

CHAPTER 5 NON-RESIDENTIAL 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.

CUTOFF LUMINAIRES.

LOW-EMITTING AND FUEL EFFICIENT VEHICLES.

NEIGHBORHOOD ELECTRIC VEHICLE (NEV).

TENANT-OCCUPANTS.

VANPOOL VEHICLE.

ZEV.

SECTION 5.103 SITE SELECTION (Reserved)

SECTION 5.104 SITE PRESERVATION (Reserved)

SECTION 5.105 DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES (Reserved)

SECTION 5.106 SITE DEVELOPMENT

5.106.1 Storm water pollution prevention. Newly constructed projects which disturb less than one acre of land shall prevent the pollution of stormwater runoff from the construction activities through one or more of the following measures:

5.106.1.1 Local ordinance. Comply with a lawfully enacted stormwater management and/or erosion control ordinance.

5.106.1.2 Best management practices (BMP). Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP.

1. Soil loss BMP that should be considered for implementation as appropriate for each project include, but are not limited to, the following:

- Scheduling construction activity.
- Preservation of natural features, vegetation and soil.
- Drainage swales or lined ditches to control stormwater flow.
- Mulching or hydros seeding to stabilize disturbed soils.
- Erosion control to protect slopes.
- Protection of storm drain inlets (gravel bags or catch basin inserts).
- Perimeter sediment control (perimeter silt fence, fiber rolls).
- Sediment trap or sediment basin to retain sediment on site.
- Stabilized construction exits.
- Wind erosion control.
- Other soil loss BMP acceptable to the enforcing agency.

2. Good housekeeping BMP to manage construction equipment, materials and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:

- Material handling and waste management.
- Building materials stockpile management.
- Management of washout areas (concrete, paints, stucco, etc.).
- Control of vehicle/equipment fueling to contractor's staging area.
- Vehicle and equipment cleaning performed off site.
- Spill prevention and control.
- Other housekeeping BMP acceptable to the enforcing agency.

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] 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. [BSC] 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 percent 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 vehicle parking spaces.

5.106.4.1.2 Long-term bicycle parking. For new buildings with over 10 tenant-occupants or for additions or alterations that add 10 or more tenant vehicular parking

spaces, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet the following:

- Covered, lockable enclosures with permanently anchored racks for bicycles;
- Lockable bicycle rooms with permanently anchored racks; or
- 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:

- Covered, lockable enclosures with permanently anchored racks for bicycles;
- Lockable bicycle rooms with permanently anchored racks; or
- Lockable, permanently anchored bicycle lockers.

5.106.5.2 Designated parking. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as follows:

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED SPACES
0-9	0
10-25	1
26-50	3
51-75	6
76-100	8
101-150	11
151-200	16
201 and over	At least 8 percent of total

5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle:

CLEAN AIR/
VANPOOL/EV

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-50	0
51-75	1
76-100	2
101-200	3
201 and over	3% ¹

1. Calculation for spaces shall be rounded up to the nearest whole number.

5.106.5.3 Electric vehicle (EV) charging. [N] Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code, the California Electrical Code* and as follows:

5.106.5.3.1 Single charging space requirements. [N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the *California Electrical Code*. Construction plans and specifications shall include, but are not limited to, the following:

- The type and location of the EVSE.
- A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.
- The raceway shall not be less than trade size 1.".
- The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.
- The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.

5.106.5.3.2 Multiple charging space requirements. [N] When multiple charging spaces are required per Table 5.106.5.3.3, raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the *California Electrical Code*. Construction plans and specifications shall include, but are not limited to, the following:

- The type and location of the EVSE.
- The raceway(s) 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 charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.
- Plan design shall be based upon 40-ampere minimum branch circuits.
- Electrical calculations shall substantiate the design of the electrical system, to include the ratings of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage.
- The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

5.106.5.3.3 EV charging space calculation. [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.

Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:

- Where there is insufficient electrical supply.
- 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.

5.106.5.3.4 [N] Identification. The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking.

Notes:

- The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf.
- See Vehicle Code Section 22511 for EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.
- The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents and businesses. www.oprc.ca.gov/docs/ZEV_Guidebook.pdf.

5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following:

- The minimum requirements in the *California Energy Code* for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and
- Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and
- Allowable BUG ratings not exceeding those shown in Table 5.106.8, or

Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

Exceptions: [N]

- Luminaires that qualify as exceptions in Section 147 of the *California Energy Code*.
- Emergency lighting.

