

**INITIAL STATEMENT OF REASONS  
FOR PROPOSED BUILDING STANDARDS  
OF THE CALIFORNIA BUILDING STANDARDS COMMISSION  
REGARDING THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE  
(CALGREEN)  
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11  
(BSC 04/19)**

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 2019 California Green Building Standards Code via a supplement, effective July 1, 2021.

Key amendments proposed during this code cycle include:

- Amend the Designated Clean Air Vehicle (CAV) tables to increase the percentages for both mandatory and voluntary, and to provide an updated website link for Sacramento Area Bicycle Advocates relating to changing rooms.
- Amend the Electric Vehicle (EV) infrastructure tables to increase the percentages for both mandatory and voluntary.
- Amend the Light Pollution reduction to add clarity.
- Relocate pre-rinse spray valves from voluntary into mandatory with additional amendments to reference Title 20.
- Update the volatile organic compound limits reference standard for carpet systems, carpet cushion and resilient flooring systems in the mandatory and voluntary code provisions.
- Update Chapter 6, Referenced Organizations and Standards to align with proposed amendments to mandatory and voluntary code sections regarding resilient flooring systems, brownfield redevelopment, solar reflectance for roofing products, and reduction of heat island effect for hardscapes.
- Amend mandatory and voluntary flow rate tables to align with existing showerhead flow rates codified in chapter 5, and amend the reference to the 2019 *California Plumbing Code* to align with proposed code changes in the plumbing code.
- Amend code language in Section A5.405 and to provide a web link to CalRecycle's website for accessing resources regarding reused materials.
- Add new code section in the appendix voluntary chapter for Bird Friendly Building Design.

- Update the volatile organic compound limits reference standard for Thermal insulation in the voluntary code provisions.
- Amend Division A5.6, Voluntary Tiers and CALGreen Verification Guidelines checklist affected by proposed mandatory and voluntary updates as shown in items 1 through 15.

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 Chapter 5 and appendix A5, of Part 11, Title 24, California Code of Regulations, are being made to clarify, implement and make specific requirements relative to the following items:

## **ITEM 1: DESIGNATED PARKING**

### **Sections: 5.106.5.2 and Table 5.106.5.2, Designated parking for clean air vehicles.**

BSC is proposing to increase the percentage of designated parking stalls for clean air vehicles (CAV) for inclusion in the 2019 CALGreen Intervening Code Cycle, Section 5.106.5.2, for nonresidential mandatory measures. The proposed changes to Table 5.106.5.2 are needed to avoid conflict with proposed percentage increases to the electrical vehicle (EV) charging infrastructure found in Table 5.106.5.3.3. Additionally, BSC is proposing an amendment to add a footnote below the table that states “Calculation for spaces shall be rounded up to the nearest whole number” to match the existing footnote on Table 5.106.3.3 and add a “Note” below the CAV table that states that “Designated parking for clean air vehicles shall count toward the total parking spaces required by the local enforcing agencies”. This amendment is needed because there is confusion from designers and local enforcing agencies that misinterpret the intent of the CAV parking stalls as not counting toward the total parking spaces requirements.

BSC proposes to amend to the CAV Table 5.106.5.2 by increasing percentage requirement from 8 percent to 12 percent and by adding the aforementioned footnote and adding a “Note”.

By proposing amendments to these sections, BSC will prevent conflicts with proposed code language in other code sections being proposed to increase EV infrastructure requirements, and provide uniformity and consistency in the mandatory measures for designated CAV and EV requirements. This will also provide guidance to the design and regulation community for properly using the CAV table stall count as part of the total required parking spaces.

## ITEM 2: ELECTRIC VEHICLE INFRASTRUCTURE

### Table 5.106.5.3.3 EV charging space calculation.

#### Section 5.106.5.3.5 [N] Future charging spaces.

BSC is proposing to increase the percentage of electric vehicle infrastructure for inclusion in the 2019 CALGreen Intervening Code Cycle, Table 5.106.5.3.3 for nonresidential mandatory measures. BSC is also proposing an amendment to the EV code Section 5.106.5.3.5 by adding a “Note” that states, “Future electric vehicle charging spaces shall count toward the total parking spaces required by the local enforcing agencies.” This amendment is needed because there is confusion from designers and local enforcing agencies that misinterpret the intent of the future EV charging stalls as not counting toward the total parking spaces requirements.

