



# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

Y NA RESPON PARTY Y NA RESPON PARTY Y NA RESPON PARTY Y NA RESPON PARTY

**CHAPTER 3 GREEN BUILDING SECTION 301 GENERAL**

**301.1 SCOPE.** Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

**301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS [BSC-CG]** The provisions of individual sections of Chapter 3 apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of \$200,000 or above (for occupancies within the authority of California Building Standards Commission). Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.

A code section will be designated by a banner to indicate where the code section only applies to newly constructed buildings (N) or to additions and/or alterations (A). When the code section applies to both, no banner will be used.

**301.3.1 Nonresidential additions and alterations that cause updates to plumbing fixtures only:**  
**Note:** On and after January 1, 2014, certain commercial real property, as defined in Civil Code Section 1101.3, shall have its noncompliant plumbing fixtures replaced with appropriate water-conserving plumbing fixtures under specific circumstances. See Civil Code Section 1101.1 et seq. for definitions, types of commercial real property affected, effective dates, circumstances necessitating replacement of noncompliant plumbing fixtures, and duties and responsibilities for ensuring compliance.

**301.3.2 Waste Diversion.** The requirements of Section 5.408 shall be required for additions and alterations whenever a permit is required for work.

301.4 PUBLIC SCHOOLS AND COMMUNITY COLLEGES. (see GBCS)  
 301.5 HEALTH FACILITIES. (see GBCS)

**SECTION 302 MIXED OCCUPANCY BUILDINGS**

**302.1 MIXED OCCUPANCY BUILDINGS.** In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

**SECTION 303 PHASED PROJECTS**

**303.1 PHASED PROJECTS.** For shell buildings and others constructed for future tenant improvements, only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.

**303.1.1 Initial Tenant Improvements.** The provisions of this code shall apply only to the initial tenant improvements to a project. Subsequent tenant improvements shall comply with the scoping provisions in Section 301.3 non-residential additions and alterations.

**ABBREVIATION DEFINITIONS:**  
 BSC California Building Standards Commission  
 DSA-SS Division of the State Architect, Structural Safety  
 OSHPD Office of Statewide Health Planning and Development  
 LR Low Rise  
 HR High Rise  
 AA Additions and Alterations  
 N New

**CHAPTER 5 NONRESIDENTIAL MANDATORY MEASURES DIVISION 5.1 PLANNING AND DESIGN**

**SECTION 5.101 GENERAL**

**5.101.1 SCOPE.** The provisions of this chapter outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

**SECTION 5.102 DEFINITIONS**

**5.102.1 DEFINITIONS.** The following terms are defined in Chapter 2 (and are included here for reference)

**CUTOFF LUMINAIRES.** Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5 percent) at an angle of 90 degrees above nadir, and 100 (10 percent) at the vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

**LOW-EMITTING AND FUEL EFFICIENT VEHICLES.** Eligible vehicles are limited to the following:  
 1. Zero emission vehicle (ZEV), enhanced advanced technology PZEV (enhanced AT ZEV) or transitional zero emission vehicles (TZEV) regulated under CFR Title 13, Section 1052.  
 2. High-efficiency vehicles, regulated by U.S. EPA, bearing a fuel economy and greenhouse gas rating of 9 or 10 as regulated under 40 CFR Section 600 Subpart D.

**NEIGHBORHOOD ELECTRIC VEHICLE (NEV).** A motor vehicle which meets the definition of "low-speed vehicle" either in Section 385.5 of the Vehicle Code or in 49CFR571.500 (as it exists on July 1, 2000), and is certified to zero-emission vehicle standards.

**TENANT-OCCUPANTS.** Building occupants who inhabit a building during its normal hours of operation as permanent occupants, such as employees, as distinguished from customers and other transient visitors.

**VANPOOL VEHICLE.** Eligible vehicles are limited to any motor vehicle, other than a motortruck or truck tractor, designed for carrying more than 10 but not more than 15 persons including the driver, which is maintained and used primarily for the nonprofit work-related transportation of a building for the purpose of ride-sharing.

