

MEMORANDUM



TO: MEMBERS OF THE PLANNING COMMISSION
FROM: DAVID CAMPBELL, AICP, LEED GA, PLANNER
THRU: BARBARA MCBETH, AICP, COMMUNITY DEVELOPMENT
DEPUTY DIRECTOR
SUBJECT: TEXT AMENDMENT 18.263 – PLUG-IN ELECTRIC VEHICLE
(PEV) CHARGING STATIONS AND SPACES
DATE: SEPTEMBER 5, 2012

The City of Novi has made a concerted effort in recent years to “go green” with a number of these efforts highlighted on the City of Novi Goes Green webpage. The City has adopted a sustainability strategy and is engaged in a series of projects aimed at making municipal buildings significantly more energy efficient through the use Energy Efficiency Conservation Block Grant (EECBG) Funds. To encourage use of alternative energy sources on private properties, the City has implemented amendments to the Zoning Ordinance allowing green infrastructure such as solar collectors and wind energy turbines. Last year, the City received a grant to allow for the installation of two electric vehicle charging stations which were installed at the Police Department and at the Novi Community Library.

Consistent with these ongoing efforts, the Community Development Department now proposes a **text amendment to create standards for the installation of plug-in electric vehicle (PEV) charging stations and parking spaces within off-street parking areas in all zoning districts.** The intent is to provide reasonable regulations for the siting and design of PEV charging stations and spaces, such that the stations are located where they will not impede pedestrian access or encroach on a setback requirement. The proposed amendment also addresses the manner PEV charging spaces are to be treated with respect to meeting minimum parking requirements, and also the design and dimensions of the charging spaces.

PEV charging stations and spaces are typically located along the perimeter of a parking area, most often in close proximity to the building served by the parking area to minimize the distance covered by the electric infrastructure connecting the charging station to the building's electrical service panel. A PEV charging station usually consists of a pedestal adjacent to a parking space, with one or more cords of sufficient length to connect with a plug-in electric vehicle (see attached photographs of existing charging stations). The charging stations may be available to the public, either as a free service or for a fee, or they may be designated for private use (e.g. a particular tenant within an office complex). The charging stations can be either Level-1 or Level-2 compatible, or often times both. Level-1 stations provide charging via a 120-volt AC plug, the same as plugging a vehicle into a standard three-prong wall outlet. Level-2 stations typically provide charging through a 240-volt hard-wired electrical service on a dedicated circuit, similar to the wiring of a residential electric dryer. Level-1 charging takes approximately 12 hours for a full charge, while Level-2 charging can take less than 4 hours. There is also Level-3 charging (aka DC Fast Charging), but the infrastructure is costly and more suited to a commercial fueling station.

By 2015, all major automakers are expected to offer plug-in electric vehicles for sale, including both entirely electric vehicles and plug-in hybrid vehicles. As energy prices continue to fluctuate and the market adjusts to this relatively new electric vehicle technology, it is difficult to predict the market share these types of vehicles will comprise in the foreseeable future. The general

consensus among industry analysts is that 2% to 5% of all new vehicle sales in the United States will be plug-in electric vehicles (including plug-in hybrids) by 2020. It is therefore logical to conclude that at least 2% of the parking spaces in a parking area should be electric-vehicle ready in the near future. If this ordinance is approved, Planning staff will advise applicants that approximately 2% of the parking spaces in a given parking lot would be the appropriate amount of spaces to dedicate as PEV spaces, given the direction of the industry.

In addition to reviewing the current Planning articles on electric vehicle infrastructure, Community Development Department staff attended a conference in Auburn Hills in September 2011 on preparing a community for electric vehicles. The information provided there, along with the City of Auburn Hills' ordinance, formed the basis for this text amendment. Staff also met with Steven Cohen, the Community Development Director for the City of Auburn Hills, as well as with representatives from the Ann Arbor-based Clean Energy Coalition (CEC). Both have proven to be a valuable resource. Auburn Hills and the CEC hope to lead the charge for multiple southeast Michigan communities to adopt PEV ordinances, not only in an effort to "go green" but also as a region-wide economic development measure to recognize southeast Michigan's willingness to move forward with new technology as the automotive industry brings more plug-in electric vehicles to the market. Several southeast Michigan communities, including Auburn Hills, Rochester Hills, Troy, Dearborn, Warren, and Farmington Hills have either already adopted a PEV ordinance or are in the process of doing so. The City of Auburn Hills was the first community in Michigan to adopt a PEV ordinance, and that ordinance encourages – but does not require – the installation of the electrical conduit below a new or expanded parking lot to provide for future charging stations. It further encourages a dedicated 240V circuit be installed within the garages of newly-constructed homes. Inclusion of this PEV infrastructure has been favorably received by applicants as a low-cost addition during construction of new developments and parking lots, and some developers have been excited at the prospect of the added value of being able to market a new home or building as "electric vehicle ready".

