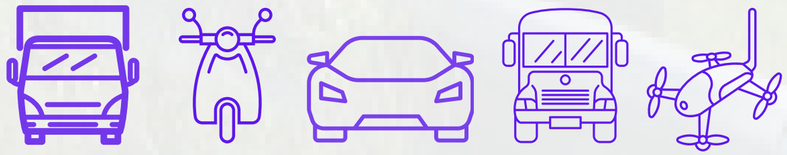
SOUTHERN NEW HAMPSHIRE
PLANNING COMMISSION

MPO 06.27.23

SNHPC REGION

PLAN FOR ELECTRIC VEHICLE INFRASTRUCTURE DEVELOPMENT



OBJECTIVE:

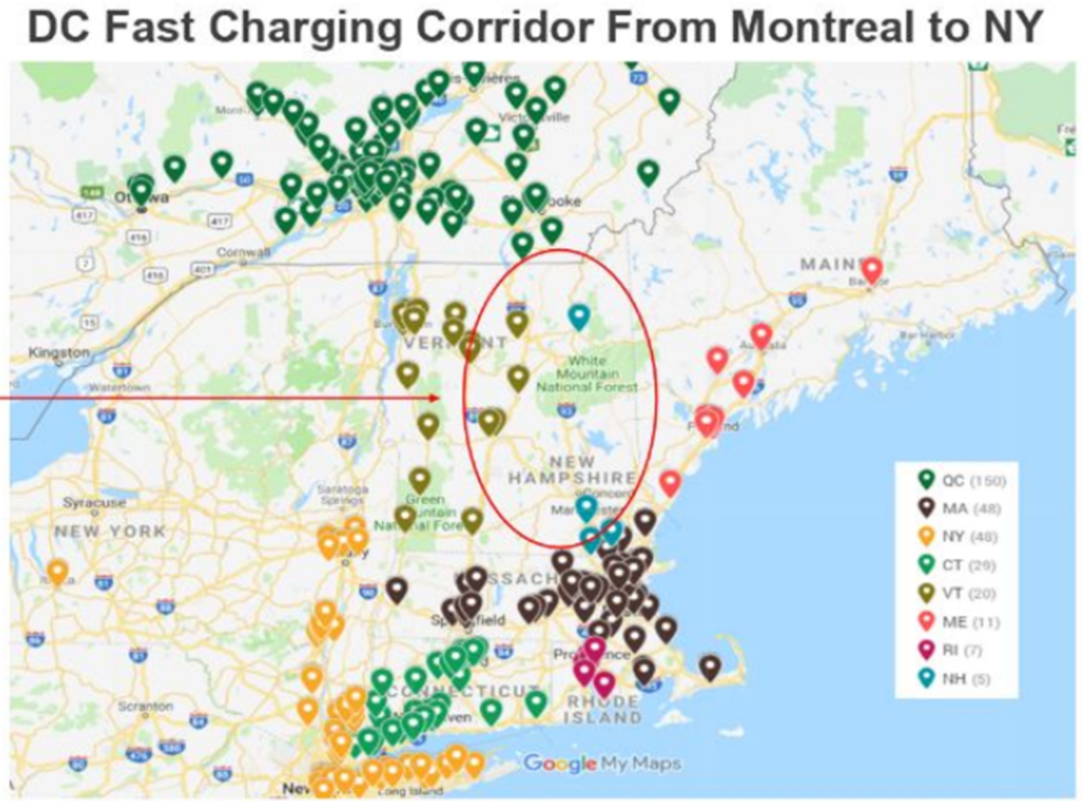
support the adoption and transformation to electric vehicles throughout the region, and between NH RPC regions.

