



Zoning Text Amendment (ZTA) No. 14-01, Electric Vehicle Parking Standards- Updated



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Completed: 2/2012/14

Description

ZTA No. 14-01 amends the provision for parking design standards, size and arrangement, and minimum required parking spaces for the charging of electric vehicles. Specifically, the ZTA would allow electric vehicle charging stations under certain circumstances.

Summary

Staff recommends approval with modifications of ZTA 14-01 to allow electric vehicle charging stations under certain circumstances. The staff recommendations include plain language; add definitions, general development standards and maintenance requirements.

Council members Berliner and Navarro sponsored Zoning Text Amendment 14-01 to require electric vehicle charging stations under certain circumstances. The sponsors would require spaces for the charging of electric vehicles in instances where 50 or more parking spaces are required, as well as design and accessible requirements if 25 or more electric charging stations are required.

Background/Analysis

Electric vehicles (EVs) have re-entered the market and will be available to consumers in all 50 states. The growth of EVs is anticipated increase as a transportation choice, and the incorporation of electric vehicle supply equipment (EVSE) will become a critical element of planning and designing¹. EVs run on electric only, powered by rechargeable battery packs, and rely on non-traditional fueling capabilities, unlike combustion engines that “recharge” using gasoline filling stations.

Since 2010, multiple jurisdictions in several states have created standards in zoning ordinances, road codes, building codes, etc. that allow for the incorporation of EVSE in the development of private or public property, including street designs. Site design and locational requirements are

¹ *Siting and Design Guidelines for Electric Vehicle Supply Equipment* (2012), WXY Architecture + Urban Design.

part of zoning ordinances nationwide; however, siting and installation of EVSE depends on a variety of considerations, including the proposed use, proximity to power supply, parking space size and orientation, pedestrian circulation, and lighting².

Simply stated an EVSE delivers electricity to charge the batteries connected to a charging station. There are currently three levels of charging stations: Level 1 (slow charging), Level 2 (moderate charging) and Level 3 (rapid charging). Figure 1 below shows the attributes of each level for electric vehicle charging stations. Most all municipal governments permit by-right Level 1 and Level 2 in any zoning district, provided they are ancillary to the primary use. Level 3 charging stations are permitted by-right in certain commercial, mixed use and industrial zones, again, if the charging stations are ancillary to the primary.