In September 2012, the CEC is planning to release their Plug-In Ready Michigan plan, an electric vehicle preparedness plan intended to aid local officials prepare for an increase in plug-in electric vehicle use. The CEC will present their plan at the Oakland County Planners' Gathering at the City of Auburn Hills civic campus on September 7, and representatives from Novi's Planning staff will attend. The Planners' Gathering will be a good opportunity to gauge Novi's proposed amendment relative to the CEC's recommendations and to comparable measures being taken by Novi's peer communities in southeast Michigan.

Staff recommends the Planning Commission hold the required public hearing on September 12, 2012, and subsequent to that hearing make a recommendation to the City Council to approve the proposed text amendment 18.263 relative to plug-in electric vehicle charging stations and spaces.

If any Commissioner has any questions related to this request, do not hesitate to contact Dave Campbell in the Community Development Department at (248) 347-0484 or dcampbell@cityofnovi.org.

STATE OF MICHIGAN

COUNTY OF OAKLAND

CITY OF NOVI

ORDINANCE NO. 12-18.263

AN ORDINANCE TO AMEND ORDINANCE NO. 97-18 AS AMENDED, THE CITY OF NOVI ZONING ORDINANCE, AMENDING ARTICLE 2 – CONSTRUCTION OF LANGUAGE AND DEFINITIONS, ZONING DISTRICT AND MAP, AS WELL AS ARTICLE 25 - GENERAL PROVISIONS, TO PROVIDE DEFINITIONS AND STANDARDS FOR PLUG-IN ELECTRIC VEHICLE CHARGING STATIONS AND PARKING SPACES, AS WELL AS TO ENCOURAGE THE INSTALLATION OF PLUG-IN ELECTRIC VEHICLE CHARGING STATIONS AND SPACES WITHIN NEW AND EXPANDED OFF-STREET PARKING AREAS.

THE CITY OF NOVI ORDAINS:

Part I. That Ordinance No. 97-18, the City of Novi Zoning Ordinance, as amended, Article 2 – Construction of Language and Definitions, Zoning District and Map, and Article 25 – General Provisions, is hereby amended to read as follows:

Sec. 201 Definitions

[Add the following definitions]

Plug-In Electric Vehicle (PEV): Any vehicle licensed and registered for operation on public and private highways, roads, and streets, either partially or exclusively, on electrical energy from the grid, or an off-board source, that is stored on-board via a battery for motive purpose. Includes an all-electric vehicle (EV) and a plug-in hybrid electric vehicle (PHEV).

Plug-In Electric Vehicle (PEV) Charging Station: A public or private electrical component assembly or group of assemblies designated specifically to charge batteries within electric plug-in electric vehicles. Also known as electric vehicle supply equipment (EVSE). PEV charging stations include Level 1, Level 2, and Level 3 charging, as follows:

- *PEV Charging Station Level 1: A PEV charging station that charges a PEV via a 120-volt AC outlet (a standard household electrical outlet).*
- *PEV Charging Station Level 2: A PEV charging station that charges a PEV at a voltage between 208 and 240 volts on a dedicated circuit of 20 to 80 amps.*
- *PEV Charging Station Level 3: A PEV charging station that charges a PEV at a voltage greater than 240 volts. Also known as DC fast charging and best suited to a public fueling station.*

Plug-In Electric Vehicle (PEV) Charging Space: Any public or private designated parking space that is served by a PEV charging station and identifies the use to be dedicated exclusively for the active charging of a PEV.

Plug-In Electric Vehicle (PEV) Infrastructure: Conduit, wiring, structures, machinery, and/or equipment necessary and integral to support a plug-in electric vehicle, including PEV charging stations

Sec. 2501 – 2404 [unchanged]

Sec. 2505 – Off-Street Parking Requirements

Subsections 1 through 16 [unchanged]