Granite geek

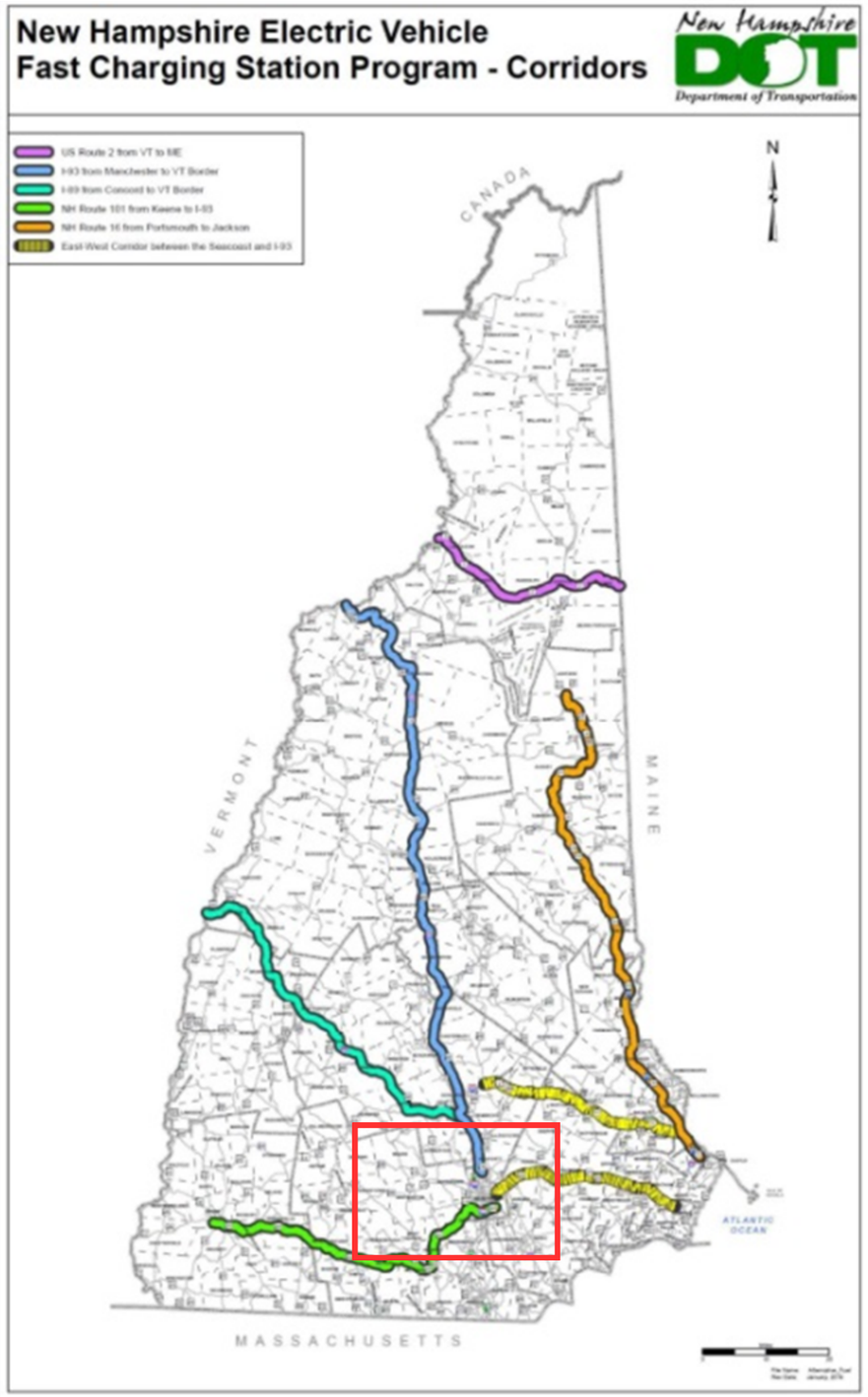
New Hampshire is a laggard in terms of public vehicle-charging stations compared to its neighbors.

DC fast charge sites are being installed in neighboring states at a higher volume than New Hampshire, in large part to enable EV tourism

NH is the missing link



One slide from a 2019 presentation by Eversource presentation about “electric vehicle charging infrastructure”