BSC’s Zero Emission Vehicle (ZEV) regulation is one strategy to improve air quality and reduce greenhouse gas emissions through advanced technology vehicle production and Low-Emission Vehicle Regulations placed on automobile manufacturers. Consumers are embracing electric and electric/hybrid vehicles and there is a need for widespread infrastructure to support future charging needs. Additionally, the Governor’s Office Zero Emission Vehicle (ZEV) Action Plan identifies strategies and actions supporting the milestones identified in Executive Order B-16-12, and a revised target of 5 million ZEVs on California’s roadways by 2030 as directed by Executive Order B-48-18.

BSC is proposing to increase the percentages for EV infrastructure in Table 5.106.5.3.3 from 6 percent to 10 percent for lots over 201 spaces. This increase will accommodate a foreseeable increase in the demand for EV charging. BSC is also proposing to increase the voluntary Tier 1 and Tier 2 percentages for parking lots over 201 spaces to avoid conflict with the proposed changes in the mandatory code Table 5.106.5.3.3. and to further the EV infrastructure in the tier options. These changes in both the mandatory and voluntary provisions will support new buildings incorporating EV infrastructure in conjunction with electric vehicle market penetration. These amendments will add uniformity and consistency between mandatory and voluntary provisions. The addition of the “Note” in section 5.106.5.3.5 will provide guidance to the design and regulation community for properly using the EV infrastructure table stall count toward the total required parking spaces.

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 Triennial Code Adoption 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. On September 30, 2019, CARB provided in-depth technical and cost analysis along with suggested code changes to the EV charging infrastructure building standards for nonresidential buildings included in the CALGreen Code.

BSC proposes to increase the current 6 percent requirement for EV charging spaces to 10 percent in new nonresidential buildings. The proposed revisions to the mandatory building standards are essential to fill the gap of EV charging infrastructure needed by 2025 to support the implementation the states goals as specified in Executive Order B-16-E-O12 to provide infrastructure to support 1.5 million ZEVs by 2025. These provisions also support

the Executive Order B-48-18, which includes a target for 5 million ZEVs on California roads by 2030.

In addition to supporting the Administration's directives, BSC's goal is to enable future charging capability at nonresidential buildings in an effort to increase access to EV charging which currently exists. CARB's study has shown that this effort will further encourage the purchase and use of EVs for routine transportation. In addition, this proposal would result in significant cost savings for future installation of EV charging stations at nonresidential buildings.

CARB gathered data from the California Energy Commission to identify a need for 99,000 to 133,000 EV charging spaces in nonresidential buildings by 2025. CARB, also gathered information on existing, funded, planned, and proposed EV charging infrastructure to determine the remaining gap in EV charging stations after 2025 in an estimated gap between 8,000 and 76,000 EV charging spaces needs to be for nonresidential buildings by 2025. According to CARB, BSC's proposed building standards will help to improve air quality and reduce an estimated 173,000 to 204,000 tons of carbon dioxide equivalent annually between mid-2021 and the end of 2024.

### ITEM 3: LIGHT POLLUTANT REDUCTION

#### Section 5.106.8 and Table 5.106.8 Light pollution reduction.

##### Sections: 5.106.8.1 Facing – Backlight; 5.106.8.2 Facing – Glare.

BSC's proposes to strike the **[N]** banner from Exceptions in Section 5.106.8 since the exceptions apply to additions and alterations per the *California Energy Code*.

BSC proposes to amend Exception 1 and to add an exception for luminaires to align CALGreen with the backlight uplight and glare (BUG) requirements and exceptions adopted into Section 130.2(b) of Title 24, Part 6, *2019 California Energy Code*.

BSC proposes to add Exception 5, for "Luminaires with less than 6,200 initial luminaire lumens" to align CALGreen with similar language adopted in the *2019 California Energy Code* Section 130.2(b), luminaire cutoff requirements. The purpose of the new exception 5 is to align the scope of Part 11, Section 5.106.8 to the scope of similar provisions in Part 6, Section 130.2(b). To the extent that the language in Part 11 could have been understood to be more broad in application than that in Part 6, this change has the material effect of narrowing the application of these requirements to luminaires within the scope of the Part 6 provisions. This change is necessary to prevent a conflict between the scoping provisions of light pollution in Parts 6 and 11; the scoping provisions in Part 11 are intended to reflect the scoping provisions in Part 6.

