

JULY 11, 2011

## AGENDA ITEM NO. 9E. COMMUNITY DEVELOPMENT

To: Mayor and City Council  
From: Peter E. Auger, City Manager and Steven J. Cohen, Director of Community Development  
Submitted: July 5, 2011  
Subject: Motion – Approval of Text Amendment to Zoning Ordinance / Section 1834. Electric Vehicle Infrastructure

### **INTRODUCTION**

Electric vehicles (EVs) have entered the market and will soon be available to consumers in all 50 States. As the home of Chrysler Group, LLC and numerous automotive suppliers, the City of Auburn Hills recognizes the importance of supporting this emerging innovation in the industry.

Automakers have clearly identified that to support the mass production of EVs, municipalities will need to enable and promote the necessary charging infrastructure demanded by potential customers. Thus, advanced planning at all governmental levels is critical to support the early adoption of EVs and spur private sector investment.

The City has learned that EVs need a much different type of fueling network than gasoline engine vehicles. This new fueling system will be based on a clustering of strategically placed charging stations at homes, workplaces, and retail stores, in lieu of the traditional quick ‘in and out’ fueling system used with gas stations today. This will be quite a paradigm shift for most American consumers and we have talked to many skeptics.

However, companies like GM, Ford, and Nissan believe the market will develop over time and all three have made bold public predictions that at least 10% of their Y2020 overall sales will be comprised of EVs. That is just eight years away. What will the EV market be like in 20-30 years? No one really knows. However, we do anticipate that higher gas prices, advancements in battery storage, lower vehicle costs, and significant public/private investment in technology and infrastructure will greatly influence EV market share over time.



*Chevy Volt (top) and Ford Focus (bottom)*

### **AUBURN HILLS' LEADERSHIP ON THE ISSUE**

In mid-April 2011, staff recommended to the City Manager that the City of Auburn Hills take a leadership role in Michigan and progressively plan for the rollout of the infrastructure needed for EVs. The City Manager approved the initiative and staff quickly developed a coalition of industry experts to help with the effort (i.e., Chrysler Group, LLC, Magna E-Car, ALTe, Clean Energy Coalition, Pike Research, and DTE Energy). On May 2, 2011, the coalition met and discussed the City's vision and how to develop a public-private partnership to promote the use of EVs in Auburn Hills and the region. The group was supportive of the initiative and the meeting concluded with the consensus of “we are on-board ... proceed ... just let us know when you need our support.”

Thus, over the past 60 days the following has occurred:

- **Grant Application.** The City of Auburn Hills has been included as a “Champion City” in a federal planning and readiness grant application submitted to the US Department of Energy by the Clean Energy Coalition to promote EV infrastructure planning Statewide.

**AUBURN HILLS' LEADERSHIP ON THE ISSUE (cont.)**

- **Public Charging Stations.** The City Council has accepted a DTE Energy grant to install public EV charging stations in the Downtown. DTE anticipates bids to install the stations will be received in early July 2011 with installation in August 2011. Staff will advise the City Council on the exact station locations once final costs have been determined.
- **Develop Model Ordinance.** The City has developed the enclosed ordinance based on laws implemented in the States of Washington, Oregon, and California and input from our public and private sector colleagues. The ordinance is intended to strongly encourage, but not require, property owners to plan for and/or install EV charging stations to support the future market demand. Understanding that the greatest barrier to market adoption of EVs is the unique infrastructure need to refuel the vehicles, it is our goal to raise awareness about the issue. The ordinance will also help the City and property owners' proactively plan today for EV infrastructure, so that costly or cost prohibitive retrofits can be avoided in the future.

**STAFF RECOMMENDATION**

We envision EV charging stations becoming as commonplace as ADA barrier free spaces at major workplaces and retail centers. **The attached ordinance is a small step that the City of Auburn Hills can take to prepare for the future by setting policy and removing the red tape and bureaucratic uncertainty involved with installing a network of public and private EV charging stations throughout the community.** This is what good community planning is all about and the City of Auburn Hills is at the forefront on the issue in Michigan.

