

## EV Ready: Municipal Responses to Electric Vehicles

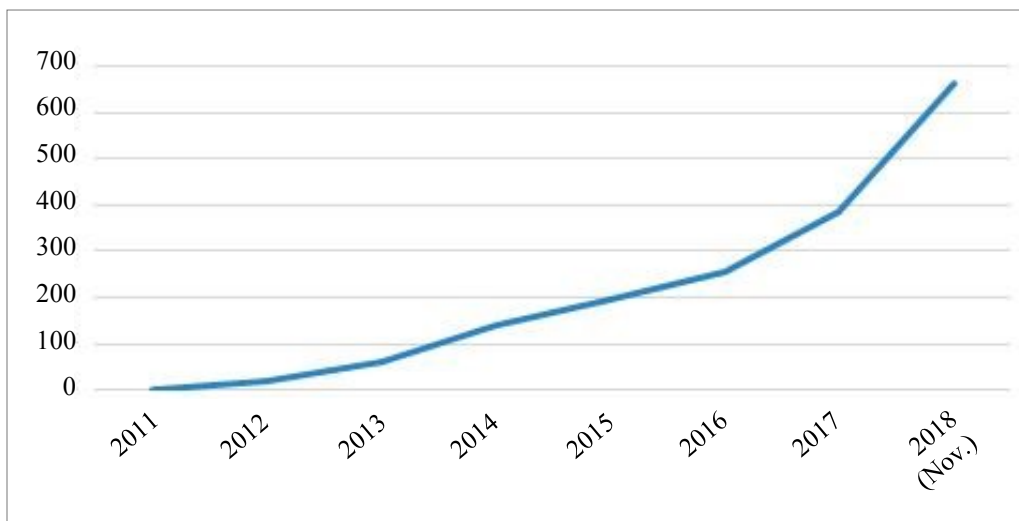
By Dylan Tuttle, Junior Planner

Many Dutchess County municipalities are recognizing that planning for electric vehicles (EVs) is an investment in their community's future. According to a summer 2018 survey, six of our 30 municipalities have installed public charging stations, and several more have begun to address EVs through local plans and codes. Others are in the process of researching best practices and developing a strategy. Nearly all indicated that, with interest in this topic picking up steam, more information would be helpful. This article provides a short background on this emerging technology, lays out steps local governments can take to prepare, and lists both financial and informational resources.

### Background: Electric Vehicles and EV Charging Stations

#### The Cars

Electric vehicles use rechargeable batteries to power electric motors for propulsion, instead of a gasoline powered internal combustion engine. Most EVs are plug-in electric vehicles (PEVs), meaning the vehicle needs to be plugged in to charge. EVs on the road today include fully electric, battery-only cars as well as plug-in hybrid electric vehicles, which have both an electric motor (with a much smaller battery) and a gas engine.



Number of electric vehicle (EV) registrations in Dutchess County. Source: [NYSERDA Electric Vehicle Registration Map](#)

The number of electric vehicles on the road has risen exponentially since their introduction to the market at the beginning of the decade. Drivers are making the switch for a variety of financial and environmental reasons, finding EVs to be:

- **Cleaner:** EVs have zero exhaust emissions, leading to better air quality and fewer health problems down the road.