BSC's proposes to strike the **[N]** banner from "Notes", note #1 in Section 5.106.8 to avoid a potential conflict with the *California Energy Code* because note #3 mentions a reference to the *California Energy Code* for additions and alterations.

BSC proposes to repeal footnotes 3 and 5 from Table 5.106.8 and relocate them into two new code Sections; Section 5.106.8.1 with an exception for "corners", and Section 5.106.8.2. This amendment will add clarity for their application and intent. As a result of the proposed change, the footnotes in Table 5.106.8 are being updated accordingly. The original language was ambiguous regarding when increases in stringency of backlight and glare would apply, and how luminaire facing was to be addressed. This change has the material effect of ensuring that increased requirements do not apply to luminaires located

more than two mounting heights away from property lines, and precluding illogical facing of luminaires located close to property boundaries. The changes to this section are necessary to align the application of Section 5.106.8 to the intent of the original code language and to ensure the requirements comply with backlight and glare ratings, but do not apply when they would not be of benefit.

BSC's proposed amendments will benefit the code user by clarifying the exceptions to the requirements of light pollution reduction by avoiding conflict with mandatory provisions of *California Energy Code*, Part 6 of the California Code of Regulations for newly constructed nonresidential buildings, additions and alterations. Additionally, the new code sections will help clarify the application and intent of how backlight and glare are to be addressed when located near property lines.

#### **ITEM 4: PRE-RINSE SPRAY VALVES**

##### **Section: 5.303.3.4.6 Pre-rinse Spray Valve**

In coordination with the Department of Housing and Community Development (HCD), the Division of the State Architect (DSA), the Office of Statewide Health Planning and Development (OSHPD), and the California Energy Commission (CEC), BSC is proposing this new subsection to align with the Appliance Efficiency regulations adopted by the CEC in Title 20 of the California Code of Regulations. On January 28, 2019, the amended federal standards for all commercial pre-rinse spray valves went into effect (Title 10, Code of Federal Regulations, section 431, subpart O). The federal standards for flow rate of commercial pre-rinse spray valves manufactured on or after January 28, 2019, shall be equal to or less than the values shown in Table H-2. Table H-2 can be found in Title 20, California Code of Regulations, section 1605.1(h)(4). and per Title 20 Section 1605.3(h)(4)(A); Commercial pre-rinse spray valves manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf) [113 grams-force (gf)]. Additionally, Title 20 has a requirement that pre-rinse spray valves need to be labeled per Title 20, Section 1607(d)(7) therefore BSC is also adding a reference to that Title 20 regulation.

#### **ITEM 5: POLLUTION CONTROL**

##### **Sections: 5.504.4.4 Carpet systems; 5.504.4.4.1 Carpet cushion; 5.504.4.6 Resilient flooring systems.**

BSC proposes to amend Chapter 5, Section 5.504.4.4 Carpet systems, Section 5.504.4.4.1 Carpet cushion, and Section 5.504.4.6 (resilient flooring systems) to update the referenced standard for the new California Department of Public Health (CDPH) for Volatile Organic Compounds (VOC) limits. 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 are non-substantive with no intended change in regulatory effect.

## **ITEM 6: REFERENCED ORGANIZATIONS AND STANDARDS**

### **NSF/ANSI 140-2014**

#### **NSF/ANSI 140-2007:**

#### **ASTM E1333 - 14:**

#### **ASTM E1903 – 11:**

#### **ASTM E1918 -16 (2016):**

#### **ASTM E1980 - 11:**

CBSC proposes to amend Chapter 6 above mentioned referenced standards to align with other state agencies as well as to coordinate with proposed amendments to Sections 5.504.4.4 and A5.504.8.4 for carpet systems. These proposed changes will also align with Section 110.8 in Title 24 Part 6, the 2019 California Energy Code. Updating, correction and coordination of the referenced standards listed below will aid the code user and the regulatory agencies in properly applying standards for VOC limits on flooring products, formaldehyde limits in composite wood materials, environmental site assessment for brownfield redevelopment, and requirements for solar reflectance and reduction of heat island effect. These amendments are non-substantive with no intended change in regulatory effect.