We would like to thank all those in the public and private sector who reviewed the draft ordinance and provided input; in particular Nico Schultz, Development Manager at The Taubman Company who reviewed the proposal in detail and added key insight from a property owner perspective, which was greatly appreciated.



*McDonald's in Cary, NC*

**PLANNING COMMISSION RECOMMENDATION**

**Recommended Approval on June 28, 2011 (7-0 vote).**

**MOTION**

**"Move to accept the Planning Commission's recommendation and approve the text amendment to create Section 1834. Electric Vehicle Infrastructure of the Zoning Ordinance, to be known as Ordinance No. 11-836."**

I CONCUR: Thomas A. Tanghe on behalf of \_\_\_\_\_  
PETER E. AUGER, CITY MANAGER



*Not Yet Approved*  
**CITY OF AUBURN HILLS  
PLANNING COMMISSION MEETING**

**June 28, 2011**

**CALL TO ORDER:** Chairperson Ouellette called the meeting to order at 7:02 p.m.

**ROLL CALL:** Present. Beidoun, Hitchcock, Mitchell (arrived at 7:26 p.m.), Pierce, Ouellette, Salerno, Verbeke  
Absent. Kittle, Spurlin  
Also Present. Director of Community Development Cohen  
Guests. 13

**LOCATION:** City Council Chamber, 1827 N. Squirrel, Auburn Hills, MI 48326

**5c. Public Hearing / Motion – Recommendation to City Council for Approval of Text Amendment to Zoning Ordinance / Section 1834. Electric Vehicle Infrastructure (7:38 p.m.)**

Mr. Ouellette and Mr. Cohen explained that the text amendment was proposed to encourage the planning and installation of electric vehicle charging stations in Auburn Hills.

The Commission's discussion covered the following:

- It is an exciting project for the City of Auburn Hills.
- Auburn Hills wants to be a leader in Michigan on this issue. Staff is not aware of any other municipality in Michigan that has developed an ordinance like this.
- Several people from the public and private sector reviewed the draft ordinance and provided comments including Reb Construction, TH Marsh Construction, Clean Energy Coalition, Oakland County, and Taubman Company.
- The definition of "electric vehicle" in the ordinance should be clarified to prohibit a golf cart or similar types of recreational vehicle from parking in a charging station.
- The standard for the number of recommended charging stations for development varied in ordinances reviewed from the States of Washington, Oregon, and California. The City's ordinance encourages developments with parking lots with fewer than 1,000 spaces are encouraged to have two percent of the spaces dedicated for electric vehicle charging stations.
- The City has secured a grant via DTE Energy to install several public electric vehicle charging stations in the downtown. The City Council has approved the installation of those stations Downtown, which will be installed sometime in August. DTE Energy will monitor usage and report back to the City.
- Charging stations will have notification signage alerting motorists of parking prohibitions.
- Wayfinding signs should be installed near the public charging stations. Also, smart phones will have applications with the ability to locate stations.
- Hotels and motels will need to install charging stations.
- Mr. Cohen would like to work with the Planning Commission in the future to comprehensively plan where clusters of charging stations should be located.
- The Commission commended Mr. Cohen for his hard work on project.

The public hearing was opened and closed at 8:10 p.m. No comments from the public were made.

**Ms. Mitchell moved to recommend to City Council approval of a text amendment to create Section 1834. Electric Vehicle Infrastructure in the Zoning Ordinance with the addition of amending the definition of "electric vehicles."**

**Supported by Ms. Salerno.**

**VOTE: Yes: Beidoun, Hitchcock, Mitchell, Pierce, Ouellette, Salerno, Verbeke  
No: None**

**Motion Carried (7-0)**

**CITY OF AUBURN HILLS**

**COUNTY OF OAKLAND**

**STATE OF MICHIGAN**

**ORDINANCE NO. 11-836**

**TEXT AMENDMENT TO ZONING ORDINANCE**

AN ORDINANCE TO AMEND  
ARTICLE XVIII. GENERAL PROVISIONS TO ADD  
SECTION 1834. ELECTRIC VEHICLE INFRASTRUCTURE  
IN ZONING ORDINANCE NO. 372, AS AMENDED

THE CITY OF AUBURN HILLS ORDAINS

Section 1.