**Note:** Source: Vehicle Code, Division 1, Section 688

**ZEV.** Any vehicle certified to zero-emission standards.

**SECTION 5.106 SITE DEVELOPMENT**

**5.106.1 STORM WATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE OF LAND.** Newly constructed projects and additions which disturb less than one acre of land, and are not part of a larger common plan of development or sale, shall prevent the pollution of storm water runoff from the construction activities through one or more of the following measures:

**5.106.1.1 Local ordinance.** Comply with a lawfully enacted storm water management and/or erosion control ordinance.

**5.106.1.2 Best Management Practices (BMPs).** Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMPs.

1. Soil loss BMPs that should be considered for implementation as appropriate for each project include, but are not limited to, the following:  
 a. Scheduling construction activity during dry weather, when possible.  
 b. Preservation of natural features, vegetation, soil, and buffers around surface waters.  
 c. Drainage swales or lined ditches to control stormwater flow.  
 d. Mulching or hydroseeding to stabilize disturbed soils.  
 e. Erosion control to protect slopes.  
 f. Protection of storm drain inlets (gravel bags or catch basin inserts).  
 g. Perimeter sediment control (silt fence, fiber rolls).  
 h. Sediment trap or sediment basin to retain sediment on site.  
 i. Stabilized construction exits.  
 j. Wind erosion control.  
 k. Other soil loss BMPs acceptable to the enforcing agency.

2. Good housekeeping BMPs to manage construction equipment, materials, non-stormwater discharges and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:  
 a. Dewatering activities.  
 b. Material handling and waste management.  
 c. Building materials stockpile management.  
 d. Management of washout areas (concrete, paints, stucco, etc.).  
 e. Control of vehicle/equipment fueling to contractor's staging area.  
 f. Vehicle and equipment cleaning performed off-site.  
 g. Spill prevention and control.  
 h. Other housekeeping BMPs acceptable to the enforcing agency.

**5.106.2 STORMWATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB ONE OR MORE ACRES OF LAND.** Comply with all lawfully enacted stormwater discharge regulations for projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development or sale.

**Note:** Projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of the larger common plan of development or sale must comply with the post-construction requirements detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board or the Lahontan Regional Water Quality Control Board (for projects in the Lake Tahoe Hydrologic Unit).

The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff (pre-project hydrology) with the installation of postconstruction stormwater management measures. The NPDES permits emphasize runoff reduction through on-site stormwater use, interception, evapotranspiration, and infiltration through nonstructural controls, such as Low Impact Development (LID) practices, and conservation design measures. Stormwater volume that cannot be addressed using nonstructural practices is required to be captured in structural practices and be approved by the enforcing agency.

Refer to the current applicable permits on the State Water Resources Control Board website at [www.waterboards.ca.gov/constructionstormwater/](http://www.waterboards.ca.gov/constructionstormwater/). Consideration to the stormwater runoff management measures should be given during the initial design process for appropriate integration into site development.

**5.106.4 BICYCLE PARKING.** For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2.

**5.106.4.1 Bicycle parking [BSC-CG]** Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.

**5.106.4.1.1 Short-term bicycle parking.** If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added with a minimum of one two-bike capacity rack.  
**Exception:** Additions or alterations which add nine or less visitor vehicular parking spaces.

**5.106.4.1.2 Long-term bicycle parking.** For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

**5.106.4.1.3** For additions or alterations that add 10 or more tenant-occupant vehicular parking spaces, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one bicycle parking facility.

**5.106.4.1.4** For new shell buildings in phased projects provide secure bicycle parking for 5 percent of the anticipated tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

**5.106.4.1.5 Acceptable bicycle parking facility** for Sections 5.106.4.1.2, 5.106.4.1.3, and 5.106.4.1.4 shall be constructed from the street and shall meet one of the following:  
 1. Covered, lockable enclosures with permanently anchored racks for bicycles;  
 2. Lockable bicycle rooms with permanently anchored racks; or  
 3. Lockable, permanently anchored bicycle lockers.

**Note:** Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.

**5.106.4.2 Bicycle parking [DSA-SS]** For public schools and community colleges, comply with Sections 5.106.4.2.1 and 5.106.4.2.2.

**5.106.4.2.1 Student bicycle parking.** Provide permanently anchored bicycle racks conveniently accessed with a minimum of four two-bike capacity racks per new building.

**5.106.4.2.2 Staff bicycle parking.** Provide permanent, secure bicycle parking conveniently accessed with a minimum of two staff bicycle parking spaces per new building. Acceptable bicycle parking facilities shall be convenient from the street or staff parking area and shall meet one of the following:  
 1. Covered, lockable enclosures with permanently anchored racks for bicycles;  
 2. Lockable bicycle rooms with permanently anchored racks; or  
 3. Lockable, permanently anchored bicycle lockers.

**5.106.5 ELECTRIC VEHICLE (EV) CHARGING [N]** Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3.1 and shall be provided in accordance with regulations in the California Electrical Code and the California Electrical Code.