#### **NSF/ANSI 140-2014:**

BSC proposes to repeal Section 5.504.4.4 from the Referenced Section in the table for the Standard NSF/ANSI 140-2014 column because of a printing error during the 2015 Triennial Code Adoption Cycle. BSC did not issue a rulemaking to add Section 5.504.4.4 to reference standard NSF/ANSI 140-2014.

#### **NSF/ANSI 140-2007:**

BSC proposes to repeal the referenced standard NSF/ANSI 140-2007 because it will conflict with a related proposed amendment to Sections 5.504.4.4, Item 5, for carpet systems in which BSC proposes to repeal the reference to NSF/ANSI 140-2007.

#### **ASTM E1333-14:**

BSC proposes to repeal Section 5.504.4.5 from the Referenced Section in the table for the Standard ASTM E1333-14 column because of a printing error during the 2015 Triennial Code Adoption Cycle. BSC did not issue a rulemaking to add Section 5.504.4.5 to reference standard ASTM E1333-14.

#### **ASTM E1333-14:**

Tables 5.504.4.5 and A5.504.8.5

BSC proposes to amend referenced standard ASTM E1333 and update to ASTM E1333-14 and apply it to Tables 5.504.4.5 and 5.504.8.5. This amendment will align with HCD's update to this new reference standard that was promulgated previously in the 2015 Triennial Code Adoption Cycle.

This amendment will add consistency and uniformity between the residential and

nonresidential codes.

**ASTM E1903 –11:** A5.103.2.1

BSC proposes to amend ASTM E1903-97 referenced standard and update to ASTM E1903-11 to update to the most current requirements for brownfield redevelopment. Additionally, BSC is correcting the reference to the appropriate code from Section A5.103.4 to the appropriate Section A5.103.2.1.

This amendment will provide the latest reference standard available.

**ASTM E1918 -16 (2016):**

CBSC proposes to repeal Section A5.106.11.1 from the Referenced Section in the table for the Standard E1918-06 (2015) and update it to ASTM E1918-16 (2016) to align with the *California Energy Code* for reduction of heat island effect and solar reflectance requirements for hardscape materials.

This amendment will add consistency and uniformity between the energy code and nonresidential CALGreen code.

**ASTM E1980 - 11:**

CBSC proposes to repeal Section A5.106.11.2.3 from the Referenced standard ASTM E1980-11 column because of a printing error during the 2015 Triennial Code Adoption Cycle. BSC did not issue a rulemaking to add Section A5.106.11.2.3 to reference standard ASTM E1980-11.

**ASTM E1980-11:** Tables A5.106.11.2.3

BSC proposes to amend referenced standard ASTM E1980-01 and update to ASTM E1980-11 and apply it to Tables A5.106.11.2.3. This amendment will align with HCD's update to this new reference standard that was promulgated previously in the 2015 Triennial Code Adoption Cycle.

This amendment will add consistency and uniformity between the residential and nonresidential codes.

## **ITEM 7: BASELINE WATER USE AND WATER USE REDUCTION**

### **CHAPTER 8: COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL**

#### **WORKSHEET (WS-1)**

##### **BASELINE WATER USE TABLE**

BSC proposes to amend the shower heads flow rate found in Baseline Water Use Table from 2.0 to 1.8 gpm to align with the codified code language found in the mandatory chapter 5, Indoor Water Use, Section 5.303.3.3. Additionally, footnote 1 is being amended from Table A to Table 4-1 to align with a proposed code change in the 2019 California Plumbing Code Chapter 4.

This amendment will add consistency and uniformity between the mandatory requirements and the associated flow rate tables in CALGreen and coordination with the *California Plumbing Code*.

#### **WORKSHEET (WS-2)**

##### **WATER USE REDUCTION TABLE**

BSC proposes to amend the shower heads flow rate found in Baseline Use Reduction Table from 2.0 to 1.8 gpm to align with the codified code language found in the mandatory chapter 5, Indoor Water Use, Section 5.303.3.3. Additionally, footnote 1 is being amended from Table A to Table 4-1 to align with a proposed code change in the 2019 California Plumbing Code Chapter 4.

This amendment will add consistency and uniformity between the proposed code changes in the California Plumbing Code and nonresidential CALGreen code.

