

**INITIAL STATEMENT OF REASONS
FOR PROPOSED BUILDING STANDARDS
OF THE CALIFORNIA BUILDING STANDARDS COMMISSION
REGARDING THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11
(BSC 03/21)**

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE and BENEFITS

Government Code Section 11346.2(b)(1) requires a statement of specific purpose of each adoption, amendment, or repeal and the problem the agency intends to address and the rationale for the determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carry out the purpose and address the problem for which it is proposed. The statement shall enumerate the benefits anticipated from the regulatory action, including the benefits or goals provided in the authorizing statute.

General purpose, problem, rationale and benefits: The California Building Standards Commission (BSC) proposes to amend the 2019 California Green Building Standards Code for inclusion in the 2022 California Green Building Standards Code, effective January 1, 2023.

Key amendments proposed during this code cycle include:

- New definition for Automatic Load Management Systems.
- New definition for Electric Vehicle (EV) capable spaces.
- Amend the definition for Low-emitting and fuel-efficient vehicles.
- Amend the definition for Nonwater urinal with drain cleansing action.
- New definition for Off-street load spaces.
- Repeal the requirement for Designated parking for clean air vehicles.
- Increase the EV capable space percentages and add a new requirement for installed Level 2 chargers for both mandatory and voluntary provisions.
- Add a new definition for Electric Vehicle (EV) charging-Medium-duty and Heavy-duty Vehicles [N].
- Relocate Thermal insulation and acoustical ceilings and wall panels from voluntary to mandatory.
- Amend the voluntary requirement for Designated parking for clean air vehicles.
- Amend Section A5.303.4.1 Nonwater urinal with drain cleansing action to align with the new proposed definition.
- Amend Section A5.504 to renumber voluntary Tier 2 into Tier 1 for Thermal insulation.
- Amend Division A5.6, Voluntary Tiers and CALGreen Verification Guidelines checklist affected by proposed mandatory and voluntary updates as shown in items 1 through 19.

The intent of the code continues to (1) reduce greenhouse gas (GHG) emissions from buildings, (2) promote environmentally responsible, cost-effective, healthier places to live and work and (3) reduce potable water consumption in buildings.

The proposed changes to the building standards with statewide application will lead to substantial environmental benefits through reduction of GHG emissions, criteria pollutants, and fossil fuel dependency leading to improved public health, and potentially result in significant cost savings (avoided costs) associated with future installation of EV charging stations at nonresidential buildings.

The proposed additions, amendments, and deletions to Chapters 2, 5 and Appendix A5, of Part 11, Title 24, California Code of Regulations, are being made to clarify, implement, and make specific requirements.

New amendments and existing amendments (some shown for context): Item numbers used to coordinate with the items listed in the Express Terms.

BSC conducted two CALGreen stakeholder workshops on January 7, 2021 and March 30, 2021, which were attended by state agencies, interested parties and stakeholder representatives such as the California Air Resources Board (CARB), California Energy Commission, Department of Housing and Community Development, California Department of Public Health, California Building Industry association, Electric Vehicle Charging Association, Tesla, Southern California Edison, Underwriters Laboratory, Energy Solutions, various local enforcing agencies, and private consultants. Based on testimony presented at the workshops and comments received from various stakeholders, BSC proposes to increase the existing EV percentages for EV capable spaces and the new requirements for the installation of electric vehicle charging equipment (EVSE) to create electric vehicle charging stations (EVCS) for both mandatory and voluntary measures. Then on April 28 and 29, 2021, BSC hosted a Green Building Code Advisory Committee (GREEN CAC) public meeting in which BSC staff presented the proposed EV code changes along with other BSC proposals to the committee members to obtain input.

The committee members provided valuable information and provided recommendations on the BSC proposed rulemaking package with a motion to Approve as Submitted for most rulemaking items. However, there were some proposed EV code changes that garnered a Further Study recommendation. As a result, additional coordination with various state agencies and subject matter experts was conducted and further modifications were made to the proposed EV language. The following items include specific rationale and agency responses to the CAC recommendations. These code items have been coordinated with other state agencies that are proposing similar amendments and are mostly based on the input gathered from the two workshops and the GREEN CAC meeting.

ITEM 1

CHAPTER 2, DEFINITION, AUTOMATIC LOAD MANAGEMENT SYSTEMS (ALMS)

BSC added a definition for AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS).

BSC is proposing a definition for Automatic Load Management System (ALMS) which is needed to allow for the use of energy savings systems to promote Electric Vehicle (EV) expansion. See Item 8 for the permitted use of an ALMS in the electric vehicle charging requirements in the mandatory and voluntary code sections. This definition is being coordinated with other state agencies that are also proposing similar amendments. The proposed definition will add consistency for the various occupancies within the CALGreen code. The intent is to make the definition generic in nature to allow for the code section for ALMS to list the specific code requirements.

CAC Recommendation: Further Study (FS)

Agency Response: Accept. The GREEN CAC recommended a revised definition based on comments received by the California Energy Commission and other stakeholders during the GREEN CAC. After the GREEN CAC meeting, BSC coordinated with the Division of the State Architect (DSA), The Department of Housing and Community Development (HCD), and The California Air Resources Board (CARB) to revise the definition for consistency between the various occupancies under BSC, DSA, and HCD's authority.

ITEM 2

CHAPTER 2, DEFINITION, ELECTRIC VEHICLE (EV) CAPABLE SPACE

BSC added a definition for EV capable space.

BSC is proposing to adopt a new definition for EV capable space to clarify the term as used within CALGreen and in the EV charging industry. This definition refers to a space which has capability or infrastructure to facilitate future EV charging. See Item 8 for EV capable code language being proposed in the mandatory and voluntary applicable code sections. This proposed definition is being co-adopted with other state agencies DSA and HCD that are also proposing similar amendments. The proposed definition will add consistency for the various occupancies within the CALGreen code.

CAC Recommendation: Approve. The CAC recommended to coordinate with HCD and DSA on the definition for consistency.

Agency Response: Accept. BSC has coordinated and revised the definition with HCD and DSA to have one definition for EV capable spaces for the various occupancies under BSC, DSA and HCD's authority.

ITEM 3

CHAPTER 2, DEFINITION, LOW-EMITTING AND FUEL-EFFICIENT VEHICLES

BSC proposes to repeal the definition for LOW-EMITTING AND FUEL-EFFICIENT VEHICLES since the related code Sections 5.106.5.2 and A5.106.5.1 and related subsections for Clean air vehicles which mentions low-emitting and fuel-efficient is proposed for repeal. This amendment will maintain consistency within the CALGreen Code.

CAC Recommendation: Approve.