**Exceptions:**  
 1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:  
 a. Where there is no local utility power supply.  
 b. Where the local utility is unable to supply adequate power.  
 c. Where there is evidence suitable to the local enforcing agency substantiating the local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.  
 2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

**5.106.5.3.1 EV capable spaces.**  
**[N]** EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements:  
 1. Raceways complying with the California Electrical Code and no less than 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area and shall terminate in close proximity to the proposed location of the EV capable and into a suitable listed cabinet, box enclosure or equivalent. A common raceway may be used to serve multiple EV charging spaces.  
 2. A service panel or subpanel (s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.  
 3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated ampere at each EV capable space.  
 4. The service panel or subpanel circuit(s) shall be reserved overcurrent protective devices (space) as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

**Note:** A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by an enforcement agency. See vehicle Code Section 22511.2 for further details.

**TABLE 5.106.5.3.1**

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE) 1/2
0-9	0	0
10-25	2	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 AND OVER	20% of total <sup>1</sup>	25% of EV capable spaces <sup>2</sup>

1. Where there is insufficient electrical supply.  
 2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count towards the total number of required EV capable spaces shown in column 2.

**5.106.5.3.2 Electric vehicle charging stations (EVCS)**  
 EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 may be provided with EVSE in any combination of Level 2 and Direct Current Fast Charging (DCFC), except that at least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable space is accumulatively supplied to the EV charger.

The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

**5.106.5.3.3 Use of automatic load management systems (ALMS).**  
 ALMS shall be permitted for EVCS. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.3.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each EVSE controlled by an ALMS shall deliver a minimum 3.0 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.

**5.106.5.3.4 Accessible EVCS.**  
 When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code, Chapter 11B, Section 11B-228.3.  
**Note:** For EVCS signs, refer to California Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

**5.106.5.4 Electric Vehicle (EV) charging: medium-duty and heavy-duty. [N]**  
 Construction shall comply with section 5.106.5.4.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores and retail stores with planned off-street loading spaces shall also comply with section 5.106.5.4.1 for future installation of medium- and heavy-duty EVSE.  
**Exceptions:**  
 1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:  
 a. Where there is no local utility power supply.  
 b. Where the local utility is unable to supply adequate power.  
 c. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.  
 When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as follows:  
**5.106.5.4.1 Electric vehicle charging readiness requirements for warehouse, grocery stores and retail stores with planned off-street loading spaces.**  
**[N]** In order to avoid future demolition when adding EV charging supply and distribution equipment, spare raceways(s) or busways(s) and adequate capacity for transformers(s), service panel(s) or subpanel(s) shall be installed the time of construction in accordance with the California Electrical Code. Construction plans and specifications shall include but are not limited to, the following:  
 1. The transformer, main service equipment and subpanel shall meet the minimum power requirement in Table 5.106.5.4.1 to accommodate the dedicated branch circuits for the future installation of EVSE.  
 2. The construction documents shall indicate on or more location(s) convenient to the planned off-street loading space(s) reserved for medium- and heavy-duty ZEV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the tenant vehicular parking space(s) as shown in Table 5.106.5.4.1.  
 3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium- and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipment for medium- and heavy-duty vehicles.  
 4. The raceway(s) or busway(s) shall be sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty ZEVs as shown in Table 5.106.5.4.1.

**TABLE 5.106.5.4.1 RACEWAY CONDUIT AND PANEL POWER REQUIREMENTS FOR MEDIUM- AND HEAVY-DUTY EVSE [N]**

BUILDING TYPE	BUILDING SIZE (SQ. FT.)	NUMBER OF OFF-STREET LOADING SPACES	ADDITIONAL CAPACITY REQUIRED (KVA) FOR RACEWAY & BUSWAY AND TRANSFORMER & PANEL
Grocery	10,000 to 90,000	1 or 2	200
	Greater than 90,000	3 or Greater	400
		1 or Greater	400
Retail	10,000 to 135,000	1 or 2	200
	Greater than 135,000	3 or Greater	400
		1 or Greater	400
Warehouse	20,000 to 256,000	1 or 2	200
	Greater than 256,000	3 or Greater	400
		1 or Greater	400

**5.106.6 LIGHT POLLUTION REDUCTION. [N]** Outdoor lighting systems shall be designed and installed to comply with the following:  
 1. The minimum requirements in the California Energy Code for Lighting Zones 0-4 as defined in Chapter 10, Section 10-114 of the California Administrative Code; and  
 2. Backlight (B) ratings as defined in IES TM-15-11 (shown in Table A-1 in Chapter 8).  
 3. Uplight and glare ratings as defined in California Energy Code (shown in Tables 130-2-A and 130-2-B in Chapter 8) and  
 4. Allowable BUG ratings not exceeding those shown in Table 5.106.8. [N] or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