## **ITEM 8: BROWNFIELD REDEVELOPMENT (VOLUNTARY)**

### **A5.103.2.1 Brownfield redevelopment.**

BSC proposes to amend this code section A5.103.2.1 to update the referenced standard from ASTM E1903-01 to ASTM E1903-11 which is proposed for change in Chapter 6 Referenced Organizations and Standards.

This amendment will provide the latest reference standard available and coordinates the affected code section with the appropriate reference standard.

## **ITEM 9: CHANGING ROOMS AND DESIGNATED PARKING (VOLUNTARY)**

### **Section A5.106.4.3 Changing rooms.**

BSC proposes to amend this code Section A5.106.4.3 “Note” to add a website link for additional information from the Sacramento Area Bicycle Advocates.

The link is as follows: [SacBike website](http://sacbike.org) sacbike.org.

This amendment will provide additional resources which is a benefit to the code user.

### **Sections: A5.106.5.1 Designated parking for clean air vehicles; A5.106.5.1.1 Tier 1, Table A5.106.5.1.1; A5.106.5.1.2 Tier 2, Table A5.106.5.1.2.**

BSC is proposing to increase the percentage of designated parking stalls for clean air vehicles (CAV) in Section A5.106.5.1.1 Tier 1, Section A5.106.5.1.2 Tier 2, Table A5.106.5.1.1 and Table A5.106.5.2 for nonresidential voluntary measures. These amendments are needed to avoid conflict with proposed percentage increases to electrical vehicle (EV) charging spaces in the mandatory measures Table 5.106.5.3.3, and the voluntary measures Tables A5.106.5.3.1 Tier 1 and A5.106.5.3.2 Tier 2. Additionally, BSC proposes to amend Section A5.106.5.1 to clarify that this code section also applies to additions and alterations which will align with similar existing language in mandatory Section 5.106.5.2.

Lastly, BSC is proposing an amendment to each CAV table by adding a footnote to state that “Calculation for spaces shall be rounded up to the nearest whole number” to match existing footnote on Table 5.106.3.3 and add a “Note” below the CAV table that states that “Designated parking for clean air vehicles shall be considered parking spaces and shall count toward the total parking spaces required by the local enforcing agencies”. This amendment is needed because there is confusion from designers and local enforcing agencies that misinterpret the intent of the CAV parking stalls as not counting toward the total parking spaces requirements.

BSC proposes to amend to the CAV Tables A5.106.5.1.1, Tier 1 and Table A5.106.5.2, Tier 2 by increasing percentage requirement from 10 percent to 17 percent for Tier 1, and from 12 percent to 22 percent for Tier 2 and by adding the aforementioned footnote and “Note” below each table.

By proposing amendments to these sections, BSC will prevent conflicts with proposed code language in other code sections within CALGreen, and provide uniformity and consistency in the mandatory and voluntary measures for designated CAV and EV parking requirements. This will also provide guidance to the design and regulated community to assist with the proper use the CAV tables stall count as part of the total parking required.

## **ITEM 10: ELECTRIC VEHICLE INFRASTRUCTURE (VOLUNTARY)**

### **Section A5.106.5.3 [N] Electric vehicle (EV) charging.**

#### **Table A5.106.5.3.1, Tier 1 and Table A5.106.5.3.2, Tier 2**

### **Section A5.106.5.3.4 [N] Future charging spaces.**

BSC is proposing to increase the percentages of electric vehicle infrastructure installation in Table A5.106.5.3.1 and Table A5.106.5.3.2 for nonresidential voluntary measures. BSC is proposing an amendment to Section A5.106.5.3.3 Identification by adding a banner [N] to align with the mandatory code Section 5.106.3.4. Voluntary Section A5.106.5.3.4 is also being amended to add a banner and title, “[N] Future charging spaces,” and to repeal the notes that are no longer needed which will align with existing mandatory language in Section 5.106.5.3.5. BSC is also proposing an amendment to the EV code Sections 5.106.5.3.5 and A5.106.5.3.4 by adding a “Note” that states, “Future electric vehicle charging spaces shall be considered parking spaces and shall count toward the total parking spaces required by the local enforcing agencies.” This amendment is needed because there is confusion from designers and local enforcing agencies that misinterpret the intent of the future EV charging space requirements as not counting toward the total parking space requirements.