Agency Response: Disagree. BSC disagrees with the CAC recommendation since this definition will be needed for the voluntary code Section A5.106.5.1 Designated parking for clean air vehicles which BSC has decided to not repeal. See items 12 and 13 for more information. Upon further review this definition has been amended to reflect current laws and the title has been changed to Zero-emitting and high-efficient vehicles.

ITEM 4

CHAPTER 2, DEFINITION, NONWATER URINAL WITH DRAIN CLEANSING ACTION

BSC proposes to amend the title Urinal, Hybrid to NONWATER URINAL WITH DRAIN CLEANSING ACTION and amends the definition by adding the word "nonwater". The new

title and revised definition align with the name of the fixture as referenced in the 2021 Uniform Plumbing Code. This amendment will provide consistency between CALGreen and the Plumbing Code.

CAC Recommendation: Approve

Agency Response: Accept.

ITEM 5

CHAPTER 2, DEFINITIONS, OFF-STREET LOADING SPACES

BSC is proposing a new definition for off-street loading space. This definition is needed to align with the new proposed code language for EV charging for Medium-duty and Heavy-duty vehicles. See Item 9 for use of the term.

CAC Recommendation: Approve as amended.

Agency Response: Accept. BSC agrees with the CAC and has replaced “parking” with “loading”.

ITEM 6

CHAPTER 2, DEFINITIONS, VANPOOL VEHICLE

BSC proposes to repeal the definition for VANPOOL VEHICLE to coordinate with the related code Section 5.106.5.2 for Clean air vehicles which mentions vanpool and is proposed for repeal. This amendment will maintain consistency within the CALGreen Code.

CAC Recommendation: Approve.

Agency Response: Disagree. The CAC recommended Approve, but during the CAC meeting it was discussed that BSC should consider not repealing the voluntary Designed parking for clean vehicles Sections A5.106.5.1.1 and A5.106.5.1.2, therefore the definition is needed to support the voluntary code sections. CARB reviewed the definition for Vanpool vehicle and no changes were made.

ITEM 7

5.106.5.2 Designated parking for clean air vehicles

BSC proposes to repeal Section 5.106.5.2, Section 5.106.5.2.1, Table 5.106.5.2 with footnote, and “Note” below Table 5.106.5.2.

Currently, EV capable spaces can be used to comply with the clean air vehicles requirement percentages. Because EV capable percentages are being significantly increased, BSC has determined that Section 5.106.5.2 Designated parking for clean air vehicles, is no longer needed. This amendment will help mitigate the impact to smaller parking lots by decreasing the amount of specially designated spaces, offsetting the increase percentage of EV capable spaces and of the new requirement that electric vehicle supply equipment be installed.

CAC Recommendation: Approve.

Agency Response: Accept.

ITEM 8

CHAPTER 5, NONRESIDENTIAL MANDATORY MEASURES, Section 5.106.5.3 Electric Vehicle (EV) charging

General purpose, problem, rationale and benefits:

This proposed action adopts mandatory green building standards for occupancies within BSC authority, building upon a framework of voluntary measures adopted in 2008 and makes modifications and clarifications to the 2019 Intervening CALGreen Code. The intent of the code continues to:

- (1) reduce greenhouse gas (GHG) emissions from buildings;
- (2) promote environmentally responsible, cost-effective, healthier places to live and work;
- (3) respond to the directives by the Governor in 2008 to develop a green building code.

The proposed changes to the building standards with statewide application will lead to substantial environmental benefits through reduction in energy use, GHG emissions, criteria pollutants, and fossil fuel dependency leading to improved public health, and potentially result in significant cost savings (avoided costs) associated with future installation of EV charging stations at nonresidential buildings.

BSC's proposed action will support the implementation of the Governor's Executive Orders B-16-2012, B-48-2018 and N-79-20 to achieve a benchmark for having over 1.5 million zero-emission vehicles (ZEVs) on California roadways by 2025, 5 million ZEVs on California roadways by 2030, and 100% sales of electric vehicles by 2035, respectively. Per the [California Energy Commission's \(CEC\) AB 2127 recent Commission Report](http://efiling.energy.ca.gov/getdocument.aspx?tn=238853), (efiling.energy.ca.gov/getdocument.aspx?tn=238853). California has a gap in the number of Level 2 chargers expected to be installed by 2025 to support California's 1.5 million ZEV target under Executive Order B-16-2012. This gap widens significantly when looking at 2030 and longer time horizons.

The objectives of the proposed amendments are to further advance the potential for EV preparedness and provide clarity to the code user in consistent reference nomenclature to other parts of Title, 24.

Health and Safety Code Section 18930.5(b) as amended by Assembly Bill 341 allows BSC and other state agencies that propose building standards to allow for input by state agencies that have expertise in green building subject areas.

BSC conducted two green building standards workshops. The first was conducted on January 7, 2021, and the second one was conducted on March 30, 2021. Because CARB has expertise in air quality, climate change, and EV charging infrastructure, they were included in the workshops. CARB provided technical feedback and the associated cost/benefit analysis. BSC, DSA and HCD also coordinated the EV regulation efforts.

BSC is proposing amendments to increase the percentages for EV capable spaces and require the installation of EVSE. The proposed amendments require new nonresidential buildings with 10-25 parking spaces to install EV capable infrastructure in 20% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 26 or greater actual parking spaces shall install EV capable infrastructure in 20% of the total number of actual parking spaces and 25% of the number of required EV

capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 15% for 26 or more actual parking spaces. The net resulting percentage for the required EVSE is 5% for 26 or more actual parking spaces. The installation of EVSE, may be Level 2 EVSE with the option for installing direct current fast chargers (DCFC).

An alternative compliance pathway for DCFC allows for the installation of DCFC in exchange for up to five EV capable spaces. This will give property owners the incentive to install more chargers to create an increased number of EVCS. This also provides flexibility for property owners to choose EV charging options that maximize the business case for their facilities, particularly for occupancy types that may typically have shorter dwell times.

Additionally, the California Energy Commission's AB 2127 July 14, 2021 Commission Report indicates a need of 27,891 additional public DC fast chargers to support California's 8 million ZEV deployment goal by 2030. As of January 2021, there were approximately 5,963 public DC fast chargers available statewide. This alternative compliance pathway provides flexibility within the code to help close this gap.

BSC is proposing to include automated load management systems (ALMS) as an optional strategy to comply with the EVCS requirements. Each EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EV's. ALMS compliance option gives property owners options for code compliance and incentivizes the installation of more chargers than the minimum required by the code.

