Planning for Electric Vehicles

in Burlington and Camden Counties

June 2022

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

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Glossary of Terms

Electric vehicle terminology can be confusing and inconsistent in its usage. This section provides an overview of common terms related to electric vehicles. Definitions are provided by the U.S. Department of Energy and other sources referenced in the appendix to this report.

BEV: Battery Electric Vehicle. A plug-in electric vehicle that uses only a battery and electric motor to power the EV. Current examples include the Nissan LEAF, the Chevrolet Bolt, or any of the Tesla models.

DCFC: Direct Current Fast Charging station. A charging station that converts high-voltage AC power to DC power. DCFC can generally charge a battery to 80 percent in 20–30 minutes.

EV: A generic term for a vehicle that gets some or all of its power from an electric motor. Sometimes used to mean PEV, BEV, All-Electric Vehicle, Fuel Cell Electric Vehicle (FCEV), and occasionally Hybrid Electric Vehicle.

EVSE: Electric Vehicle Supply Equipment. These are the charging stations that charge the batteries in electric vehicles. There are currently three levels of charging stations, generally known as Level 1, Level 2, and DCFC. The amount of power required, cost, amount of time to charge the vehicle, and needed infrastructure vary.

ICE: Internal Combustion Engine. Traditional gasoline and diesel cars and trucks use an internal combustion engine to convert fuel to the motion that moves the vehicle. Propane or compressed natural gas is used in some ICE vehicles as well.

PEV: Plug-In Electric Vehicle. An EV that plugs in to an external source to charge an on-board battery that provides the electricity for the electric motor. Some EVs, such as trolleys, subways, trains, and trolley buses, are powered by electricity from overhead wires or a track. FCEVs are powered by a fuel cell.

PHEV: Plug-In Hybrid Electric Vehicle. PHEVs use both an ICE and an electric motor with a battery that recharges by plugging into an external source. Depending on its exact configuration, the PHEV's battery can either assist the ICE or fully power the vehicle until the battery has been discharged, at which time the vehicle continues to operate as a Hybrid Electric Vehicle. Current examples include the Toyota Prius Prime and the Chrysler Pacifica Hybrid.

Charging Station Terminology

Charging stations for electric vehicles (EVs) are also known as electric vehicle supply equipment (EVSE). Different types of chargers are appropriate for various needs when considering the amount of charging needed, where the vehicle will charge, the amount of time the vehicle can stop at a charging station, and the electrical wiring available to install charging equipment. There are three types of charging stations: Level 1, Level 2, and Direct Current Fast Charging (DCFC) stations. Charging time depends on the size of the vehicle's battery and the level of charger being used, but general ranges are listed in Figure 1 below.

Level 1 charging involves simply plugging a vehicle into a standard home outlet using a charging cord that typically comes with the vehicle; this is the cheapest type of charging station in terms of upfront investment. The power use of Level 1 charging is like running a hairdryer. A Level 1 charger would likely be sufficient for charging a vehicle that travels between 30 and 40 miles daily. Level 1 purchase costs for a public charger range between $596 to $813[1] and installation costs will vary depending on the site.

Level 2 charging requires higher voltage and an EVSE unit to facilitate the charging. The power use of a Level 2 charger is like that of an electric stove with all the burners turned on. Level 2 chargers generally provide two charging ports for each charger, allowing one charging station to serve two vehicles. Purchasing a Level 2 charger for public use ranges between $938 and $3,127 with higher costs for networked stations and pedestals with one charger vs. two chargers.[1] Installation of Level 2 chargers costs around $3,000 with a variability in installation costs of up to 50% depending on the number and location of chargers.[1]

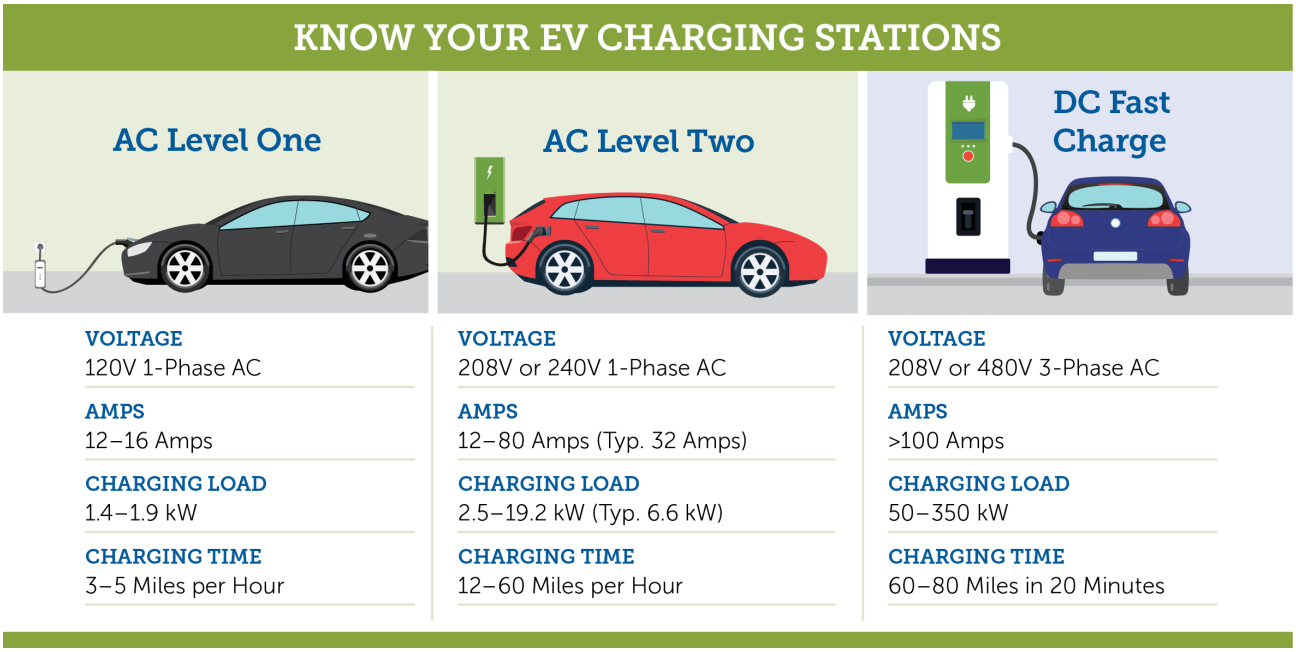
DCFC stations converts high-voltage AC power to DC power so that the power can be stored in compatible EV batteries. DCFC stations have three types of connectors (CHAdeMO, CCS, or Tesla) and are used most often in public charging stations along long-distance high-volume traffic corridors. Tesla chargers are considered proprietary and are not generally discussed in this document because they cannot be used by non-Tesla EVs, although Tesla vehicles can access the other types of chargers with an adapter. Tesla is exploring options to make their charging network available to other EVs, but there is no definitive timeline as to when this may be available or what may be required for non-Tesla EVs to access that charging infrastructure.

Public DCFC cost between $28,000 and $140,000 with higher costs for networked stations and pedestals with one charger versus two chargers. Installation of DCFC costs range between $18,000 and $66,000.[1] DCFC charging costs more than Level 2 charging. According to *U.S. News and World Report,* depending on gasoline prices and the fuel economy of the vehicle, public fast charging may cost more than gasoline per vehicle mile of range.[2] Not all EVs are able to use DCFCs, although most new models can access DCFCs.

Installation costs of electric vehicle chargers varies widely depending on the site location, existing wiring and electrical upgrades required, permitting, trenching, type and number of chargers, geographic location, and labor costs. Labor is typically the largest expense when installing EVSE, accordingly, per charger cost goes down on larger EVSE installation projects.[1]

[1] "Alternative Fuels Data Center," U.S. Department of Energy, accessed April 28, 2022, afdc.energy.gov/. All cost information referenced on the webpage is from the International Council on Clean Transportation's 2019 publication on charging infrastructure costs across major U.S. metropolitan areas.
[2] Vincent, John. "How Much Does It Cost to Charge an Electric Car?" U.S. News and World Report. August 2021, cars.usnews.com/cars-trucks/electric-car-charging-costs.

Figure 1: Charging Station Types



Source: Advanced Energy (www.advancedenergy.org)

CHAPTER 1:

Introduction

Background

According to the New Jersey Department of Environmental Protection (NJ DEP), the transportation sector is the single-largest source of climate change pollutants in New Jersey.[3] Traditional internal combustion engines emit a variety of chemical compounds that impact public health, damage vegetation, degrade water quality, and contribute to climate change. Since electric vehicles have no tailpipe emissions, they can provide a pathway to cleaner air and a mechanism to help slow climate change. New Jersey's commitment to increasing the use of clean renewable energy sources makes the adoption of EVs an even bigger win for the people and environment of New Jersey.

New Jersey's state, county, and local governments all play a role in preparing the state to support the growing numbers of EVs by strategically supporting charging infrastructure that will help relieve range anxiety and make the electrification of the transportation system practical, reliable, and convenient for EV users.

The Delaware Valley Regional Planning Commission (DVRPC) has partnered with the University of California, Davis (UC Davis) and the NJ DEP to identify where plug-in electric vehicles (PEVs) are located, where they are expected to be, and where the demand for workplace charging is expected to grow. DVRPC will use these tools, along with other available data, to identify opportunities to fill the gaps in public charging infrastructure.

County- and municipal-owned parking lots provide opportunities for EV charging that are accessible to the traveling public and possibly to EV owners who face challenges charging at home. This report will review the availability of electric vehicle service equipment (EVSE) in relation to county facilities, multifamily housing developments, and census block groups (CBGs) where there are existing PEV owners, and projected workplace charging events to gauge the need and utility of EVSE hosted at these sites.

Methodology

According to the International Center for Clean Transportation, the vast majority of EV charging in the United States currently occurs at the owner's home or workplace, and this trend is expected to continue as EV use increases. DVRPC has partnered with Plug-In & Hybrid Electric Vehicle Research Center at UC Davis to provide detailed projections of where EV owners will live and how much demand there will be for workplace charging when 5 percent of the vehicles registered in the DVRPC region are PEVs or when 330,000 (almost 10 percent) of the registered vehicles in the state are PEVs. The DVRPC/UC Davis Electric Vehicle Planning Toolkit analysis includes the current and projected numbers and geographic distribution of PEVs, which includes battery electric and plug-in hybrid EVs (PHEVs), and the anticipated workplace charging demand associated with future PEV distribution at the municipal and CBG levels.

The model uses regression analysis to correlate current PEV ownership with demographic characteristics (from the U.S. Census) of the locations where PEVs are registered to identify areas where future PEV purchases are most likely to occur. Using additional data on commuting patterns in the region, the model projects those areas where PEV owners are likely to work and proportionately assigns PEVs to their

[3]NJ DEP, *2020 New Jersey Scientific Report on Climate Change, Version 1.0*, ed. R. Hill, M.M. Rutkowski, L.A. Lester, H. Genievich, N.A. Procopio (Trenton, NJ: NJ DEP, 2020), 184 pp., www.nj.gov/dep/climatechange/docs/nj-scientific-report-2020.pdf.

workplace CBG. Using information on commuting distance, and user-specified battery capacity, tolerance for charge depletion, and mix of all-battery and PHEVs, the toolkit predicts the number of workplace charging events and kilowatt hours (kWh) of demand at the CBG level. The model assumes employees park at the workplace charger for seven hours. This model is not predictive regarding the year in which the number of vehicles projected will be reached. It is, however, a useful tool for determining the likely spatial distribution of vehicles given a specified number of PEVs in the DVRPC region.

DVRPC used the outputs from this tool to determine the proximity of potential home and workplace charging demand to publicly accessible EVSE, multifamily residential areas, and county facilities. Multifamily residential areas are defined using COSTAR property data on multifamily residential units which includes rental and individually owned multi-family housing units as of September 2021. The goal is to inform county government decisions about promoting publicly accessible EVSE in county government parking facilities, especially in municipalities with high EV ownership or where the DVRPC/UC Davis Electric Vehicle Planning Toolkit projects higher levels of workplace charging demand.

This analysis considers the State of New Jersey's *Electric Vehicle Law* ("EV Law"; P.L.2019, c, 362), which requires that there be 1,000 Level 2 publicly available chargers installed in the state by December 31, 2025, and relies on inputs from the NJ DEP's list of EVSE, COSTAR property data on multifamily residential units, and the locations of county facilities and parks with parking. DVRPC used Geographic Information System (GIS) analysis to determine the potential for public charging and to identify where there may be gaps in EVSE. The analysis also reviewed where county parks and facilities are within a half-mile of multifamily residential areas to highlight the potential for charging options for residents of these units, using the assumption that people will comfortably walk up to one-half-mile to access transportation or an amenity.

The analysis was reviewed with planners for Burlington and Camden counties, as well as NJ DEP staff, to develop recommendations to better help the county governments prepare for New Jersey's goal of 330,000 PEVs in the state by 2025.

CHAPTER 2:

Existing Conditions

Charging Infrastructure

The NJ DEP and U.S. Department of Energy maintain databases of publicly accessible and privately held EVSE. These databases were used to map the locations of EVSE in Burlington and Camden counties.

The information in Table 1 presents the statistics on EVSE in the counties, including the number of locations, the types of chargers, and whether the locations are open to the public or private. The table also separates the number of Tesla chargers from the other types of charging facilities because Tesla chargers are considered proprietary and are not available for use by all EV owners, although Tesla is exploring adapters that would open their network to other models of PEVs.

There are 32 private charger connections in Burlington County. Thirty of these chargers (28 Level 2 and two Level 1 chargers), are owned by the federal government and located on the Joint Base McGuire-Dix-Lakehurst. The other two Level 2, private chargers are located at the Pinelands Commission Headquarters. The two privately held charging stations in Camden County are available for use at private businesses.

Table 1: Existing PEV Charging Infrastructure

County (# of Locations)	Type/Number Connection		Public Connections	Private Connections
Burlington (28)				
	Level 1	2	0	2
	Level 2	63	33	30
	DCFC	10	10	0
	Tesla	28	28	0
Total Connections (non-Tesla)		75	43	32
Camden (23)				
	Level 1	1	1	0
	Level 2	28	26	2
	DCFC	14	14	0
	Tesla	3	3	0
Total Connections (non-Tesla)		43	41	2

Source: NJ DEP Bureau of GIS

Existing and Projected EV Locations

DVRPC used 2021 vehicle registration data provided by the NJ DEP to map registered PEVs in the state at the CBG level to determine the areas with existing demand for at- or near-home EV charging. This data, along with data from the U.S. Census, was used as an input into the DVRPC/UC Davis Electric Vehicle Planning Toolkit to project the location of future PEVs when New Jersey reaches its goal of 330,000 (or nearly 10 percent) registered PEVs in the state. At the time of this analysis, there were 1,762 PEVs registered in Burlington County,1,558 PEVs registered in Camden County and 60,000 registered light duty PEVs statewide.

Tables 2 and 3 list the top five municipalities in each county ranked by the percentage of registered PEVs to the current number of registered vehicles in the municipality. Since the DVRPC/UC Davis Electric Vehicle Planning Toolkit assigns vehicle registrations at the CBG level, seven municipalities were excluded from this analysis because the CBG boundaries were incompatible with municipal boundaries. Maps of this analysis show the CBG-level data to demonstrate locations of registered PEV densities. The toolkit does not predict the total number of passenger vehicles for New Jersey in 2025, so the percentage of PEV registrations is only calculated for the current vehicle registrations.

Table 2: Top Five Municipalities (by Percentage) in Burlington County for Current and Future PEVs

Municipality	Total Number of Passenger Vehicles	Current Number of PEVs	Projected Number of PEVs	Current Percentage of Vehicles that are PEVs
Moorestown Township	15,859	257	3,132	1.62%
Chesterfield Township	4,252	59	596	1.38%
North Hanover Township	4,941	53	362	1.08%
Medford Lakes Borough	3,301	28	215	0.84%
Medford Township	18,612	156	1,480	0.84%

Source: DVRPC, 2022

Note: The projected results specifically for Burlington and Camden counties reflect the penetration scenario of when 330,000 passenger vehicles (about 10 percent) in New Jersey are PEVs.