BSC’s Zero Emission Vehicle (ZEV) regulation is one strategy to improve air quality and reduce greenhouse gas emissions through advanced technology vehicle production and Low-Emission Vehicle Regulations placed on automobile manufacturers. Consumers are embracing electric and electric/hybrid vehicles and there is a need for widespread infrastructure to support future charging needs. Additionally, the Governor’s Office Zero Emission Vehicle (ZEV) Action Plan identifies strategies and actions supporting the milestones identified in Executive Order B-16-12, and a revised target of 5 million ZEVs on California’s roadways by 2030 as directed by Executive Order B-48-18.

### **Rationale for proposed code change:**

BSC proposes to amend the EV Table A5.106.5.3.1, Tier 1 and Table A5.106.5.3.2, Tier 2 by increasing percentage requirement from 8 percent to 15 percent for Tier 1, and from 10 percent to 20 percent for Tier 2, and by adding the aforementioned footnote and “Note” below each table. This increase is intended to accommodate a foreseeable increase in the demand for EV charging infrastructure. The proposed increases apply to parking lots over 201 parking spaces and are needed to avoid conflict with the proposed increases in the mandatory code Table 5.106.5.3.3. The proposed changes to voluntary provisions will support new buildings incorporating EV infrastructure in conjunction with electric vehicle

market penetration. These amendments will add uniformity and consistency between mandatory and voluntary provisions. The addition of the “Note” in section A5.106.5.3.4 will provide guidance to the design and regulated community to assist in properly using the EV infrastructure table stall count as part of the total required parking spaces.

#### **Table A5.106.5.3.1 Tier 1.**

**Rationale:** BSC proposes to increase the Tier 1 provision from 8% to 15% in an effort to further advance the potential for EV preparedness. The Tier 1 provision has been modified to incorporate a sliding scale similar to the mandatory measure. There is no fiscal effect since Tier 1 is a voluntary measure available for adoption by local agencies. However, if all local governments adopted Tier 1 as mandatory, it may add 0.07-0.1% to total costs for nonresidential new construction.

#### **Table A5.106.5.3.2 Tier 2.**

**Rationale:** BSC proposes to increase the Tier 2 provision from 10% to 20%. The Tier 2 provision has been proposed to incorporate a sliding scale similar to the mandatory and Tier 1 measures. There is no fiscal effect since Tier 2 is a voluntary measure available for adoption by local agencies. However, if all local governments adopted Tier 2 as mandatory, it may add 0.1-0.2% to total costs for nonresidential new construction.

### **ITEM 11: SOLAR REFLECTANCE INDEX (VOLUNTARY)**

#### **Section: A5.106.11.2.3 Solar reflectance index alternative.**

BSC proposes to amend this code section A5.106.2.3 to update the referenced standard from ASTM E1980-01 to ASTM E1980-11 which is a proposed change in Chapter 6 Referenced Organizations and Standards. This proposed update aligns with the *California Energy Code* for solar reflectance index for roofing materials.

This amendment will add consistency and uniformity between the energy code and nonresidential CALGreen code and coordinates the affected code section with the appropriate reference standard.

### **ITEM 12: BIRD FRIENDLY DESIGN (VOLUNTARY)**

#### **A5.107 Bird-friendly building design**

##### **A5.107.2 Special conditions**

##### **A5.107.3 Nighttime conditions with exceptions**

##### **A5.107.3.1 Systems or operation and maintenance manual**

BSC received a petition to include Bird Friendly Design as a voluntary measure in the 2019 Intervening Code Cycle Rulemaking. The subject petition for voluntary bird-friendly building design standards relies on CBCS’s authority under Health and Safety Code 18931(f) and is proposed for non-residential buildings across California and can be adopted by local governments. BSC reviewed, and determined that the petition met the criteria for a petition as shown in Title 24, Part 1, California Administrative Code, Article 3, Section 1-315. Thus, BSC has agreed to carry the petition in the 2019 Intervening Code Cycle.

The problem the petition sets out to address is the large number of bird deaths caused by collisions with buildings. Many varieties of birds are at risk. In general, it is the smaller

species that fly at lower altitudes that are in most danger of collisions in California. Material alternatives to vision glass for the treatment of building areas posing the greatest risk for collision is part of the consideration in bird friendly design.