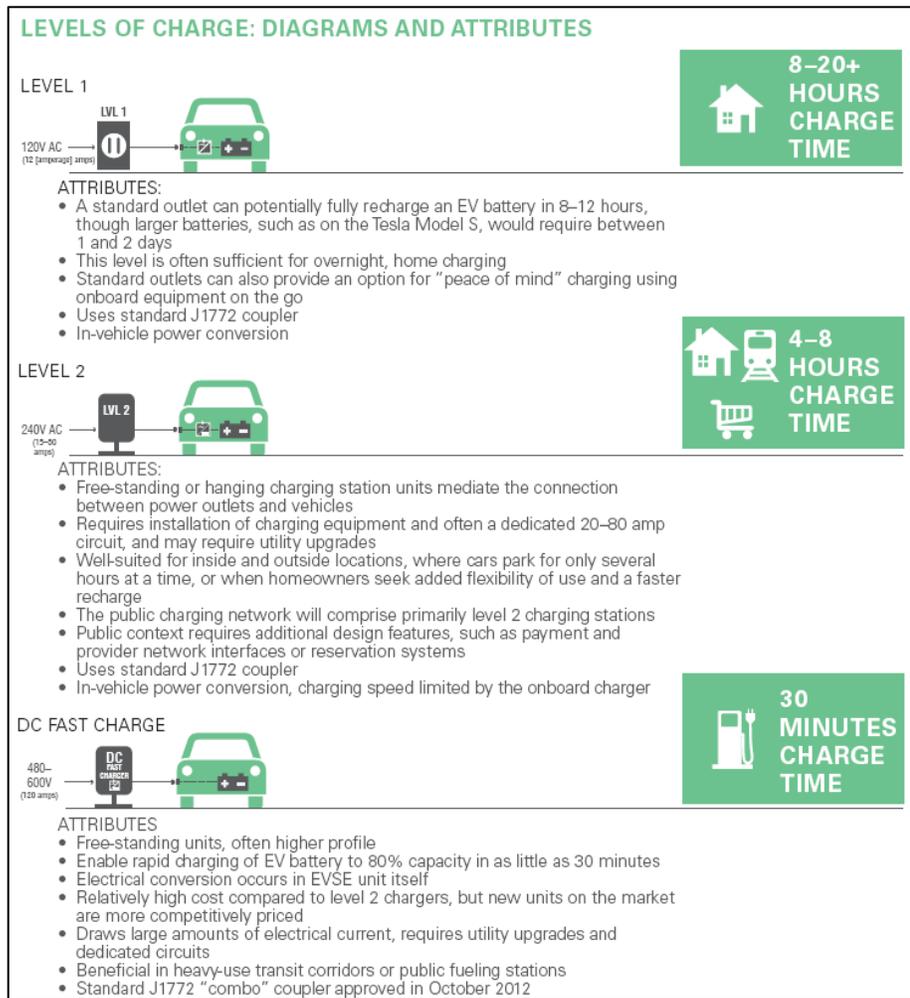


Figure 1: Levels of Charging Stations

Source: *Siting and Design Guidelines for Electric Vehicle Supply Equipment (2012)*

Many zoning ordinances vary with respect to the number of required parking spaces for EV charging stations. Most states do not require minimum thresholds for parking spaces;

² Ibid.

however, all require a minimum of one accessible EV charging station, located in close proximity to the building or facility entrance and connected to a barrier-free accessible route of travel (see Figure 2 below for a possible configuration). In all cases, it is not necessary to designate the accessible electric vehicle charging station exclusively for use of disabled persons, since accessible parking is available for those not needing a charge. Those ordinances that were cited as having mandatory measures for non-residential uses provide as few as one EV charging space between 10 – 25 parking spaces, incrementally increasing one per each additional 25 parking spaces. Once a parking facility increases to 201 spaces or more, at least 8% of the total spaces must be for EV charging station spaces. One such ordinance provided that no more than 20% of the parking facility could be for EV charging stations. In all instances electric vehicle charging stations were included in the calculation for minimum required parking spaces.