**Exceptions: [N]**  
 1. Luminaires that qualify as exceptions in Sections 130.2 (b) and 140.7 of the California Energy Code.  
 2. Emergency lighting.  
 3. Building facade meeting the requirements in Table 140.7 of the California Energy Code, Part 6.  
 4. Custom lighting fixtures as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction.  
 5. Luminaires with less than 6,200 initial luminaire lumens.

**5.106.6.1 Facing Backlight**  
 Luminaires within 2M of a property line shall be oriented so that the nearest property line is behind the fixture, and shall comply with the backlight rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point of that property line.  
**Exception: Corners.** If two property lines (or two segments of the same property line) have equidistant points to the luminaire, then the luminaire may be oriented so that the intersection of the two lines (the corner) is directly behind the luminaire. The luminaire shall still use the distance to the nearest point(s) on the property lines to determine the required backlight rating.

**5.106.8.2 Facing-Glare.**  
 For luminaires covered by 5.106.8.1, if a property line also exists within or extends into the front hemisphere within 2M of the luminaire then the luminaire shall comply with the more stringent glare rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point on the nearest property line within the front hemisphere.  
**Note: [N]**  
 1. See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways.  
 2. Refer to Chapter 8 (Compliance Forms, Worksheets and Reference Material) for IES TM-15-11 Table A-1, California Energy Code Tables 130-2-A and 130-2-B.  
 3. Refer to the California Building Code for requirements for additions and alterations.

**5.106.10 GRADING AND PAVING.** Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:  
 1. Swales.  
 2. Water collection and disposal systems.  
 3. French drains.  
 4. Water retention gardens.  
 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.  
**Exception:** Additions and alterations not altering the drainage path.

**5.106.12 SHADE TREES [DSA-SS].** Shade Trees shall be planted to comply with Sections 5.106.12.1, 5.106.12.2, and 5.106.12.3. Percentages shown shall be measured at noon on the summer solstice. Landscape irrigation necessary to establish and maintain tree health shall comply with Section 5.304.6.

**5.106.12.1 Surface parking areas.** Shade tree plantings, minimum #10 container size or equal, shall be installed to provide shade over 50 percent of the parking area within 15 years.  
**Exceptions:** Surface parking area covered by solar photovoltaic shade structures with roofing materials that comply with Table AS 106.11.2.2 in Appendix AS shall be permitted in whole or in part in lieu of shade tree planting.

**5.106.12.2 Landscape areas.** Shade tree plantings, minimum #10 container size or equal shall be installed to provide shade of 20% of the landscape area within 15 years.  
**Exceptions:** Playfields for organized sport activity are not included in the total area calculation.

**5.106.12.3 Hardscape areas.** Shade tree plantings, minimum #10 container size or equal shall be installed to provide shade over 20 percent of the hardscape area within 15 years.  
**Exceptions:**  
 1. Walks, hardscape areas covered by solar photovoltaic shade structures or shade structures with roofing materials that comply with Table AS 106.11.2.2 in Appendix AS shall be permitted in whole or in part in lieu of shade tree planting.  
 2. Designated and marked play areas of organized sport activity are not included in the total area calculation.

**DIVISION 5.2 ENERGY EFFICIENCY SECTION 5.201 GENERAL**

**5.201.1 SCOPE [BSC-CG], California Energy Code [DSA-SS].** For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory building standards.

**DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION SECTION 5.301 GENERAL**

**5.301.1 SCOPE.** The provisions of this chapter shall establish the means of conserving water use indoors, outdoors and in wastewater conveyance.

**SECTION 5.302 DEFINITIONS**

**5.302.1 Definitions.** The following terms are defined in Chapter 2 (and are included here for reference)

**EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETA) [DSA-SS].** An adjustment factor when applied to reference evapotranspiration that adjusts for plant factors and irrigation efficiency, which are two major influences on the amount of water that needs to be applied to the landscape.

**FOOTPRINT AREA [DSA-SS].** The total area of the furthest exterior wall of the structure projected to natural grade, not including exterior areas such as stairs, covered walkways, patios and decks.

**METERING FAUCET.** A self-closing faucet that dispenses a specific volume of water for each actuation cycle. The volume or cycle duration can be fixed or adjustable.