Table 3: Top Five Municipalities (by Percentage) in Camden County for Current and Future PEVs

Municipality	Total Number of Passenger Vehicles	Current Number of PEVs	Projected Number of PEVs	Current Percentage of Vehicles that are PEVs
Haddonfield Borough	8,041	131	1,531	1.63%
Voorhees Township	20,235	254	2,597	1.25%
Cherry Hill Township	52,333	516	4,864	0.99%
Collingswood Borough	9,642	81	671	0.84%
Merchantville Borough	2,466	20	131	0.81%

Source: DVRPC, 2022

Note: The future results specifically for Burlington and Camden counties reflect the scenario of when 330,000 passenger vehicles (about 10 percent) in New Jersey are PEVs.

County Facilities

Beginning in 2013, Camden County offered free Level 2 charging at 11 charging stations. Only three of the locations are currently in use. Camden County is currently in the process of renewing the contracts for all seven of these sites and installing new stations. Burlington County does not currently offer EV charging at its facilities, but the Burlington County Bridge Commission is pursuing installing EVSE at the commission's office at the Tacony-Palmyra Bridge in Palmyra Borough. Table 4 lists the locations of the Camden County EVSE and indicates whether those charging stations are active.

Table 4: Camden County EVSE Locations

Location	Active as of January 2022 (# of Ports)	Location	Active as of January 2022 (# of Ports)
Camden County College–Blackwood	No (2)	Cooper River Park Boathouse	Yes (1)
Camden County College–Camden	Yes (1)	Bellmawr Branch Library	Yes (1)
Camden County College–Cherry Hill	No (2)	South County Regional Branch	No (2)
Camden County Vocational Technical School	No (2)	-	-

Source: Camden County Planning Department, 2021

Burlington and Camden counties provided DVRPC with lists of county parks, buildings, and libraries that could potentially serve as host sites for EVSE. DVRPC mapped these facilities and performed a proximity analysis to screen which facilities may be appropriate locations for EVSE. The proximity analysis looked at the distance between each facility and existing charging stations, multifamily residential areas, CBGs with greater than 20 registered PEVs per square mile, and CBGs with greater than 40 workplace charging events per square mile per day as determined by the DVRPC/UC Davis Electric Vehicle Planning Toolkit.

The details of the analysis are provided in the next chapter of this report.

Figures 2 and 3 show the publicly accessible EVSE and multifamily residential areas in Burlington and Camden counties.

Figure 2: Burlington County Existing EVSE and Multifamily Residential Areas

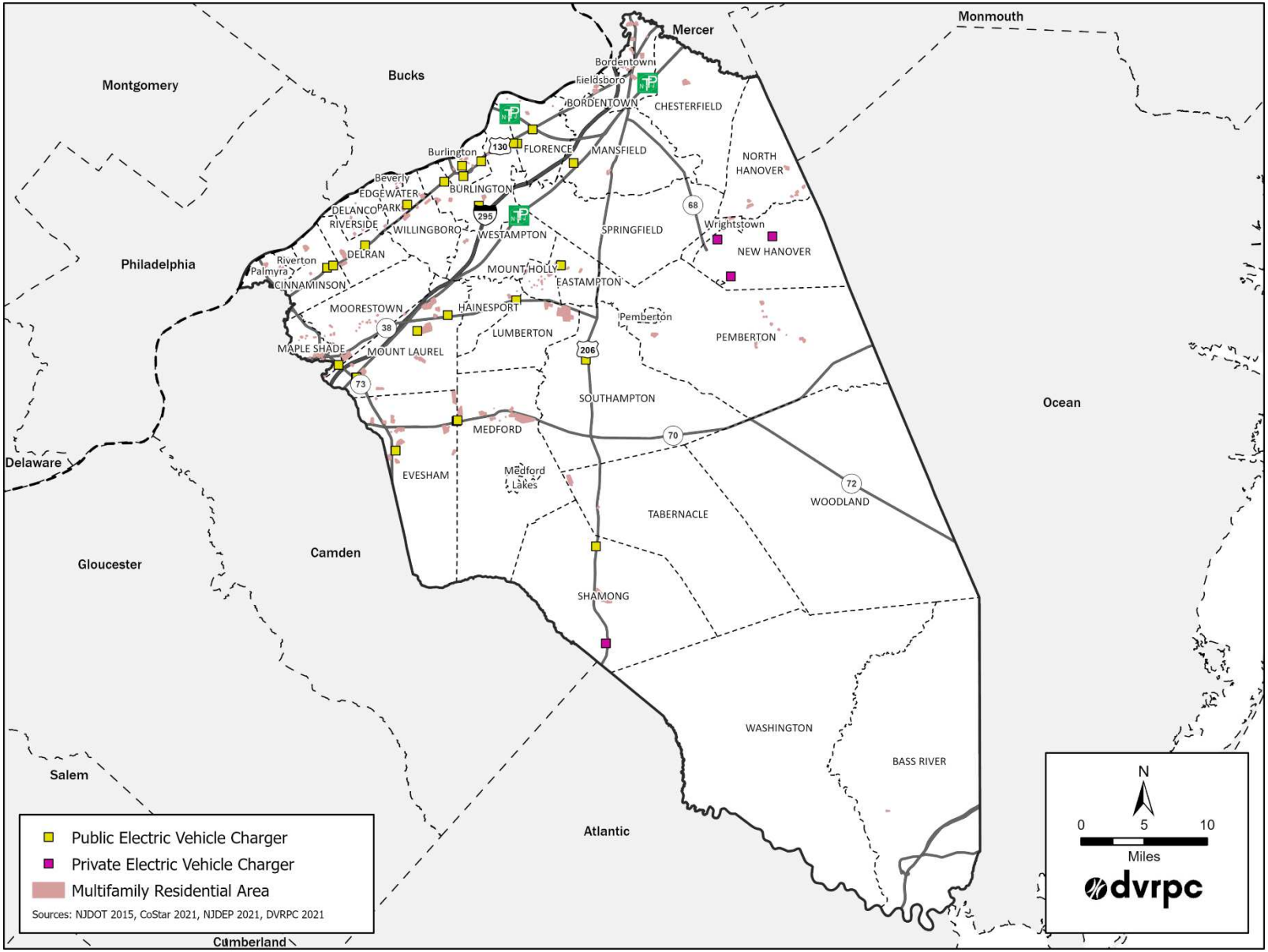
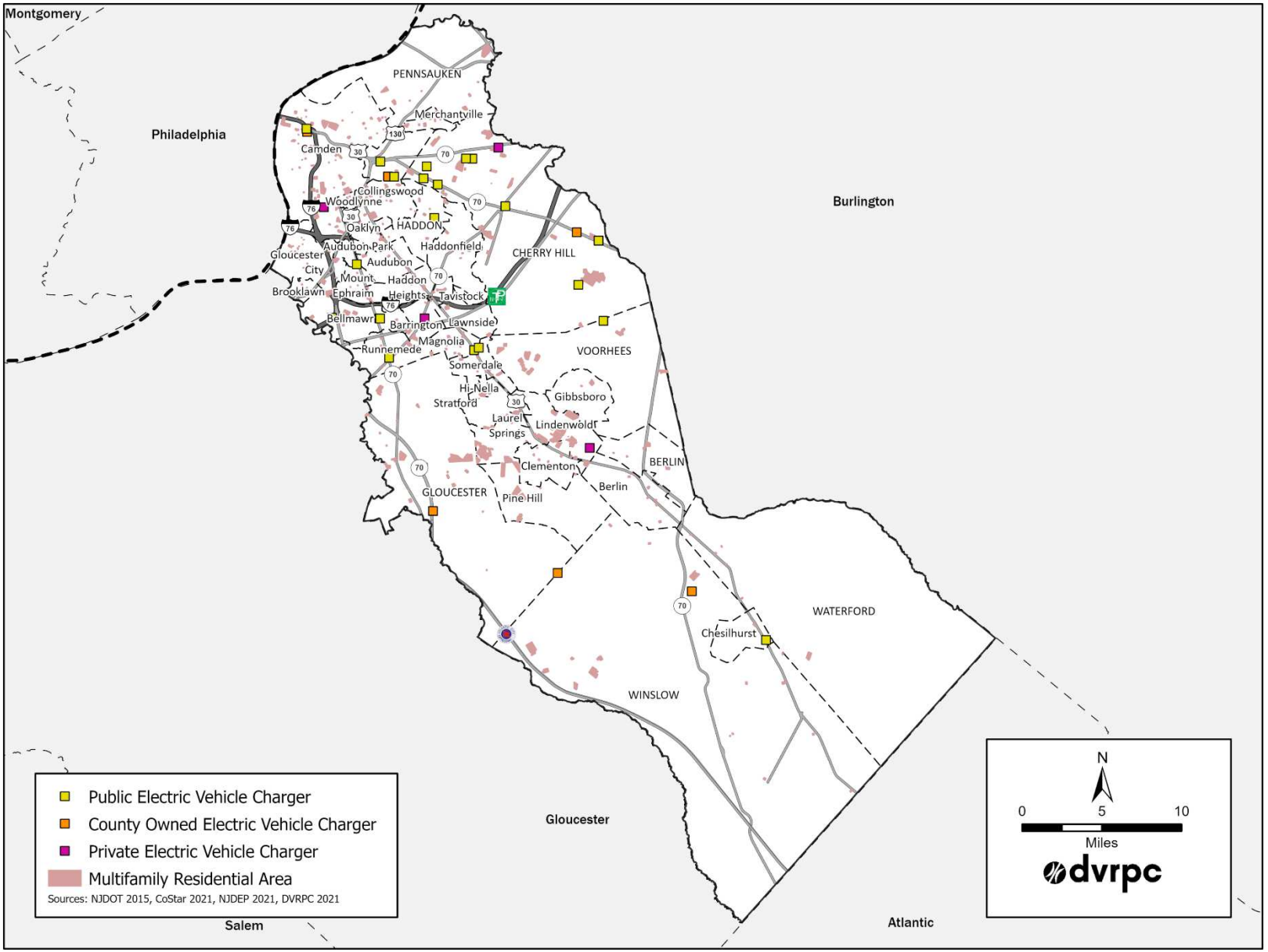


Figure 3: Camden County Existing EVSE and Multifamily Residential Areas



NJ DEP Direct Current Fast Charging (DCFC) Corridors

As a participant in the New Jersey Partnership to Plug-In, and to meet the requirements of New Jersey's EV Law (P.L 2019, Chapter 362), the NJ DEP is developing maps to inform the strategic placement of EVSE.

The NJ DEP's initial mapping effort focused on the locations of current and planned DCFC along major travel routes in the state. The resulting *Strategic Mapping for Electric Vehicle DC Fast Charging Station Locations* shows DCFC that complies with the EV Law. These are stations that have at least two charging ports, provide 150 kWh of power, and are no more than 25 miles from the next compliant charger. These locations do not include Tesla superchargers because the Tesla chargers are not universally usable by all PEVs. The map shows that there is one DCFC in Camden County (at the Crowne Plaza on Marlton Pike in Cherry Hill) and a planned compliant DCFC on US 130 in Delran in Burlington County. These two chargers may be active by the time of this publication. All of Camden County and roughly the northwestern half of Burlington County are within the 25-mile range of these DCFCs.

The maps indicate potential locations of DCFC based on suitability scores that consider population, traffic, and proximity of commercial amenities. The DCFC locations and the location selection criteria are available at www.drivegreen.nj.gov/dg-partnership-to-plugin.html.

Figure 4 is a copy of the NJ DEP statewide strategic map for DCFC locations. The NJ DEP provided the GIS Shapefile of the suitability scoring of the locations to DVRPC, and Figures 5 and 6 show the DCFC Corridor Suitability Analysis for the locations in Burlington and Camden counties, respectively. These locations provide a picture of the interstate, state, and county highway corridors that would be suitable for building out a DCFC network across the state.

The locations on the map are not intended to identify exact locations but to inform the decision-making process. For example, the Moorestown Mall is located near the Collins Road and NJ 73 intersection in Burlington County. The mall's parking lot and commercial amenities may make that a very suitable location for travelers along NJ 73 to charge their vehicles.

Burlington County

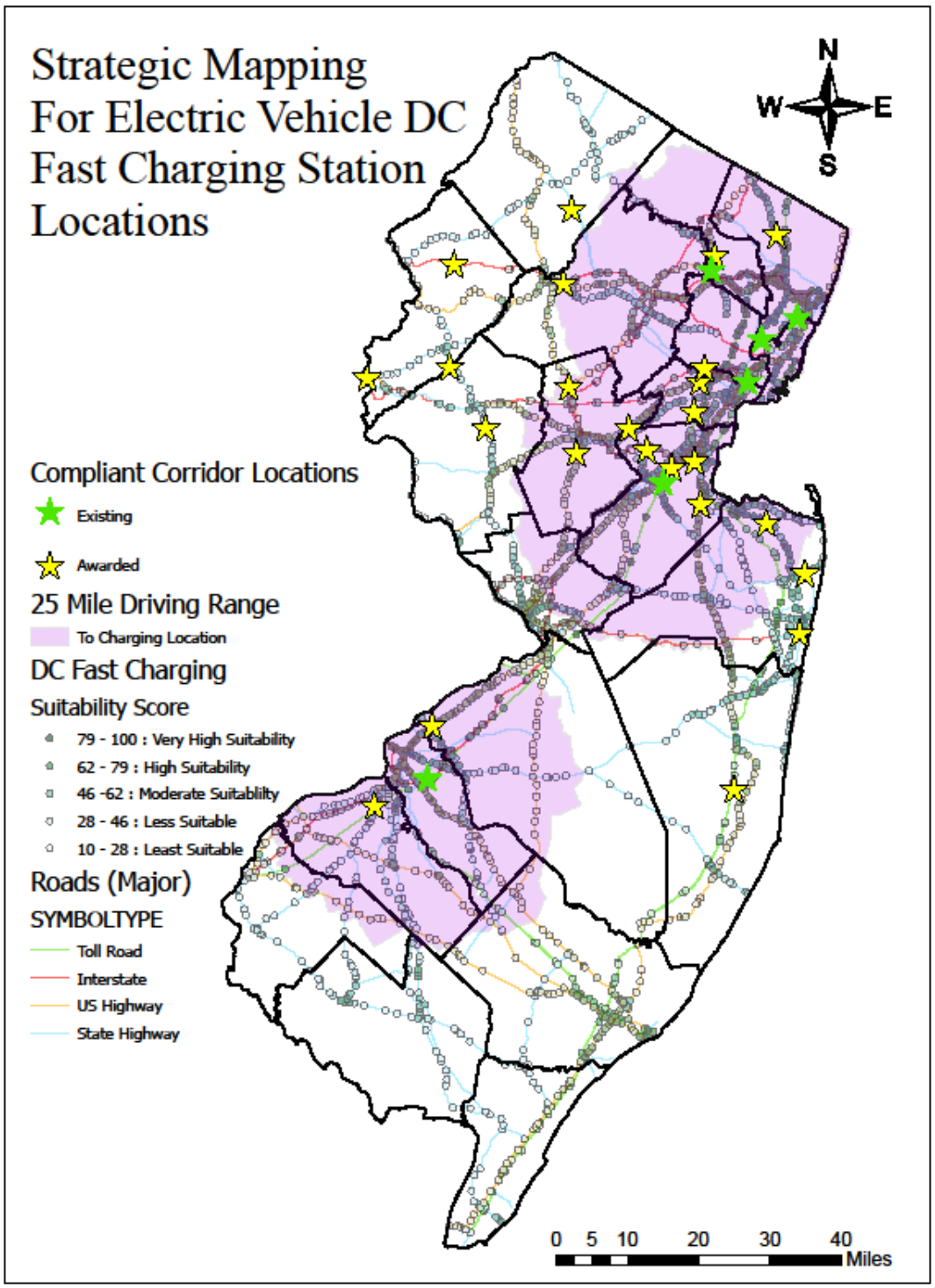
The NJ DEP mapped seven locations in Burlington County with "Very High" suitability scores for DCFC based on their methodology. Four of these locations roughly form a corridor between County Route (CR) 537 in Maple Shade Township and Fellowship Road in Mount Laurel Township along NJ 73. The other three locations are at the I-295 and NJ 73 interchanges (Exits 36A and 36B on I-295).