NH ALTERNATIVE FUEL CORRIDORS

FHWA + NHDOT focusing NEVI funds on AFCs

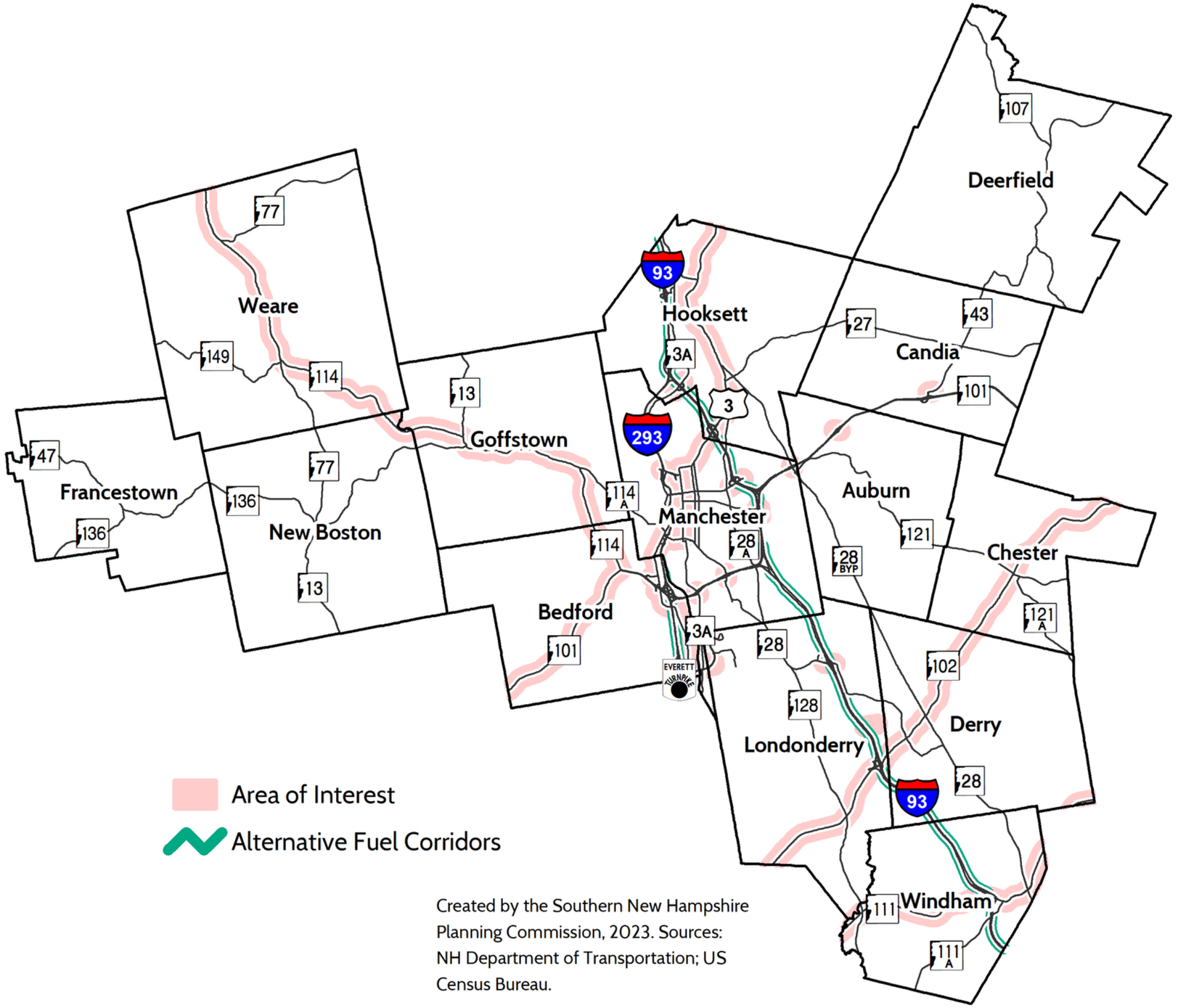
- Goal= DCFC station at least every 50 miles.

In our region:

- I-93 from Hooksett to Manchester (within a mile of interchanges)
- NH Route 101 from Bedford to Manchester
- NH Route 101 from Candia to Manchester (within a mile of interchanges)

EV WORKING GROUP

- Bedford
- Chester
- Derry
- Goffstown
- Hooksett
- Manchester
- Windham
- NHDES



SNHPC FAST CHARGING CORRIDORS

Routes of Interest

- I-93
- I-293
- FEET
- US-3
- NH-101
- NH-102
- NH-111
- NH-114
- NH-28

The area of interest was determined to be within 1/4 of mile of non-limited access expressways and within 1/4 of limited access expressways exits

EV CHARGING SITE SELECTION

- 13,501 businesses in the region→6,115 w/in 1/4 of mile
- gas stations, grocery stores, & state liquor stores were selected as suitable businesses; all hospitals, colleges, parking structures, and park-&-rides were included
- additional public sites were considered, especially if no other qualifying sites
- over 100 sites were identified, reviewed against viability criteria, & reviewed w/ local municipal staff
- 60 potential DCFC and/or Level 2 charging stations sites selected