Note: [N] See also *California Building Code*, Chapter 12, Section 1203.6 for college campus lighting requirements for parking facilities and walkways.

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:

- Swales.
- Water collection and disposal systems.
- French drains.
- Water retention gardens.
- Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

Division 5.2 – ENERGY EFFICIENCY

SECTION 5.201 GENERAL

5.201.1 Scope [BSC], 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 used indoors, outdoors and in wastewater conveyance.

SECTION 5.302 DEFINITIONS

5.302.1 Definitions. The following terms are defined in Chapter 2.

GRAYWATER.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELCO).

POTABLE WATER.

RECYCLED WATER.

SUBMETER.

WATER BUDGET.

SECTION 5.303 INDOOR WATER USE

5.303.1 Meters. Separate submeters or metering devices shall be installed for the uses described in Sections 5303.1.1 and 5303.1.2.

5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters shall be installed as follows:

- For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop.
- Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:
 - Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
 - Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
 - Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW).

5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day.

5.303.2 Reserved.

5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

5.303.3.2 Urinals. The effective flush volume of urinals shall not exceed 0.5 gallons per flush.

5.303.3.3 Showerheads.

5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

Note: A hand-held shower shall be considered a showerhead.

5.303.3.4 Faucets and fountains.

5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.

5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 rim space (inches) at 60 psi.

5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle.

5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per minute/20 rim space (inches) at 60 psi.

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

5.303.4 Areas of addition or alteration. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Section 5.303.3 shall apply to new fixtures in additions or areas of alteration to the building.

5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1401.1 of the *California Plumbing Code* and in Chapter 6 of this code.

5.303.3.2 Urinals. The effective flush volume of urinals shall not exceed 0.5 gallons per flush.

5.303.3.3 Showerheads.

5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

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SECTION 5.304 OUTDOOR WATER USE

5.304.1 Water budget. A water budget shall be developed for landscape irrigation use that installed in conjunction with a new building or an addition or alteration conforms to the local water efficient landscape ordinance or to the California Department of Water Resources Model Water Efficient Landscape Ordinance where no local ordinance is applicable.

Note: Prescriptive measures to assist in compliance with the water budget are listed in Sections 492.5 through 492.8, 492.10 and 492.11 of the ordinance, which may be found at: <http://www.water.ca.gov/waterefficiency/docs/WaterOrdSec492.cfm>.

5.304.2 Outdoor potable water use. For new water service or for addition or alteration requiring upgraded water service for landscaped areas of at least 1,000 square feet but not more than 5,000 square feet (the level at which *Water Code* §535 applies), separate submeters or metering devices shall be installed for outdoor potable water use.

5.304.3 Irrigation design. In new nonresidential construction or building addition or alteration with at least 1,000 but not more than 2,500 square feet of cumulative landscaped area (the level at which the MWELCO applies), install irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations.

5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:

- Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
- Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.

SECTION 5.305 WATER REUSE SYSTEMS (Reserved)

Division 5.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION 5.401 GENERAL

5.401.1 Scope. The provisions of this chapter shall outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, and building commissioning or testing and adjusting.

SECTION 5.402 DEFINITIONS

5.402.1 Definitions. The following terms are defined in Chapter 2.

ADJUST.

BALANCE.

BUILDING COMMISSIONING.

TEST.

SECTION 5.403 FOUNDATION SYSTEMS (Reserved)

SECTION 5.404 EFFICIENT FRAMING TECHNIQUES (Reserved)

SECTION 5.405 MATERIAL SOURCES (Reserved)

SECTION 5.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE (Reserved)

SECTION 5.407 WATER RESISTANCE AND MOISTURE MANAGEMENT

5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by *California Building Code* Section 1403.2 (Weather Protection) and *California Energy Code* Section 150, (Mandatory Features and Devices), manufacturer's installation instructions or local ordinance, whichever is more stringent.

5.407.2 Moisture control. Employ moisture control measures by the following methods.

5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent spray on structures.

5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows:

5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following:

- An installed awning at least 4 feet in depth.
- The door is protected by a roof overhang at least 4 feet in depth.
- The door is recessed at least 4 feet.
- Other methods which provide equivalent protection.

5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that