Camden County

There are 21 locations that score as Very High suitability for DCFC in the NJ DEP Strategic Location map. The locations are along three corridors with two locations off of I-76 in the general location of the intersection of I-76 and I-676. The other three corridors are:

- I-295 between Exit 28 in Barrington Borough to Exit 32 in Cherry Hill Township;
- US 30 between the vicinity of the interchange with I-676 to West Park Drive in Camden City; and
- US 130 between the vicinity of the I-76 interchange in Camden City to Cove Road in Pennsauken Township.

Figure 4: NJ DEP Strategic Mapping for EV DCFC Station Locations in New Jersey



Source: NJ DEP

Figure 5: Strategic Mapping for EV DCFC Station Locations in Burlington County

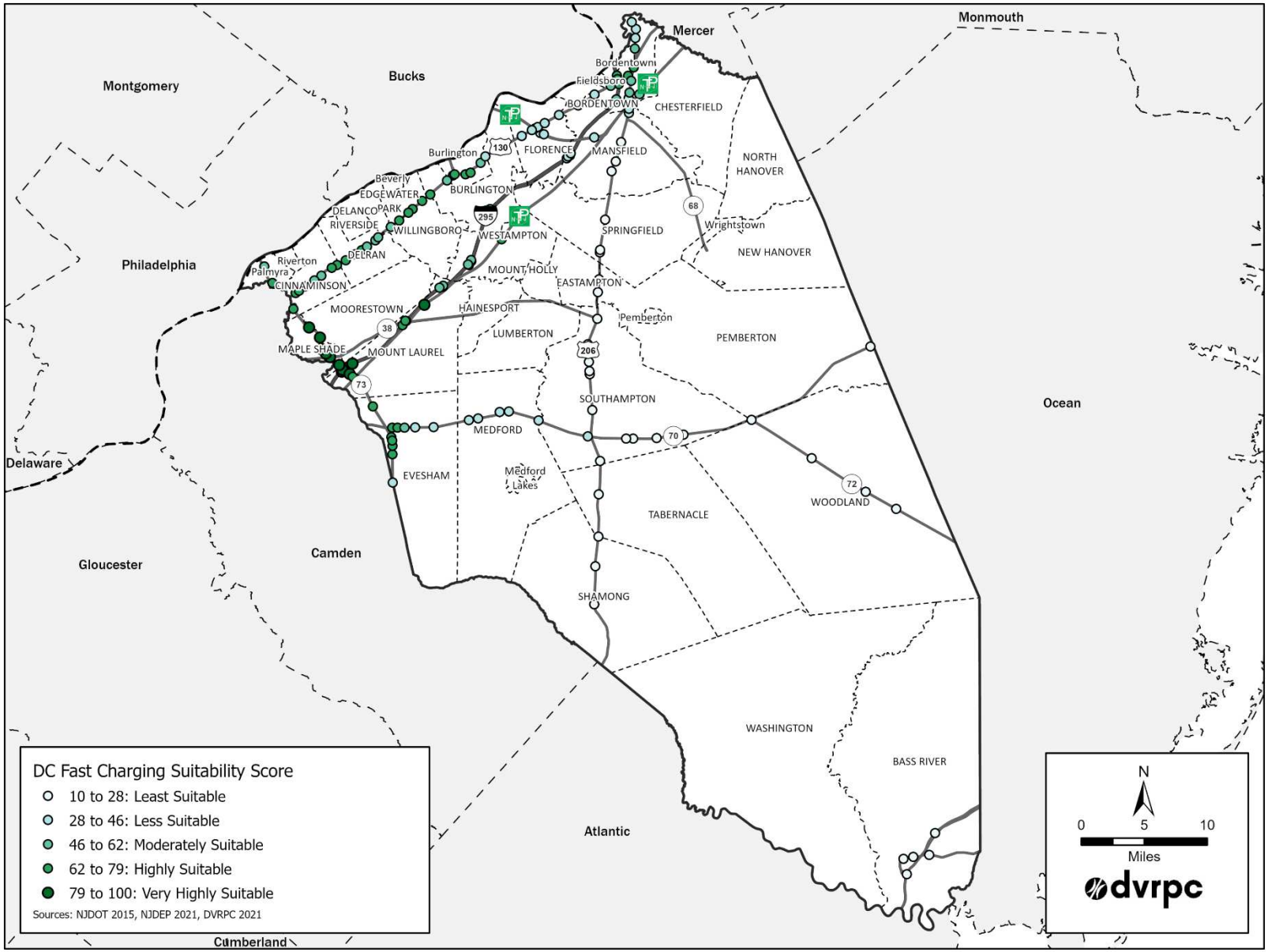
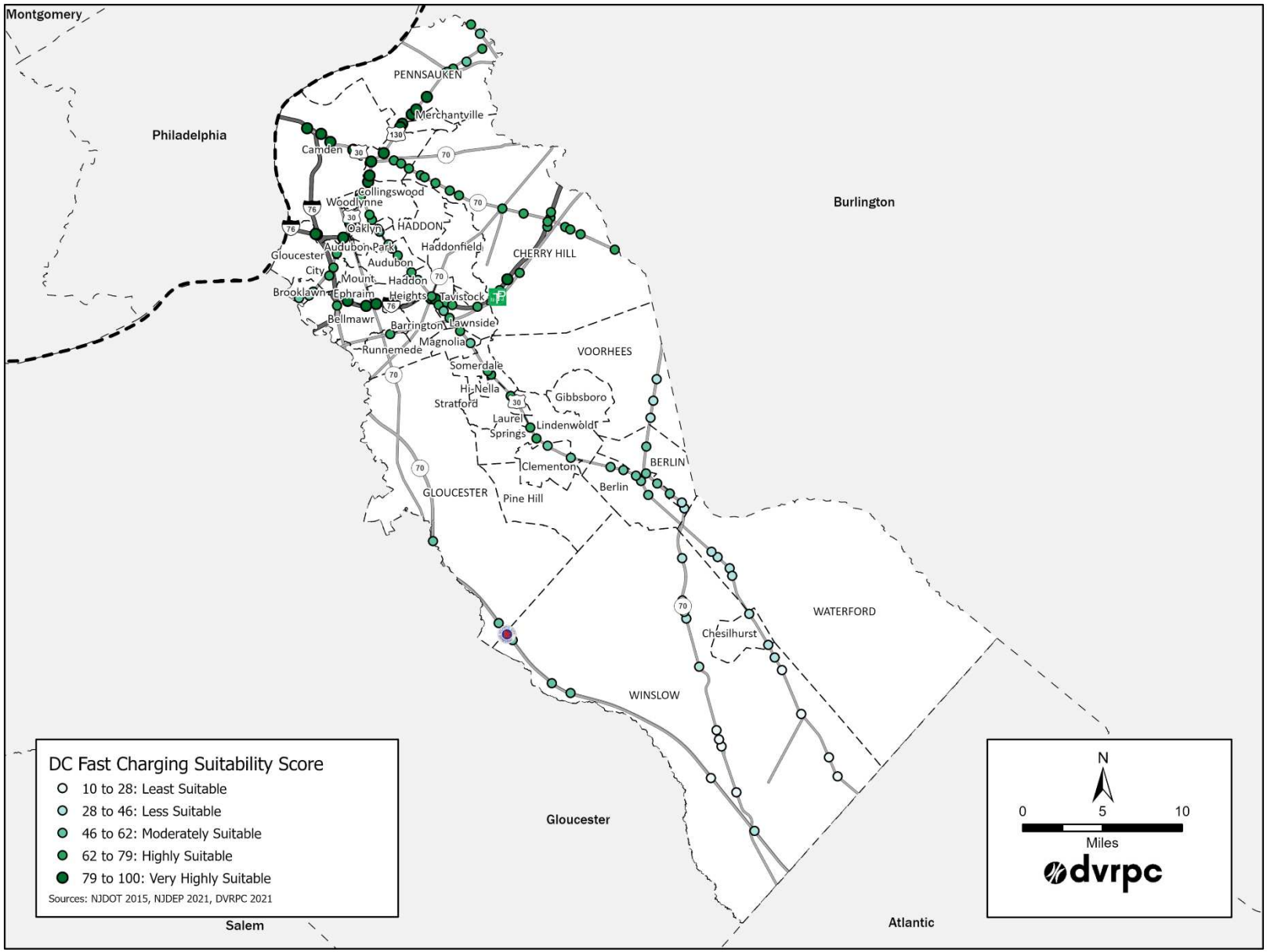


Figure 6: Strategic Mapping for EV DCFC Station Locations in Camden County



CHAPTER 3:

Analysis

The DVRPC/UC Davis Electric Vehicle Planning Toolkit produces, at the CBG level, predictions of the spatial distribution of PEVs and the associated workplace charging demand of those vehicles. The calculations are based on the 2021 distribution of PEVs from the New Jersey Motor Vehicle Commission via the NJ DEP; demographic data from the 2015–2019 American Community Survey five-year summaries; commuting data from Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES), version 7; and commuting distances between block groups from DVRPC's Travel Demand Model. The projections of workplace charging events reflect the penetration scenario of when 330,000 passenger vehicles (about 10 percent) are PEVs.

The purpose of this effort was to perform a screening-level analysis on county-owned facilities and parks to determine suitability of those locations for hosting EVSE. DVRPC evaluated four criteria to determine suitability:

1. Facilities that are more than one mile from the closest public EVSE. This criterion was chosen to select locations that were beyond comfortable walking distance from existing EVSE. The National Renewable Energy Lab (NREL) also assumes in its modeling that non-residential Level 2 charging stations are generally used for charging within walking distance of a destination due to the longer charge time of these stations.
2. Proximity (within 0.5 miles) of parks with CBGs that have greater than 20 registered PEVs per square mile. This number is greater than approximately 80 percent of CBGs regarding the number of registered PEVs per square mile as calculated from the DVRPC/UC Davis Electric Vehicle Planning Toolkit. This criterion was selected to identify areas where there is an existing density of PEVs.
3. Proximity (within 0.5 miles) of parks with CBGs that have greater than 40 projected workplace charging events per day. This number is greater than approximately 75 percent of CBGs with regard to workplace charging events per day as calculated from the DVRPC/UC Davis Electric Vehicle Planning Toolkit. This criterion was selected to identify areas where there is projected demand for charging near where PEV owners are working. Research from the NREL suggests that workplace charging demand is roughly twice the demand for public EVSE.
4. Proximity (within 0.5 miles) of county facilities with multifamily residential areas. Multifamily units often do not have garages or driveways where the occupants can plug in and charge PEVs. This criterion was selected to identify where EVSE may serve housing developments that face challenges to charging at home.

After scoring each of the county facilities, the top scoring sites in each county were selected for additional analysis. The cut-off score is a two and above for Burlington County and three and above for Camden County. The top scoring locations were reviewed using aerial photos for obvious factors that may impact suitability for hosting EVSE. Based on the conditions evident from inspection of the aerials, such as lack of pedestrian access, parking spaces, or amenities for visitors using the chargers, some of the top facilities initially analyzed were not recommended to host EVSE. As an example, there are a number of libraries that scored well in Camden County but were not included on this list because review of the aerial photos indicate that these facilities do not have parking. In other instances, county facilities that are located near other county facilities were combined into one site analysis, such as the Burlington County facilities in Mount Laurel Township and Walworth Park and Evans Pond in Cherry Hill and Haddon Townships in Camden County.

The analysis results for the recommended locations are included in Table 5, which includes the 13 facilities in Burlington County; and Table 6, which includes the 11 facilities in Camden County. These facilities scored well in the GIS analysis and did not show obvious deficiencies in the remote site review. Table 7 includes the proximity analysis for sites in Camden County that currently have EVSE that are being renewed. Each recommended facility is discussed in the following section of this report. Sites that were reviewed but not recommended are also discussed in the following section.

A full list of county facilities that were analyzed and their scoring is available in Appendix A.

Burlington County

Burlington County is the largest county in New Jersey by land area, with a population density of 578 people per square mile. The county hosts more acres devoted to agriculture than any other county in the state and hosts Joint Base McGuire-Dix-Lakehurst, as well as the Wharton State Forest. Urban and suburban development is located in the southwestern portion of the county. The New Jersey Turnpike, I-295, US 130, and US 206 serve the more populous portions of the county.

PEV registrations in the state are mostly located in the urbanized municipalities along the Delaware River and border with Camden County. Due to the large areas of agriculture, state forests, and military land uses in the county, most of the EVSE are logically concentrated in the urban and suburban municipalities, although this does leave gaps in charging infrastructure for the public traveling through the county to the popular tourist destinations on the New Jersey coast.

Figures 7 through 9 are maps of Burlington County showing the relationships of the analyzed county facilities with each of the analysis criteria: existing EVSE, multifamily residential areas, PEV registrations, and workplace charging events. The green star-shaped selected facility symbol refers to county facilities that have been selected as appropriate sites for future EVSE installation.

Figure 7: Burlington County Facilities, Existing EVSE, and Multifamily Residential Areas

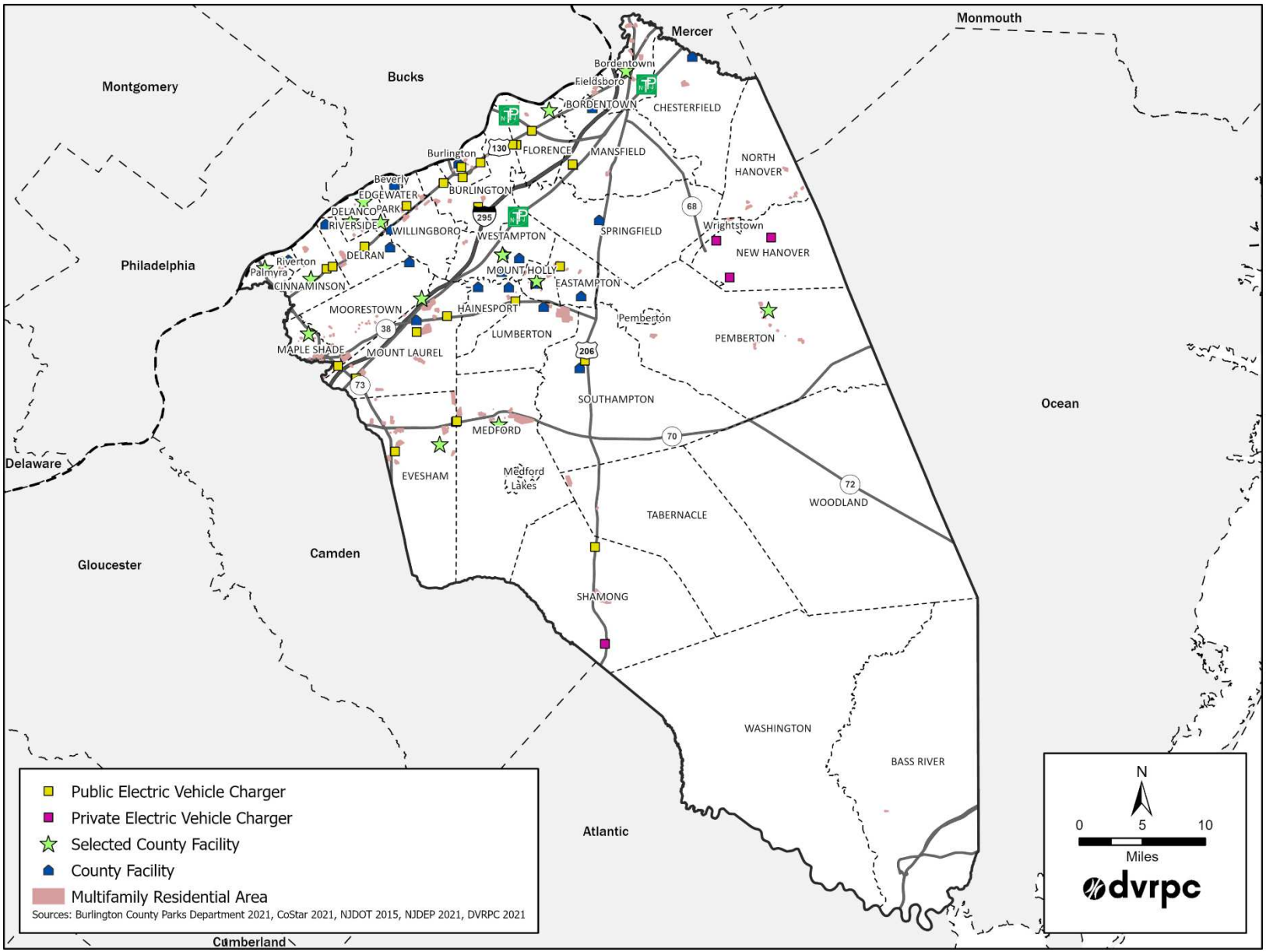


Figure 8: Burlington County Current EV Registrations per Square Mile and Selected Facilities