Fast Charging

Public Charging at Retail & Business

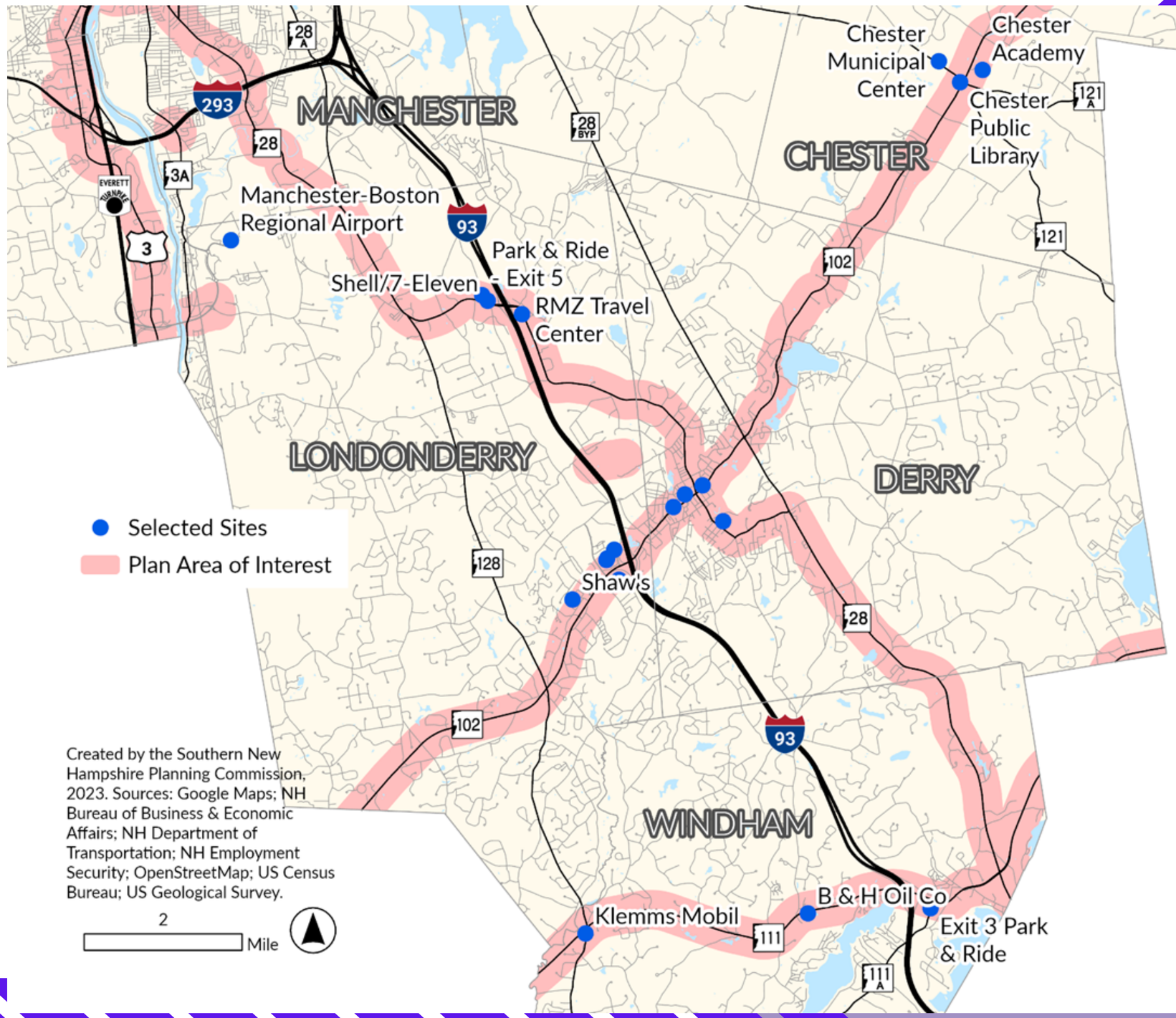
Level 2

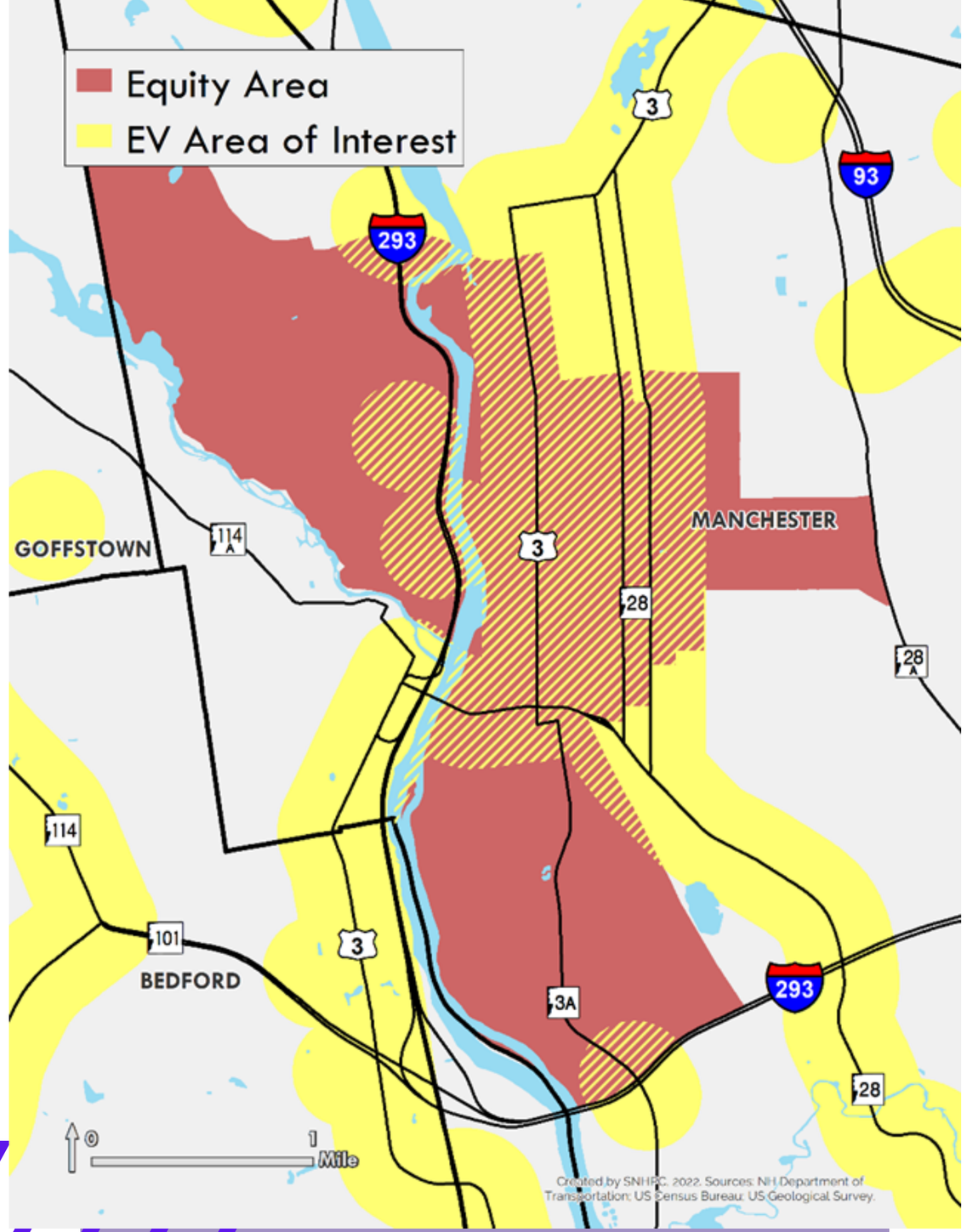
Best for work & multifamily

Level 1

Best for homes

	Fast Charging	Level 2	Level 1
Time to Full Charge*	20-30 **minutes**	5-6 hours	20 hours
Charging Speed	**90-120 miles** per **½ hour**	20 miles per hour	4 miles per hour


