

## **Electric Vehicle Infrastructure language to be added after page 67 of the 2020-07-13 Draft**

F. The recommendations of the planning board concerning locations appropriate for the development of public electric vehicle infrastructure, including but not limited to, commercial districts and, areas proximate to public transportation and transit facilities and transportation corridors, and public rest stops; and recommended changes, if any, in the local development regulations necessary or appropriate for the development of public electric vehicle infrastructure.

### 1. Township's current regulations

Currently the Township's Land Development Ordinance does not specifically address electric vehicle infrastructure (EVI). Nonetheless, there are several sections of the Land Development Ordinance that impact the ability of property owners to install EVI as follows:

1. **Site Plan Review:** The installation of EVI, other than for a single-family dwelling, would require site plan review and approval from the Planning board (or Board of Adjustment in certain cases). Under Section 134-104.2, almost all site improvements and building expansions require site plan approval, however there are 6 exemptions to the requirement that site plan approval be obtained. The first exemption relates to single-family dwellings. The fifth exemption relates to various utilities, so long as parking and circulation is not impacted. Installation of EVI typically impacts parking by reserving parking spaces for electric vehicle charging only and the EVI may result in the loss of parking. The other exemptions from site plan review would not apply to EVI. As a result, most EVI applications will require site plan review. Depending on whether the EVI conforms to accessory structure requirements, the site plan application could be either Minor Site Plan or Major Site Plan; Minor Site Plan review can result in a quicker and easier approval process than a Major Site Plan review.
2. **Setback Requirements:** Each zoning district establishes minimum setback standards for principal structures and accessory structures. In the case that the EVI does not conform the setback requirements of the zoning district (or any other part of Chapter 134), variance relief would be required either from the Planning Board or from the Board of Adjustment.
3. **Accessory Structure Regulations:** Accessory structures, such as EVI, are subject to a variety of regulations, predominantly found in Section 134-62. Perhaps most impactful of these regulations is that accessory structures are only permitted in a rear yard and not in a front or side yard. As will be discussed later in this section, the most favorable location for EVI on commercial properties is likely to be within front or side yards. In the case that the EVI does not conform to Section 134-62 (or any other part of Chapter 134), variance relief would be required either from the Planning Board or from the Board of Adjustment.
4. **Signage Regulations:** Signs are regulated under Section 134-68. As will be discussed later, EVI often requires signage that may or may not conform to the Land Development Ordinance. In the case that signage for EVI does not conform to Section 134-68 (or any other part of Chapter 134), variance relief would be required either from the Planning Board or from the Board of Adjustment.

The permitting process for site plan applications and variance applications is long and expensive compared to the permitting process for zoning permits. While a zoning permit involves a 10 business day review resulting in approval, deficiency (ie. insufficient

information was submitted) or denial, it can easily take 3 months to get before the Planning Board or Board of Adjustment and if approved, resolution conformance generally takes time. When projects are expected to take a longer time and to cost more for permitting approvals, the likelihood of the project moving forward decreases.

## 2. Improvements required with charging locations

Installing EVI requires a variety of improvements to a site, all of which have potential impacts on the character of the development, safety of development, and provision of sufficient amount of parking. Improvements include:

1. **Charging Equipment:** Electric charging equipment is required to be installed adjacent to the parking spaces. Often bollards are also required to ensure that vehicles do not damage the equipment. Depending on the location of the equipment and the configuration of the parking lot, this equipment could infringe on area dedicated to parking spaces, resulting either in a loss of parking spaces or a shifting of the location of parking spaces. In some cases, the charging equipment can be located within landscaped islands, eliminating the impact on parking spaces, but rather impacting landscaping and impervious coverage.
2. **Changes to parking spaces:** In some cases, installation of EVI requires dimensional changes to parking spaces. In particular, if the EVI is installed between parking spaces, as opposed to on landscaped islands, the obstruction to movement created by the EVI may result in the need for wider parking spaces. This could further decrease the supply of parking on-site.
3. **Electric Support Equipment:** Transformers and other electrical support equipment may be required for EVI. The size and placement of this equipment can impact circulation, parking, impervious coverage, and landscaping. Additionally, screening of this equipment may be desirable to maintain the aesthetics of the site.
4. **Electric Power Source:** Some source of electricity is required to provide power to the electric vehicles. Generally the power comes from the larger electricity network and may be supplied by renewable sources such as wind and electric or may be supplied by non-renewable sources such as coal and natural gas, however, there have been cases where EVI is installed, powered by an on-site diesel generator.
5. **Electric Conduit:** Electric connections will be required for the EVI, most likely in the form of underground conduit. This conduit has the potential to require new electric poles and to conflict with existing underground utilities.
6. **Signage:** EVI requires signage to ensure that individuals know that the EVI service is provided, the type of service provided. Some electric vehicles have proprietary charging connectors and require special adapters to charge with EVI from other companies. And likewise, some EVI chargers may not work with all vehicles. EVI also offers different speeds of charging service, with more powerful and quicker services being released as time goes on. Visual communication as to the location, type of service, and speed/power of service is required and typically this visual communication includes signage in the form of corporate logos. Additionally, there are some EVI services where the electricity is provided free of charge, however, a large screen is included in the EVI, displaying advertisements on a digital screen. This signage currently is not permitted under several sections of Section 134-68.