BSC proposes to add Section A5.107 and sub-sections A5.107.1, A5.107.2, A5.107.3 with exception, and A5.107.3.1. Bird-friendly building design and subsections, adopt the proposed amendments that address “bird-friendly” standards for planning and design of buildings. The intent of these voluntary standards is to reduce the number of bird deaths caused by collisions with buildings. BSC is proposing concepts and alternative materials to vision glazing and other building features for designers and developers to use when designing buildings to reduce bird collision. Cities such as San Francisco, Oakland, Palo Alto, Sunnyvale and recently Richmond have adopted legislation or guidelines to address bird collisions. Additionally, cities such as New York, Toronto, Chicago and the state of Minnesota have already adopted Bird-Friendly Building Guidelines, some regulatory, some voluntary. The city of Portland Oregon created a guide “Resource guide for bird-friendly Building Design” First edition July, 2012 that followed those of the American Bird Conservancy, and has recently moved forward from guidelines to an administrative rule for bird-friendly building treatments refer to [Portland bird friendly ordinance](#) for codified ordinance . By identifying and incorporating “bird friendly” strategies for designers and developers, the number of birds killed by collision with buildings will likely be reduced. According to a study by Cornell’s Laboratory of Ornithology which cites work by the American Bird Conservancy shows upwards of 500,000,000 bird deaths by collision in North America alone.

### **ITEM 13: INDOOR WATER USE (VOLUNTARY)**

#### **Table A5.303.2.2 WATER USE BASELINE (PERFORMANCE METHOD)**

BSC proposes to amend the shower heads flow rate found in Water Use Baseline Table A5.303.2.2 from 2.0 to 1.8 gpm to align with the codified code language found in the mandatory chapter 5, Indoor Water Use, Section 5.303.3.3. Additionally, footnote 2 is being amended to from Table A to Table 4-1 to align with a proposed code change in the 2019 California Plumbing Code Chapter 4 Table A. Lastly, the Water Use Baseline table title is being amended to add the word “PERFORMANCE METHOD” to better indicate the applicability of the table.

This amendment will add consistency and uniformity between the mandatory requirements and the associated flow rate tables in CALGreen and coordination with the *California Plumbing Code*.

#### **Table A5.303.2.3.1 FIXTURE FLOW RATES (PRESCRIPTIVE METHOD)**

BSC proposes to amend the shower heads flow rate found in Fixture Flow Rates table A5.303.2.3.1 from 2.0 to 1.8 gpm to align with the codified code language found in the mandatory chapter 5, Indoor Water Use, Section 5.303.3.3. Lastly, the Fixture Flow Rates table title is being amended to add the word “PRESCRIPTIVE METHOD” to better indicate the applicability of the table.

This amendment will add consistency and uniformity between the mandatory requirements and the associated flow rate tables in CALGreen.

### **Section: A5.303.3 Appliances and fixtures for commercial application.**

BSC proposes to amend Chapter A5, Section A5.303.3 item 2(a) by repealing the provision for residential dishwashers as this specific Appendix Chapter 5 only addresses standards for nonresidential occupancies. Additionally, BSC proposes to relocate code item 7, Commercial pre-rinse spray valves into a new code section in chapter 5 with amendments to reference Title 20 Appliance Efficiency Regulations to avoid conflict and to maintain consistency between the codes and regulations.

The California Energy Commission updated Title 20 (2018) Appliance Efficiency Regulations for commercial pre-rinse spray valves to align with Environmental Protection Agency (EPA) Water Sense requirements. The new adopted Title 20 regulation differs from the current Title 24, *CALGreen* code language, therefore an amendment is needed to avoid conflict. BSC is proposing to add a reference from CALGreen to the fixture regulations in Title 20, and reprint those regulations in the new code section to clarify the requirements in one single location as the Title 20 regulations are found in several locations.

Consistency among federal law and state regulations and consistency between Title 20 and Title 24 CALGreen code will benefit the code user and regulatory agencies because it eliminates potential conflicts. There is no intended change in regulatory effect because this amendment is editorial and simply references an existing regulation already in effect.

#### **ITEM 14: MATERIAL SOURCES (VOLUNTARY)**

##### **Sections: A5.405.2.1 Certified wood.**

BSC proposes to amend this code Section A5.405.2.1 remove superfluous information that is not regulatory in nature.

This amendment will provide clarity by removing language that is no longer needed.

##### **A5.405.3 Reused materials.**

BSC proposes to amend this code Section A5.405.3 "Note" to add a website link for additional resources from [CalRecycle's website](http://CalRecycle's website) for reused materials list.

