MEMORANDUM

TO: Development Engineering Advisory Board Members

FROM: Ravi Mahajan, Plan Review Services Manager

DATE: OCT 7, 2021

SUBJECT: Electrical Vehicle Charging Infrastructure requirements in the Building Code

PURPOSE: The purpose of this memo is to provide clarification on how the building code provisions related to Electrical Vehicle Charging Infrastructure (EV) are Interpreted and enforced by the Clark County Building Safety Staff.

BACKGROUND:

1. Originally to be effective on July 1, 2020 but extended to February 1, 2021, the Washington State Building Code Council (WSBC) adopted the 2018 International Building Code as the state's building code for uniform application throughout the state. This is achieved through the amendment of Chapter 51-50 of the WAC's.
2. Since the model code (IBC) does not have any provisions related to the Electrical Vehicle Charging Infrastructure requirements, the state agency WSBC has been adopting Washington specific requirements related to these since the previous code cycle in which 2015 edition of the IBC was adopted as the state code after appropriate amendments.
3. In the previous edition of the building code, Section 427 was dedicated to EV requirements which got changed to Section 429 in the current state building code which is based on 2018 IBC.
4. The requirements remained unchanged between the two codes and implementation of the text in these two codes have presented a challenge to the building community all through because of the way the text is written.
5. Interpretations provided earlier by the WSBC on this topic have been of no help either as they have continued the confusion initiated by the text in the building code.
6. Following is what the building code section 429 (current code, attachment "B") and 427 (previous edition of the building code, attachment "A") requires:
   a) 5 percent of the provided parking spaces (if total is 20 or more) associated with use-group R-1, R-2 and B to be provided with EV infrastructure.
   b) The electrical room to be designed to accommodate equipment and other associated distribution system for 20 percent of the total parking spaces.
   c) Requires EV charging stations at the required parking spaces **OR** just provide the infrastructure for the additional capacity.

7. The confusion is in the text of the building code where it states that as an alternate ("OR" in the text) to providing the minimum required EV parking spaces with EV stations, an applicant could simply provide the infrastructure for the additional capacity without ever providing the minimum EV spaces with EV charging stations. So, the confusion is what happens to the minimum required by the code. As an example, if there are 100 parking spaces provided, according to the building codes only 5 are required to be provided with EV stations or under the "OR" provisions of the code the applicant may only provide infrastructure for the additional capacity (20-5) which is for 15 spaces. This seems against how the building code is applied and implemented.
8. Because of the continued confusion on this subject because the way it is written, this topic has been discussed on numerous occasions at the WSBC Council meetings and it continues to be discussed.
9. Apparently the WSBC made some amendments (attachment "C") to the text in WAC 51-50-0427 and got it approved (attachment "D") on August 26,2021.
10. The latest document (attachment "D") seems to have addressed various past issues of confusion which have persisted for so long, the new revised requirements are:
    a) Earlier exemption to 20 parking spaces is gone.
    b) Minimum required EV spaces increased from 5 to 10 percent.
    c) EV stations are required at the minimum required EV spaces and in addition the infrastructure is required to be provided for the additional capacity.
11. Above (document "D") is not posted yet on the WSBC website meaning even though the document D" has been amended at the State Legislature, it has not been adopted yet by the WSBC for enforcement by the local jurisdictions.

CLARK COUNTY BUILDING DEPT POSITION:

1. The building code authorizes and imposes a responsibility on the local Building Official to interpret the building code provisions for achieving the intended purposes of the building code.
2. Wherever the code text is not clear, or the issue is not addressed by the code, the BO can investigate for other information that might assist the BO in arriving at a decision on how to enforce the building code pertaining to that issue/ subject.
3. To address the issue of EV parking spaces and required infrastructure, following is our position till WSBC amends it further and makes it official:
    a) 5 percent of the parking spaces are required to be designated EV spaces and these spaces need to be provided with EV stations.
    b) Infrastructure for the additional capacity needs to be provided.
    c) Electrical room needs to be designed to accommodate equipment and distribution systems for up to 20 percent of the total parking spaces.

d) All the above is applicable when the total number of parking space is 20 or more and the use group of the building is B, R-1 and/ or R-2.
e) EV infrastructure requirements are to be provided for a minimum one space for accessible parking space. This is in addition to the required minimum 5 percent required.

ATTACHMENTS:

1. 2016 edition of the Washington State Adopted Building Code based on 2015 IBC, Section #427 (A)
2. 2020 edition of the Washington State Adopted Building Code based on 2018 IBC, Section #429 (B)
3. WAC 51-50-0427 marked with proposed changes (C)
4. WAC 51-50-0429 approved and certified dated 8/26/2021 (D)

SECTION 427
ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

427.1 Scope. The provisions of this section shall apply to the construction of new buildings serving Group B, Group R-1 hotel and motel only, and Group R-2 occupancies.