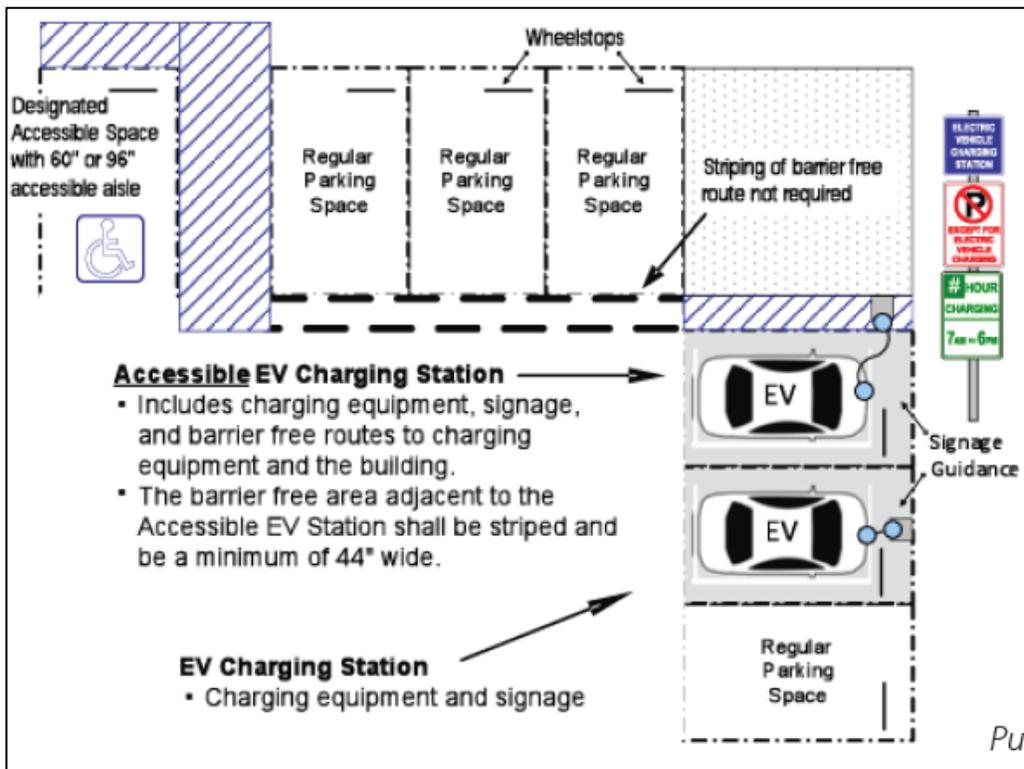


Figure 2: Off Street Accessible Electric Vehicle Charging Station Option 1

Source: *Electric Vehicle Infrastructure: A Guide for Local Governments in Washington State (2010)*

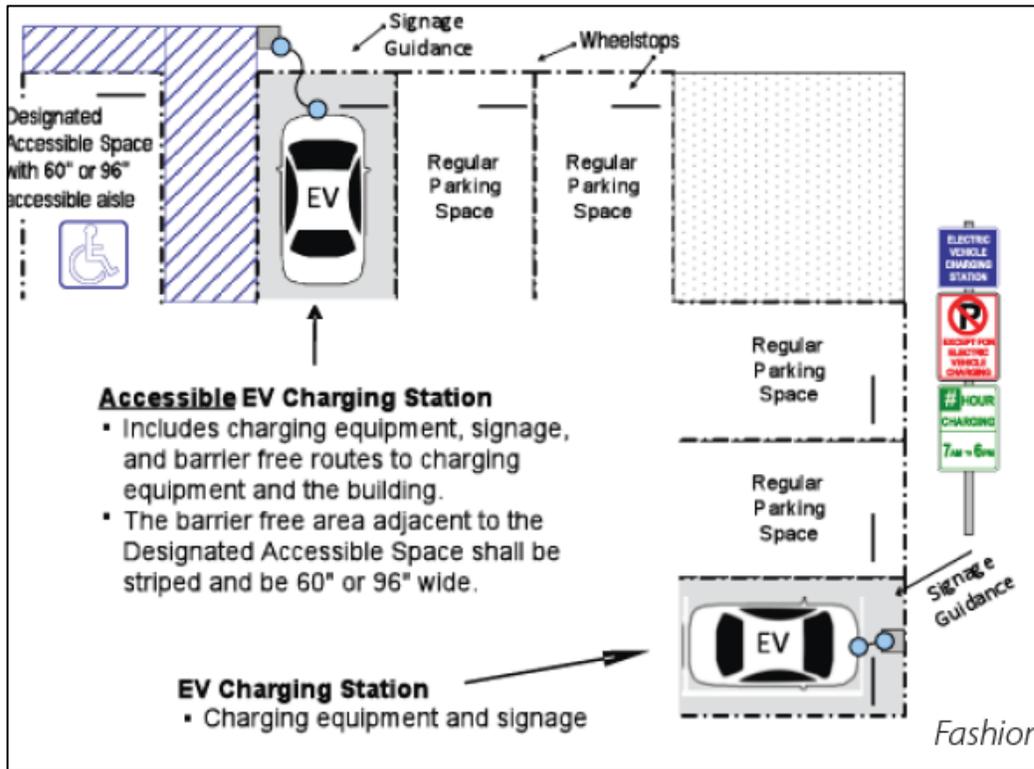


Figure 3: Off Street Accessible Electric Vehicle Charging Station Option 2

Source: *Electric Vehicle Infrastructure: A Guide for Local Governments in Washington State (2010)*

In reviewing the proposed text amendment, staff identified several items for Planning Board discussion and consideration:

- As proposed, this text amendment does not differentiate between primary or accessory use of these stations. Most, if not all zoning ordinances that outline where this use is permitted, by level of charging station, and defines what where the electric charging station is a primary or accessory use. This may affect future automobile filling stations that may install rapid charge (or Level 3) electric charging stations, alongside regular fueling stations.
- As proposed, this text amendment does not consider "EV-readiness", in that the ordinance does not have provisions to anticipate future need or growth of electric charging stations throughout the County.
- As proposed, this amendment does not differentiate between types of charging stations, nor defines the terms used in the section.