The benefits of these amendments include sustaining California's natural resources by reducing energy, greenhouse gas emissions, criteria pollutants, and dependency on fossil fuel. CARB staff estimated a GHG emissions reduction potential between 409,000 to 516,000 metric tons of CO² annually through the implementation of the proposed amendments. (Refer to Attachment A)

Sections 5.106.5.3 through 5.106.5.3.3.2

Specific Proposed Regulatory Actions: Provided below is rationale for the amendment or action proposed for each code section.

Section 5.106.5.3. BSC proposes to amend the section applicable to EV capable regulations and remove the verbiage pertaining to EVSE.

"Exceptions" from **Section 5.106.5.3.3** are being relocated below Section 5.106.5.3 with editorial amendments along with a new exception 2 being added for automated mechanical car parking systems.

CAC Recommendation: Further Study (FS).

Agency Response: BSC accepts the FS for Section 5.106.5.3 with Exceptions 1 and 2 and has made some amendments to the exceptions based on coordination with BSC, DSA, and HCD.

No further changes were made to exception 2 for the automatic parking systems.

Section 5.106.5.3.1. Single charging space requirements is being proposed for repeal. The 2019 Intervening Code Cycle increased the percentages for EV Capable spaces that

no longer allows for a single EV capable space, which makes this single charging space section obsolete.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with the FS for Section 5.106.5.3.1, there is no action required as the repeal of this section is editorial to align with 2019 supplement.

Existing **Section 5.106.5.3.2** for multiple charging space requirements, is being renumbered to the available **Section 5.106.5.3.1** and renamed as EV capable spaces. The section contains editorial amendments to requirements 1-3. Requirement 4 has been relocated from the repealed Section 5.106.5.3.4 Identification. The “Note” is being relocated from Section 5.106.5.3.5 with edits to align with HCD’s current proposal.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with the FS for new Section 5.106.5.3.1 (*Formally 5.106.5.3.2*) Items 1-4 & Note since these amendments are mostly editorial in nature and consisted of rewording the code requirements for EV capable spaces for items 1-3, to relocate “identification” and add it as item 4 and to relocate Note from Section 5.106.5.3.5. There were no specific comments with objections to the proposed code changes. Comments for signage requirements were also received. However, upon further review BSC decided to not make any additional changes pertaining to signage.

A comment was received during the Section 5.106.5.3.1 discussion. The EV Access for All (EVAA) coalition submitted a comment April 16, 2021 just prior to the April 28 and 29, 2021 GREEN CAC meeting. The EVAA proposed a new EV Alternate Compliance Pathway (ACP) Section 5.106.5.3.1a which proposed 30% EV Ready spaces with 5% Level 2 EVSE. The CAC recommended BSC to consider the ACP prior to 45-day comment period, but not delay the current proposed EV regulations. BSC reviewed the ACP proposed code language and has determined that there are technical issues with the proposal. Additionally, the ACP was submitted as a comment on April 16, 2021 ahead of the GREEN CAC meeting where it was heard on April 28, 2021. The untimely submission of such a substantive proposal did not give BSC sufficient time to fully vet the proposed code changes with the affected parties and interested stakeholders which is done during the precycle workshops. Moving forward BSC may consider such proposal in upcoming rulemaking code cycles and is willing to work with the EVAA coalition.

Available Section number **5.106.5.3.2** is being used for new proposed code language specific to requiring installation of electric vehicle charging stations (EVCS) by taking EV capable spaces and equipping them with EVSE with any combination of Level 2 or direct current fast charging EVSE’s. Paragraph 2 permits EV chargers to charge multiple EV’s simultaneously as long as they meet the electrical load capacity indicated. Paragraph 3 provides the allowance for one DCFC to reduce the required number of EV capable spaces without EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

CAC Recommendation: Further Study (FS).

Agency Response: BSC accepts the FS for Section 5.106.5.3.2 and has made

amendments to the EV regulations for electric vehicle charging stations in coordination with DSA, HCD, CARB and CEC.

Available Section number **5.106.5.3.3** is being use for new code language to permit the use of an automatic load management system (ALMS) for EVCS.

CAC Recommendation: N/A.

Agency Response: Post CAC, BSC assigned available code Section number 5.106.5.3.3 for the use of automatic load management systems (ALMS) to meet EVCS regulations.

A new code **Section 5.106.5.3.4** Accessible EVCS has been created along with a new Note for EVCS signs, both added to advise the code user of existing requirements.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with the FS for available section number 5.106.5.3.4 for EVCS accessibility requirements and new Note for EVCS signs since there was no specific objections pertaining to the amendments. However, post CAC, the EVCS signs code section was changed to a Note with additional amendments to reference to Caltrans Traffic Operations Policy Directive 13-01.

Existing **Section 5.106.5.3.3** Charging space calculation, is being repealed as it references Table 5.106.5.3.3 (proposed Table 5.106.5.3.1) which no longer allows for single charging space requirements and the “Exceptions” below Section 5.106.5.3.3 will be relocated under section 5.106.5.3 Exceptions.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with the FS for existing Section 5.106.5.3.3 with Exceptions since the amendment is editorial and consist of relocating exceptions to other sections and to repeal code language that is no longer applicable. This code section number is being reused for proposed code language for the use ALMS as mentioned above.

Table 5.106.3.3 is being renumbered to **Table 5.106.5.3.1** so it can be printed next to the new EV Capable and EVSE code sections to maintain the number sequencing between revised code section numbers and table numbers. This table has also been amended to increase the percentages for EV capable spaces and to add a column for the requirement of EVCS. The proposed amendments require new nonresidential buildings with 10-25 actual parking spaces to install EV capable infrastructure in 20% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 26 or greater actual parking spaces shall install EV capable infrastructure in 20% of the total number of actual parking spaces and 25% of the number of required EV capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 15% for 26 or more actual parking spaces. The net resulting percentage for the required EVSE is 5% for 26 or more actual parking spaces. The installation of EVSE per Table 5.106.5.3.1, may be provided with EVSE in any combination of Level 2 and direct current fast charging, except that at least one Level 2 EVSE shall be provided.

To calculate the required number of EV capable spaces for 201 or more actual parking spaces, multiply e.g., 201 x 20% and round the sum up to the nearest whole number.

That sum is the required number of EV capable spaces to be designed as per Sections 5.106.5.3 and 5.106.5.3.1. To calculate the required EVCS charging spaces use the sum of EV capable spaces and multiply it by 25%, rounding up to the nearest whole number. That sum is the number of EVCS required per Table 5.106.5.3.1.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Table 5.106.5.3.1 (Formally Table 5.106.5.3.3) which increased the percentages for EV capable spaces and added new requirements for electric vehicle charging stations. There was no specific objection to the proposals.