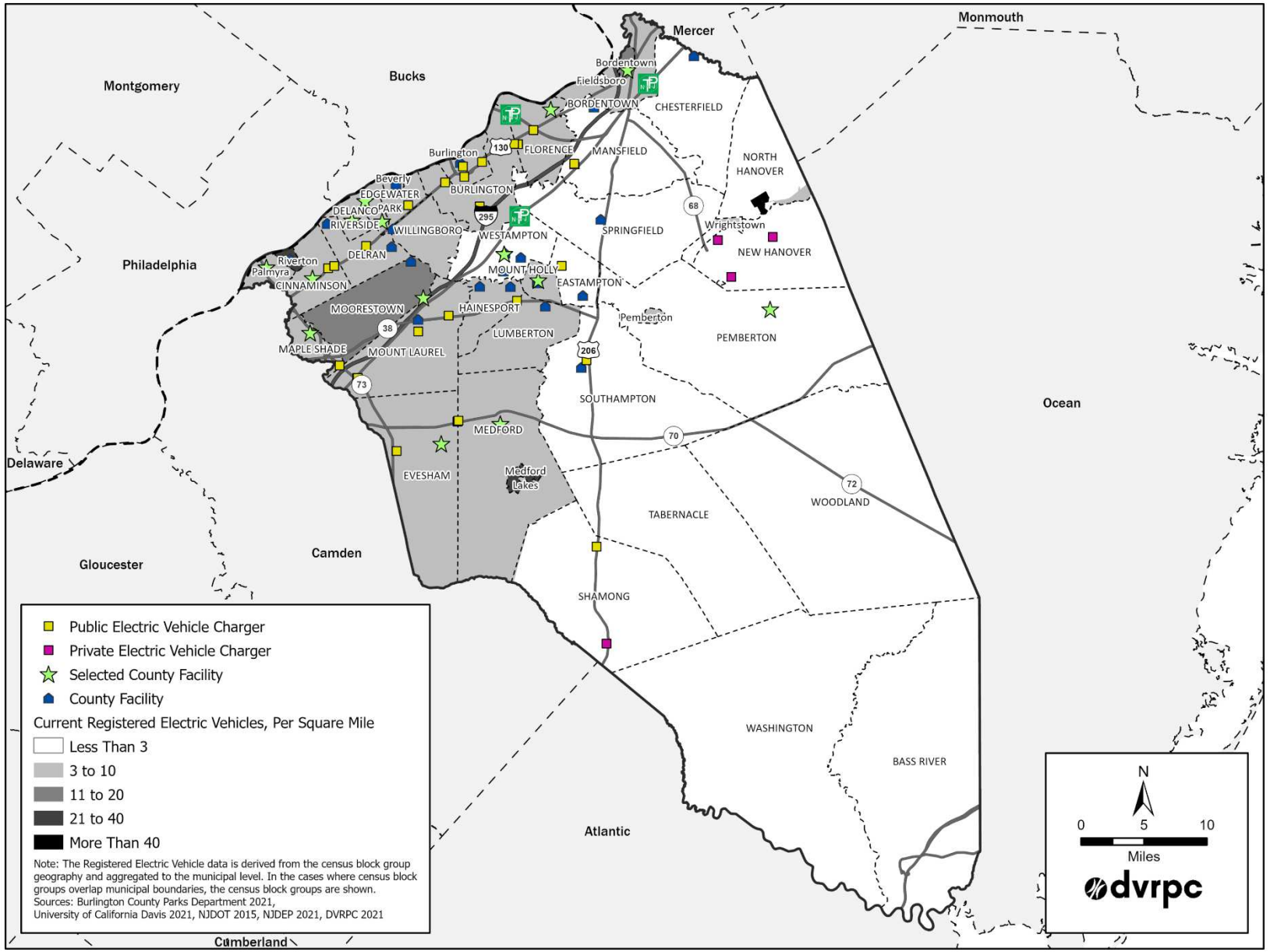


Figure 9: Burlington County Current Projected Workplace Charging Events and Selected Facilities

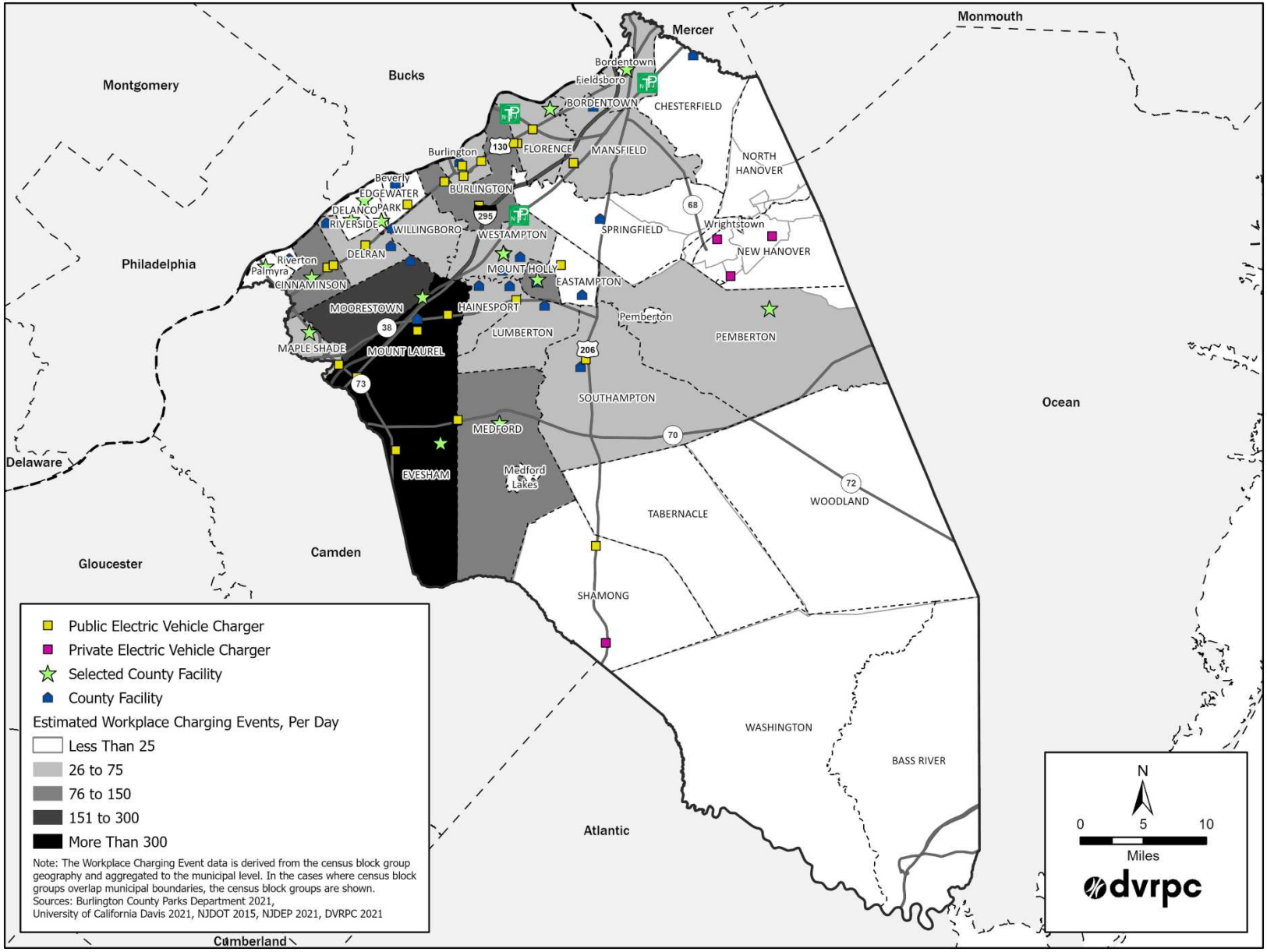


Table 5: Burlington County Facility Analysis

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs per square mile (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Maple Shade Public Library	1	1	1	1	**4**
Bordentown Library Branch	1	1	0	1	**3**
Burlington County Community Agricultural Center	1	0	1	1[a]	**3**
Historic County Prison Museum and County Administration Complex	1	1	0	1	**3**
Cinnaminson Branch Library	1	0	0	1	**2**
Delanco Public Library	1	0	0	1	**2**
Evesham Public Library	1	0	0	1[a]	**2**
Florence Township Library	1	0	0	1	**2**
Library Headquarters and Amphitheater	1	0	1	0	**2**
Pemberton Township Library Branch	1	0	0	1	**2**
Pennington Park	1	0	0	1	**2**
Pinelands Library Branch	1	0	0	1	**2**
Riverside Public Library	1	0	0	1	**2**

Source: DVRPC, 2022
[a] The multifamily residential area is within 0.5 miles of the location but is not accessible to pedestrians.

Sites Recommended for EV Charging Stations

Bordentown Library Branch

The Bordentown Library Branch is located within downtown Bordentown and connected by sidewalks to two multifamily residential areas that lack private driveways or garages, offering a potential vehicle charging opportunity for residents. The library is also within 0.5 miles of US 130 and could offer those travelers a charging opportunity while being able to walk to Bordentown's amenities during charging. Finally, the library is also located within reasonable walking distance of Bordentown's downtown area along Crosswicks Street and Farnsworth Avenue, which also includes several schools. This site scored points for being more than one mile from an existing charging station, within 0.5 miles of a CBG with high existing PEV ownership, and within 0.5 miles of a multifamily residential area.

Burlington County Community Agricultural Center

Burlington County Community Agricultural Center is a 68-acre park located in Moorestown and Mount Laurel townships. The Agricultural Center functions as an educational facility and hosts a working farm, weekly farmers' market in season, educational events, and facility rentals. A commercial kitchen, community gardens, and demonstration gardens also bring traffic to the Agricultural Center.

This site ranks well for adding public EVSE because it is farther than one mile from an existing public EVSE and within 0.5 miles of a CBG with a higher density of workplace charging demand. The site is within 0.5 miles of a Comcast office facility and 0.75 miles of Lockheed Martin, although a walking path does not extend to the Lockheed Martin facility. GIS analysis of the facility indicated that the site is within 0.5 miles of a multifamily residential area, but inspection of aerial photographs indicates that this development has off-street parking and may not need the public EVSE.

This location could be used by visitors to the Agricultural Center, but the seasonal nature of some of the activities of the site could be a detriment to the use of this equipment. The site is approximately one mile from Exit 43 of I-295, a high-suitability location for DCFC in the NJ DEP analysis. The site's proximity to exits of I-295, the Centerton Square Shopping Center, and weekend activities may make the site a good candidate for public EVSE or even DCFC.

Cinnaminson Branch Library

Cinnaminson Branch Library is located in Cinnaminson Township near the intersection of Riverton Road and US 130. The library shares a parking lot with the Cinnaminson Township Police Department building and the Cinnaminson Township Building, which includes the Cinnaminson Court Clerk. The parking lot appears to be ample to adequate for the existing uses, and a charger in this parking lot could serve users of all three buildings. The library is 0.2 miles away from a multifamily residential area, which is connected via sidewalk. The library is also across the street from a large shopping center whose visitors also may benefit from charging at the library while shopping. The library scored points for being farther than one mile from an existing charger and for being within 0.5 miles of a multifamily residential area. EVSE is recommended at this site to serve visitors and staff of the municipal buildings, as well as the county's library at this site. EVSE could also serve future municipal fleet charging needs.

Delanco Public Library

Delanco Public Library is located in Delanco Township behind M. Joan Pearson Elementary School and is the library for the community and the elementary school. The library, the school, and the Board of Education (BOE) offices share a large parking area on the site that also gives access to a playing field, playgrounds, and sport court. EVSE is recommended at this site because it could serve staff and employees of the school, library, and the BOE, as well as visitors to all three sites and nearby residents of multifamily residential areas

who do not have access to a private charger. Delanco Public Library scored points for being located more than one mile from an existing charger and within 0.5 miles of a multifamily residential area.

Evesham Public Library

The Evesham Public Library located in Evesham Township shares a building with the Evesham Township Building Department and Evesham Township Police Department. The township building has a large common parking lot with the Diamonds at Arrowhead Park and the dog park. The township's Memorial Sports Complex is located directly across New Road and is connected to the library with a walking path. The sports complex has additional ball fields, soccer fields, basketball courts, tennis courts, a playground, outdoor exercise equipment, community gardens, and an indoor recreation center. The Evesham Public Library is also connected to several nearby amenities within a short walk on Tuckerton Road via sidewalk.

Evesham Library scored points for being located farther than one mile from an existing EVSE and within 0.5 miles of a multifamily residential area. Although aerial photography analysis indicates that the library may not be accessible to the large nearby multifamily residential area to pedestrians because of a missing sidewalk link, EVSE installation is still recommended at this site given the many potential users of the nearby recreational opportunities, businesses, and the Evesham Township Building.

Florence Township Library

The Florence Township Library is located within Florence Township off of Hornberger Avenue. The library is directly next door to Roebling Arms, an assisted living facility, and within a short walk of Roebling Elementary School, Riverbank Charter School of Excellence, Nykita Field, and the Roebling Museum. The library is also within a short walk of the Roebling Park and the Roebling River Line Light Rail Station. The Florence Township Library is also only 0.5 miles from US 130, making potential future EVSE at this site useful to travelers on US 130. Florence Township Library scored points for being more than one mile from an existing EVSE and within 0.5 miles of a multifamily residential area. Aerial photography analysis indicates that the nearby multifamily residential area does have sidewalk access to the library and does not have private off-street parking that would enable EV charging. EVSE installation is recommended at this site.

Historic County Prison Museum and County Administration Complex

The Burlington County Historic Prison Museum and County Administrative complex is in Mount Holly Township. The complex scored points for being farther than one mile from an existing public EVSE and being within 0.5 miles of a multifamily residential area and CBG with a higher density of PEV ownership.

The complex benefits from a large parking area(s) that could accommodate EVSE for visitors to the museum, county courts, and administrative offices, as well as employees of these facilities. The complex could also serve as a charging locus for future county-owned EVs. Lastly, the facility is within easy walking distance of the shops and amenities on High Street in Mount Holly. This location is a top location recommended for county-hosted, public EVSE.

