



State of New Jersey
Department of Environmental Protection
Bureau of Mobile Sources

Electric Vehicle DC Fast Charging Infrastructure Planning Methodology

In accordance with the New Jersey Partnership to Plug-In, “Partnership” (signed June 3rd, 2019), the Department is developing mapping that will help inform strategic placement of electric vehicle (EV) charging infrastructure.

Further, Public Law 2019, chapter 362, “EV Law” (signed January 17th, 2020), prescribes more specific requirements for EV charging infrastructure, with regard to number, power, and distribution of charging stations.

This initial phase of the Department’s effort focuses on DC fast charging (DCFC) on major travel corridors in New Jersey. The EV Law requires at least 75 charging locations on travel corridors, equipped with at least two DCFCs per location, each capable of providing at least 150 kW of power, and no more than 25 miles between charging locations. The EV Law also requires that fast charging equipment at these 75 locations comply with CHAdeMO, CCS, or other non-proprietary future standards (i.e., Tesla Superchargers are not compliant). These are referred to as compliant locations.

The Department used the following strategy to develop plans for where DCFC would be best deployed on major travel corridors in NJ.

- Current EV registrations were [mapped to show concentrations of EV ownership](#).
- Existing DCFC stations were mapped.
 - We can look at all DCFC stations by type of connector and power level, as well as only those that comply with the EV law.
- Predicting future ownership of EVs
 - UC Davis Plug-in Hybrid & Electric Vehicle Research Center developed a Market Toolbox
 - As inputs, it uses current EV registrations, U.S. Census Data on population, housing, jobs, per capita income, and Journey to Work data.
 - The Market Toolbox created a geographic projection based on a future of 330,000 EVs.
 - While the future distribution looks much like our existing EV registration distribution, we may use this tool to evaluate placement of DCFC in areas of higher projected EV ownership.
- Evaluating Best Placement of DCFCs
 - MJ Bradley & Associates developed a tool to evaluate exits and intersections along major NJ roadways for DCFC suitability.
 - The DCFC suitability rankings take into account traffic volume, population density, and nearby commercial activity.

- EV infrastructure corridor map
 - The end result is a map showing EV Law-compliant DCFC stations and DCFC suitability rankings along major NJ roadways.
 - As new DCFC stations are proposed via grant applications, the Department can use several tools to evaluate and rank proposals:
 - DCFC suitability scores
 - Current and projected EV registration concentrations
 - Gaps in coverage along major corridors (to comply with the 25 mile EV Law requirement)