### 3. Locations for EVI

#### *Background*

In reviewing appropriate locations for EVI, it is important to understand the charging speed of EVI, the charging patterns of owners of electric vehicles, and the length of time owners of an electric vehicle are likely to spend at a site with EVI.

In general, the speed at which an electric vehicle can be charged has been decreasing as more powerful chargers are developed. Full charge times can range from 10-20 hours on a slow charger to less than an hour on a more powerful charger.

Due to the time it takes to fully charge an electric vehicle, charging strategies of owners of electric vehicles are different than the refueling strategies of car owners. While the federal government recommends that owners of gas powered cars keep their vehicles near full in order to be prepared in the case of emergency, gas powered car owners are often likely to refill their gas tank only when they are low on gas. Electric vehicle owners are different in this respect and tend to recharge their vehicles either overnight or at work. As such, when they stop to recharge their cars, often they are not looking for a full charge, but rather a partial charge to extend their range. Whereas a full charge might take 10 hours, a partial charge of 30 minutes might provide an additional 20 miles of range.

#### *Land Uses Compatible with EVI*

Based on the above, appropriate locations for EVI would seem to be places where people tend to park for a period of time greater than 30 minutes. Such appropriate uses would include shopping centers and restaurants, places of employment (ie. offices and factories), park and ride facilities, and residential properties. While people do not typically spend more than 30 minutes at gas stations, there is not likely to be any harm from the installation of EVI at gas stations.

#### *Compatible Site Locations for EVI*

While individual uses may be compatible with EVI, the location on the site will require analysis. While accessory structures are restricted to rear yards, this is not likely to be appropriate for EVI. In particular, the rear yards of many commercial developments is dedicated to back of house issues such as loading and waste management. This would not be an appropriate place for providing EVI to the public. Instead, EVI is more appropriate within the front and side yards of a development, subject to setback requirements. Additionally, it may be worth considering whether the EVI can be located within existing parking spaces or whether the EVI should only be permitted on landscape islands so as to minimize its impact on parking. Finally, design considerations regarding screening may be necessary to ensure that the EVI does not negatively impact the aesthetics of the site.

#### *Potential Locational Hazards for EVI*

One area in which EVI may not be appropriate is anywhere that the threat of flooding could pose a hazard to the users of and people in vicinity of EVI. Ultimately this is a question of the protective measures built into the equipment and whether the equipment can be safely operated during a flood or can safely be automatically shut down during a flood.

#### 4. Recommended Changes to Land Development Regulations

There are numerous questions regarding the appropriate policy for regulating EVI through the Land Development Ordinance, and it is not recommended that any ordinances be adopted prior to the Township conducting a comprehensive study regarding these policy questions. Policy questions that should be reviewed include:

1. Ability to streamline the permitting process to decrease time and cost for installation of EVI. Potential options would include whether the Township should permit commercial EVI through a zoning permit, a minor site plan, or major site plan. The key question regarding permitting EVI through a zoning permit is whether the Township will have sufficient time to review all standards and requirements to ensure appropriate location and installation of EVI.
2. Design standards that should be applicable to EVI including:
  1. Permissibility within front and side yards.
  2. Minimum setbacks from property lines, and in the case of larger developments, setbacks from principal internal access drives.
  3. Screening of equipment.
3. Permitted locations of EVI, including whether there are any districts which are not appropriate for EVI and whether EVI should be permitted in flood hazard areas.
4. Signage for EVI, including the amount, size, and location of directional and instructional signage and whether electronic advertising should be permitted in conjunction to EVI.