three primary types of information:
 - Assessing stakeholder traits and characteristics relevant to electrification
 - Electrification Priorities – includes assessing priority charging locations to support EV adoption
 - Electrification Barriers – including lack of charging, insufficient awareness of EVs, lack of capital
 - Interactive Map - the public can ‘like’ a proposed location & propose sites by dropping ‘pins’

Sign up for NHDES’ Transportation Infrastructure (i.e., NEVI) Distribution List:

https://visitor.r20.constantcontact.com/manage/optin?v=001dZZfSJUF90B7pVuGHqxRT3Y-vC6HS9AXwL4y7N2BNpMPo9zWFE6gy3-RUD_0ud4EJ_GyvKPaCF6HB5DovBfsaZ1K0JGg6qU6S3o1GMuAIOM%3D

BIL: DISCRETIONARY GRANT PROGRAM

- \$2.5 billion **discretionary** grant funding divided between corridor & community charging - *competitive program*
 - \$1.25 billion – **Corridor** Charging Grant Program
 - Publicly accessible EVSE, H2, LPG & NG fueling infrastructure along designated AF Corridors
 - \$1.25 billion – **Community** Charging Grant Program
 - Publicly accessible EVSE, H2, LPG & NG fueling infrastructure in communities
 - Priorities: rural areas, LMI neighborhoods, and communities with a low ratio of private parking spaces.

That's all we know right now ... additional guidance anticipated (likely mid-November)

What can you do?

- ✓ Get educated
- ✓ Get engaged
- ✓ Get EV-ready



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Thank you!

Introducing our changemakers:

➤ **Town of Peterborough**

Seth MacLean, Asst. Town Administrator

Emily Manns (Chair) and Bruce Tucker, Energy Committee

➤ **EVSE LLC**

Dan Shanahan, Director of Sales & Marketing

➤ **Town of Wolfeboro**

Brian Deshaies, Selectman