

memorandum

DATE: January 14, 2022
TO: Susie Stec, Community & Economic Development Director
FROM: Jill Bahm and Eric Pietsch, Giffels Webster
SUBJECT: Electric Vehicle (EV) Charging Station Ordinance

Previous Discussions

The Planning Commission discussed the draft ordinance in October and in December had a representative from the Dunamis Clean Energy Partners, an EV hardware manufacturing company. As a result of those discussions, the recommended changes to promote reliability have been added (see red text in the attached draft ordinance).

The remainder of this memo was prepared in October 2021 and is provided as background

Introduction

What prompted this discussion?

- The Planning Commission has expressed interest in amending the Zoning Ordinance to encourage and support sustainability. One fairly straightforward amendment is to provide standards for electric vehicle (EV) charging stations.

Background on Issue

Why consider an amendment?

According to the US Department of Energy, consumers and businesses with fleet vehicles are increasingly considering plug-in electric vehicles (PEVs). These include plug-in hybrid electric vehicles (PHEVs) and all-electric vehicles (EVs)—all of which need access to charging stations. Most users will charge at home or at fleet facilities, but the availability of charging stations at workplaces and public destinations is a factor in the decision-making process. Making more stations available may help increase visibility and confidence in EVs.

- There are three types of EV chargers:
 - Level 1 chargers: These chargers use a regular 120-volt outlet, common to most home and commercial plugs. These chargers provide two to five miles of range per one hour of charging. This would result in about 40 miles of range for a vehicle parked overnight. According to the Department of Energy, the cost for this type of charging is between \$200-500 (roughly the cost of adding a new outlet to an existing 120-v circuit).
 - Level 2 chargers: These chargers use 208/240-volt outlets, which may be used in a residential home or commercial setting. These chargers provide between 18-28 miles of

range per one hour of charging and can result in a full charge for a vehicle parked overnight.

- Direct current (DC) fast chargers: These chargers use 208/480-volt outlets and provide rapid charging. They provide about 60 to 80 miles of range per 20 minutes of charging. These are mainly found in heavy traffic corridors.
- In general, when provided for users of a site, charging stations are reasonable accessory uses in all zoning districts, particularly when intended for those who live or work on the property. Non-residential properties may also offer charging for visitors of a site and may even charge for this service.
- Charging at Level 1 chargers costs around 14 cents per kilowatt hour, public Level 2 chargers cost around 44 cents/kWh and fast chargers up to 59 cents/kWh, according to a PwC analysis.
- The Department of Energy promotes public charging stations and estimates that there are approximately 43,000 public EV charging stations across the US. Over 80% are Level 2 chargers, 15% are DC fast chargers and less than five percent are Level 1 chargers.
 - Demand for EV charging is increasing, and new tools are being developed to help drivers find charging sites. The US Department of Energy has a search tool that can identify public stations and fuel corridors:
<https://afdc.energy.gov/stations/#/find/nearest?location=lathrup%20village,%20mi>

Current Ordinance

The ordinance does not include any provisions for EV charging stations.

Recommendation

A draft amendment is attached that provides a definition for EV charging station and includes standards that address location, parking, lighting, signage and general maintenance. The Planning Commission may wish to discuss whether EV stations should be required for new non-single-family residential development as a proactive measure. An additional standard could be added to Section 5.13, Parking that could require all new, expanded and reconstructed parking areas to provide the electrical capacity necessary to accommodate the future hardwire installation of Level 2 EVCSs for a specific amount of required parking. (10-15% may be appropriate.)