

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: AUGUST 1, 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. Some of these efforts are as follows. 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 of EECBG, Energy Efficiency Conservation Block Grant 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 (see attached excerpt from the City's webpage).

Consistent with these ongoing efforts, the Community Development Department has now proposed a **text amendment creating standards which allow and encourage 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 encourage, but not require the installation of at least the "infrastructure" needed for future installation of charging stations in new or expanded parking lots, such as identification of appropriate parking spaces, and the underground conduit for electrical wiring needed for future charging stations.

One of the purposes of the PEV ordinance is to provide reasonable regulations for the siting and design of PEV charging stations. While the stations are welcomed and encouraged, the City does not wish to see the charging stations located where they might 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 spaces themselves. 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 provide charging through a 240-volt hard-wired electrical service, 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 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.

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' experience with a similar ordinance encouraging the installation of the conduit below the new or expanded parking lot, at a properly sited location for future charging station, has been viewed as a low-cost addition to construction of new developments and parking lots that applicants have been willing to do. Some developers have even been excited at the prospect for the added value of being able to market a new building as "electric vehicle ready". Additionally, Auburn Hills representatives and the CEC hope to lead the charge for multiple southeast Michigan communities to adopt "Electric Vehicle-Ready" 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.

The Planning Commission is asked to set a Public Hearing for Wednesday September 12, 2012 on the proposed ordinance amendment. At that time, the Commission will hold the public hearing and forward a recommendation to the City Council, for reading and adoption. 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, including a battery electric vehicle and a plug-in hybrid vehicle.

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 vehicles.

Plug-In Electric Vehicle (PEV) Charging Station Level 1: A PEV charging station that charges a PEV at a voltage between 0 and 120 volts.

Plug-In Electric Vehicle (PEV) Charging Station Level 2: A PEV charging station that charges a PEV at a voltage between 120 and 240 volts.

Plug-In Electric Vehicle (PEV) Charging Station Level 3: A PEV charging station that charges a PEV at a voltage greater than 240 volts.

Plug-In Electric Vehicle (PEV) Charging Space: Any marked parking space that is served by a PEV charging station and identifies the use to be exclusively for the active charging of an electric vehicle

Plug-In Electric Vehicle (PEV) Infrastructure: Conduit, wiring, structures, machinery, and 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 is 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, as well as to encourage the installation of PEV infrastructure. PEV charging stations and corresponding charging spaces are not required but are encouraged within off-street parking areas in all zoning districts.
- a. The City of Novi strongly encourages, but does not require, that within all new and expanded non-residential parking areas the electrical capacity be provided to accommodate for the future hardwire installation of Level-1 and Level-2 PEV charging stations. It is recommended that a parking area have the capacity for 2% of the total spaces to be prepared for PEV charging stations. The City of Novi encourages the combining of "green" technologies, such as covering a PEV charging station and/or space with a photovoltaic roof or canopy.
 - b. PEV charging stations, as well as all structures and equipment ancillary to PEV charging stations, shall collectively be considered an accessory use to any principal permitted use.
 - c. The location of public and private 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, so long as all standards pertaining to off-street parking spaces and to off-street parking areas are met;
 3. PEV charging spaces are encouraged to be located adjacent to barrier-free parking spaces such that the required barrier-free access aisle may also provide access to the PEV charging station, so long as all applicable barrier-free code requirements are met for the barrier-free spaces. Doing so would effectively create a barrier-free PEV charging space.
 - d. Public and private 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 Electric Code, the Michigan Electric Code, 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;
 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 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 accessory to it (bollards, signs, etc.) 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 shall clearly display a toll-free telephone number to report any problems.
- e. Public and private PEV charging station spaces shall be considered as standard parking spaces for the purpose of meeting the minimum off-street parking requirements of Section 2505 this Ordinance.
- f. Structures accessory to public and private PEV charging stations, including but not limited to bollards, signs, canopies, shelters, solar collectors, etc., shall be subject to the following:
 1. All accessory 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 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 accessory 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 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:

Press Release

Electric vehicle charging stations now in Novi

CONTACT: Sheryl Walsh, 248-735-5628
FOR IMMEDIATE RELEASE

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Novi, Michigan, September 9, 2011 - The City of Novi takes pride in being a proponent of eco-friendly initiatives with the preservation of its abundant natural features, commitment to connecting the community with walkable pathways, progressive updates to the City Ordinance addressing solar panels and wind turbines and most recently the installation of two electric vehicle charging stations. These new charging stations are located at Novi Police Headquarters, 45125 W. Ten Mile Road, and at the City of Novi Public Library, 45255 W. Ten Mile Road. The charging stations were made possible through a grant awarded by the ChargePoint America Program, which is funded in part by the United States Department of Energy, as part of the American Reinvestment and Recovery Act.

The ChargePoint Networked Charging Stations are easy to use and will work with any electric vehicle or plug-in hybrid on the market. Networked charging stations provide many attractive capabilities to drivers of electric vehicles. The networking allows a driver to identify where charging stations are located and even which charging stations are currently being used. Any charging station attached to a network can transmit information about the charging session including: start time and time of completion. Networked charging stations have the ability to email or send text messages to a driver alerting him or her about their charging session status. Like most gas stations, users will pay via credit card or ChargePoint card. The current fee to "plug-in" to one of the City of Novi charging stations is \$3 per charge.