Library Headquarters and Amphitheater

The Burlington County Library Headquarters and Amphitheater is part of a county complex that includes the Burlington County Animal Shelter, Medical Examiner, Special Services, Emergency Services, Emergency Services Training Center, and Institute of Technology. This site scored points for being farther than one mile from an existing public EVSE and being within 0.5 miles of a CBG with a higher density of PEV ownership.

Public EVSE at this complex could serve visitors to the library, amphitheater, and ballfields, as well as employees of the county offices. This location could also serve as an additional locus for charging for future county-owned EVs.

Maple Shade Public Library

The Maple Shade Public Library is located in Maple Shade Township. This site scored all four potential points in analysis for being more than one mile from an existing charging station, within 0.5 miles of a CBG with high existing PEV ownership, within 0.5 miles of a CBG with high workplace demand, and within 0.5 miles of a multifamily residential area.

The Maple Shade Public Library is part of the Maple Shade Township Municipal Complex, which includes the police station and municipal offices. This site also has existing parking spaces directly adjacent to the sides of the building, creating a potential for EVSE to be more easily (and therefore perhaps inexpensively) wired into existing circuitry and possibly even mounted directly onto the building's façade. The site is connected to the surrounding neighborhood via sidewalks, including a multifamily residential area that does not have garages or private driveways. EVSE at this site could also serve those who are willing to walk from the Maple Shade commercial area along Main Street and Forklanding Road, the center of which is about 0.7 miles away. This location is a top location recommended for county-hosted, public EVSE.

Pemberton Township Library Branch

Pemberton Township Library Branch is located in Pemberton Township along Broadway Street. The library has its own paved parking lot and is located directly next to Pine Grove Plaza, which has a grocery store, gym, and other shops and services. Several churches, restaurants, Deborah Hospital, a large apartment complex, and other businesses are located within a short walk of the library and can be accessed via a sidewalk. The nearby multifamily residential area does not appear to have private driveways or garages that would enable residents to choose to charge their EVs. Pemberton Township Library Branch scored points for being farther than one mile away from existing EVSE and within 0.5 miles of a multifamily residential area. This location would provide EVSE in an area of the county that presently lacks publicly accessible EVSE.

Pennington Park

Pennington Park encompasses 140 acres in Delanco Township along Rancocas Creek. Work is currently underway to connect Pennington Park to Amico Island Park via a regional trail. A longer term plan will continue the regional trail to Willingboro Park, creating a trail connection from Pennington Park to Willingboro Park. The park hosts a community garden, walking trail, soccer fields, and a baseball field. Living Springs Senior Residence and Abundant Life Fellowship Church are connected to the park via a short trail. The nearby multifamily residential area does appear to have a trail connection to the park, but also appears to have private driveways and garages. This site scored points for being farther than one mile from an existing public EVSE and being within 0.5 miles of a multifamily residential area. Although this site could serve visitors to the park, the size of the lot and lack of pedestrian connections to additional amenities make this a lower-priority site for EVSE investment.

Pinelands Library Branch

Pinelands Library Branch is located within the Medford Town Hall in Medford Township off Union Street. The library is within a short walk of Medford Village Park and the businesses along Main Street in Medford. Pinelands Library Branch is less than a mile away from NJ 70, offering charging capability to those travelers and easy pedestrian access to amenities for visitors to use while charging their vehicles. Pinelands Library Branch scored points for being greater than one mile away from an existing charging station and within 0.5

miles of a multifamily residential area. EVSE is recommended at this site given the ample parking and convenient location to the attractions of Medford.

Riverside Public Library

Riverside Public Library is located in Riverside Township. The library is located in the rear of a building that faces the Riverside River Line Light Rail Station. The library shares a public parking area with nearby businesses and buildings along Scott Street, all of which are within a short walk. The library is located greater than one mile away from an existing charging station and is within 0.5 miles of a multifamily residential area. The area around the library is dense and walkable. Riverside Public Library is adjacent to two redevelopment areas where a townhouse community called the Mills at Riverside is under construction (190 units) and 64 luxury apartments are planned for the Watchcase Tower.

This location would be suitable for installing an EV charger but requires additional analysis. Ownership of the parking lot that the library shares and additional analysis and engagement with Riverside Township are advised to determine if another nearby site, including the Park and Ride lot for the Riverside River Line Light Rail Station, may be a more suitable location.

In-Progress Charging Station

Burlington County Bridge Commission Office

As of February 2022, Burlington County Bridge Commission is installing a charging station at its office located at 1300 NJ 73 in Palmyra. The charging station will be funded by the It Pay$ to Plug In Program and will be hosted in the commission's parking lot by the Tacony-Palmyra Bridge toll plaza. More information on the It Pay$ to Plug In Program is available in Chapter 6.

Sites That Were Assessed but Are Not Currently Recommended for Charging Locations

Beverly Public Library

Beverly Public Library is located in the City of Beverly within the central commercial area. The library has its own small parking area and is a three-block walk to the Beverly/Edgewater Park River Line Light Rail Station and the Beverly Rail Station bus stop. The library is also within 0.5 miles of a multifamily residential area and within 0.5 miles of workplace charging demand. Given the limited number of spaces in the Beverly Public Library parking lot, as well as the existing EVSE in Edgewater Park, EVSE is not recommended at this location.

Riverton Public Library

The Riverton Public Library is located within a short walk of Riverton Borough Hall and Riverton Public School in Riverton Borough. Aerial photograph analysis indicates that although the library has bicycle parking along Main Street, it does not appear to have a parking lot of its own where an EVSE could be installed. EVSE installation is therefore not recommended at the Riverton Public Library.

Aerial photograph analysis also shows that Riverton Borough Hall appears to only have a very small parking area that is shared with the fire and police center, making it likely incompatible with hosting public EVSE. Riverton Public School also does not seem to have its own parking lot. Although Riverton Borough would be well served to have a public EVSE for visitors, residents of the few multifamily residential areas, and residents who rely on on-street parking, EVSE will likely need to be a public-private partnership hosted by a private business and its private parking area - unless it can be installed for on-street parking or in a borough-owned property.

Willingboro Lakes Park

Willingboro Lakes Park (formerly Olympia Lakes Park) is a 105-acre park located in Willingboro Township. The park is across Beverly Road from a large multi-unit residential development that only has on-street parking. This site scored points for being within 0.5 miles of a multifamily residential area, although pedestrian access from this development seems limited from inspection of the aerial photos. The park is greater than one mile away from an existing charging station and close to the Beverly Road and US 130 intersection. This location is not recommended due to limited access to amenities and limited pedestrian access.

Camden County

Camden County covers 227 square miles and is New Jersey's ninth most populous county as of the 2020 U.S. Census, with 523,485 residents and a population density of 2,364.9 people per square mile. With its proximity to Philadelphia across the Delaware River, Camden County has been a major growth engine in the Delaware Valley region since the end of World War II. The landscape of Camden County has changed dramatically over the last century, from a county of concentrated development in the western half coupled with low density and rural areas in the east, to a county with few remaining rural areas as suburban land uses replace agricultural land. The New Jersey Turnpike, I-76, I-676, I-295, US 30, NJ 70, and the Atlantic City (AC) Expressway are all major transportation corridors that pass through the county.

PEV registrations within Camden County are primarily concentrated within Collingswood, Haddonfield, Voorhees, and Cherry Hill, with low rates of current EV ownership in Camden City and in the less populated eastern end of the county.

Figures 10 through 12 are maps of Camden County showing the relationships of the analyzed county facilities with each of the analysis criteria: existing EVSE, multifamily residential areas, PEV registrations, and workplace charging events. The green star-shaped selected facility symbol in Figures 10 through 12 refers to county facilities that have been selected as appropriate sites for future EVSE installation.

Figure 10: Camden County Facilities, Existing EVSE, and Multifamily Residential Areas

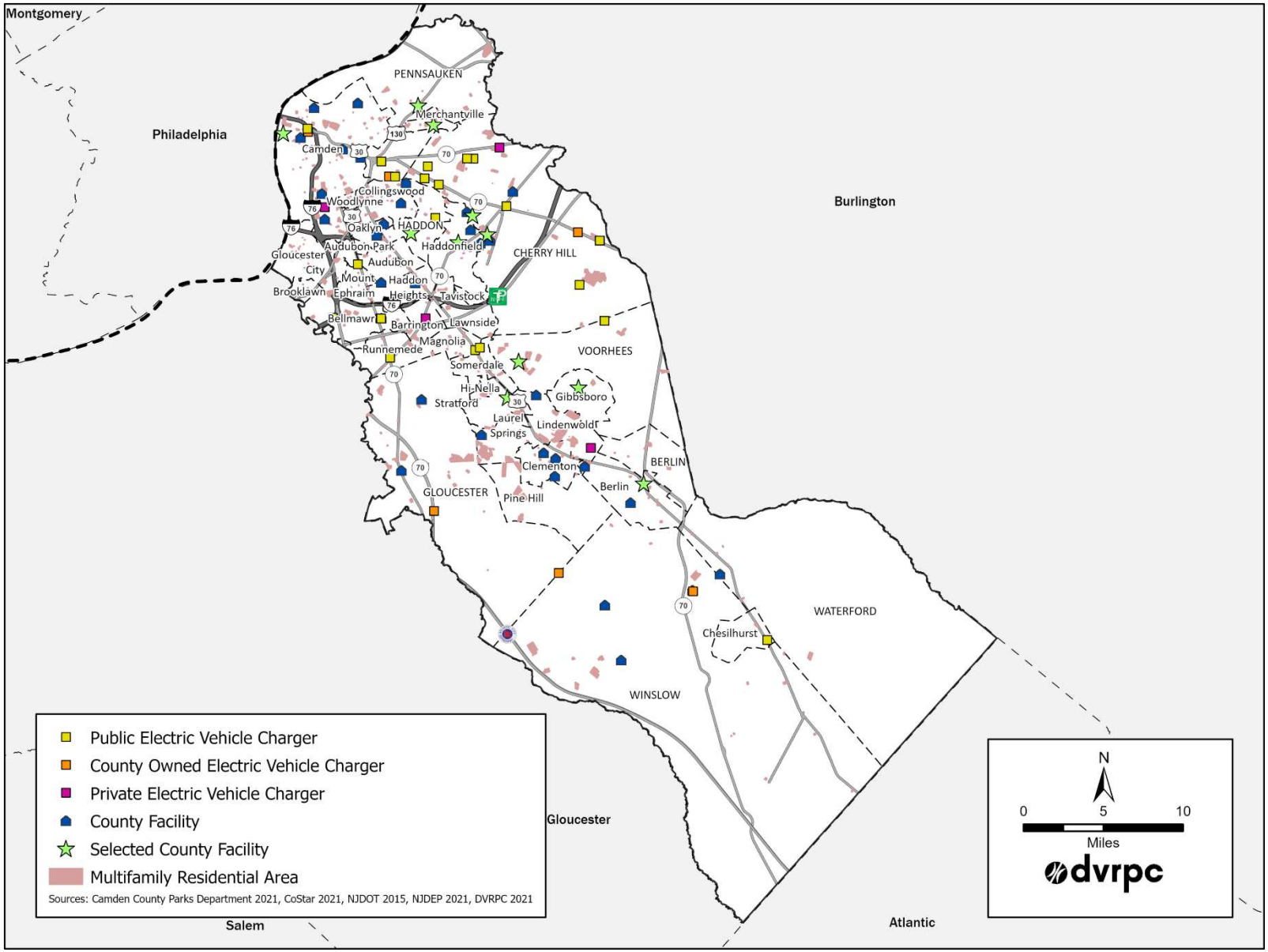


Figure 11: Camden County Current EV Registrations per Square Mile and Selected Facilities

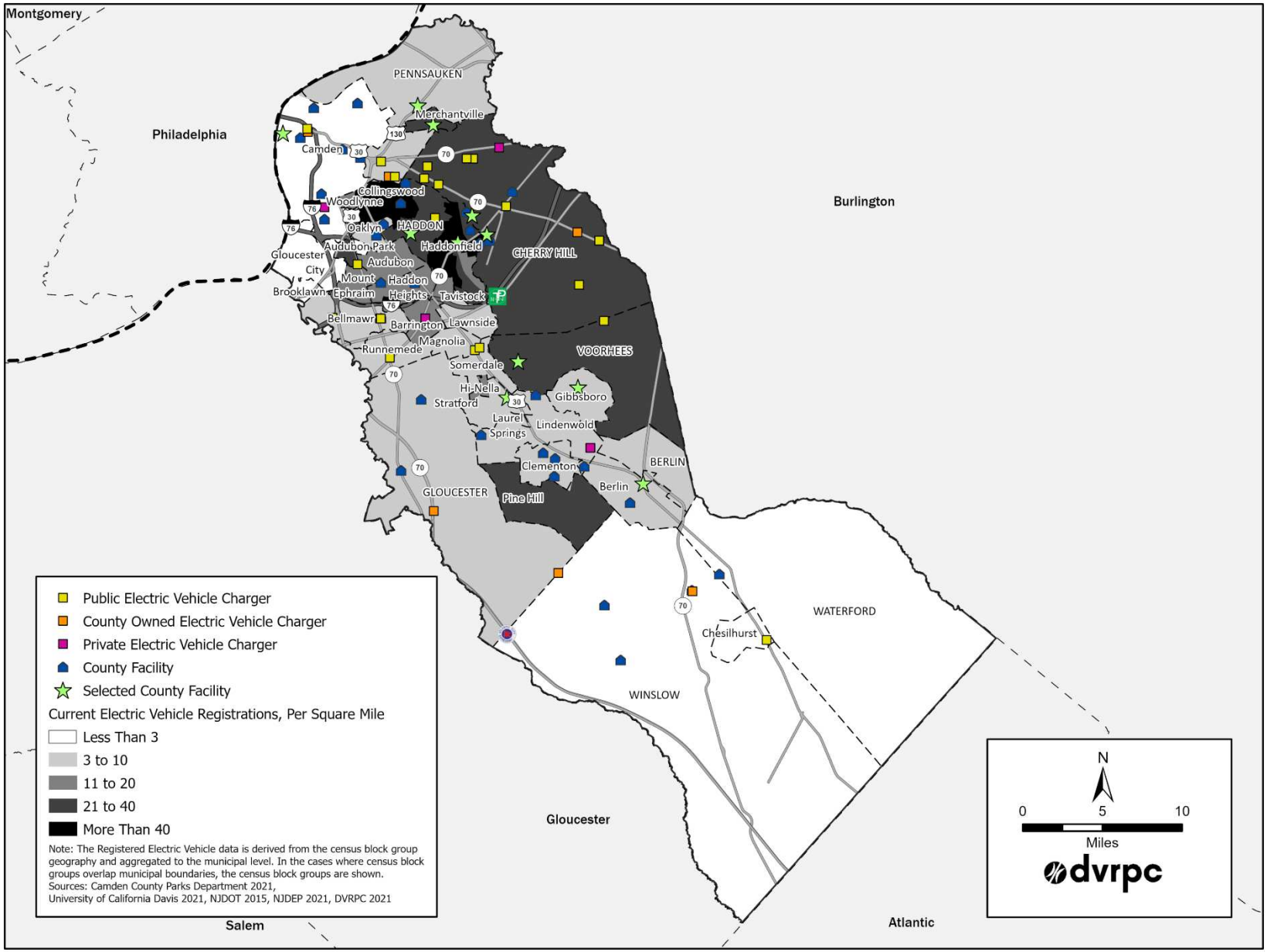


Figure 12: Camden County Current Projected Workplace Charging Events and Selected Facilities