MANCHESTER
LONDONDERRY
CHESTER
DERRY
WINDHAM
Chester Municipal Center
Chester Academy
Chester Public Library
Manchester-Boston Regional Airport
Park & Ride - Exit 5
Shell/7-Eleven
RMZ Travel Center
Shaw's
Klemms Mobil
B & H Oil Co
Exit 3 Park & Ride
Selected Sites
Plan Area of Interest
Created by the Southern New Hampshire Planning Commission, 2023. Sources: Google Maps; NH Bureau of Business & Economic Affairs; NH Department of Transportation; NH Employment Security; OpenStreetMap; US Census Bureau; US Geological Survey.
2
Mile


Equity Area
EV Area of Interest
293
93
3
MANCHESTER
GOFFSTOWN
114
A
3
28
28
A
114
101
BEDFORD
3
3A
293
28
0
1
Mile
Created by SNHPC, 2022. Sources: NH Department of Transportation; US Census Bureau; US Geological Survey.

POTENTIAL SITES BY COMMUNITY

Derry

Location	US/NH Route	Address	Phase 3 Power	Fast Charger Candidate	Level 2 Candidate
Municipal Center	NH Route 102	14 Manning St.	Yes	Yes	*Existed
Derry Public Library	NH Route 102	64 East Broadway	Yes	No	Yes
Marion Gerrish Community Center	NH Route 102	39 West Broadway	Yes	Unknown	Yes
Parkland Medical Center	NH Route 28	1 Parkland Dr.	Yes	Yes	Yes

Traffic		4,300
Phase 3 Power		Yes
Fast Charger candidate		Yes
Level 2 candidate		Yes
Restrooms		Yes
Parking		100+
Services	Downtown Shops	Groceries, Restaurant

In Derry's downtown, this is a large municipal parking lot at in the downtown. Derry had installed Level 2 chargers in this location and is looking to install DCFCs with a 3rd party provider. Located just north of NH Route 102 about 1,000 feet northwest from the junction with NH 28 . There are restaurants, shopping, and services within walking distance.

Derry

Municipal Center

Corridor: NH Route 102

Address: 14 Manning Street
Derry, NH

Traffic		4,300
Phase 3 Power		Yes
Fast Charger candidate		Yes
Level 2 candidate		Yes
Restrooms		Yes
Parking		100+
Services	Downtown Shops	Groceries, Restaurant

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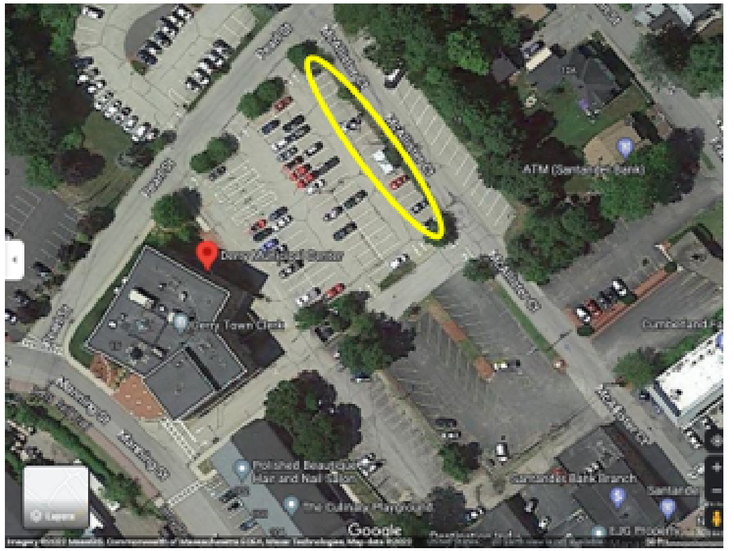