- As proposed, electrical charging stations for those with disabilities would be required after 25 or more electric vehicle charging stations, when typically these are designed to be included with the first required space, but not mandated to only disabled persons.

Staff included language in the proposed amended text amendment that would address staff's discussion points, including reducing the point at which accessible electric charging parking spaces are required. Staff recommends the following considerations into the amended text

- Define whether electric charging stations are a primary or accessory use, and what zone will permit the level of charging station;
- Define the terms used in the code which reference electric vehicle charging stations;
- Require one accessible electric vehicle parking space when required to do a minimum of one electric vehicle charging space per fifty parking spaces, but this space would be available to any person needing to use the space, since assumedly ADA accessible stalls will already be available in the parking lot or garage.
- Staff did not recommend an optional, "EV-readiness" language, although it is a viable option for smaller parking facilities in order to anticipate growth of this transportation sector.

Conclusion

With the proposed changes to the ZTA language as depicted in Attachment 1, staff recommends approval of ZTA 14-01. Incorporating electric vehicle technology in the zoning ordinance amendments includes a holistic approach when determining the location and site design of electric vehicle charging stations and allows uniform requirements regarding electric vehicle charging stations in all zones. These changes will define new terminology relating to electric vehicles, identify permitted locations, and define site design requirements when approving development plan applications.

Attachments

1. ZTA No. 14-01, as modified by Staff

Zoning Text Amendment No.: 14-01
Concerning: Parking Design- Charging
Stations
Draft No. & Date: 1 – 1/10/14
Introduced: January 28, 2014
Public Hearing:
Adopted:
Effective:

**COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND
SITTING AS THE DISTRICT COUNCIL FOR THAT PORTION OF
THE MARYLAND-WASHINGTON REGIONAL DISTRICT WITHIN
MONTGOMERY COUNTY, MARYLAND**

By: Councilmembers Berliner and Navarro

AN AMENDMENT to the Montgomery County Zoning Ordinance to:

Require electric vehicle charging stations under certain circumstances

By adding the following subsection of the Montgomery County Zoning Ordinance,
Chapter 59 of the Montgomery County Code:

DIVISION 59-E-2. “PLANS AND DESIGN STANDARDS.”
Section 59-E-2.2. “Size and arrangement of parking spaces.”
Subsection 59-E-2.24. “Space for charging electric vehicles.”

EXPLANATION: ***Boldface** indicates a Heading or a defined term.*
Underlining indicates text that is added to existing law by the original text amendment.
[Single boldface brackets] indicate that text is deleted from existing law by original text amendment.
Double underlining indicates text that is added to the text amendment by amendment.
[[Double boldface brackets]] indicate text that is deleted from the text amendment by amendment.
** * * indicates existing law unaffected by the text amendment.*

ORDINANCE

The County Council for Montgomery County, Maryland, sitting as the District Council for that portion of the Maryland-Washington Regional District in Montgomery County, Maryland, approves the following ordinance

Sec. 1. DIVISION 59-E-2 is amended as follows:

Division 59-E-2. PLANS AND DESIGN STANDARDS.

Sec. 59-E-2.2. Size and arrangement of parking spaces.

* * *

59-E-2.23. Spaces for handicapped.

Parking spaces for handicapped persons shall be provided in accordance with the standards specified in the Maryland Building Code for the Handicapped as contained in the Code of Maryland Regulations 05.01.07,* dated September 5, 1980, and as subsequently amended.