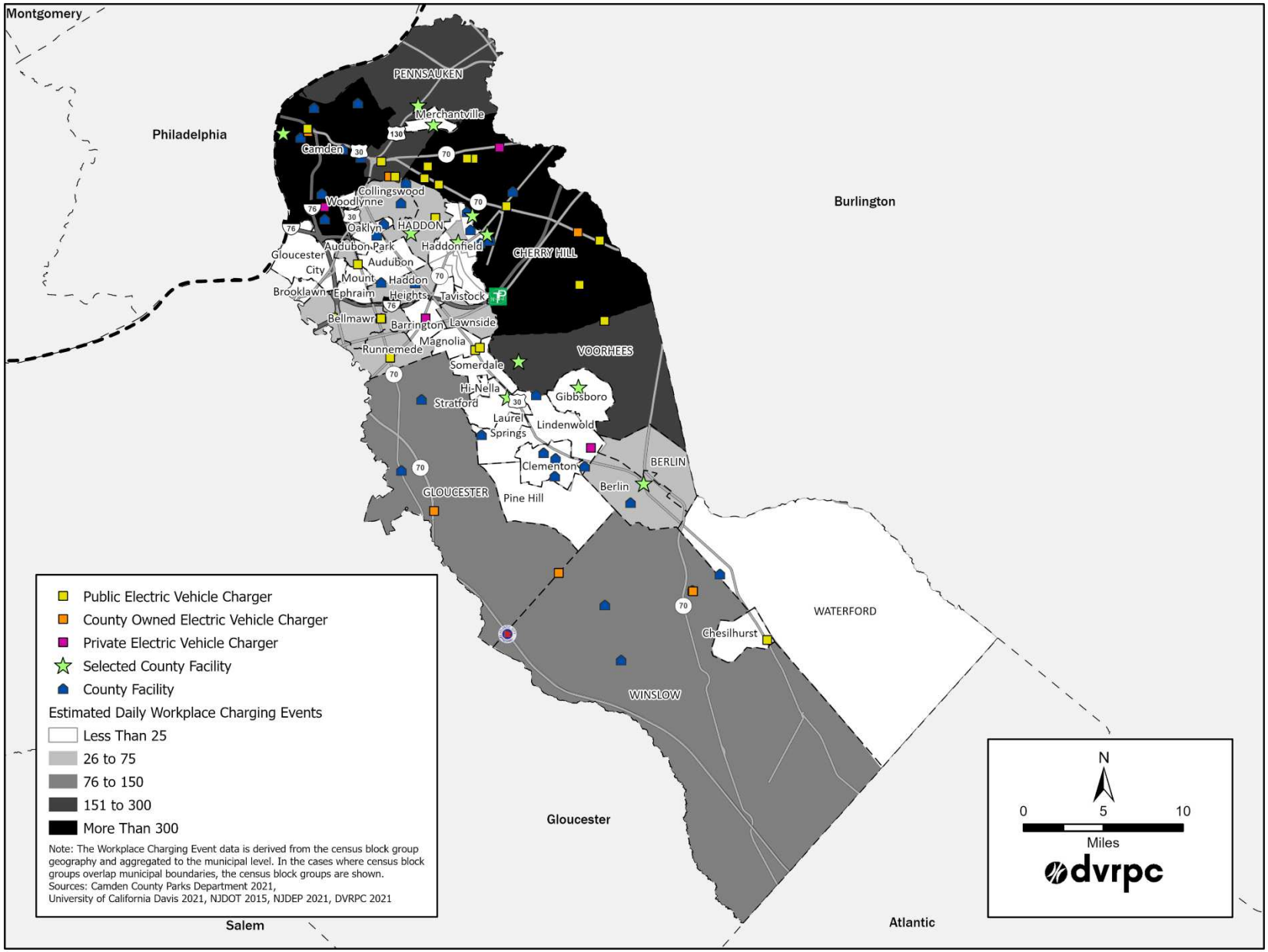


Table 6: Camden County Facility Analysis

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs per square mile (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Gibbsboro Public Library	1	1	1	1	4
Voorhees Branch Library	1	1	1	1	4
Haddonfield Public Library	1	0	1	1	3
Haddon Township Branch Library	1	0	1	1	3
Maria Barnaby Greenwald Memorial Park	0	1	1	1	3
Marie Fleche Memorial Library	1	1	0	1	3
Merchantville Public Library	1	0	1	1	3
Pennsauken Free Public Library	1	0	1	1	3
Stratford Public Library	1	1	0	1	3
Wallworth Park and Evans Pond Park Complex	1	1	0	1	3
Wiggins Park	0	1	1	1	3

Source: DVRPC, 2022

Table 7: County-Owned Existing Charging Locations

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs per square mile (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Camden County College–Cherry Hill	1	1	1	1	4
Bellmawr Branch Library	1[a]	1	0	1	3
Camden County College–Camden	0	0	1	1	3
Cooper River Park Boathouse	0	1	1	1[b]	3
South County Regional Branch	1	0	0	1[b]	2
Camden County College–Blackwood	1	0	0	0	1
Camden County Vocational Technical School	1	0	0	0	1

Source: DVRPC, 2022
[a] GIS analysis indicated that the site was within one mile of an existing charger but that the charger was the existing county-owned EVSE at the library.
[b] The multifamily residential area is within 0.5 miles of the location but is not accessible to pedestrians.

Sites Recommended for New EV Charging Stations

Haddonfield Public Library

The Haddonfield Public Library is located two blocks away from the NJ 41 commercial corridor of Haddonfield. The library is connected via sidewalk to many nearby destinations and amenities, including the Haddonfield Port Authority Transit Corporation (PATCO) train station, which is also two blocks away. There are at least two multifamily residential areas within a 0.3-mile walk that do not appear to have private driveways or garages for charging an EV. Haddonfield Public Library scored points for being greater than one mile away from an existing charger and for being located within 0.5 miles of an area with an existing high ownership of PEVs and within 0.5 miles of a multifamily residential area.

Haddon Township Branch Library (William G. Rohrer Memorial Library)

The Haddon Township Branch Library is located next to a large apartment complex and across MacArthur Boulevard from the Westmont Plaza, which boasts a Target and multiple businesses. The library has sidewalk connections to these points of interest, as well as the Haddon Township High School and Middle School complex. The Haddon Township Branch Library scored points for being greater than one mile away from an existing charger, is located within 0.5 miles of an area with an existing high ownership of PEVs, and within 0.5 miles of a multifamily residential area.

Gibbsboro Public Library

Gibbsboro Public Library shares a building with the borough administration and is located within Gibbsboro Borough. The public library has a shared parking lot with Gibbsboro Elementary School, making a charging station at this site potentially useful to library users and staff, as well as school staff and visitors. This site scored points for all the analysis criteria, and there is no publicly available EVSE in Gibbsboro Borough.

Maria Barnaby Greenwald Memorial Park and Pennypacker Park

Maria Barnaby Greenwald Memorial Park is located in Cherry Hill Township. The Camden County Parks Department building and refueling station are located in this park adjacent to the community pool. The park's softball field and parking lot are separated from the Parks Department Building and pool by approximately 0.5 miles but connected by walking trails. The Parks Department complex may serve as a good location for EVSE and could serve future county EV fleet vehicles and also be open to the public using the park and swim club. The site is located within 0.5 miles of an area with an existing high ownership of PEVs, within 0.5 miles of an area with high workplace charging demand, and within 0.5 miles of a multifamily residential area. It is worth noting that the NJ 70 corridor in Cherry Hill is well served with EVSE, and this site is within one mile of existing EVSE.

Pennypacker Park is a natural area on the south side of the Cooper River from Maria Barnaby Greenwald Memorial Park in Haddonfield and has no separate parking area.

Marie Fleche Memorial Library

Marie Fleche Memorial Library is located directly off CR 561 in Berlin Borough near its intersection with US 30. The library is connected via sidewalk to nearby businesses, including two gas stations, a bank, and a post office. The library appears to share an ample parking lot with the Berlin Borough Municipal Complex, which includes the police department, municipal court, and other municipal services, creating an opportunity for visitors and employees of these buildings to also utilize public EVSE. Marie Fleche Memorial Library scored points for being greater than one mile away from an existing charger, within 0.5 miles of an area with high workplace charging demand, and within 0.5 miles of a multifamily residential area.

Merchantville Public Library

The Merchantville Public Library is in downtown Merchantville adjacent to the Merchantville School. The library is in a dense, walkable area and has sidewalk connections to nearby businesses and residential areas. The library has a parking lot that appears to be shared with the school and is adjacent to First Presbyterian Church and CVS Pharmacy, creating opportunity for shared parking for visitors to nearby amenities who need to take advantage of an EVSE. Merchantville Public Library received points for being greater than one mile away from an existing charger, located within 0.5 miles of an area with an existing high ownership of PEVs, and within 0.5 miles of a multifamily residential area.

Pennsauken Free Public Library

The Pennsauken Free Public Library is located directly off US 130. The library has sidewalk connections to the adjacent Pennsauken Township Building and the nearby amenities of Pennsauken. The library also hosts a sizeable vegetable garden, which would offer seasonal garden tenders an opportunity to charge while they work in the garden. The Pennsauken Free Public Library scored points for being greater than one mile away from an existing charger, is located within 0.5 miles of an area with an existing high ownership of PEVs, and within 0.5 miles of a multifamily residential area.

Stratford Public Library

This library is located one block off US 30 in Stratford Borough. The library is located directly west of the Borough Building and Police Department Building, which are connected via sidewalks. The library has its own parking lot with adequate space for EVSE. Finally, the library is within a short walk via sidewalk to the Stratford Borough commercial area along US 30, so visitors to those businesses could also potentially utilize the library's charger. Stratford Borough is dense and walkable. Stratford Public Library scored points for being greater than one mile away from an existing charger, within 0.5 miles of an area with high workplace charging demand, and within 0.5 miles of a multifamily residential area.

Voorhees Branch Library

The Voorhees Branch Library is located across Laurel Road from the Voorhees Town Center, which hosts a shopping mall, the municipal building, restaurants, and commercial space. The library scored well on the proximity analysis and may be a good location for EVSE, but the ample parking in the Town Center may be a better location depending on ownership's willingness to host EVSE. This site is located farther than one mile from an existing public charger based on GIS analysis, but the closest EVSE is located at the Walmart Super Center in Somerdale. Although that location is not a far drive from this complex, the library's proximity to amenities, as well as a multifamily residential area and high EV ownership and workplace charging, make this location worth considering for EVSE investment.

Wallworth Park and Evans Pond Complex

Evans Pond is part of the Wallworth Park complex located in Cherry Hill and Haddonfield townships. This site is adjacent to a large multifamily residential area and is within 0.5 miles of a CBG with high PEV ownership. The park complex, including the Croft Farm owned by Cherry Hill Township, provides amenities for visitors who could potentially use the EVSE while visiting. EVSE in the park would also be accessible to EV owners from the adjacent apartment complex. The park complex is less than 1.5 miles from Exit 32 of I-295.

Wiggins Park

Wiggins Park is located in Camden City along the Delaware River and hosts a marina, a promenade, and an outdoor music stage amidst the Camden Waterfront attractions. It does not appear that there is publicly available EVSE along the Camden Waterfront, and this location may be a good location for investment. The park is less than one mile from access to I-676 and may serve as a DCFC location. The nearest public charger is located at the Camden Campus of the Camden County Community College, approximately one mile away. This site scored points because it is located within 0.5 miles of an area with an existing high ownership of PEVs, within 0.5 miles of an area with high workplace charging demand, and within 0.5 miles of a multifamily residential area.

Sites with Existing Chargers

As of February 2022, Camden County is in the process of replacing the obsolete chargers at the below sites with updated Blink-networked chargers. All the charging locations will have a two-plug Level 2 EVSE except for the Cooper River Park Boathouse, which will have a one-plug Level 2 EVSE due to space limitations.

Bellmawr Branch Library

Bellmawr Branch Library received the second-highest score of the existing charger locations in Camden County. The library is in the same building as the Bellmawr Regional Health Center and shares a parking lot with Bellmawr Fire and Rescue, Bellmawr Police Department, and Bellmawr Municipal Court. This charging location is located farther than one mile from the closest public EVSE and is within 0.5 miles of both a CBG with a high concentration of registered PEVs and a multifamily residential area. The library is within 0.5 miles of Exit 28 of I-295, a designated Alternative Fuel Corridor (AFC) and very highly suitable location on the NJ DEP DCFC Corridor.

Camden County College–Blackwood

The Blackwood Campus of Camden County College is a large campus of the Camden County College system. The campus is located within one mile of NJ 42 (exit 7B). This location only scored one point for being located more than a mile from an existing charging location. Based on the proximity analysis alone, this is not a high-priority location for EVSE, but it is still useful to accommodate staff and students. The location may provide charging for travelers on the AC Expressway, but lack of amenities at this location and charging times associated with Level 2 charging may limit frequent usage as a corridor charging location. There are not many publicly accessible charging stations in this part of the county.

Camden County College–Camden

Camden County College's Camden campus is located within a mile of I-676/US 30 and can be accessed by commuters, tourists, and visitors to the college. The site is within 0.5 miles of a CBG with high workplace charging events and a multifamily residential area. The charger at this location is within the parking garage at the college. This location continues to be suitable as a public charging station, and charging should be continued at this location to serve the workplace charging needs and multifamily charging needs of the nearby community, including the Rutgers University Camden Campus.

The immediate area around the campus hosts a number of publicly accessible facilities that may be suitable for DCFC. This area is within one mile of a high-suitability location for DCFC in the NJ DEP analysis, and these facilities may be a suitable location for DCFC based on proximity to a designated AFC, highly suitable location on the NJ DEP DCFC Corridor, and access to I-676.

Camden County College–Cherry Hill

The Cherry Hill campus is located directly off NJ 70 at its intersection with Springdale Road. A number of commercial uses are connected via sidewalk to the campus parking. A large condominium complex is also located adjacent to the campus and is connected by sidewalk, although the complex appears to have garages and off-street parking. The college parking lot is within one mile of Exit 34 of I-295. This location may even be a suitable location for adding DCFC in the future based on its proximity to a designated AFC and highly suitable location on the NJ DEP DCFC Corridor.

Camden County Vocational Technical School

The Camden County Vocational Technical School scored only one point for being located more than a mile from an existing charging location. There is public EVSE 1.5 miles away at the Target shopping center. The location could serve staff, students, and visitors to the school, but the school is not located near other amenities or a multifamily residential area. This is not a high-priority location for EVSE, although it does provide for learning opportunities for the student projects at the school.

Cooper River Park Boathouse

Cooper River Park Boathouse is located in Pennsauken Township within Cooper River Park. The boathouse hosts weddings, events, and rowing events. The boathouse is connected via sidewalk to a commercial and industrial area of Pennsauken and scored points for being within 0.5 miles of both a CBG with a high concentration of registered PEVs and a CBG with high demand for workplace charging. The GIS analysis suggested that the boathouse is within 0.5 miles of a multifamily residential area, but inspection of the aerial photographs indicates that the area is on the other side of the Cooper River and approximately one mile away overland. The Cooper River Park Boathouse is also within one mile of US 130. This is a good location for EVSE to serve a number of different users from visitors to the location and employees in the area to travelers along US 130. The Boathouse is within 1.5 miles of an existing DCFC at the Crowne Plaza, so Level 2 charging continues to be most appropriate for this location.

South County Regional Branch Library

The South County Branch Library is located adjacent to the Winslow Township Senior Center and directly across the street from the Winslow Township Middle School. The library is within a 0.5-mile walk of the Winslow Township High School. Analysis of aerial photography-based mapping indicates that the library is connected to both schools and the senior center via sidewalks and a striped crosswalk over Cooper Folly Road. This charging station location is also within a one-mile drive of State Route 73 and a NJ DEP "least suitable" DCFC Corridor location. Although the charging station is within a half-mile of a multifamily residential area, pedestrian connections do not exist between the development and the library, making it unlikely that this charger would be used by the development's residents. The charging station could serve visitors and staff to the library and senior center, as well as provide service within a short walk for teachers, staff, and visitors of the two nearby schools and their sports fields. There is currently no active EVSE in the NJ 73 Corridor in Winslow Township.