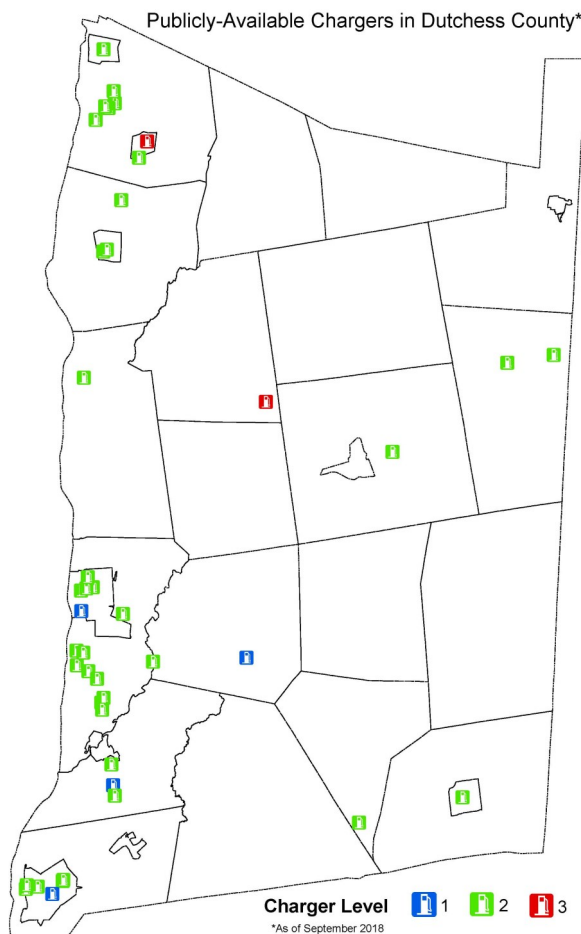
- **Cheaper:**
  - According to the [U.S. Department of Energy](#), it costs about half as much to fuel an EV as it does a gas vehicle.
  - EVs also have fewer moving parts than gas vehicles, so they require less frequent and less expensive repairs.
  - While EVs are generally more expensive to purchase, [battery costs](#) have declined dramatically, and are expected to continue decreasing. The price for an EV will likely be comparable to a traditional car within a few years. In the meantime, government incentives can be used to narrow the difference.
- **Better for Energy Security:** EVs can be powered by domestic energy sources, reducing dependence on foreign oil.
- **Safer:**
  - EVs tend to have a [lower center of gravity](#) than traditional cars, reducing rollovers.
  - There is also less chance of a fire or explosion in a crash than in a traditional vehicle.

### The Charging Stations

Charging stations are classified by their approximate charging time and the form of power delivered—alternating current (AC) or direct current (DC). There are three basic levels:

1. Level 1 chargers use a standard 120V AC wall plug. No special installation is needed, but it can take 12-18 hours to fully charge a battery-only EV.
2. Level 2 chargers use a 240V AC plug, similar to a clothes dryer. Special wiring and equipment are needed, but the charger can replenish a battery-only EV in 4-8 hours, depending on the car.
3. DC fast chargers vary in voltage, with newer models capable of producing [up to 350kW](#)—enough power to charge a vehicle in as little as 10 minutes.

In most situations, a level 2 charger is enough. EV owners tend to charge their cars the way one charges a cell phone, and for a day of normal use an overnight charge will be plenty. This is especially true if common stops like the driver’s workplace and grocery store have stations available. DC fast chargers are needed only for long trips, where a charge will be necessary along the way. New York State is in the process of installing DC fast chargers at rest stops along major corridors, and many more are being installed across the state and country by [Electrify America](#). Like all new technologies, car charging continues to evolve, and



Map shows the distribution and charger level of electric vehicle charging stations in Dutchess County as of September 2018. Click on the map to view larger. For regularly-updated data that includes addresses and other detailed information regarding each charging station, visit [www.plugshare.com](http://www.plugshare.com).

separate plug-in charging stations may only be necessary in the near term. Some companies are experimenting with wireless charging, while others are exploring the potential of adapting existing infrastructure (like street lights) to double as charging stations.

### EV Planning for Local Governments

The challenge for municipalities is to plan for electric vehicles without being overly prescriptive towards this rapidly-changing technology. Municipalities have found many ways to strike this balance in their codes and site review processes.

#### **The Basics: Allow and Permit**

While a lot of vehicle charging will take place in private residences and workplaces, a network of publicly available chargers is a necessary supplement. A first step is to review your local zoning code to ensure that public EV charging stations are allowed in logical locations, and to create a streamlined permitting process for private companies who wish to build publicly-accessible charging stations. Municipalities can also ease the burden on interested private property owners by enacting a provision to waive the site plan requirement for new charging station installation. Many New York municipalities, such as the Town of Otto and the City of Oneida, have taken steps like these to clarify charging station permissions and processes in their codes.

#### **Set Standards and Regulations**

EV charging stations, especially if they are available to the public, require signage, pavement markings, and protective elements, such as bollards. Municipalities should set universal standards for these elements, reducing the chance of damage to the station and ensuring that the rules for these parking spaces are clear to all drivers. Without proper signage and pavement markings, non-EV drivers are likely to use these spaces, preventing EV drivers from charging and defeating the purpose of installing the station.