17. It is the intent of this subsection to provide reasonable standards for the installation and operation of Plug-In Electric Vehicle (PEV) charging stations and charging spaces within off-street parking areas.
- a. PEV charging stations, as well as all structures and equipment ancillary to PEV charging stations (protective bollards, signage, etc.), shall collectively be considered an accessory use to any principal permitted use.
 - b. The location of PEV charging stations and spaces shall be subject to the following:
 - 1. PEV charging stations and spaces shall be permitted anywhere off-street parking is permitted;
 - 2. PEV charging stations and spaces shall be permitted anywhere within an off-street parking area that a standard parking space is permitted, provided all standards pertaining to off-street parking spaces and to off-street parking areas are met;
 - c. PEV charging stations and spaces shall meet the following design requirements:
 - 1. PEV charging stations shall meet all applicable electrical and building codes, including but not limited to the National Electrical Code (NEC) and the Michigan Building Code;
 - 2. PEV charging stations shall be Level-1 and Level-2 capable as defined by the National Electrical Code (NEC);
 - 3. PEV charging spaces shall meet all dimensional requirements of a standard parking space per Section 2506 of this Ordinance, including length and width. PEV charging spaces shall meet the requirements of the City's Design and Construction Standards, including those pertaining to parking lot curbing and pavement;
 - 4. Where a PEV charging space is proposed perpendicular to a 4 inch curb such that a 17-foot parking space with a two-foot overhang is permitted per Sec. 2509 of this Ordinance, the corresponding PEV charging station as well as any structures ancillary to it (bollards, signs, etc.) shall be installed a minimum of 2 feet from the face of the curb;
 - 5. Where a PEV charging station is installed adjacent to a sidewalk, the station and all structures ancillary to it shall maintain a 5-foot wide clearance for the sidewalk;
 - 6. PEV charging stations and spaces shall be identified with the State-standard "Reserved Parking Only – Charging Station" sign and corresponding plaque (R7-8c and R7-8cP, respectively) as detailed in the Michigan Standard Highway Signs Book, or its equivalent. PEV identification signs shall meet the same standards relative to location, height, and design as barrier-free parking signs;
 - 7. PEV charging spaces shall be identified with the MMUTCD-standard pavement marking D9-11b (ALT) or its equivalent;
 - 8. PEV charging stations shall be installed in a suitable location such that any cords connecting the charging station with the vehicle will not extend

across a pedestrian walkway or will otherwise present a tripping hazard. Charging stations featuring self-retracting cords are encouraged;

9. PEV charging stations available to the public shall be maintained in safe and operational repair, and shall clearly display a toll-free telephone number to report any problems.
- d. PEV charging spaces shall be considered as standard parking spaces for the purpose of meeting the minimum off-street parking requirements of Section 2505 this Ordinance.
- e. PEV charging stations and spaces, as well as all structures ancillary to PEV charging stations and spaces, including but not limited to bollards, signs, canopies, shelters, solar collectors, etc., shall be subject to the following:
 1. PEV charging stations and spaces, as well as all ancillary structures installed as part of a PEV charging station, shall meet the minimum parking setback requirements of the applicable zoning district;
 2. Solar collector-equipped panels and canopies, shelters, carports, and similar large structures installed as part of a PEV charging station or space shall meet the minimum building setback requirements of the applicable zoning district;
 3. All ancillary structures installed as part of a PEV charging station shall meet the maximum height requirements of the applicable zoning district;
 4. PEV charging stations shall be permitted no additional signage beyond the required City-standard sign identifying the PEV charging station space.

Sec. 2506. - Off-Street Stacking Space, Layout Standards, Construction and Maintenance
[unchanged]

Part II

Severability. Should any section, subdivision, clause, or phrase of this Ordinance be declared by the courts to be invalid, the validity of the Ordinance as a whole, or in part, shall not be affected other than the part invalidated.

PART III.

Savings Clause. The amendment of the Novi Code of Ordinances set forth in this Ordinance does not affect or impair any act done, offense committed, or right accruing, accrued, or acquired or liability, penalty, forfeiture or punishment, pending or incurred prior to the amendment of the Novi Code of Ordinances set forth in this Ordinance.

PART IV.

Repealer. All other Ordinance or parts of Ordinance in conflict herewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

PART V.

Effective Date: Publication. Public hearing having been held hereon pursuant to the provisions of Section 103 of Act 110 of the Public Acts of 2006, as amended, the provisions of this Ordinance shall be published within fifteen (15) days of its adoption by publication of a brief notice in a newspaper circulated in the City of Novi stating the date of enactment and effective date, a brief statement as to its regulatory effect and

that a complete copy of the Ordinance is available for public purchase, use and inspection at the office of the City Clerk during the hours of 8:00 A.M. to 5:00 P.M., Local Time. The provisions of this Ordinance shall become effective seven (7) days after its publication.

MADE, PASSED, AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF NOVI, OAKLAND COUNTY, MICHIGAN, ON THE ___ DAY OF _____, 2012.

ROBERT J. GATT, MAYOR

MARYANNE CORNELIUS, CITY CLERK

Ayes:
Nays:
Abstentions:
Absent:

Photos illustrating Plug-In Electric Vehicle (PEV) Charging Stations