Section 1834 of Auburn Hills Zoning Ordinance No. 372, as amended, is hereby added and shall read as follows:

SECTION 1834. ELECTRIC VEHICLE INFRASTRUCTURE

1. Intent.  
The intent of this section is to facilitate and encourage the use of electric vehicles and to expedite the establishment of a convenient, cost-effective electric vehicle infrastructure that such use necessitates.
2. Definitions:  
For the purposes of this Section, the following definitions shall apply.
  - A. Accessible electric vehicle charging station means an electric vehicle charging station where the battery charging station is located within accessible reach of a barrier-free access aisle and the electric vehicle.
  - B. Battery charging station means an electrical component assembly or cluster of component assemblies designed specifically to charge batteries within electric vehicles.
  - C. Battery electric vehicle means any vehicle that operates exclusively on electrical energy from an off-board source that is stored in the vehicle's batteries, and produces zero tailpipe emissions or pollution when stationary or operating.
  - D. Charging levels means the standardized indicators of electrical force, or voltage, at which an electric vehicle's battery is recharged. The terms 1, 2, and 3 are the most common charging levels, and include the following specifications:
    1. Level-1 is considered slow charging. Voltage including the range from 0 through 120.
    2. Level-2 is considered medium charging. Voltage is greater than 120 and includes 240.
    3. Level-3 is considered fast or rapid charging. Voltage is greater than 240.

- F. Electric vehicle means any vehicle that is 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. "Electric vehicle" includes: (1) a battery electric vehicle; and (2) a plug-in hybrid electric vehicle.
- G. Electric vehicle charging station means 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. An electric vehicle charging station equipped with Level-1 or Level-2 charging equipment is permitted outright as an accessory use to any principal use.
- H. Electric vehicle charging station – private restricted use means an electric vehicle charging station that is (1) privately owned and restricted access (e.g., single-family home, executive parking, designated employee parking) or (2) publicly owned and restricted (e.g., fleet parking with no access to the general public).
- I. Electric vehicle charging station – public use means an electric vehicle charging station that is (1) publicly owned and publicly available (e.g., Park & Ride parking, public library parking lot, on-street parking) or (2) privately owned and available to visitors of the use (e.g., shopping center parking).
- J. Electric vehicle infrastructure means conduit/wiring, structures, machinery, and equipment necessary and integral to support an electric vehicle, including battery charging stations and rapid charging stations.
- K. Electric vehicle parking space means any marked parking space that identifies the use to be exclusively for the parking of an electric vehicle.
- L. Non-electric vehicle means any motor vehicle that does not meet the definition of electric vehicle.
- M. Plug-in hybrid electric vehicle means an electric vehicle that (1) contains an internal combustion engine and also allows power to be delivered to drive wheels by an electric motor; (2) charges its battery primarily by connecting to the grid or other off-board electrical source; (3) may additionally be able to sustain battery charge using an on-board internal-combustion-driven generator; and (4) has the ability to travel powered by electricity.

### 3. Permitted Locations

- A. Level-1 and Level-2 electric vehicle charging stations are permitted in every zoning district, when accessory to the primary permitted use. Such stations located at one-family, multiple-family, and mobile home park dwellings shall be designated as private restricted use only. Installation shall be subject to permit approval administered by the Community Development Department.
- B. Level-3 electric vehicle charging stations are permitted in the B-2, T&R, I-1, and I-2 districts, when accessory to the primary permitted use. Installation shall be subject to permit approval administered by the Community Development Department.
- C. If the primary use of the parcel is the retail electric charging of vehicles, then the use shall be considered a gasoline service station for zoning purposes. Installation shall be subject to Special Land Use approval and located in zoning districts which permit gasoline service stations.

