giffels webster

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.)

Amend Section 2.2: Definitions to add:

Electric vehicle charging station (EVCS). A public or private parking space that is served by battery charging station equipment that has as its primary purpose the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electric vehicle. EVCS may include Level 1, 2 and 3 charging stations.

Amend Article 4 to add a new section:

Section 4.20: Electric Vehicle Infrastructure

1. **Intent.** The intent of this section is to facilitate the use of electric vehicles and to expedite the establishment of a convenient electric vehicle infrastructure that such use necessitates. Electric vehicle charging stations should be provided in convenient and safe locations and maintained in good working order to promote electric vehicles and instill confidence in the reliability of the overall network in the City of Lathrup Village.
2. **Permitted Locations**
   A. When accessory to the principal permitted use, and when no fees are collected for such use, electric vehicle charging stations are permitted in every zoning district.
   B. When accessory to the principal permitted use, and when fees are collected for such use, electric vehicle charging stations are permitted in all non-single-family residential zoning districts.
3. **General Requirements**
   A. Parking
      i. An electric vehicle charging station space may be included in the calculation for minimum required parking spaces required in accordance with Section 5.13. All such spaces shall comply with ADA requirements.
      ii. Public electric vehicle charging stations are reserved for parking and charging electric vehicles only. Electric vehicles may be parked in any space designated for public parking, subject to the restrictions that would apply to any other vehicle that would park in that space.
   B. **Lighting**. Site lighting shall be provided in compliance with Section 5.8, where an electric vehicle charging station is installed, unless charging takes place during daytime hours only.
   C. Equipment Standards and Protection
      i. Battery charging station outlets and connector devices shall be no less than 36 inches and no higher than 48 inches from the surface where mounted. Equipment mounted on pedestals, lighting posts, bollards, or other devices shall be designed and located as to not impede pedestrian travel or create trip hazards.
      ii. Adequate battery charging station protection, such as concrete-filled steel bollards, shall be used. Curbing may be used in lieu of bollards, if the battery charging station is setback a minimum of 24 inches from the face of the curb. Bumper blocks shall not be used for protection of such charging devices.
      iii. All equipment installed shall meet building code requirements.
      iv. Equipment mounted on pedestals, lighting posts, bollards, or other devices for on-street charging station shall be designed and located as to not impede pedestrian travel or create trip hazards within the right of-way

D. Signage. Signs shall meet the standards of the City of Lathrup Village Sign Ordinance, Article 2 of the City's municipal code, as well as the following:

i. Information shall be posted identifying voltage and amperage levels and any time of use, fees, or safety information related to the electric vehicle charging station.

ii. Each electric vehicle charging station space shall be posted with City-approved signage clearly indicating the space is only for electric vehicle charging purposes. For purposes of this subsection, "charging" means that an electric vehicle is parked at an electric vehicle charging station and is connected to the battery charging station equipment.

E. **Permitting**. Compliance with all local building and electrical codes is required.

F. **Maintenance**. Electric vehicle charging stations shall be maintained in all respects, including the functioning of the equipment. A phone number or other contact information shall be provided on the equipment for reporting when it is not functioning, or other problems are encountered. The failure to maintain the electric vehicle charging stations in proper working order for a period in excess of 14 days shall result in those spaces ceasing to counted towards required parking, The installation of the number of parking spaces provided by the district regulations shall be required. The electric vehicle charging stations must be operational during the normal business hours of the use(s) that it serves. Electric vehicle charging stations may be de-energized or otherwise restricted after normal business hours of the use(s) it serves.