427.2 Required electric vehicle charging infrastructure. Where parking is provided, five percent of parking spaces shall be provided with electric vehicle charging infrastructure in compliance with Sections 427.3, 427.4 and 427.5. When the calculation of percent served results in a fractional parking space, the applicant shall round up to the next whole number.

Exception: Group R and Group B occupancies served by less than 20 on-site parking.

427.3 Electrical room(s). Electrical room(s) serving parking areas shall be designed to accommodate the electrical equipment and distribution required to serve a minimum of 20 percent of the total parking spaces with 208/240 V 40-amp electric vehicle charging infrastructure.

427.4 Electric vehicle charging infrastructure. Electric vehicle charging infrastructure shall be installed meeting one of the following requirements:

1. A minimum number of 208/240 V 40-amp, electric vehicle charging stations required to serve the parking spaces specified in section 427.2. The electric vehicle charging stations shall be located to serve spaces designated for parking and charging electric vehicles, or
2. Additional service capacity, space for future meters, panel capacity or space for additional panels, and raceways for future installation of electric vehicle charging stations. The service capacity and raceway size shall be designed to accommodate the future installation of the number of 208/240 V 40-amp, electric vehicle charging stations specified in section 427.2. The raceway shall terminate at spaces designated for parking and charging electric vehicles in the future.

Where designated electric vehicle charging locations serve exterior on-grade parking spaces that are located more than 4 feet from a building, raceways shall be extended below grade to a pull box in the vicinity of the designated future electric vehicle charging locations or stub above grade in the vicinity of the designated future electric vehicle charging locations, protected from vehicles by a curb or other device.

Exception: In lieu of surface-mounted raceway between the electrical panel and the designated electric vehicle charging locations, it is permitted to provide permanent markings indicating the pathway for future raceway, and one-inch diameter capped sleeves through each wall and floor assembly that are penetrated along that route. This pathway and the locations of capped sleeves shall also be indicated on the electrical plans. Raceway shall be installed for any portion of the pathway located below slabs, below grade, or within floor, wall or roof assemblies.

427.5 Electric vehicle charging infrastructure for accessible parking spaces. When electric vehicle charging infrastructure is required, one accessible parking space shall be served by electric vehicle charging infrastructure. The electric vehicle charging infrastructure may also serve adjacent parking spaces not designated as accessible parking

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SECTION 429
ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

429.1 Scope. The provisions of this section shall apply to the construction of new buildings serving Group B, Group R-1 hotel and motel only, and Group R-2 occupancies.

429.2 Required electric vehicle charging infrastructure. Where parking is provided, five percent of parking spaces shall be provided with electric vehicle charging infrastructure in compliance with Sections 427.3, 427.4 and 427.5. When the calculation of percent served results in a fractional parking space, the applicant shall round up to the next whole number.

Exception: Group R and Group B occupancies served by less than 20 on-site parking spaces.

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Where designated electric vehicle charging locations serve exterior on-grade parking spaces that are located more than 4 feet from a building, raceways shall be extended below grade to a pull box in the vicinity of the designated future electric vehicle charging locations or stub above grade in the vicinity of the designated future electric vehicle charging locations, protected from vehicles by a curb or other device.

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429.5 Electric vehicle charging infrastructure for accessible parking spaces. When electric vehicle charging infrastructure is required, one accessible parking space shall be served by electric vehicle charging infrastructure. The electric vehicle charging infrastructure may also serve adjacent parking spaces not designated as accessible parking.

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AMENDATORY SECTION (Amending WSR 16-03-064, filed 1/19/16, effective 7/1/16)

WAC 51-50-0427 Section 427—Electric vehicle charging infrastructure.

427.1 Scope. The provisions of this section shall apply to the construction of new buildings ((~~serving Group B, Group R-1 hotel and motel only, and Group R-2 occupancies~~)).

EXCEPTIONS: 1. Occupancies classified as Group R-3 or Group U.
2. Group A, Group E, or Group M occupancies, except where employee parking spaces are designated. The provisions of Section 427 shall apply only to those designated employee parking spaces.

427.2 Required electric vehicle charging infrastructure. Where parking is provided, ((~~five~~)) ten percent of parking spaces shall be provided with electric vehicle charging infrastructure in compliance with Sections 427.3, 427.4 and 427.5. When the calculation of percent served results in a fractional parking space, the applicant shall round up to the next whole number.

((~~EXCEPTION: Group R and Group B occupancies served by less than 20 on-site parking spaces.~~))

427.3 Electrical room(s). Electrical room(s) serving buildings with on-site parking ((~~areas shall be designed~~)) spaces must be sized to accommodate the potential for electrical equipment and distribution required to serve a minimum of 20 percent of the total parking spaces with 208/240 V 40-amp, circuit or equivalent electric vehicle charging infrastructure.