Sites That Were Assessed but Are Not Currently Recommended for Charging Locations

Kirkwood Lake Conservation Area

Inspection of aerial photos of the Kirkwood Lake Conservation Area indicates that there are no public amenities in the park or in the immediate vicinity of that park that would make the site suitable for public EVSE. The Lindenwold PATCO Station is near the park and may serve as a more suitable location for publicly accessible EVSE based on the size of the parking lot and duration of time spent parked at the lot by commuters.

Timber Creek Park

Timber Creek Park consists of 128 acres and is located in Lindenwold and Gloucester townships. Although scoring well in the proximity analysis, this location has an unimproved parking lot and does not appear suitable for EVSE. This site is located approximately 1.25 miles from Exit 9 of NJ 42, farther than one mile from an existing public charger, within 0.5 miles of an area with an existing high ownership of EVs, and within 0.5 miles of a multi-unit development.

Cherry Hill Free Public Library

The Cherry Hill Free Public Library scored well in the proximity analysis and has ample space for parking for visitors to the site and EVSE, however there is an existing public charger approximately 0.5 miles from the library at the Whole Foods Market at Routes NJ 41 and NJ 70. This shopping center is connected by sidewalk to the library. Due to the proximity of this infrastructure, the Cherry Hill Library is not recommended as a priority for County owned EVSE.

Camden County Libraries

The following Camden County Libraries scored well in the screening analysis but under further inspection were found to lack sufficient parking to host EVSE:

- Audubon Free Public Library
- Camden Free Public Library (closed)
- Collingswood Free Public Library
- Haddon Heights Free Public Library
- Oaklyn Memorial Library

CHAPTER 4: Pricing

The public charging ecosystem is rapidly changing with numerous pricing models for Level 2 EV charging. The costs associated with DCFC require payment for that level of charging. Federal and state funding mechanisms are offering incentives to move toward standardized and interoperable pricing systems. To be eligible for state and federal funding programs, EVSE must be networked, either via cellular networks or Wi-Fi, to provide data on equipment usage and availability.

Connecting EVSE to Wi-Fi or cellular networks allows the EVSE owner to track and manage utilization of the station, collect fees for parking and station usage, and implement pricing strategies that encourage customer turnover and recoup operation costs for the owner. Networked EVSE can also share information about the costs and availability of charging stations.

Usage Fees

Free

Under the Free Charging Model, EV owners can park and charge in a parking spot for free. This model was popular for early EVSE sites to encourage EV ownership. Free charging can also be offered as a benefit by businesses to encourage EV owners to patronize the business or spend more time at the location. This model also allowed for non-networked charging stations and allowed the station owner to forgo the costs associated with collecting payment. Many publicly funded EVSE initially offered free charging to provide environmental benefits and encourage growth in EV market share.

Free charging is not recommended for the county-hosted EVSE.

Pricing Strategies

There are numerous strategies to collect fees for using EVSE, almost all of which require networked charging stations that also add costs to hosting EVSE. Charging strategies should reflect the goals and characteristics of the host site but generally share the purpose of incentivizing charging behaviors, such as moving the vehicle once the charging session is completed and offsetting the cost of hosting EVSE.

The following descriptions of pricing strategies were provided by ChargePoint and are published in *Charge Up Your Town: Best Management Practices to Ensure Your Town is EV Ready*, published by the NJ DEP, New Jersey Department of Community Affairs (DCA), and New Jersey Bureau of Public Utilities in February 2022:

- **Per Hour/Time-Based Fee:** A time-based fee (e.g., hourly) is set for all charging regardless of time of day or vehicle type. If you charge per hour, there is a set cost for any vehicle whether it is charging or not. Because different vehicles receive electricity at different rates, the cost of energy may vary widely by charging session. This is similar to how a parking meter fee works.
- **Flat Fee per Session:** The driver pays a set fee for the entire session. This is usually more appropriate for workplace charging or charging stations that have very short, regular sessions.
- **Per Unit of Energy (usually kWh):** The driver pays for the energy consumed on a per kWh basis. This accurately accounts for the true cost of electricity for the charging station owner (similar to a utility bill) since different makes and models charge at varying power levels, but it does not give an incentive for a car to leave the space once charging is complete.

- **Time-of-Use ("TOU") Price:** TOU pricing represents an opportunity to ensure that the increased energy use associated with the growing number of EVs can create value for all ratepayers and the grid, in addition to EV drivers. TOU pricing works by sending price signals to drivers: prices are lower during certain hours of the day and higher during others. EV charging operators can set TOU pricing to drivers regardless of whether they are enrolled in an electric utility's TOU electricity rate, which is tied to the operator's monthly utility bill. If an EV charging operator is enrolled in a utility's TOU electricity rate, they can choose whether and how to pass along a TOU price to drivers.
- **Minimum and/or Maximum Price per Session:** A **maximum price per session** would be a limit to the amount it costs each time a car plugs in (per session) or a limit per a certain number of hours, and a minimum price per session would be the amount it costs each time a car plugs in, regardless of the time length.
- **Length-of-Stay Price:** One price is charged during the first period of time, and another price displayed to drivers is charged for subsequent periods of time.
- **Combination Approach:** A combination of these approaches, such as charging a flat rate for the first two hours, then an increased time-based per-hour rate for longer sessions. This is a custom pricing strategy to encourage people to move their EV once charging is complete.
- **Driver Group Price:** Fees are set based on different classifications of drivers. For example, employees charging at their workplace or visitors could be offered a unique or reduced rate, which could be any of the options listed above.

Charging Time Limits

According to the NJ DEP, "Some venues lend themselves to having longer available charging times, such as a hotel or recreation site. For example, a beach or amusement park should have longer charging time limits. Other venues can have shorter charging time limits, such as a public library or supermarket."[4]

Considering the usage characteristics of the various county facilities analyzed in this report, EVSE at libraries and county offices should necessarily have shorter charging time limits than parks and trail connections, where the public will be spending longer periods of time.

Many of the strategies used to encourage parking turnover are applicable for managing charging limits. These strategies can include tiered pricing that increases after a vehicle is done charging or placing limits on the amount of time a vehicle can remain connected to the charger. Enforcement of the rules will need to evolve as demand increases for EVSE.

[4] NJ DEP, NJDCA, NJ BPU, *Charge Up Your Town: Best Management Practices to Ensure Your Town is EV Ready* (February 2022), p. 19, nj.gov/dep/drivegreen/pdf/chargeupyourtown.pdf.

CHAPTER 5: Recommendations

Overall

Selection of locations for EVSE can consider various goals. In this study, DVRPC reviewed county-owned parks and facilities for suitability to host publicly accessible EVSE based on proximity to multifamily residential areas, existing PEV ownership, locations where workplace charging is anticipated to be high, and distance from existing chargers. The analysis also considered the proximity to existing AFCs and the NJ DEP DCFC Corridor analysis as potential locations for DCFC to be funded under state or federal programs. Locations with existing EVSE should be maintained and/or reactivated to support the development of charging corridors and the reliability of the charging network.

General Recommendations

- County and municipal governments should begin planning to transition their fleets to EVs as a first/early course of action. Public facilities can serve the dual purpose of providing charging infrastructure for both government-owned fleets and the traveling public.
- County governments should consider hosting sites for DCFC where these locations are within one mile of an interchange of Federal Highway Administration (FHWA)-designated AFCs or the highly suitable locations identified in the NJ DEP DCFC Corridor analysis.
- New and renewed EVSE should charge an appropriate fee for charging. The EVSE should be networked to collect usage data, and the fee should offset the network and energy costs. Charger locations should be reported to the Alternative Fuel Data Center and have a display identifying the costs for charging. NJ DEP and FHWA Infrastructure Investment and Jobs Act guidance for EVSE funding provide useful requirements for EVSE infrastructure.[5]
- County and local governments should continue to engage with Sustainable Jersey and the NJ DEP to access funding and continue to plan for effective EVSE networks in the region. The New Jersey Board of Public Utilities (NJ BPU) EV Tourism Program and the NJ DEP It Pay$ to Plug In Program (Public Community Fast Charging) are anticipated to be open for funding in the spring of 2022. Additional funding opportunities are identified in Chapter 6 of this report.

[5] NJ DEP *It Pays to Plug-In Grant Overview: https://nj.gov/dep/drivegreen/overview.pdf* and FHWA NEVI Funding Guidance: www.fhwa.dot.gov/environment/alternative_fuel_corridors/nominations/90d_nevi_formula_program_guidance.pdf

Burlington County Recommendations

Recommendations were prioritized based on the proximity analysis scores and additional factors determined through the review of the aerial photographs. Priority locations scored a "3" or above in the proximity analysis, and recommendations were adjusted due to extenuating circumstances, such as availability of parking, pedestrian access to the location, and commercial and cultural amenities in the area. Based on these analyses, the following locations are recommended for new EVSE:

Priority

- *Bordentown Library Branch (Level 2 recommended):* The Bordentown Library Branch is connected via sidewalk to the main commercial area of downtown Bordentown, as well as several schools and multifamily residential areas. It is within 0.5 miles of US 130 and could also offer charging for those travelers.
- *Burlington County Bridge Commission Station (in progress):* Finishing the grant application and installation process for the Burlington County Bridge Commission's charger at their office near the Tacony-Palmyra Bridge toll plaza is highly recommended to give the county an early win with an installed, highly visible charger.
- *Burlington County Community Agricultural Center (Level 2 or DCFC recommended):* The Burlington County Community Agricultural Center could serve as a potential DCFC location due to its proximity to I-295, which is a designated AFC, and would help extend the DCFC Corridor coverage further into northeastern Burlington County.
- *Historic County Prison Museum and County Administration Complex (Level 2 recommended):* The Historic County Prison Museum and County Administration Complex could serve as a charging center for a future county EV fleet, as well as serving visitors to the complex. The NJ BPU EV Tourism Program could be an appropriate funding source for the Historic County Prison Museum and County Administration Complex, as well as the Burlington County Community Agricultural Center charging locations.
- *Maple Shade Public Library (Level 2 recommended):* Maple Shade Public Library scored the highest of all the recommended charging locations in Burlington County. Installation may be easier at this site as existing parking spots are directly adjacent to the building, and it could be less expensive to extend existing wiring and mount EVSE directly onto the building's façade.

Secondary

- *Cinnaminson Branch Library (Level 2 recommended):* Cinnaminson Branch Library shares a parking lot with the Cinnaminson Township Police Department building and could be a good location for future municipal fleet charging.
- *Delanco Public Library (Level 2 recommended):* Delanco Public Library shares a parking lot with the M. Joan Pearson Elementary School and the BOE and offers a potential to share EVSE use between those three buildings, as well as nearby residents without a private charger.
- *Evesham Public Library (Level 2 recommended):* Evesham Public Library shares a building with the Evesham Township municipal offices, as well as the Evesham Police Department. This site could be a good location for future municipal fleet charging. Additionally, the large Memorial Sports Complex across the street from this location could take advantage of using EVSE while utilizing the many recreational facilities adjacent to the library.
- *Florence Township Public Library (Level 2 recommended):* The Florence Township Library is within walking distance of the Roebling Museum, a cultural institution that may make this site a candidate for the NJ BPU EV Tourism Program as an appropriate funding source.
- *Library Headquarters and Amphitheater (Level 2 recommended):* The Library Headquarters and Amphitheater is part of a county complex that includes many other county office buildings. This location could serve as an additional locus for charging for future county-owned PEVs.

- *Pemberton Township Library Branch (Level 2 recommended):* Pemberton Township Library Branch is located directly next to Pine Grove Plaza, which has a number of services for EV owners to use while charging, such as a grocery store and a gym.
- *Pennington Park (Level 2 charger recommended):* Pennington Park is a lower-priority charging location but could be useful to recreational users of this large park or the regional trail connection currently under construction to Amico Island Park.
- *Pinelands Library Branch (Level 2 recommended):* Pinelands Library Branch is within a short walk to Main Street in Medford and also offers drivers on nearby NJ 70 a convenient stopping place to charge and enjoy Medford's amenities.
- *Riverside Public Library (Level 2 recommended):* Riverside Public Library has a shared parking lot with unknown ownership. Additional engagement with Riverside Township and other stakeholders is recommended to determine if this is a good charging location or if another nearby site, including the Park and Ride lot for the Riverside River Line Light Rail Station, may be a more suitable location.

Camden County Recommendations

New EVSE

Recommendations were prioritized based on the proximity analysis scores and additional factors determined through the review of the aerial photographs. Priority locations scored a "3" or above in the proximity analysis and recommendations were adjusted due to extenuating circumstances, such as availability of parking, pedestrian access to the location, and commercial and cultural amenities in the area. Based on these analyses, the following locations are recommended for new EVSE:

Priority

- *County Public Library Locations:* The following Camden County Public Library locations are situated in walkable communities with access to amenities for use while waiting for a vehicle to charge. Additionally, the charger could be used by the residents of nearby multifamily residential areas, as well as staff of and visitors to the libraries. All these proposed charging locations are farther than one mile away from an existing public charger, so new EVSE at these libraries would serve vehicle owners without a private connection within at least a one-mile radius.
    - *Gibbsboro Public Library (Level 2 recommended);*
    - *Haddonfield Public Library (Level 2 recommended);*
    - *Haddon Township Branch Library (Level 2 recommended);*
    - *Marie Fleche Memorial Library (Level 2 recommended);*
    - *Merchantville Public Library (Level 2 recommended);*
    - *Pennsauken Free Public Library (Level 2 recommended); and*
    - *Stratford Public Library (Level 2 recommended).*
- *Maria Barnaby Greenwald Memorial Park, possible location for county fleet charging center (Level 2):* Maria Barnaby Greenwald Memorial Park can provide charging for park and pool users, as well as a potential charging location for county-owned EVs.
- *Wiggins Park (Level 2 or DCFC recommended):* Wiggins Park would be a good location for EV charging for the Camden Waterfront tourist destinations.

Secondary

- *Voorhees Branch Library/Voorhees Town Center (Level 2 recommended):* The Voorhees Branch Library is located across Laurel Road from the Voorhees Town Center, which hosts a shopping mall, the municipal building, restaurants, and commercial space. The library scored well on the proximity

analysis and may be a good location for EVSE, but the ample parking in the Town Center may be a better location depending on ownership's willingness to host EVSE.

- *Wallworth Park and Evans Pond Park Complex (Level 2 or Level 1 recommended):* The Wallworth Park complex is a suitable location for the casual park visitors and nearby multifamily residential area residents.

Existing EVSE

The existing EVSE at county-owned facilities are currently being renewed. Four of the locations scored a "3" or above on the proximity analysis. The other sites serve students, staff, and visitors to the locations and provide EVSE in portions of the county that lack charging infrastructure. Therefore, it is recommended that these sites be renewed.

Priority: Continue charging programs at all existing locations.

- *Camden County College–Cherry Hill and Camden County College–Camden:* The Cherry Hill and Camden campuses of Camden County College are located in highly populated areas that could not only serve campus students, employees, and visitors but also serve as a community charging resource in areas with high workplace charging demand and/or a higher population of EV owners. The Cherry Hill campus may even be a suitable location for adding DCFC in the future based on its proximity to a designated AFC and highly suitable location on the NJ DEP DCFC Corridor.
- *Bellmawr Branch Library:* The Bellmawr Branch Library is located in a densely populated area that could serve residents and employees in the area, as well as visitors to libraries, businesses, and offices in these locations.
- *Cooper River Park Boathouse:* The Cooper River Park Boathouse is a convenient location for visitors to the park and trail, as well as near businesses with anticipated high workplace charging demand.
- *Camden County College–Blackwood:* The Blackwood Campus of Camden County College, although not scoring high on the proximity analysis, provides charging to students, staff, and visitors to the college. The location may provide charging for travelers on the AC Expressway, but lack of amenities at this location and charging times associated with Level 2 charging may limit frequent usage as a corridor charging location. There are not many publicly accessible charging stations in this part of the county.
- *South County Regional Branch Library:* The South County Regional Branch library can provide charging opportunities in a part of the county that lacks EVSE density. This location also provides convenient charging for local school campuses, a senior center, and visitors.
- *Camden County Vocational Technical School:* The Camden County Vocational Technical School is more than two miles from the AC Expressway and within 1.5 miles of a public charger at the Target shopping center. EVSE at this location would be convenient for students and staff but is unlikely to attract larger community usage.