A comment was received during the Table 5.106.5.3.1 discussion. The EVAA coalition proposed a new EV Table 5.106.5.3.1a which required 30% EV Ready spaces with 5% Level 2 EVSE to be used as an alternate to BSC Table 5.106.5.3.1 as part of the Alternate Compliance Pathway (ACP). BSC disagrees with the FS for the inclusion of Table 5.106.5.3.1a as proposed by the EVAA coalition. BSC reviewed the ACP proposed code language in the table and has determined that there are technical issues with the proposal. Additionally, the ACP was submitted as a comment on April 16, 2021 ahead of the GREEN CAC meeting where it was heard on April 28, 2021. The untimely submission of such a substantive proposal did not give BSC sufficient time to fully vet the proposed code changes with the affected parties and interested stakeholders. Moving forward BSC may consider such proposal in upcoming rulemaking code cycles and is willing to work with the EVAA coalition.

Existing **Section 5.106.5.3.4** Identification, Verbiage is being relocated under Section 5.106.5.3.1 as line 4.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for existing Section 5.106.5.3.4 as the proposed amendment is editorial in nature to relocate the verbiage for identification into the main paragraph of the EV requirements. This code section number is being reused for the proposed EVCS accessibility requirements as mentioned above.

Section 5.106.5.3.5 [N] Future charging spaces, is being repealed because the reference to clean air vehicles Section 5.106.5.2 no longer applies because it is being repealed. The **Note** under Section 5.106.5.3.5 is being relocated to Section 5.106.5.3.1.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for existing Section 5.106.5.3.5 and Note because the repeal of this section is needed due to the proposed repeal of designated parking for clean air vehicles which this code section references and the Note is being relocated to Section 5.106.5.3.1 which is editorial and there was no specific objection to the proposals.

ITEM 9

5.106.5.4 Electric Vehicle (EV) charging-Medium-duty and Heavy-duty Vehicles[N].

BSC proposes this section for adoption, which includes a mandatory requirement to install additional infrastructure to support later addition of chargers up to 400kW ZEV fueling in new warehouses, grocery stores, and retail buildings with off-street loading spaces that

will support the future addition of chargers for medium- and heavy-duty vehicles.

Under a mandate from Assembly Bill 1092 (Chapter 410, Statutes of 2013) authored by Assembly Member Levine, BSC was directed to develop mandatory EV standards for nonresidential buildings during the 2016 Intervening Code Cycle.

Health and Safety Code Section 18930.5(b) as amended by Assembly Bill 341 allows BSC and other state agencies that propose building standards to allow for input by state agencies that have expertise in green building subject areas. The California Air Resources Board (CARB) has expertise in air quality, climate change, and EV charging infrastructure.

BSC is moving forward with the CARB suggested changes and proposes to include a mandatory requirement for EV capable infrastructure to support installation of EV chargers for either depot, or opportunity charging in new warehouses, grocery stores, and retail buildings with off-street loading spaces, such as loading docks or parking spaces set aside for loading and unloading of motor vehicles. Recent analysis shows that EV capable infrastructure must support 180,000 medium- and heavy-duty zero-emission vehicles (ZEV) by 2030. CARB has adopted and continues to adopt regulations requiring sales and purchases of medium- and heavy-duty ZEVs. While it is too early to mandate design of depot- or fleet-size battery electric vehicle (BEV) charging locations given the lack of data about ZEV fleet operations, it is foreseeable that with the ongoing development of regulations for medium- and heavy-duty ZEVs, there will be a need for charging opportunities throughout daily operations that include stops at multiple buildings for loading and unloading. The proposed mandate will increase medium- and heavy-duty ZEV access to EV chargers throughout their daily operations, which will ultimately be necessary to support the addition of 180,000 medium- and heavy-duty ZEVs by 2030, and to support the additional need from 100 percent sales of medium- and heavy-duty EVs by 2045.

In addition to supporting California zero-emission policies and directives such as Executive Order N-79-20, CBSC's goal is to enable future charging capability at warehouses, grocery stores, and retail buildings with off-street loading spaces in an effort to increase access to currently existing ZEV charging stations. These proposed code changes support CARB's regulatory requirements for medium- and heavy-duty ZEVs.

CBSC proposes to include a mandatory requirement to install EV capable infrastructure to support later addition of charging stations in new warehouses, grocery stores, and retail buildings with off-street loading spaces for charging medium- and heavy-duty ZEVs. This change will help improve air quality and support the estimated emissions reductions from current CARB regulations which include: 19 million metric tons of carbon dioxide equivalent (MMTCO_{2e}) total by 2050 from the Innovative Clean Transit Regulation, 0.5 MMTCO_{2e} total by 2040 from the Airport Shuttle Bus Regulation, and 1.7 MMTCO_{2e} per year by 2040 from the Advanced Clean Trucks Regulation. These estimated emissions reductions do not include those from the Advanced Clean Fleets Regulation currently under development. The proposed infrastructure additions could also be used to support zero-emission material handling equipment, and additional requirements to increase infrastructure for this equipment will be revisited in future code cycles.

Specific Proposed Regulatory Actions: BSC is proposing to add new code Section 5.106.5.4 Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] and related

subsections and a table for the advancement of EVSE for medium-duty and heavy-duty vehicles.

CAC Recommendation: Approve.

Agency Response: Accept. Post CAC meeting, BSC has made a friendly amendment the leading paragraph to make an editorial correction. Also, the exception has been amended to align with a similar exception in ITEM 8 for EV regulations.

ITEM 10

5.504.7 Thermal Insulation

BSC proposes to relocate Section A5.504.4.8 Thermal Insulation from voluntary Tier 1 to a new mandatory code Section 5.504.4.7 with amendments. New relevant code Section 5.504.4.7.1 Verification of compliance has been added to provide consistency with similar existing requirements for acoustical ceilings and wall panels.

Adding these amendments will afford greater protection of public health by requiring that installed thermal insulation meet the more restrictive California department of Public Health (CDPH) standard. This amendment has limited impact on the affected building community in California. A majority of these products already meet the required limits, and LEED v4 gives low-emitting material credits for these products. Considering the availability of these products in the market, such requirements will be readily accepted by the current market and many manufacturers. BSC is proposing to only reference the new CDPH volatile organic compounds (VOC) limits standard for these materials and proposes to repeal all other certification programs and testing labs listed as those programs and testing labs all reference the CDPH testing standard criteria. The CDPH website contains a list approved certification programs and testing labs. BSC is proposing to provide a web link to CDPH's website for certification programs and testing labs that meet the CDPH standard.

Updating the reference to the new CDPH standard and by only using the CDPH standard for VOC limits will aid the code user in properly applying the most recent reference standard. Using one single source for the most current information will also aid the code user and the enforcing agencies. These amendments have been recommended and have the support from California Air Resources Board (CARB), and CDPH.