SITE PRIORITIZATION

01. proximity to a major route

02. accessibility to the public

03. relevant activity at the site

Manchester

TAC PRIORITIZATION EXERCISE

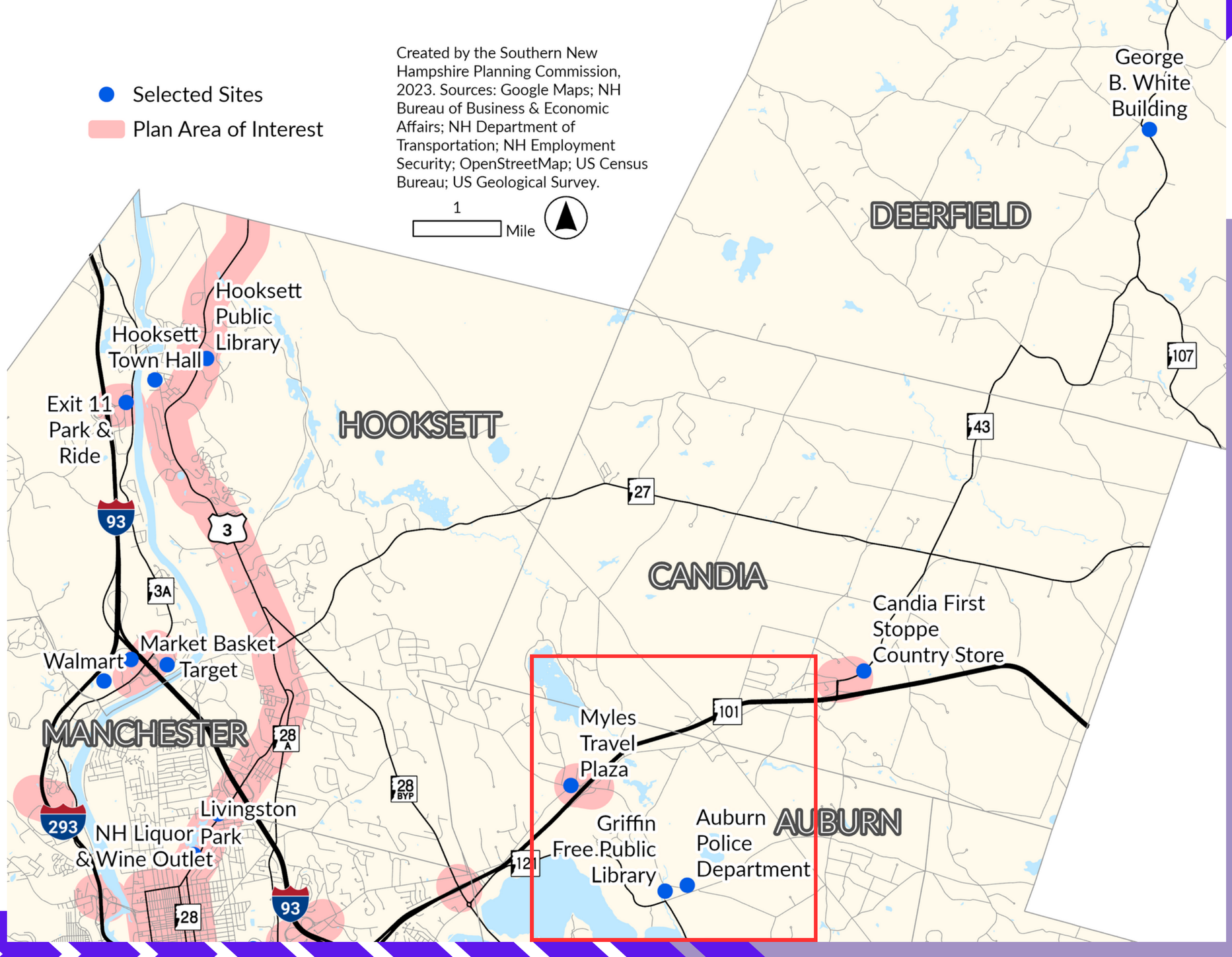
Priority (1= top priority)	Location	US/NH Route
1	Catholic Medical Center	I-293 Exit 5 Granite St.
2	West Manchester Branch Library	I-293 Exit 5/Granite St.
3	City Library and New England College Lot	NH Route 3/NH Route 28
4	Market Basket	NH Route 3
5	Arms Park	NH Route 23
6	Veteran's Memorial Park on street	NH Route 3
7	Livingston Park	NH Route 3/NH Route 28/I-93 Exit 9
8	Derryfield Park	I-93 Exit 8/Bridge Street
9	Victory Parking Garage/Vine Street diagonal parking	NH Route 3/NH Route 28
10	Center of NH Parking Garage	I-293 Exit 5/NH Route 3
11	Manchester Airport	NH Route 101 NH Route 28
12	Wall Street Tower Garage	NH Route 3
13	Hampshire Plaza Parking Garage	NH Route 3
14	NH Liquor & Wine Outlet	I-93 Exit 9 /US Route 3