59-E-2.24. [[Space for charging electric vehicles.]] Electric Vehicle

Infrastructure

59-E-2.24.1. 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-effect electric vehicle infrastructure that such use necessitates.

59-E2.24.2. Applicability

These requirements apply to all parking facilities constructed after {effective date}, of Section 59-E-2.24, Electric Vehicle Infrastructure.

59-E-2.24.3. Definitions

For the purpose of this Section, the following definitions shall apply.

a) Accessible electric vehicle charging station means an electric vehicle charging station where the batter charging station is located within accessible reach of a barrier-free access aisle and the electric vehicle.

26 **b) Battery charging station** means an electrical component assembly or
27 cluster of component assemblies designed specifically to charge batteries within
28 electric vehicles.

29 **c) Battery electric vehicle** means any vehicle that operates exclusively on
30 electrical energy from an off-board source that's stored in the vehicle's batteries,
31 and produces zero tailpipe emissions or pollution when stationary or operating.

32 **d) Charging levels** means that standardized indicators of electrical force, or
33 voltage, at which an electric vehicle's battery is recharged. The terms 1, 2 and 3,
34 are the most common charging levels, and include the following specifications:

35 **1) Level 1** is considered slow charging. Voltage including the range
36 from 0 through 120.

37 **2) Level 2** is considered medium charging. Voltage is greater than
38 120 and includes 240.

39 **3) Level 3** is considered fast or rapid charging. Voltage is greater
40 than 240.

41 **e) Electric vehicle** means any vehicle that is licensed and registered for
42 operation on public and private highways, roads, and streets; either partially
43 or exclusively, on electrical energy from the grid, or an off-board source that
44 is stored on-board via a battery for motive purpose. "Electric vehicle"
45 includes a battery electric vehicle and a plug-in hybrid electric vehicle.

46 **f) Electric vehicle charging station** means a public or private parking space
47 that is served by battery charging station equipment that has as its primary
48 purpose the transfer of electric energy (by conductive or inductive means) to
49 a battery or other energy storage device in an electric vehicle. An electric
50 vehicle charging station equipped with Level 1 or Level 2 charging
51 equipment is permitted outright as an accessory use to any principal use.

52 **g) Electric vehicle charging station – private restricted use means an**
53 electric vehicle charging station that is as follows:

54 1) privately owned and restricted access (e.g., single-family home,
55 executive parking, designated employee parking) or

56 2) publically owned and restricted (e.g., fleet parking with no access
57 to the general public).

58 **h) Electric vehicle charging station – public use means an electric vehicle**
59 charging station that is publicly owned and publicly available (e.g., Park & Ride
60 parking, public library parking lot, on-street parking) or privately owned and
61 available to visitors of the use (e.g., shopping center parking).

62 **i) Electric vehicle infrastructure means conduit/wiring, structures,**
63 machinery and equipment necessary and integral to support an electric vehicle,
64 including battery charging stations and rapid charging stations.

65 **j) Electric vehicle parking space means any marked parking space that**
66 identifies the use to be exclusively for the parking of an electric vehicle.

67 **k) Non-electric vehicle means any motor vehicle that does not meet the**
68 definition of electric vehicle.

69 **l) Plug-in hybrid vehicle means an electric vehicle that contains an internal**
70 combustion engine and also allows power to be delivered to drive wheels by an
71 electric motor; charges its battery primarily by connecting to the grid or other off-
72 board electrical source; may additionally be able to sustain battery charge using an
73 on-board internal-combustion –driven generator and has the ability to travel
74 powered by electricity.

75

76 **E-59.2.24.4. Permitted Locations**

77 **a) Level 1 and Level 2 electric vehicle charging stations are permitted in**
78 every zoning district when accessory to the primary permitted use. Such stations

79 located at one-family, multi-family and mobile home park dwellings shall be
80 designated as private restricted use only. Installation shall be subject to permit
81 approval administered by the Department of Permitting Services.