Lastly, these proposed amendments are needed for consistency with similar amendments to related products found in Sections 5.504.4.4 Carpet systems; 5.504.4.4.1 Carpet cushion; 5.504.4.6 Resilient flooring systems codified in the 2019 Intervening Code cycle.

CAC Recommendation: Approve.

Agency Response: Accept.

ITEM 11

5.504.4.8 Acoustical ceilings and wall panels

BSC proposes to relocate Section A5.504.9 Acoustical ceilings and wall panels, and related sub-section A5.504.4.9.1 Verification of compliance, from the voluntary measures to mandatory into new code Sections 5.504.4.8 and 5.504.4.8.1.

Adding these amendments will afford greater protection of public health by requiring that

installed acoustical ceiling and wall panels meet the more restrictive CDPH standard. This amendment has limited impact on the affected building community in California. A majority of these products already meet the required limits, and LEED v4 gives low-emitting material credits for these products. Considering the availability of these products in the market, such requirements will be readily accepted by the current market and many manufacturers. BSC is proposing to only reference the new CDPH VOC limits standard for these materials and proposes to repeal all other certification programs and testing labs listed as those programs and testing labs all reference the CDPH testing standard criteria. The CDPH website contains a list approved certification programs and testing labs. BSC is proposing to provide a web link to CDPH's website for certification programs and testing labs that meet the CDPH standard.

Updating the reference to the new CDPH standard and by only using the CDPH standard for VOC limits will aid the code user in properly applying the most recent reference standard. Using one single source for the most current information will also aid the code user and the regulatory agencies. These amendments have been recommended and have the support from California Air Resources Board (CARB) and the California department of Public Health (CDPH).

Lastly, these proposed amendments are needed for consistency with similar amendments to related products found in Sections 5.504.4.4 Carpet systems; 5.504.4.4.1 Carpet cushion; 5.504.4.6 Resilient flooring systems codified in the 2019 Intervening Code cycle.

CAC Recommendation: Approve.

Agency Response: Accept.

ITEM 12

A5.102.1, Definitions, LOW-EMITTING AND FUEL-EFFICIENT VEHICLES

BSC proposes to repeal the definition for LOW-EMITTING AND FUEL-EFFICIENT VEHICLES since the related code Sections 5.106.5.2 and A5.106.5.1 and related subsections for Designated parking for clean air vehicles which mentions low-emitting and fuel-efficient is proposed for repeal. This amendment will maintain consistency within the CALGreen Code.

CAC Recommendation: Further Study (FS).

Agency Response: Accept. Upon further review, BSC has decided to not repeal the defined term for LOW-EMITTING AND FUEL-EFFICIENT VEHICLES. However, the definition title has been changed to ZERO-EMITTING AND HIGH-EFFICIENT VEHICLES for consistency with proposed definition amendments in Item 3.

ITEM 13

A5.106.5.1 Designated parking for clean air vehicles

BSC proposes to repeal Section A5.106.5.1, A5.106.5.1.1 Tier 1, Table 5.106.5.1.1 with footnote 1, and "Note" below Table 5.106.5.1.1. BSC also proposes to repeal Section A5.106.5.1.2 Tier 2, Table A5.106.5.1.2 with footnote 1, and "Note" below Table A5.106.5.1.2.

Since the EV capable spaces can be used to comply with meeting the clean air vehicles

requirement percentages and the EV capable percentages are being significantly increased; BSC has determined that the Designated parking for clean air vehicles requirements in Sections A5.106.5.1.3 Parking stall marking and A5.106.5.1.4 Vehicle designations are no longer needed. This amendment will allow for small parking lots to not be unjustly impacted by the increased EV Capable and EVSE proposed changes in ITEM 6.

CAC Recommendation: Further Study (FS).

Agency Response: Accept. Upon further review, BSC has decided to not repeal the voluntary codes for Tier 1 and Tier 2 clean air vehicles. However, the voluntary code sections have been amended to simplify the application by using a percentage instead of the current clean air vehicle tables. The percentages have been increased to go beyond the proposed increased percentages for EV capable spaces for both Tier 1 and Tier 2.

ITEM 14

A5.106.5.3 [N] Electric Vehicle (EV) charging.

BSC is proposing amendments for Tier 1 to increase the percentages for EV capable spaces and require a higher percentage for the installation of EVSE. The proposed amendments require new nonresidential buildings with 0-9 actual parking spaces to install EV capable infrastructure in 30% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 10 or greater actual parking spaces shall install EV capable infrastructure in 30% of the total number of actual parking spaces and 33% of the number of required EV capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 20% for 10 or more actual parking spaces. The net resulting percentage for the required EVSE is 10% for 10 or more actual parking spaces.

If adopted locally, this alternative would add 0.3 – 1.0 percent to total costs for nonresidential new construction above the proposed mandatory provisions. This requirement would result in the installation of an additional 56,135 to 69,248 EV capable spaces and 62,924 to 75,778 EV chargers over the proposed mandatory provisions during the 3-year life of the amendments. Initial construction costs for Alternative 1 were estimated to total an additional \$188 to \$353 million with avoided retrofit costs of \$833 to \$1,160 million resulting in a statewide benefit of \$481 to \$972 million over the 3-year life of the amendments compared to the proposed mandatory provisions. An additional 492,000 to 597,000 metric tons CO₂e emission reduction annually could be achieved compared to the proposed mandatory provisions.

BSC is also proposing amendments for Tier 2 to increase the percentages for EV capable spaces and require a higher percentage for the installation of EVSE. The proposed amendments require new nonresidential buildings with 0-9 actual parking spaces to install EV capable infrastructure in 45% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 10 or greater actual parking spaces shall install EV capable infrastructure in 45% of the total number of actual parking spaces and 33% of the number of required EV capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 30% for 10 or more actual parking spaces. The net resulting percentage for the required EVSE is 15% for 10 or more actual parking

spaces. If adopted locally, this alternative would add 0.6 – 2.1 percent to total costs for nonresidential new construction above the proposed mandatory provisions. This requirement would result in the installation of an additional 168,404 to 207,745 EV capable spaces and 119,058 to 145,027 Level 2 EV chargers over the proposed mandatory provisions during the 3-year life of the amendments. Initial 'construction costs for Alternative 2 were estimated to total an additional \$398 to \$752 million with avoided retrofit costs of \$2,012 to \$2,822 million resulting in a statewide benefit of \$1,260 to \$2,424 million over the 3-year life of the amendments compared to the proposed mandatory provisions. An additional 1,047,000 to 1,280,000 metric tons CO₂e emission reduction annually could be achieved compared to the proposed mandatory provisions.