427.4 Electric vehicle charging infrastructure. Electric vehicle charging infrastructure shall ((~~be installed meeting one of~~)) meet the following requirements:

1. A minimum number of 208/240 V 40-amp, circuit or equivalent electric vehicle charging stations required to serve the parking spaces specified in section 427.2. The electric vehicle charging stations shall be located to serve spaces designated for parking and charging electric vehicles((~~, or~~)).

2. Additional service capacity, space for future meters, panel capacity or space for additional panels, and raceways for future installation of electric vehicle charging stations. The service capacity and raceway size shall be designed to accommodate the future installation of the number of 208/240 V 40-amp, circuit or equivalent electric vehicle charging stations specified in section 427.2. The raceway shall terminate at spaces designated for parking and charging electric vehicles in the future.

Where designated electric vehicle charging locations serve exterior on-grade parking spaces that are located more than 4 feet from a building, raceways shall be extended below grade to a pull box in the vicinity of the designated future electric vehicle charging locations or stub above grade in the vicinity of the designated future electric vehicle charging locations, protected from vehicles by a curb or other device.

EXCEPTION: In lieu of surface-mounted raceway between the electrical panel and the designated electric vehicle charging locations, it is permitted to provide permanent markings indicating the pathway for future raceway, and one-inch diameter capped sleeves through each wall and floor assembly that are penetrated along that route. This pathway and the locations of capped sleeves shall also be indicated on the electrical plans. Raceway shall be installed for any portion of the pathway located below slabs, below grade, or within floor, wall or roof assemblies.

Load management infrastructure may be used to adjust the size and capacity of the required building electric service equipment and circuits on the customer facilities, as well as electric utility owned

infrastructure, as allowed by applicable local and national electric codes.

427.5 Electric vehicle charging infrastructure for accessible parking spaces. When electric vehicle charging infrastructure is required, ((~~one~~)) ten percent of accessible parking space, rounded to the next whole number, shall be ((~~served by~~)) provided with electric vehicle charging infrastructure. The electric vehicle charging infrastructure may also serve adjacent parking spaces not designated as accessible parking. A maximum of ten percent rounded to the next whole number, of the accessible parking spaces are allowed to be included in the total number of electric vehicle parking spaces required under Section 427.2.

D

WAC 51-50-0429 Section 429—Electric vehicle charging infrastructure.

429.1 Scope. The provisions of this section shall apply to the construction of new buildings.

EXCEPTIONS:
1. Occupancies classified as Group R-3 or Group U.
2. Group A, Group E, or Group M occupancies, except where employee parking spaces are designated. The provisions of Section 429 shall apply only to those designated employee parking spaces.

429.2 Required electric vehicle charging infrastructure. Where parking is provided, ten percent of parking spaces shall be provided with electric vehicle charging infrastructure in compliance with Sections 429.3, 429.4 and 429.5. When the calculation of percent served results in a fractional parking space, the applicant shall round up to the next whole number.

429.3 Electrical room(s). Electrical room(s) serving buildings with on-site parking spaces must be sized to accommodate the potential for electrical equipment and distribution required to serve a minimum of 20 percent of the total parking spaces with 208/240 V 40-amp, circuit or equivalent electric vehicle charging infrastructure.

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1. A minimum number of 208/240 V 40-amp, circuit or equivalent electric vehicle charging stations required to serve the parking spaces specified in Section 429.2. The electric vehicle charging stations shall be located to serve spaces designated for parking and charging electric vehicles.
2. Additional service capacity, space for future meters, panel capacity or space for additional panels, and raceways for future installation of electric vehicle charging stations. The service capacity and raceway size shall be designed to accommodate the future installation of the number of 208/240 V 40-amp, circuit or equivalent electric vehicle charging stations specified in Section 429.2. The raceway shall terminate at spaces designated for parking and charging electric vehicles in the future.

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EXCEPTION: In lieu of surface-mounted raceway between the electrical panel and the designated electric vehicle charging locations, it is permitted to provide permanent markings indicating the pathway for future raceway, and one-inch diameter capped sleeves through each wall and floor assembly that are penetrated along that route. This pathway and the locations of capped sleeves shall also be indicated on the electrical plans. Raceway shall be installed for any portion of the pathway located below slabs, below grade, or within floor, wall or roof assemblies.

Load management infrastructure may be used to adjust the size and capacity of the required building electric service equipment and circuits on the customer facilities, as well as electric utility owned infrastructure, as allowed by applicable local and national electric codes.

429.5 Electric vehicle charging infrastructure for accessible parking spaces. When electric vehicle charging infrastructure is required, ten percent of accessible parking space, rounded to the next whole number, shall be provided with electric vehicle charging infrastructure. The electric vehicle charging infrastructure may also serve adjacent park-

ing spaces not designated as accessible parking. A maximum of ten percent rounded to the next whole number, of the accessible parking spaces are allowed to be included in the total number of electric vehicle parking spaces required under Section 429.2.

[Statutory Authority: RCW 19.27.077, 19.27.031 and 19.27.074. WSR 21-16-063, § 51-50-0429, filed 7/29/21, effective 8/29/21.]