82 **b) Level 3 electric vehicle charging stations** are permitted in the C-2, C-3,
83 C-6, CBD, R & D, LSC, I-2 and I-3 Zone when accessory to the primary permitted
84 use. Installation is subject to permit approval administered by the Department of
85 Permitting Services.

86

87 **59-E.2.24.5. General Requirements**

88 **a) Parking**

89 1. An electric vehicle charging station space may be included in the
90 calculation for minimum required parking spaces required in accordance
91 with Section 59-E-3.7.

92 2. Public electric vehicle charging stations are reserved for parking
93 and charging electric vehicles only. Electric vehicles may be parked in any
94 space designated for public parking, subject to the restrictions that would
95 apply to any other vehicle that would park in that space.

96 **b) Number**

97 1. The minimum number of electric vehicle charging stations required is 1
98 electric vehicle charging station per 50 parking spaces.

99 2. Accessible parking spaces

100 A minimum of one accessible electric vehicle charging station is required in
101 any parking facility that is required to have one electric vehicle parking
102 space. For parking facilities required to have 51-75 electric vehicle parking
103 spaces the number of accessible spaces will increase to two (2). Between 76
104 – 100 electric vehicle parking spaces increases to three (3) and each
105 thereafter increment of 25 electric charging station shall increase by one

106 additional accessible electric vehicle charging space. Accessible electric
107 vehicle charging stations should be located in close proximity to the building
108 or facility entrance and connected to a barrier-free accessible route of travel.
109 It is not necessary to designate the accessible electric vehicle charging
110 station exclusively for the use of disabled persons.

111 **c) Location and Design**

112 The provision of electric vehicle parking will vary based on the design and
113 use of the primary parking facility. The following required and additional
114 location and design criteria are provided in recognition of the various
115 parking facility layout

116 **1) Lighting**

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

119 **2) Size**

120 The minimum width for a parking space for charging electric vehicles is 9
121 feet.

122 **2) Equipment Standards and Protection**

123 (a) Battery charging station outlets and connector devices shall be no less
124 than 36 inches and no higher than 48 inches from the surface where
125 mounted. Equipment mounted on pedestals, lighting posts, bollards or other
126 devices shall be designed and located as to not impede pedestrian travel or
127 create trip hazards on sidewalks.

128 (b). Adequate battery charging station protection, such as concrete-filled
129 steel bollards shall be used. Curbing may be used in lieu of bollards, if the
130 battery charging station is setback a minimum of 24 inches from the face of
131 the curb.

132 **3) Signage**

133 (a) Information shall be posted identifying voltage and amperage levels and
134 any time of use, fees or safety information related to the electric vehicle
135 charging station.

136 (b) Each electric vehicle charging station space shall be posted with signage
137 indicating the space is only for electric vehicle charging purposes. For
138 purposes of this subsection “charging” means that an electric vehicle is
139 parked at an electric vehicle station and is connected to the battery charging
140 station equipment. Restrictions shall be included on the signage, if removal
141 provisions are to be enforced.

142 **4) Maintenance**

143 Electric vehicle charging stations shall be maintained in all respects,
144 including the functioning of the equipment. A phone number or other
145 contact information shall be provided on the equipment for reporting when it
146 is not functioning or other problems are encountered.

147 **e) Usage Fees**

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

151 _____
152 [(a) All parking facilities constructed after {effective date}, containing more than
153 50 parking spaces, must provide one space within their parking requirement
154 with a station for charging electric vehicles for each 50 automobile parking
155 spaces in the facility.

156 b) The minimum width for a parking space for charging electric vehicles is 9
157 feet.

158 c) Any parking space with a charging station must have signage indicating that
159 the space is for the exclusive use of electric vehicles.

160 d) Any parking facility required to have 25 or more spaces for charging electric
161 vehicles must provide one space for handicapped persons with a facility for
162 charging electric vehicles for each 25 spaces with electric charging
163 stations.]]

164 * * *

165 **Sec. 3. Effective date.** This ordinance becomes effective 20 days after the
166 date of Council adoption.

167

168 This is a correct copy of Council action.

169

170 _____

171 Linda M. Lauer, Clerk of the Council