Section A5.106.5.3 is amended to clarify the application for EVSE.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Section A5.106.5.3 since most of the changes were editorial. The EVAA coalition provide similar comments to those in ITEM 8 pertaining to the inclusion of an Alternate Compliance Pathway. However, no specific amendments for Tier 1 or Tier 2 were provided. BSC reviewed the ACP proposed code language under the mandatory code Section 5.106.5.3.1 and has determined that there are technical issues with the proposal. Additionally, as mentioned earlier the ACP was submitted as a comment on April 16, 2021 ahead of the GREEN CAC meeting where it was heard on April 28, 2021. The untimely submission of such a substantive proposal did not give BSC sufficient time to fully vet the proposed code changes with the affected parties and interested stakeholders. Moving forward BSC may consider such proposal in upcoming rulemaking code cycles and is willing to work with the EVAA coalition

Section A5.106.3.1 Tier 1 is amended to add the requirements for installed EVSE's when applicable and to add the reference to the requirements found in the mandatory code Section 5.106.5.3. Additionally, a reference has been added for the option to use of DCFC to comply with the requirement for EVCS and the allowance for the use of ALMS.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Section A5.106.5.3.1 Tier 1, the changes were mostly editorial referencing the associated mandatory code sections. There was no specific objection to the proposals. The EVAA coalition provide similar comments to those in ITEM 8 pertaining to the inclusion of an Alternate Compliance Pathway for Tier 1 and Tier 2 which BSC did not agree with.

Table A5.106.5.3.1 is being amended to provide an incremental percentage increase for EV capable spaces above the proposed mandatory respective code per Table 5.106.5.3.1 from 20% to 30% for Tier 1. Additionally, a column for installed EVSE's has been added which provides an incremental percentage increase above the proposed mandatory respective code per Table 5.106.5.3.1 from net 5% to net 10% for Tier 1.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Table A5.106.5.3.1 while the proposed amendments increased the percentages for EV capable spaces and electric vehicle charging stations beyond mandatory for Tier 1; there was no specific objection to the proposals. The EVAA coalition provide similar comments

to those in ITEM 8 pertaining to the inclusion of an Alternate Compliance Pathway for Tier 1 and Tier 2 which BSC did not agree with.

Section A5.106.3.2 Tier 2 is amended to add the requirements for installed EVSE's when applicable and to add the reference to the requirements found in the mandatory code Section 5.106.5.3. Additionally, a reference has been added for the option to use of DCFC to comply with the requirement for EVCS and the allowance for the use of ALMS.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Section A5.106.5.3.2 Tier 2, the changes were mostly editorial referencing the associated mandatory code sections. There was no specific objection to the proposals. The EVAA coalition provide similar comments to those in ITEM 8 pertaining to the inclusion of an Alternate Compliance Pathway for Tier 1 and Tier 2 which BSC did not agree with.

Section A5.106.3.3 Identification, BSC proposes to repeal this code to coordinate with other proposed amendments in the mandatory code.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Section A5.106.5.3.3, the repeal is editorial and needed to align with the associated proposed mandatory code sections edits. There was no specific objection to the proposal.

Table A5.106.5.3.2 is being amended to provide an incremental percentage increase for EV capable spaces above the proposed mandatory respective code per Table 5.106.5.3.2 from 20% to 45% for Tier 2. Additionally, a column for installed EVSE's has been added which provides an incremental percentage increase above the proposed mandatory respective code per Table 5.106.5.3.2 from net 5% to net 15% for Tier 2.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Table A5.106.5.3.2 while the proposed amendments increased the percentages for EV capable spaces and electric vehicle charging stations beyond mandatory for Tier 2; there was no specific objection to the proposals. The EVAA coalition provide similar comments to those in ITEM 8 pertaining to the inclusion of an Alternate Compliance Pathway for Tier 1 and Tier 2 which BSC did not agree with.

Section A5.106.3.4 Future charging spaces and Note. BSC proposes to repeal this code section and **Note** to coordinate with other proposed amendments in the mandatory code.

CAC Recommendation: Further Study (FS).

Agency Response: BSC disagrees with FS for Section A5.106.5.3.4 and Note and has decided to repeal the section and Note as originally proposed. The repeal of this section is needed due to the proposed repeal of mandatory section pertaining to designated parking for clean air vehicles and the Note is being relocated to mandatory Section 5.106.5.3.1. There were no specific objections to the proposed repeal.

ITEM 15

SECTION A5.303.4.1, Nonwater supplied urinals,

BSC proposes to amend Section A5.303.4.1 title from Nonwater supplied urinals to

Nonwater urinals. The body of the text is being amended to repeal the word “supplied” and to replace the word “urinal, hybrid” with “nonwater urinals with drain cleansing action” to match the new definition for Nonwater urinals found in the 2021 Uniform Plumbing Code. This amendment will provide consistency between CALGreen and the Plumbing Code.

CAC Recommendation: Approve.

Agency Response: Accept.

ITEM 16

SECTION A5.504, POLLUTANT CONTROL, Thermal insulation.

Statement of specific purpose, problem, rationale and benefits:

BSC proposes to relocate Section A5.504.4.8 Thermal Insulation Tier 1, from voluntary to a new code Section 5.504.4.7 found in ITEM 9. Section A5.504.4.8.1 Thermal insulation, Tier 2, has been renumbered to A5.504.4.8 with the Tier 2 moving to Tier 1 and Section A5.504.4.8.2 Verification of compliance, has been renumbered to Section A5.504.4.8.1.

CAC Recommendation: Approve.

Agency Response: Accept.

ITEM 17

A5.504.4.9 Acoustical ceilings and wall panels

BSC proposes to relocate Section A5.504.4.9 Acoustical ceilings and wall panels, and related sub-section A5.504.4.9.1 Verification of compliance from the voluntary measures to new code Sections 5.504.4.8 and 5.504.4.8.1. found in ITEM 10.

CAC Recommendation: Approve.

Agency Response: Accept.

ITEM 18

Division A5.6 – VOLUNTARY TIERS

TABLE A5.601 NONRESIDENTIAL BUILDINGS:

BSC is proposing to update the table in Sections A5.601 to include the proposed mandatory and voluntary proposed code updates as shown in items 1 through 19 as applicable to the affected code section shown in the table.

These tables are not regulatory and are to be used as checklists for compliance with the mandatory and voluntary measures.

These amendments are needed to maintain consistency with between the proposed code language and the checklist table which will benefit the code user and the local enforcing agencies.

CAC Recommendation: Further Study (FS).