#### **Require Charging Stations in New Development**

The most important locations for private charging stations are those where we spend the most time: our homes and our jobs. EV drivers who own single-family homes can set up their own chargers as needed, but at multifamily complexes and workplaces advance planning is required to ensure access to EV infrastructure. Municipalities across the country are beginning to incorporate EV charging into their site plan review process for developments that reach certain thresholds. In the Town of New Paltz, for example, any residential site plan for more than three units, or nonresidential site plan proposing more than 20 parking spaces, must include charging stations, the number of which is specified by the code (see [§140-52.B\(2\)\(n\)](#)). The planning board is given the option to waive this requirement, provided that the applicant lays conduit for future installations.

#### **Set a Trend**

Many municipalities are finding EVs, with their lower fuel and maintenance costs, to be a good fit for their fleets. This will become increasingly true as EV battery range continues to improve and the technology becomes available in more types of vehicles. Some local governments—including Dutchess County, the Town of Red Hook, and the City of Beacon—have also purchased charging stations for installation along public streets or in municipal

parking lots. New York State funding assistance programs (described below) can help municipalities with these purchases.

### **Municipal Action Item Summary:**

1. Review your zoning code to ensure that EV charging stations are permitted in logical locations. List charging stations as an accessory use in zoning use tables.
2. Create a streamlined process for private companies who wish to build publicly-accessible chargers. Determine parking rules at public charging station sites, with standards for signage, bollards, and pavement markings.
3. Require installation of charging stations in new developments that meet certain thresholds, with the option to waive the requirement provided the applicant lays conduit for ease of future installation.
4. Require installation of conduit in new parking lots and during any public parking lot rebuilding/resurfacing.
5. Consider offering a developer incentive (fewer required parking spaces, density bonus, etc.) for charging station installation.
6. Consider adding EVs into the municipal fleet, as feasible. Purchase and install public charging stations, making use of state rebate programs.

## **Additional Resources**

New York State is committing substantial resources to EV adoption. The New York Power Authority (NYPA) is programming \$40 million to expand DC Fast Charger availability along major corridors through the [EVolve NY](#) initiative, and plans to commit \$210 million more by 2025. Governor Cuomo's stated goal is to have 800,000 EVs on the road by 2025, and 10,000 public charging stations installed by 2021. State agencies also offer grants and rebates that can be applied to the expansion of EVs and EV infrastructure at the municipal level.

### **NYSDEC Municipal Zero-Emission Vehicle (ZEV) & ZEV Infrastructure Rebate Program**

The Department of Environmental Conservation's Climate Change Office has offered two rounds of the [ZEV program](#), which provides rebates of up to \$5,000 for the municipal purchase of EVs and 80% of the cost of charging stations. The third round of vehicle rebates is currently available, while the third round of charging station rebates is expected soon.

### **NYSDEC Climate Smart Communities Grant Program**

The [Climate Smart Communities](#) (CSC) program provides funding to advance a municipality's ability to implement adaptation and mitigation projects. Under this ambitious program, municipalities complete actions to earn points towards CSC Certification, including conversion of fleet vehicles and installation of charging stations. Dutchess County, as well as seventeen municipalities, has adopted the CSC pledge.

### **NYSERDA Drive Clean Rebate**

The [Drive Clean Rebate](#) provides up to \$2,000 towards an electric car purchase. The amount of the rebate depends on the range of the vehicle.

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### **NYSERDA Charge Ready NY**

[Charge Ready NY](#) provides \$4,000 rebates for Level 2 charging stations at public parking facilities, workplaces, and multifamily apartment buildings.

### **NYSERDA Clean Energy Communities**

Under the [Clean Energy Communities](#) program, municipalities that complete four out of ten “high-impact actions” and receive NYSERDA designation are eligible for grant opportunities to further their clean-energy efforts. Municipalities can use deployment of an EV or charging station as one of their four actions, or, once designated, can use grant funding for EV implementation. In Dutchess County, the Town of Red Hook, Village of Wappingers Falls and City of Beacon are designated, while the towns of Union Vale, Fishkill and Pine Plains, and City of Poughkeepsie, are participating but have not yet completed four actions.

In addition to these financial resources, the New York State Energy Research and Development Agency (NYSERDA) provides valuable information on EVs geared towards planners and municipalities. An excellent starting point is [their informational web page](#), which provides links to a wide variety of more detailed reports and resources.

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This newsletter was developed by the Dutchess County Department of Planning and Development, in conjunction with the Dutchess County Planning Federation.

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