CHAPTER 6:

Funding Sources

This chapter includes funding program information. Tables 8 and 9 include information for funding sources for EVSE and EVs. Table 10 identifies county facilities that may be eligible for the NJ BPU EV Tourism Program and the NJ DEP It Pay$ to Plug In Program Community Fast Charging Program.

Table 8: Funding Sources for EV Charging Stations

Funding Source Name	Funding Amount	Deadline	Details
Clean Vehicle Electric Vehicle Incentive Program (NJ BPU)	Funds any brand of two-port Level 2 chargers and 50% of the make-ready costs. Charger must be networked.	Until funds are gone.	Link to application. Municipalities, municipal utility authorities, local schools, municipal commissions, state governments, state agencies or boards, state commissions, state universities, community colleges, and county authorities can apply.
Climate Mayors Electric Vehicle Purchasing Collaborative through Sourcewell	Hardware and installation discounts ranging between 2% and 30% for Level 1, Level 2, and DC chargers.	Pricing contract through 7/25/22.	Contract summary at: Driveevfleets.org. Commissions, state governments, state agencies or boards, state commissions, and state universities can use this pricing contract.
Multi-Unit Dwelling (MUD) EV Charger Incentive (NJ BPU)	$1,500 per Level 2 charger ($2,000 for overburdened communities). 50% of make-ready up to $5,000/charger (75%, up to $7,500 for overburdened communities).	Until funds are gone.	For owners and property managers of MUDs. MUDs are defined as apartments, condos, or townhouses with more than five units and off-street parking. Sites can receive up to six Level 2 chargers. Application link.
NJ BPU EV Tourism Program	Reimbursement grants for municipalities and businesses of $2,000 for Level 2 chargers and 50% of the make-ready costs up to $5,000.	2022 dates not yet announced.	Locations are limited to six Level 2 EV chargers and two DCFCs per site. Visit:visitnj.org/ to see if the desired business, location, or area is recognized as a destination by the Division of Travel and Tourism.
NJ DEP's It Pay$ to Plug In Program	Reimburses a percentage of eligible costs—Level 1: $750 per Level 1 charging port; Level 2: $4,000 per Level 2 charging port; Public Community Fast Charging: up to $200,000 per location.	Rolling for Levels 1 and 2	Project must be approved and under contract before installation begins. Funding covers a portion of costs and maintenance agreement and network subscription for up to five years, and signage and painting specific to the EV parking spots. Must own and operate EVSE for five years. Link to FAQ.
PSE&G Electric Vehicle Charging Program	$7,500 per Level 2 commercial charger (maximum of four), installation for behind the meter and up to $10,000 for pole to meter utility service upgrades (if needed).	Ongoing.	Customers are responsible for the cost of the EV charging unit, which must be purchased from a preapproved list. Multifamily, governments, and public charging eligible for this program.

Source: DVRPC, 2022

Table 9: Funding Sources for EV Purchases

Funding Source Name	Funding Amount	Deadline	Details
Clean Fleet Electric Vehicle Incentive Program (NJ BPU)	Grants of up to $4,000/vehicle for local governments. Number of vehicles cap relating to population size and applicant is available on page 1 of the application.	Until funds are gone.	Applicants may apply for any number of eligible battery electric vehicles (BEVs) and EV charging stations, up to their award cap, through this program. All new and used light-duty BEVs up to FHWA Class 2B or 10,000 pounds are eligible.
Climate Mayors Electric Vehicle Purchasing Collaborative	Negotiated pricing contract through Sourcewell for Light-duty EVs, Medium and Heavy-duty Electric Chassis and Equipment, Electric School Buses.	Varies.	This program is open to all U.S. cities, counties, state governments, and public universities.
NJ Zero Emission Incentive Program (NJ Economic Development Authority's ZIP)	Voucher with values ranging between $25,000 and $100,000.	Rolling, starting 4/26/21 until all funds are reserved.	Vehicles must operate in the greater Camden, Newark, and New Brunswick areas. Voucher amounts are capped at 100% of vehicle cost. Applicant may not exceed 10% of total voucher budget. A new Medium-duty Zero Emission Vehicle must be purchased.
NJ State Purchasing Contracts	Discounted pre-negotiated purchase price (ranges between 5% and 11%) on 2022 Chevrolet BOLT EV, 2022 Nissan Leaf, 2022 Ford Escape, and 2022 Toyota Prius Prime.	Not published yet except for Toyota Prius Prime, which is 9/12/22.	All New Jersey local governments can purchase vehicles with discounted pricing through New Jersey START, a state purchasing agency. There are several PEVs, including BEVs and PHEVs available to purchase through their contracts. Select "Contracts/Blankets" and enter the word "hybrid" in the "Contract/Blanket Description" field to browse the offerings. Details about accessing the purchasing contracts and vehicle specifications and pricing: www.drivegreen.nj.gov/pdf/evs-on-state-purchasing-contracts.pdf.

Source: DVRPC, 2022

Table 10 includes sites that DVRPC believes may be candidates for the New Jersey BPU EV Tourism Program or the NJ DEP It Pay$ to Plug In Community Fast Charging Program. These programs were identified because they are either currently open or expected to open in the near future. The programs are described below. Locations are identified that may be eligible for these programs based on the screening level analysis presented in this report. Further investigation is necessary to confirm a location's suitability and eligibility for funding under these programs.

New Jersey BPU's EV Tourism Program provides incentives for a portion of the purchase and make-ready costs of Level 2 chargers and DCFCs at tourism sites, landmarks, and other areas of interest in the state of New Jersey. Examples of tourism areas/areas of interest can be found at visitnj.org/. The applicant must make a case for how their site serves as a tourism location in the application for the competitive grant funding.

NJ DEP It Pay$ to Plug In Community Fast Charging Program offers grants for DC fast chargers that must be within one mile driving distance from an exit or an intersection that is designated along NJ DEP Electric Vehicle DC Fast Charging Station Locations (see Figures 4, 5, and 6 on pages 10-12 of this report). Sites that are proposed for new charging stations in this report that are within one mile of very high or high suitability charging locations are included in the table below as they are likely to be competitive for this funding source.

Table 10: Proposed Charging Facilities with Potential Eligibility for the NJ BPU EV Tourism Program and NJ DEP's It Pay$ to Plug In Program (Public Community Fast Charging)

Proposed Charging Facility	NJ BPU EV Tourism Program	NJ DEP It Pay$ to Plug In Program (Public Community Fast Charging)
Burlington County Community Agricultural Center	X	X
Bellmawr Branch Library*		X
Camden County College–Camden*		X
Camden County College–Cherry Hill*		X
Florence Township Public Library	X	
Historic County Prison Museum and County Administration Complex	X	
Wallworth Park and Evans Pond Complex		X
Wiggins Park	X	X

Source: DVRPC, 2022
*Existing charging station location.

CHAPTER 7:

Municipal Best Management Practices for Preparing for EV Infrastructure

EVSE Installation Order of Operations

Select the type of charging most beneficial for the site. Level 1, Level 2 Networked, Level 2 Non-Networked, DCFC.

Select the electrical meter the EVSE will be connected to. Consider the amount of usage and number of available circuits. How will adding EVSE to the meter impact the electrical demand costs? Does it make sense to install a dedicated meter?

Select the location for the charging equipment on the site. As near the electrical service as is convenient, remembering to take accessibility into consideration.

Seek out incentives. There are many incentives offered for EV charging. See Chapter 6 of this report for a listing of current offerings.

Source: NJ DEP, NJ DCA, NJ BPU, *Charge Up Your Town: Best Management Practices to Ensure Your Town is EV Ready*, 2022

Decision-Making Criteria

Charger Considerations

- Charger Requirements
  - How will the electric supply line reach the charger?
- Selecting Charger Type
  - What types of drivers will need to charge at this station?
- Number of Chargers
  - How many vehicles need to charge at the station?
    - One charger per vehicle is preferable.
    - Level 2 chargers usually have two charging ports per charger, so one charging station can serve two vehicles.
- Site Amenities
  - Think about lighting, signage, and any parking spot painting.

Electrical Panel Considerations

- Selecting an Electrical Panel
  - PEVs use about 7,000 watts when connected to a Level 2 charger and about 1,400 watts when connected to a Level 1 charger.
- Distance from Panel
  - Installation is more expensive the farther the distance between the EV charger and the electrical panel to which it will be connected.

- In-Ground or Wall-Mounted Chargers
    - EV chargers can go directly onto a wall or onto a pedestal installed into the ground.
    - Wall-mounted chargers are generally cheaper. Pedestal installation can reduce cost by locating where the least pavement disruption is required.

Networked or Not Networked

- Networked chargers allow municipalities to accept payment and track charging metrics but have a higher initial cost and an ongoing cost for service that may exceed the benefits. Most grants and incentives require that networked chargers and data be shared with the funding agency.

Public versus Employee versus Fleet Charging

- The decision on where to locate the charger may depend on if the charger is intended for public use versus employee use or fleet use.

Appendices

A. County Facility Analysis

B. Reference Resources

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Appendix A: County Facility Analysis

Table A-1: Burlington County Facility Analysis

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Maple Shade Public Library	1	1	1	1	**4**
Historic County Prison Museum and County Administration Complex	1	0	1	1	**3**
Bordentown Library Branch	1	1	0	1	**3**
Burlington County Community Agricultural Center	1	1	0	1	**3**
County Offices–Administration	1	0	1	1	**3**
County Offices Economic Dev.	1	0	1	1	**3**
Riverton Public Library	1	1	0	1	**3**
Beverly Public Library	0	0	1	1	**2**
Cinnaminson Branch Library	1	0	0	1	**2**
Delanco Public Library	1	0	0	1	**2**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Evesham Public Library	1	0	0	1	**2**
Florence Township Library	1	0	0	1	**2**
Pemberton Township Library Branch	1	0	0	1	**2**
Pennington Park	1	0	0	1	**2**
Pinelands Library Branch	1	0	0	1	**2**
Riverside Public Library	1	0	0	1	**2**
Willingboro Lakes	1	0	0	1	**2**
Superintendent of Elections	1	0	0	1	**2**
Library Headquarters	1	1	0	0	**2**
Engineer Administration– Mt Laurel	0	1	0	1	**2**
Amico Island	1	0	0	0	**1**
Amphitheater	1	0	0	0	**1**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Boundary Creek Natural Resource Area	1	0	0	0	**1**
County Fairgrounds	1	0	0	0	**1**
Crosswicks Public Library	1	0	0	0	**1**
Crystal Lake Park	1	0	0	0	**1**
Library Company of Burlington	0	0	0	1	**1**
Long Bridge Park	0	0	0	1	**1**
Rancocas State Park	1	0	0	0	**1**
Smithville Park	1	0	0	0	**1**
The Rancocas Nature Center	1	0	0	0	**1**
Laurel Run Park	1	0	0		**1**
Human Services	1	0	0	0	**1**
Sally Stretch Keene Memorial Library	0	0	0	0	**0**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Solid Waste Office Facility at Rutgers	0	0	0	0	**0**

Source: DVRPC, 2022

Table A-2: Camden County Facility Analysis

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Gibbsboro Public Library	1	1	1	1	**4**
Voorhees Branch Library	1	1	1	1	**4**
Cooper River Park Boathouse	0	1	1	1	**3**
Evans Pond	1	0	1	1	**3**
Kirkwood Lake Conservation Area	1	1	0	1	**3**
Maria Barnaby Greenwald Memorial Park	0	1	1	1	**3**
Pennypacker Park	0	1	1	1	**3**
Timber Creek Park	1	0	1	1	**3**
Wallworth Park	1	0	1	1	**3**
Wiggins Park	0	1	1	1	**3**
Oaklyn Memorial Library	1	0	1	1	**3**
Audubon Free Public Library	1	0	1	1	**3**
Haddon Heights Public Library	1	0	1	1	**3**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Haddonfield Public Library	1	0	1	1	**3**
Marie Fleche Memorial Library	1	1	0	1	**3**
Camden Free Public Library	0	1	1	1	**3**
Cherry Hill Free Public Library	0	1	1	1	**3**
Collingswood Free Public Library	0	1	1	1	**3**
Pennsauken Free Public Library	1	0	1	1	**3**
Stratford Public Library	1	1	0	1	**3**
Haddon Township Branch Library	1	0	1	1	**3**
Merchantville Public Library	1	0	1	1	**3**
Atco Lake	1	0	0	1	**2**
Berlin Park	1	0	0	1	**2**
Challenge Grove Park	1	0	0	1	**2**
Hopkins Pond	1	0	0	1	**2**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Laurel Ravine Conservation Area	1	0	0	1	**2**
New Brooklyn Park	1	0	0	1	**2**
New Camden Park	1	0	0	1	**2**
Pillings Lake Conservation Area	1	0	0	1	**2**
Pyne Poynt Park	0	1	0	1	**2**
Silver Lake Conservation Area	1	0	0	1	**2**
Von Neida Park	1	0	0	1	**2**
Clementon Memorial Library	1	0	0	1	**2**
Bellmawr Branch	0	0	1	1	**2**
Gloucester Twp Branch	1	0	0	1	**2**
South County Regional Branch	1	0	0	1	**2**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Camden County College–Camden	0	0	1	1	**2**
Camden County College–Blackwood	0	1	1	0	**2**
Camden County Vocational Technical Schools–Gloucester Township Campus	0	1	1	0	**2**
Gateway Park	0	0	0	1	**1**
Great Egg Harbor Greenway	1	0	0	0	**1**
Haddon Lake Park	0	0	0	1	**1**
Lake Worth Conservation Area	0	0	0	1	**1**
Newton Lake Park	0	0	0	1	**1**
Reverend Evers Park	0	0	0	1	**1**
Riletta L. Cream Ferry Ave Branch	0	0	0	1	**1**

County Facility	Greater than one mile from an Existing Public Charging Station (+1 pt.)	Within 0.5 miles of CBG with >20 Registered PEVs (+1 pt.)	Within 0.5 miles of CBG with > 40 Workplace Charging Events per Day (+1 pt.)	Within 0.5 miles of Multifamily Residential Area (+1 pt.)	Total
Camden County College–Cherry Hill	0	0	0	1	**1**

Source: DVRPC, 2022

Appendix B: Reference Resources

City of Boston's How-to Guide: Electric Vehicle Charger Installation

City of Philadelphia's Municipal Clean Fleet Plan (2021)

Cross County Connection's Electric Vehicle Primer (2021)

DVRPC's Electric Vehicle Resource Kit for Municipalities

NJ DEP, DCA, and BPU's Charge Up Your Town: Best Management Practices to Ensure Your Town is EV Ready (2022)

NJ DEP's Electric Vehicle Resources for Local Government (2021)

North Jersey Transportation Planning Authority's Alternative Fuel Vehicle Readiness: A Guidebook for Municipalities (2017)

Sustainable Jersey's Alternative Fuel Vehicle Procurement Guide (2022)

Title of Report: Planning for Electric Vehicles in Burlington and Camden Counties

Publication Number: TR22020

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Geographic Area Covered:
Burlington County and Camden County, New Jersey

Key Words:
County Libraries, County Parks, DC Fast Charging, Electric Vehicle Charging Stations, Electric Vehicles, EVSE, Funding for EVSE, Multifamily Residential Areas, Plug-In Electric Vehicles

Abstract:
The Delaware Valley Regional Planning Commission analyzed the locations of county parks, libraries, and buildings in Burlington and Camden counties compared to existing electric vehicle charging stations (EVSE), registered electric vehicles, projected workplace charging demand, and multifamily residential areas to recommend locations for future investment in EVSE.

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