Agency Response: Accept. These amendments are editorial corrections, and the table will be amended as needed to align with proposed code changes.

ITEM 19

CALGreen VERIFICATION GUIDELINES (Mandatory, Tier 1 and Tier 2)

A5.602

CALGreen VERIFICATION GUIDELINES MANDATORY MEASURES CHECKLIST

A5.602.1

CALGreen VERIFICATION GUIDELINES TIER 1 CHECKLIST

A5.602.2

CALGreen VERIFICATION GUIDELINES TIER 2 CHECKLIST

BSC is proposing to update the verification guidelines tables in sections A5.602, A5.602.1, and A5.602.2 to include the proposed mandatory and voluntary proposed code updates as shown in items 1 through 19.

These tables are not regulatory and are to be used as checklists for compliance with the mandatory and voluntary measures.

These amendments are needed to maintain consistency with between the proposed code language and the checklist which will benefit the code user and the local enforcing agencies.

CAC Recommendation: Further Study (FS).

Agency Response: Accept. These amendments are editorial corrections, and the tables will be amended as needed to align with proposed code changes.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

Government Code Section 11346.2(b)(3) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).

See Attachment A for estimated costs developed by the California Air Resources Board (CARB). Attachment A includes assumptions and estimates based on the following:

1. [California Energy Commission CEC's AB 2127 recent Commission Report](https://efiling.energy.ca.gov/getdocument.aspx?tn=238853), retrieved from efiling.energy.ca.gov/getdocument.aspx?tn=238853.
2. *2021 National Construction Estimator*, 67th Edition, edited by Richard Pray, Craftsman Book Company, November 2018.
3. CARB staff estimated based on nonresidential building floorspace projections from CEC and data from U.S. Energy Information Administration, [2012 Commercial Buildings Energy Consumption Survey](https://www.eia.gov/consumption/commercial/), 2012, retrieved from [eia.gov/consumption/commercial/](https://www.eia.gov/consumption/commercial/).
4. California Air Resources Board, [EV Charging Infrastructure: Nonresidential Buildings: 2019/2020 Intervening Code Cycle: CARB Staff Technical and Cost Analysis](#), Table G1, November 15, 2019, retrieved from arb.ca.gov/sites/default/files/2020-09/CARB_Technical_Analysis_EV_Charging_Nonresidential_CALGreen_2019_2020_Intervening_Code.pdf.

5. *2021 National Construction Estimator*, 67th Edition, edited by Richard Pray, Craftsman Book Company, November 2018.
6. CARB staff estimated based on nonresidential building floorspace projections from CEC and data from U.S. Energy Information Administration, [2012 Commercial Buildings Energy Consumption Survey](#), 2012, retrieved from eia.gov/consumption/commercial/.
7. U.S. Energy Information Administration, [2012 Commercial Buildings Energy Consumption Survey](#), 2012, retrieved from eia.gov/consumption/commercial/.
8. [EV Charging Infrastructure: Nonresidential Buildings: 2019/2020 Intervening Code Cycle: CARB Staff Technical and Cost Analysis](#), Table G1, November 15, 2019, retrieved from arb.ca.gov/sites/default/files/2020-09/CARB_Technical_Analysis_EV_Charging_Nonresidential_CALGreen_2019_2020_Intervening_Code.pdf.
9. Department of General Services, [Ten Year Sequencing Plan, Strategy for Sacramento Office Buildings](#), April 2018, retrieved from www.dgs.ca.gov/-/media/Divisions/RESD/Publications/AMB/State-Facility-Long-Range-Planning-Study/sequencingplan1---v2C.pdf.

STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS

Government Code Section 11346.2(b)(1) requires a statement of the reasons why an agency believes any mandates for specific technologies or equipment, or prescriptive standards are required.

The California Building Standards Code has historically been a mix of performance and prescriptive provisions and reference standards. The CALGreen code is no different, and wherever possible, a performance option is included to provide flexibility to the code user.

CONSIDERATION OF REASONABLE ALTERNATIVES

Government Code Section 11346.2(b)(4)(A) requires a description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered as an alternate. It is not the intent of this paragraph to require the agency to artificially construct alternatives or describe unreasonable alternatives.

1. BSC considered the following alternative for EV vehicles in Sections 5.106.5.3 and A5.106.5.3 to further advance the potential for EV preparedness for EV vehicles. BSC conducted a stakeholder workshop on January 7, 2021, in which it proposed to include a mandatory requirement for Level 2 charging stations in new nonresidential buildings requiring one Level 2 charger for nonresidential buildings that had 10 or more actual parking spaces. Additionally, BSC proposed a voluntary Tier 1 and Tier 2 requirement for Level 2 chargers requiring Level 2 chargers in 3% of the total parking spaces for Tier 1 and 5% for Tier 2. Based on comments received at the workshop, this initial EV proposal was superseded by the more stringent current proposal which is needed to further advance EV preparedness.
2. BSC considered the following two alternatives for EV vehicle charging in voluntary Sections A5.106.5.3.1 and A5.106.5.3.2 to further advance the potential for EV preparedness for EV vehicles as voluntary tier options which are currently being proposed for adoption in this rulemaking.

Alternative 1 Tier 1: Adopt an additional 5% Level 2 EV charging requirement for new nonresidential buildings with 10 or more actual parking spaces and adopt an additional 5% EV capable space requirement.

Alternative 1 Tier 1 analysis: The proposed amendments require new nonresidential buildings with 0-9 actual parking spaces to install EV capable infrastructure in 30% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 10 or greater actual parking spaces shall install EV capable infrastructure in 30% of the total number of actual parking spaces and 33% of the number of required EV capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 20% for 10 or more actual parking spaces. The net resulting percentage for the required EVSE is 10% for 10 or more actual parking spaces. The incremental percentage increase for EV capable spaces above the proposed mandatory respective code in Table 5.106.5.3.1 is from 20% (net 15%) to 30% (net 20%) and the incremental percentage increase for Level 2 EVSE above the proposed mandatory respective code in Table 5.106.5.3.1 is from net 5% to net 10%. This alternative was rejected at this time as a mandatory requirement at the state level because it is more costly. However, this alternative can still be adopted by local governments as mandatory at the local level as a Tier 1 option and is being proposed in this rulemaking by BSC. This alternative would add 0.3 – 1.0 percent to total costs for nonresidential new construction above the proposed mandatory provisions. This requirement would result in the installation of an additional 56,135 to 69,248 EV capable spaces and 62,924 to 75,778 Level 2 EV chargers over the proposed mandatory provisions during the 3-year life of the amendments. Initial construction costs for Alternative 1 were estimated to total an additional \$188 to \$353 million with avoided retrofit costs of \$833 to \$1,160 million resulting in a statewide benefit of \$481 to \$972 million over the 3-year life of the amendments compared to the proposed mandatory provisions. An additional 492,000 to 597,000 metric tons CO₂e emission reduction annually could be achieved compared to the proposed mandatory provisions.