The web address is as follows: [calrecycle.ca.gov](http://calrecycle.ca.gov)

This amendment will provide additional resources which is a benefit to the code user.

#### **ITEM 15: POLLUTANT CONTROL (VOLUNTARY)**

##### **Sections: A5.504.4.7 Resilient flooring systems, Tier 1;**

##### **A5.504.4.7.1 Resilient flooring systems, Tier 2;**

##### **A5.504.4.8 Thermal insulation, Tier 1;**

##### **A5.504.4.9 Acoustical ceilings and wall panels.**

BSC proposes to amend Chapter 5, Section A5.504.4.7 Tier 1 and Section A5.504.4.7.1 Tier 2 Resilient flooring systems, for voluntary measures, to update the referenced standard to the new California Department of Public Health (CDPH) for Volatile Organic Compounds (VOC) limits. 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 are non-substantive with no intended change in regulatory effect.

BSC is also proposing to amend Sections A5.504.4.8 Thermal insulation, Tier 1 and Section A5.504.4.9 Acoustical ceilings and wall panels Tier 2 for voluntary measures, to update the referenced standard to the new California Department of Public Health (CDPH) for Volatile Organic Compounds (VOC) limits. 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.

Lastly, Section A5.504.4.9.1 Verification of compliance "Note" is being repealed since the new standards referenced is the CDPH standard which makes the note obsolete.

Updating the reference to the new CDPH standard and by only using the CDPH standard for VOC limits for those materials 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 are non-substantive with no intended change in regulatory effect.

## **ITEM 16: 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 15 as applicable to the affected code section shown in the table.

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

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

## **ITEM 17: 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 15.

These tables are not regulatory and are to be used as checklist 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.

## **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, the California Air Resources Board, *Electric Vehicle (EV) Charging Infrastructure: Nonresidential Building Standards, CARB Technical and Cost Analysis*, September 30, 2019 which is part of this rulemaking.

See Attachment B for the bird friendly design voluntary code proposal documents and studies relied upon.

## **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.

The modifications that BSC proposes during this Intervening Code Adoption Cycle are intended to clarify and correct as necessary the provision of the mandatory code being used in California. The amendments are responsive to comments received in the previous and current code adoption cycles and to address concerns raised at various training events held by BSC across the state. Two alternatives were considered to adopt a 15% (Tier 1 as described above) and 20% (Tier 2) requirement for EV charging infrastructure spaces for new nonresidential buildings. These alternatives were rejected at this time because they are more costly and

would provide more EV charging infrastructure than needed in the 2025 timeframe. However, local jurisdictions still have the ability to adopt these higher level thresholds depending on local context.

### **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 would increase costs marginally to California business enterprises representing less than 0.1 percent of the total new construction costs of nonresidential buildings over the 4-year life of the amendments and between 1 and 4 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.

For the bird friendly design voluntary regulatory action, See attachment B for the no significant adverse impact to California businesses.

### **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 California Building Standards Commission has assessed whether or not 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.

The cost for installing EV charging infrastructure in 10 percent of new parking facilities is an estimated cost increase of about 0.06% to 0.09% compared to total construction costs of new nonresidential buildings.

Annual initial construction costs of \$10 million to \$13.6 million may be incurred between mid-2021 and the end of 2024 due to adoption of revisions to this mandatory measure. However, potential annual retrofit costs of \$81 million to \$113 million would be avoided by installing EV charging infrastructure during new construction. An estimated annual statewide cost savings of \$71 million to \$99 million may be achieved by adopting revisions to the EV charging infrastructure provisions. Protection of public health and safety, worker safety and the environment. General welfare of California residents. See attachment A.

The cost for complying with the voluntary bird friendly design is approximately .03% to .05% of the new building overall construction cost. Some studies have shown that the use of patterned vision glass for buildings posing greatest threat for migratory birds has been minimal or cost neutral in the design features are incorporated into building design from the conceptual design phase. Additionally, this proposed code change is voluntary and has limited applicability specific to buildings within the Pacific Flyway zones. The potential benefits include; Internationally, birds perform environmental services for humans in controlling insect and rodent populations, in pollinating plants and spreading seed, and by consuming animal carcasses; and they give many human observers great pleasure to the tune of a \$40 billion bird-watching industry. See Attachment B.

### **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.