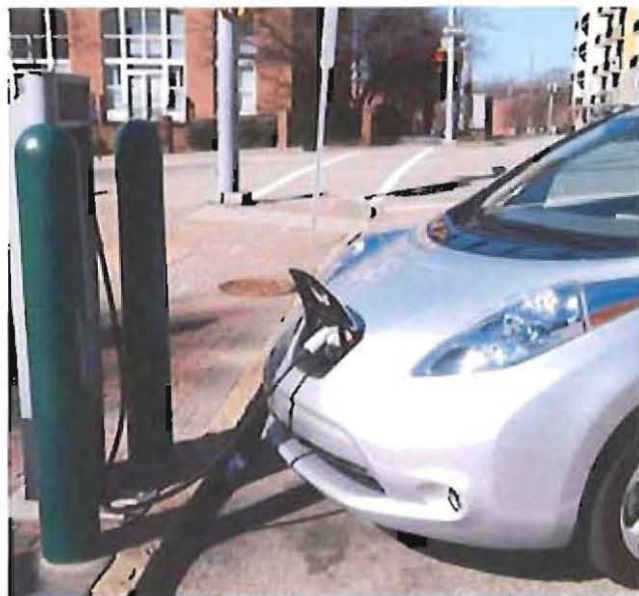


Electric vehicles charging station located at the Novi Police Headquarters.



City of Novi electric vehicle charging station located at 45125 W. Ten Mile Road, Novi Police Headquarters. Chevy Volt courtesy of Marty Feldman Chevrolet.

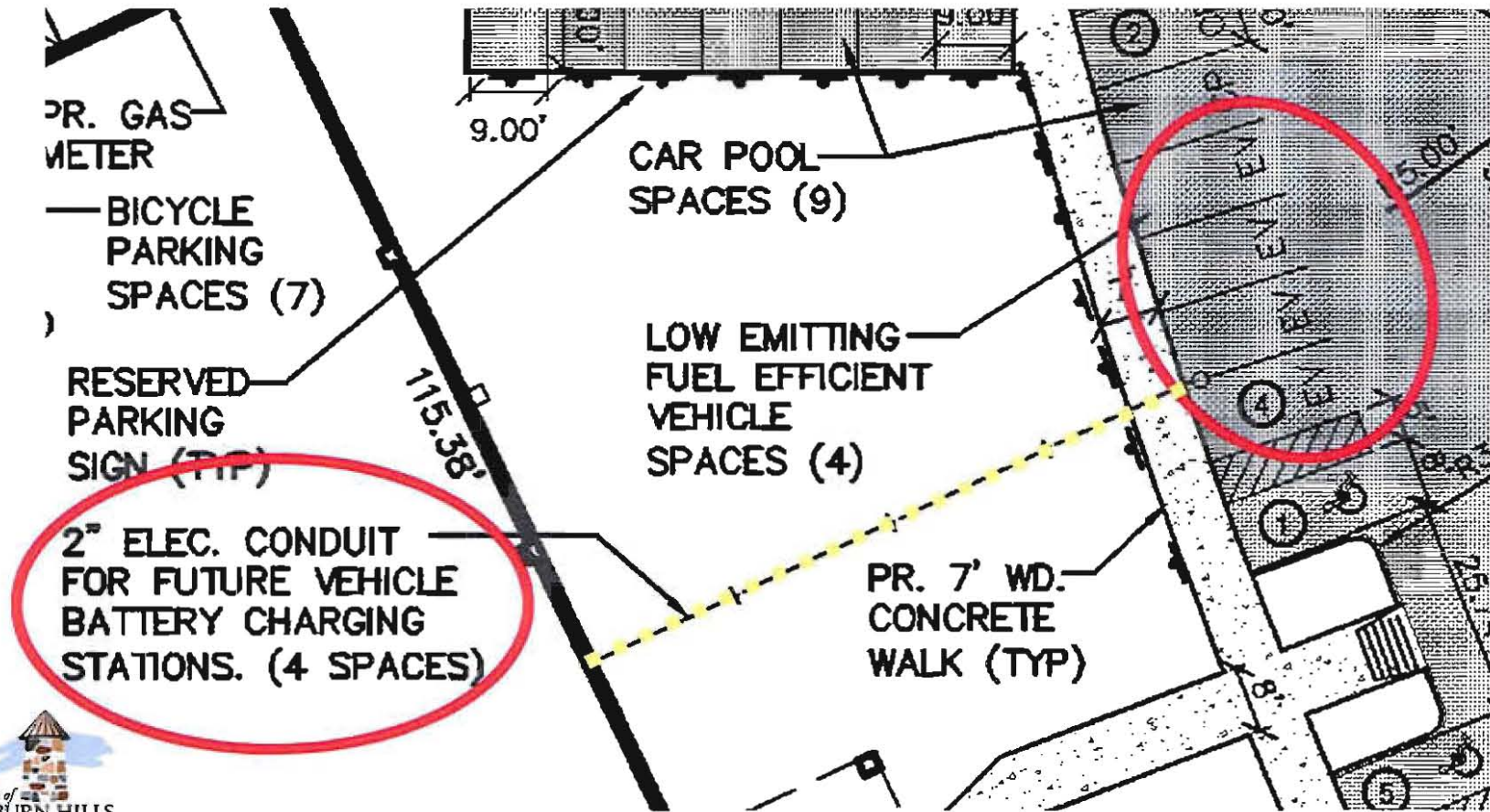
Photos illustrating Plug-In Electric Vehicle (PEV) Charging Stations



Electric Vehicle Infrastructure

Simple Message: **PLAN NOW - SAVE LATER**

It is cheaper and easier to rough-in infrastructure during construction, than to rip things up after the fact.



Electric Vehicle Infrastructure

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It is cheaper and easier to rough-in infrastructure during construction, than to rip things up after the fact.

Conduit for future
EV charging station
installation