Alternative 2 Tier 2: Adopt an additional 10% Level 2 EV charging requirement for new nonresidential buildings with 10 or more actual parking spaces and adopt an additional 15% EV capable space requirement.

Alternative 2 Tier 2 analysis: The proposed amendments require new nonresidential buildings with 0-9 actual parking spaces to install EV capable infrastructure in 45% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 10 or greater actual parking spaces shall install EV capable infrastructure in 45% of the total number of actual parking spaces and 33% of the number of required EV capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 30% for 10 or more actual parking spaces. The net resulting percentage for the required EVSE is 15% for 10 or more actual parking spaces. The incremental percentage increase for EV capable spaces above the proposed mandatory respective code in Table

5.106.5.3.1 is from 20% (net 15%) to 45% (net 30%) and the incremental percentage increase for Level 2 EVSE above the proposed mandatory respective code in Table 5.106.5.3.1 is from net 5% to net 15%. This alternative was rejected at this time as a mandatory requirement at the state level because it is more costly. However, this alternative can still be adopted by local governments as mandatory at the local level as a Tier 2 option and is being proposed in this rulemaking by BSC. This alternative would add 0.6 – 2.1 percent to total costs for nonresidential new construction above the proposed mandatory provisions. This requirement would result in the installation of an additional 168,404 to 207,745 EV capable spaces and 119,058 to 145,027 Level 2 EV chargers over the proposed mandatory provisions during the 3-year life of the amendments. Initial construction costs for Alternative 2 were estimated to total an additional \$398 to \$752 million with avoided retrofit costs of \$2,012 to \$2,822 million resulting in a statewide benefit of \$1,260 to \$2,424 million over the 3-year life of the amendments compared to the proposed mandatory provisions. An additional 1,047,000 to 1,280,000 metric tons CO₂e emission reduction annually could be achieved compared to the proposed mandatory provisions.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

Government Code Section 11346.2(b)(4)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business.

No alternatives were identified to lessen the adverse impact on small business, but most of the modifications to the code are proposed for facilitation of understanding and compliance by the code user. Those proposals that are new to the code or are made more stringent have been thoroughly vetted through stakeholder outreach and have been justified by proposing parties as to cost/benefit.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS

Government Code Section 11346.2(b)(5)(A) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.

BSC has determined that this regulatory action for EV vehicles would increase costs marginally to California business enterprises representing 0.2% to 0.9% of the total new construction costs of nonresidential buildings over the 3-year life of the amendments and between 0.8 and 18 percent of the \$20,000 to \$80,000 initial construction cost per parking space with significant benefits to Californians due to improved air quality and GHG emissions reduction. **See Attachment A.**

ASSESSMENT OF EFFECT OF REGULATIONS UPON JOBS AND BUSINESS EXPANSION, ELIMINATION OR CREATION

Government Code Sections 11346.3(b)(1) and 11346.5(a)(10)
The Building Standards Commission has assessed whether and to what extent this proposal will affect the following:

- A.** The creation or elimination of jobs within the State of California.
These regulations may cause some jobs to be created for the installation, maintaining and manufacturing of electric vehicle supply equipment (EVSE). No jobs are expected to be eliminated within the State of California.
- B.** The creation of new businesses or the elimination of existing businesses within the State of California.
These regulations may cause the creation of businesses that expand into the EV market. These regulations will not affect the elimination of jobs within the State of California.
- C.** The expansion of businesses currently doing business within the State of California.
These regulations will likely promote the expansion of businesses currently involved with EV manufacturing, installation, maintenance, and technology development within the State of California.
- D.** The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.
These regulations will increase the sustainability of California's natural resources by reducing fuel use, GHG emissions, criteria pollutants, and fossil fuel dependence. Additionally, updating and clarifying the minimum current CALGreen codes will provide increased protection of public health and safety, worker safety and the environment.

ESTIMATED COST OF COMPLIANCE, ESTIMATED POTENTIAL BENEFITS, AND RELATED ASSUMPTIONS USED FOR BUILDING STANDARDS

Government Code Section 11346.2(b)(5)(B)(i) states if a proposed regulation is a building standard, the initial statement of reasons shall include the estimated cost of compliance, the estimated potential benefits, and the related assumptions used to determine the estimates.

1. Estimated Statewide Dollar Costs for Businesses and Individuals.

The proposed amendments require new nonresidential buildings with 10-25 actual parking spaces to install EV capable infrastructure in 20% of the total number of actual parking spaces with no requirement for EVSE. New nonresidential buildings with 26 or greater actual parking spaces shall install EV capable infrastructure in 20% of the total number of actual parking spaces and 25% of the number of required EV capable spaces need to be provided with electric vehicle supply equipment (EVSE). The net resulting percentage for the required EV capable infrastructure is 15% for 26 or more actual parking spaces. The net resulting percentage for the required EVSE is 5% for 26 or more actual parking spaces. The cost of EV capable infrastructure (raceway and panel capacity) is estimated to range from approximately \$675 to \$1,021 in 56,135 to 69,248 parking spaces. This results in an estimated statewide cost of \$37.9 million (\$675 x 56,135 parking spaces) to \$70.7 million (\$1,021 x 69,248 parking spaces) over the 3-year life of the amendments above the currently required 10% EV capable requirement in CALGreen.

The installation of EVSE, triggered at 26 or greater actual parking spaces used to create electric vehicle charging stations (EVCS), may be Level 2 EVSE with the option for installing direct current fast chargers (DCFC). The cost of Level 2 EV

chargers ranges from \$1,389 to \$1,895.

The cost of other components (wiring, panel capacity, conduit, protective bollards) adds another \$998 - \$1828 per Level 2 EVSE space, bringing the total cost for Level 2 EVSE to \$2,387 - \$3,723 in 49,346 to 62,719 parking spaces. This results in an estimated statewide cost of \$118 million (i.e. \$2,387 x 49,346 parking spaces) to \$233 million (i.e. \$3,723 x 62,719 parking spaces) over the 3-year life of the amendments to add the Level 2 EVSE requirements.

Altogether, the added statewide cost for all measures affecting new nonresidential buildings is approximately \$156 million to \$304 million, or between 0.2% and 0.9% of total costs for nonresidential new construction. **See Attachment A-Cost Analysis.**

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

Government Code Section 11346.2(b)(6) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment.

These regulations do not duplicate nor conflict with federal regulations.