**GRAYWATER.** Pursuant to Health and Safety Code Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy body wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines and laundry tubs, but does not include waste water from kitchen sinks or dishwashers.

**MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO).** The California ordinance regulating landscape design, installation and maintenance practices that will ensure commercial, multifamily and other developer installed landscapes greater than 2500 square feet meet an irrigation water budget developed based on landscaped area and climatological parameters.

**MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) [HCD]** The California model ordinance (California Code of Regulations, Title 23, Division 2, Chapter 2.7), regulating landscape design, installation and maintenance practices. Local agencies are required to adopt the updated MWELO, or adopt a local ordinance at least as effective as the MWELO.

**POTABLE WATER.** Water that is drinkable and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the California Plumbing Code, Part 5.

**POTABLE WATER [HCD]** Water that is satisfactory for drinking, culinary, and domestic purposes, and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards and the requirements of the Health Authority Having Jurisdiction.

**RECYCLED WATER.** Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur [Water Code Section 13050 (n)]. Slightly pur, recycled water is water treated to remove waste matter attaining a quality that is suitable to use the water again.

**SUBMETER [HCD]** A secondary device beyond a meter that measures water consumption of an individual rental unit within a multiunit residential structure or mixed-use residential and commercial structure. (See Civil Code Section 1654.202 (g) and Water code Section 517 for additional details.)

**WATER BUDGET.** Is the estimated total landscape irrigation water use which shall not exceed the maximum applied water allowance calculated in accordance with the Department of Water Resources Model Efficient Landscape Ordinance (MWELO).

**TABLE 5.106.8 [N] MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS**

ALLOWABLE RATING	LIGHTING ZONE L0	LIGHTING ZONE L1	LIGHTING ZONE L2	LIGHTING ZONE L3	LIGHTING ZONE L4
<b>MAXIMUM ALLOWABLE BACKLIGHT RATING.</b> Luminaire greater than 2 mounting heights (MH) from property line	N/A	No Limit	No Limit	No Limit	No Limit
Luminaire back hemisphere is 1-2 MH from property line	N/A	B2	B3	B4	B4
Luminaire back hemisphere is 0.5-1 MH from property line	N/A	B1	B2	B3	B3
Luminaire back hemisphere is less than 0.5 MH from property line	N/A	B0	B0	B1	B2
<b>MAXIMUM ALLOWABLE UPLIGHT RATING (U)</b> For area lighting	N/A	U0	U0	U0	U0
For all other outdoor lighting including decorative luminaires	N/A	U1	U2	U3	UR

**MAXIMUM ALLOWABLE GLARE RATING (G)**

MAXIMUM ALLOWABLE GLARE RATING (G)	N/A	G1	G2	G3	G4
<b>MAXIMUM ALLOWABLE GLARE RATING (G)</b>	N/A	G0	G1	G1	G2
<b>MAXIMUM ALLOWABLE GLARE RATING (G)</b>	N/A	G0	G0	G1	G1
<b>MAXIMUM ALLOWABLE GLARE RATING (G)</b>	N/A	G0	G0	G0	G1

1. ESNA Lighting Zones 0 and 5 are not applicable; refer to Lighting Zones as defined in the California Energy Code and Chapter 10 of the California Administrative Code.  
 2. For property lines that abut public walkways, bikeways, plazas and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the centerline of the public roadway or public transit corridor for the purpose of determining compliance with this section.  
 3. General lighting luminaires in areas such as outdoor parking, sales or storage lots shall meet these reduced ratings. Decorative luminaires located in these areas shall meet U-value limits for "all other outdoor lighting"

**5.106.8.1 Facing Backlight**  
 Luminaires within 2M of a property line shall be oriented so that the nearest property line is behind the fixture, and shall comply with the backlight rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point of that property line.  
**Exception: Corners.** If two property lines (or two segments of the same property line) have equidistant points to the luminaire, then the luminaire may be oriented so that the intersection of the two lines (the corner) is directly behind the luminaire. The luminaire shall still use the distance to the nearest point(s) on the property lines to determine the required backlight rating.

**5.106.8.2 Facing-Glare.**  
 For luminaires covered by 5.106.8.1, if a property line also exists within or extends into the front hemisphere within 2M of the luminaire then the luminaire shall comply with the more stringent glare rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point on the nearest property line within the front hemisphere.  
**Note: [N]**  
 1. See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways.  
 2. Refer to Chapter 8 (Compliance Forms, Worksheets and Reference Material) for IES TM-15-11 Table A-1, California Energy Code Tables 130-2-A and 130-2-B.  
 3. Refer to the California Building Code for requirements for additions and alterations.