### 4. Readiness Recommendations

#### A. Residential

In order to proactively plan for and accommodate the anticipated future growth in market demand for electric vehicles, it is strongly encouraged, but not required, that all new one-family and multiple-family homes with garages be constructed to provide a 220-240-volt / 40 amp outlet on a dedicated circuit and in close proximity to designated vehicle parking to accommodate the potential future hardwire installation of a Level-2 electric vehicle charging station.

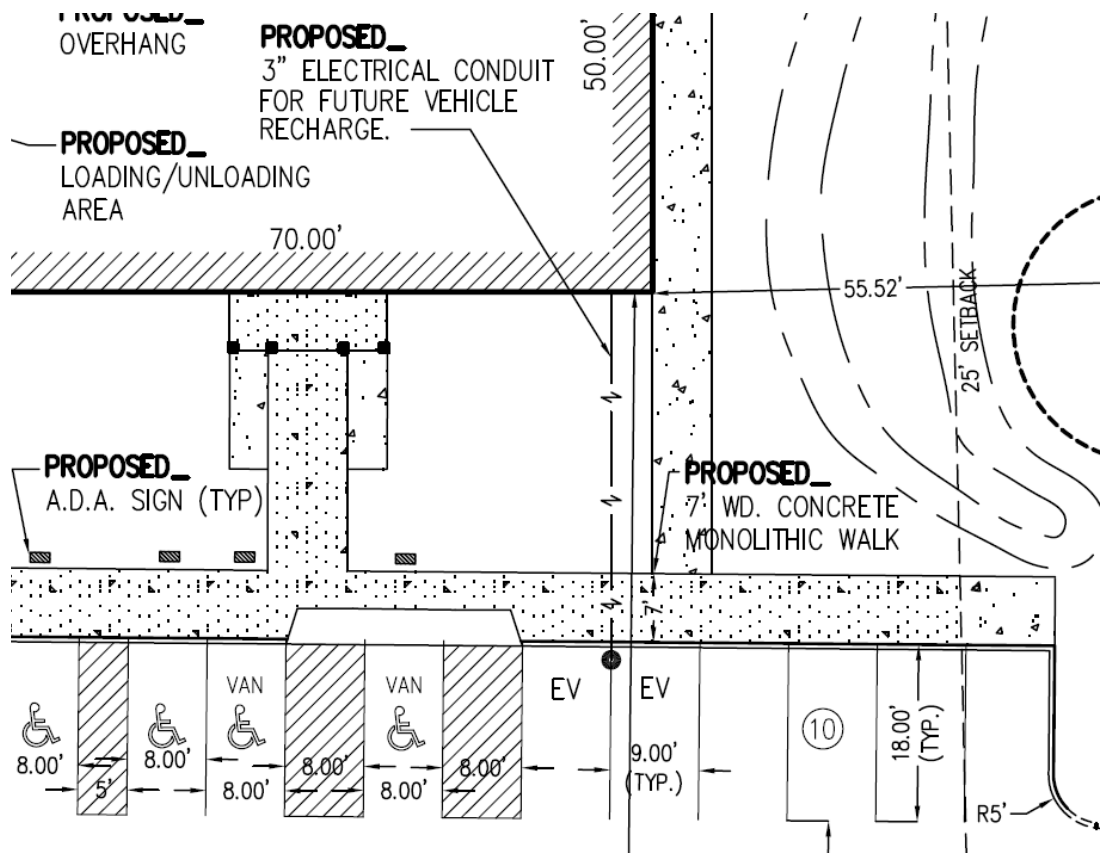
*Commentary: Industry experts have advised the City of Auburn Hills that 60% to 70% of electric vehicle charging will occur at the owner's home at night. Retrofitting a home for electric vehicle charging is considerably more expensive than the cost of including the capacity at the time of construction. To minimize the unnecessary cost to retrofit a home, the City considers electric vehicle readiness in new home construction a high priority.*

B. Non-Residential

In order to proactively plan for and accommodate the anticipated future growth in market demand for electric vehicles, it is strongly encouraged, but not required, that all new and expanded non-residential development parking areas provide the electrical capacity necessary to accommodate the future hardwire installation of Level-2 electric vehicle charging stations. It is recommended that a typical parking lot (e.g., 1,000 or less parking spaces) have a minimum ratio of 2% percent of the total parking spaces be prepared for such stations.