PUBLIC COMMENT PERIOD

May 26, 2023 - June 26, 2023

Source of comments:

- **June 1- Auburn**
- June 12- Francestown
- June 26- Derry


Selected Sites
Plan Area of Interest
Created by the Southern New Hampshire Planning Commission, 2023. Sources: Google Maps; NH Bureau of Business & Economic Affairs; NH Department of Transportation; NH Employment Security; OpenStreetMap; US Census Bureau; US Geological Survey.
1
Mile
George B. White Building
DEERFIELD
Hooksett Public Library
Hooksett Town Hall
Exit 11 Park & Ride
HOOKSETT
107
43
27
93
3
CANDIA
3A
Candia First Stoppe Country Store
Market Basket
Walmart
Target
MANCHESTER
28 A
101
Myles Travel Plaza
28 BYP
Livingston Park
293
NH Liquor & Wine Outlet
Griffin Free Public Library
121
Auburn Police Department
AUBURN
28
93

PUBLIC COMMENT PERIOD

May 26, 2023 - June 26, 2023

Source of comments:

- June 1- Auburn
- **June 12- Francestown**
- June 26- Derry

Francestown

Village Center

Corridor: NH Routes 47 and 136

Address: *multiple*

Traffic	1,800
Phase 3 Power	Yes
Fast Charger candidate	Yes
Level 2 candidate	Yes
Restrooms	?
Parking	*varies*
Services	Municipal services, community center

The center of Francestown would be an ideal location for an EV charging station, either at the Village Store or at the Town Offices. There is currently 3-phase power along Main Street.

Francestown Village Store

Francestown Town Hall

PUBLIC COMMENT PERIOD

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Emissions from Electric Vehicles

All-electric vehicles, plug-in hybrid electric vehicles (PHEVs), and hybrid electric vehicles (HEVs) typically produce lower tailpipe emissions than conventional vehicles do, and zero tailpipe emissions when running only on electricity. Tailpipe emissions are only one factor in considering a vehicle's life cycle emissions; gasoline and electricity fuel pathways also have upstream emissions to consider, which include extracting, refining, producing, and transporting the fuel. Estimating cradle-to-grave emissions must account for both fuel-cycle emissions (also known as "well to wheels") and vehicle-cycle emissions (material and vehicle production as well as end of life). The combined emissions from vehicle and fuel production through vehicle decommissioning (i.e., recycling or scrapping) are referred to as life cycle or cradle-to-grave emissions.

Electricity Sources and Fuel-Cycle Emissions

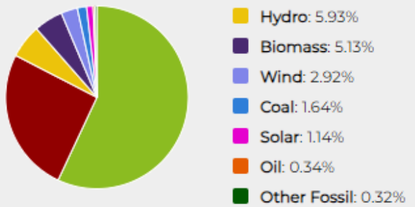
All-electric vehicles and PHEVs running only on electricity have zero tailpipe emissions, but electricity production, such as power plants, may generate emissions. In geographic areas that use relatively low-polluting energy sources for electricity generation, all-electric vehicles and PHEVs typically have an especially large life cycle emissions advantage over similar conventional vehicles running on gasoline or diesel. In areas with higher-emissions electricity, all-electric vehicles and PHEVs may not demonstrate as strong a life cycle emissions benefit.

The source of your electricity has an effect on the emissions of your electric vehicle.

Choose a State

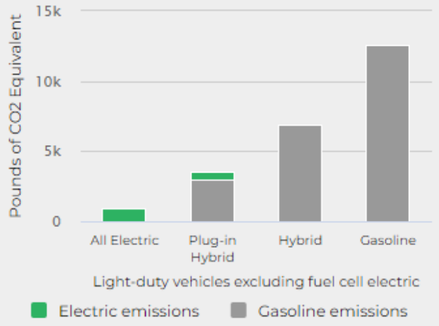
State Averages for New Hampshire

Electricity Sources



- Nuclear: 57.00%
- Natural Gas: 25.59%
- Hydro: 5.93%
- Biomass: 5.13%
- Wind: 2.92%
- Coal: 1.64%
- Solar: 1.14%
- Oil: 0.34%
- Other Fossil: 0.32%

Annual Emissions per Vehicle



QUESTIONS ? COMMENTS?

Next Step:

- MPO adoption

KEEP IN TOUCH

SNHPC

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