**5.106.10 GRADING AND PAVING.** Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:  
 1. Swales.  
 2. Water collection and disposal systems.  
 3. French drains.  
 4. Water retention gardens.  
 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.  
**Exception:** Additions and alterations not altering the drainage path.

**5.106.12 SHADE TREES [DSA-SS].** Shade Trees shall be planted to comply with Sections 5.106.12.1, 5.106.12.2, and 5.106.12.3. Percentages shown shall be measured at noon on the summer solstice. Landscape irrigation necessary to establish and maintain tree health shall comply with Section 5.304.6.

**5.106.12.1 Surface parking areas.** Shade tree plantings, minimum #10 container size or equal, shall be installed to provide shade over 50 percent of the parking area within 15 years.  
**Exceptions:** Surface parking area covered by solar photovoltaic shade structures with roofing materials that comply with Table AS 106.11.2.2 in Appendix AS shall be permitted in whole or in part in lieu of shade tree planting.

**5.106.12.2 Landscape areas.** Shade tree plantings, minimum #10 container size or equal shall be installed to provide shade of 20% of the landscape area within 15 years.  
**Exceptions:** Playfields for organized sport activity are not included in the total area calculation.

**5.106.12.3 Hardscape areas.** Shade tree plantings, minimum #10 container size or equal shall be installed to provide shade over 20 percent of the hardscape area within 15 years.  
**Exceptions:**  
 1. Walks, hardscape areas covered by solar photovoltaic shade structures or shade structures with roofing materials that comply with Table AS 106.11.2.2 in Appendix AS shall be permitted in whole or in part in lieu of shade tree planting.  
 2. Designated and marked play areas of organized sport activity are not included in the total area calculation.

**DIVISION 5.2 ENERGY EFFICIENCY SECTION 5.201 GENERAL**

**5.201.1 SCOPE [BSC-CG], California Energy Code [DSA-SS].** For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory building standards.

**DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION SECTION 5.301 GENERAL**

**5.301.1 SCOPE.** The provisions of this chapter shall establish the means of conserving water use indoors, outdoors and in wastewater conveyance.

**SECTION 5.302 DEFINITIONS**

**5.302.1 Definitions.** The following terms are defined in Chapter 2 (and are included here for reference)

**EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETA) [DSA-SS].** An adjustment factor when applied to reference evapotranspiration that adjusts for plant factors and irrigation efficiency, which are two major influences on the amount of water that needs to be applied to the landscape.

**FOOTPRINT AREA [DSA-SS].** The total area of the furthest exterior wall of the structure projected to natural grade, not including exterior areas such as stairs, covered walkways, patios and decks.

**METERING FAUCET.** A self-closing faucet that dispenses a specific volume of water for each actuation cycle. The volume or cycle duration can be fixed or adjustable.

**GRAYWATER.** Pursuant to Health and Safety Code Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy body wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines and laundry tubs, but does not include waste water from kitchen sinks or dishwashers.

**MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO).** The California ordinance regulating landscape design, installation and maintenance practices that will ensure commercial, multifamily and other developer installed landscapes greater than 2500 square feet meet an irrigation water budget developed based on landscaped area and climatological parameters.

**MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) [HCD]** The California model ordinance (California Code of Regulations, Title 23, Division 2, Chapter 2.7), regulating landscape design, installation and maintenance practices. Local agencies are required to adopt the updated MWELO, or adopt a local ordinance at least as effective as the MWELO.

**POTABLE WATER.** Water that is drinkable and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the California Plumbing Code, Part 5.

**POTABLE WATER [HCD]** Water that is satisfactory for drinking, culinary, and domestic purposes, and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards and the requirements of the Health Authority Having Jurisdiction.

**RECYCLED WATER.** Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur [Water Code Section 13050 (n)]. Slightly pur, recycled water is water treated to remove waste matter attaining a quality that is suitable to use the water again.

**SUBMETER [HCD]** A secondary device beyond a meter that measures water consumption of an individual rental unit within a multiunit residential structure or mixed-use residential and commercial structure. (See Civil Code Section 1654.202 (g) and Water code Section 517 for additional details.)

**WATER BUDGET.** Is the estimated total landscape irrigation water use which shall not exceed the maximum applied water allowance calculated in accordance with the Department of Water Resources Model Efficient Landscape Ordinance (MWELO).

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

REVISIONS	DATE