It is noted and understood that large-sized parking areas (e.g., Chrysler Group, LLC Headquarters, Great Lakes Crossing Outlets, The Palace of Auburn Hills, Oakland University, etc.) may require less electric vehicle charging stations than recommended above to accommodate the anticipated market demand.

*Commentary: If the property owner decides not to install the battery charging stations at the time of initial construction, this approach allows for the stations to be installed in the future without costly or cost-prohibitive retrofits. The intent of this subsection is encourage sites to be "roughed-in" with the installation of electrical stubs at planned electric vehicle charging station locations and conduit run from the power source to the station location to support future installation.*



Example Site Plan - "Rough-In" of Electric Vehicle Charging Stations

6. General Requirements for Multi-Family Residential and Non-Residential Development

A. Parking

1. An electric vehicle charging station space may be included in the calculation for minimum required parking spaces required in accordance with Section 1804.
2. 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. Accessible Spaces

It is strongly encouraged, but not required, that a minimum of one (1) accessible electric vehicle charging station be provided. Accessible electric vehicle charging stations should be located in close proximity to the building or facility entrance and connected to a barrier-free accessible route of travel. It is not necessary to designate the accessible electric vehicle charging station exclusively for the use of disabled persons.

C. Lighting

Site lighting shall be provided where an electric vehicle charging station is installed, unless charging is for daytime purposes only.

D. Equipment Standards and Protection

1. 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 on sidewalks.
2. 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.

E. Usage Fees

The property owner is not restricted from collecting a service fee for the use of an electric vehicle charging station made available to visitors of the property.

F. Signage

1. 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.
2. Each electric vehicle charging station space shall be posted with signage 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. Restrictions shall be included on the signage, if removal provisions are to be enforced by the property owner pursuant to Chapter 70. Traffic and Vehicles, Article III. Uniform Traffic Code of the Auburn Hills City Code.

G. 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.

Section 2. Repealer.

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

Section 3. Severability.

If any section, clause, or provision of this Ordinance shall be declared to be unconstitutional, void, illegal, or ineffective by any Court of competent jurisdiction, such section, clause, or provision declared to be unconstitutional, void, or illegal shall thereby cease to be a part of this Ordinance, but the remainder of this Ordinance shall stand and be in full force and effect.

Section 4. Savings.

The proceedings pending and all rights and liabilities existing, acquired, or incurred at the time this Ordinance takes effect are saved and may be consummated according to the law when they were commenced.

Section 5. Effective Date.

The provisions of this Ordinance are hereby ordered to take effect upon publication in the manner prescribed by the Charter of the City of Auburn Hills.

Section 6. Adoption.

This Ordinance is hereby declared to have been adopted by the City Council of the City of Auburn Hills at a meeting thereof duly called and held on the \_\_\_\_\_ day of \_\_\_\_\_, 2011, and ordered to be given publication in a manner prescribed by the Charter of the City of Auburn Hills.

**AYES:**

**NAYES:**

**ABSTENTIONS:**

STATE OF MICHIGAN )

) ss.

COUNTY OF OAKLAND )

I, the undersigned, the duly qualified Clerk of the City of Auburn Hills, Oakland County, Michigan, do hereby certify that the foregoing is a true and complete copy of Ordinance No. \_\_\_\_\_ adopted by the Auburn Hills City Council on the \_\_\_\_\_ day of \_\_\_\_\_, 2011, the original of which is in my office.

\_\_\_\_\_  
GAIL RATLIF, City Clerk