- Presentation will begin shortly
- Session will be recorded
- All attendees are muted
- Please be aware of Q&A at bottom of screen – ask your questions there
- We will address questions at various points in the session

www.chulavistaca.gov/clean

Sustainability Webinars

Upcoming Sustainable Building Series:

- December 8: Indoor Air Quality, Strategies for Residential and Nonresidential Buildings

- Summer Sustainability Series recorded webinars are available through the City of Chula Vista CLEAN website

SUSTAINABILITY SERIES

www.chulavistaca.gov/clean

Sustainable Communities Program

CITY OF CHULA VISTA

2019 Title 24 Part 11 CALGreen Code

NONRESIDENTIAL

Colleen FitzSimons
PMP, LFA, LEED AP BD+C/ID+C, GPR, CALGreen Inspector

Douglas Kot
AIA, AICP, CEM, LEED AP+

CALGreen Topics

- CALGreen History and the California Building Code
- CALGreen Nonresidential Mandatory Measures
- CALGreen Nonresidential Voluntary Measures
- City of Chula Vista Adopted Ordinances

Chula Vista Green Building Ordinance History

1980 Resource Conservation Commission Launched

2008 Photovoltaic pre-wiring requirements

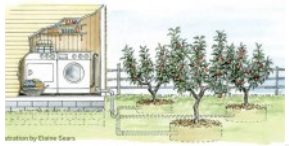
2008 Increased energy efficiency standards

2013 Solar water heating pre-plumbing

2013 Residential graywater stub-out

2012 Shade Tree Policy Number 576-19

Integration of Energy Efficiency into Planning through consideration of emissions in projects



2019 Chapter 15.28.020 Residential graywater stub-out

2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024

CALGreen launched as voluntary program:

Content developed from:

LEED
Collaborative for High Performance Schools
Build It Green, Green Point Rated
ASHRAE 189 (draft) Standard

2010 CALGreen Adopted

2013 CALGreen Adopted

2016 CALGreen Adopted

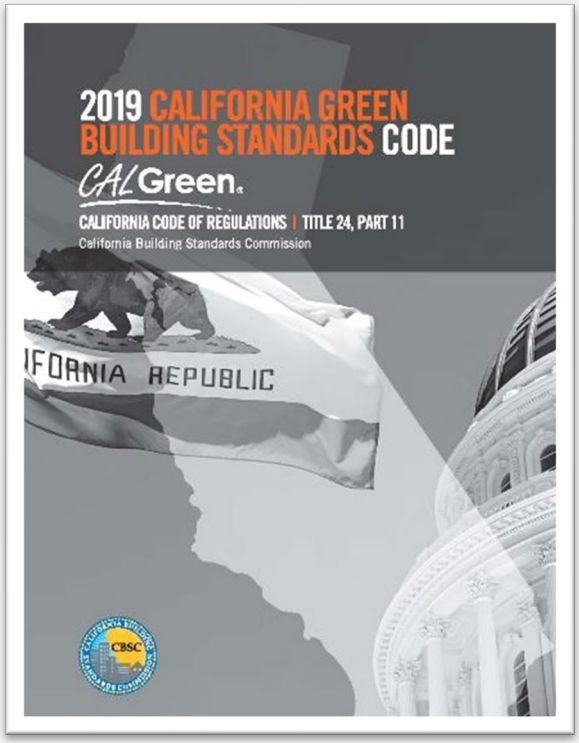
2019 CALGreen Adopted - more stringent than LEED in Energy and Water Use

2022 CALGreen Under Development

FUTURE BUILDING CODES FOCUSING ON EMISSIONS REDUCTIONS

CA Building Standards Code (CBC)
Title 24, CA Code of Regulations

Part 1 California Administrative Code
Part 2 California Building Code
Part 2.5 California Residential Code
Part 3 California Electrical Code
Part 4 California Mechanical Code
Part 5 California Plumbing Code
Part 6 California Energy Code
Part 7 Vacant
Part 8 California Historical Building Code
Part 9 California Fire Code
Part 10 California Existing Building Code
Part 11 California Green Building Standards Code
Part 12 California Referenced Standards Code



CALGreen is not a standalone code

- Enforced like other California codes
- Coordinated with other California codes
- Coordinated with Local Municipal codes
- Maintains current relationship between enforcing agencies and builders
- Establishes Uniformity and Consistency

CALGreen and the City of Chula Vista

Chapter 15.12 GREEN BUILDING STANDARDS

15.12.001 California Green Building Standards Code, 2019 Edition, adopted by reference.

There is hereby adopted by reference the California Green Building Standards Code, 2019 Edition, known as the California Code of Regulations, Title 24, Part 11, as copyrighted by the California Building Standards Commission. Said document is hereby adopted as the green building code of the City of Chula Vista for enhancing the design and construction of buildings, building additions and alterations through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices, excepting such portions as are hereinafter deleted, modified, or amended. Chapter 15.06 CVMC shall serve as the administrative, organizational and enforcement rules and regulations for this chapter. (Ord. 3470 § 1, 2019; Ord. 3386 § 1, 2016; Ord. 3287 § 1, 2013).

CALGreen and the City of Chula Vista

Chapter 15.12 GREEN BUILDING STANDARDS

15.12.005 California Green Building Standards Code Subsection 102.4

102.4 Consultant Services. The Building Official may require the applicant to retain the services of a consultant having expertise in Green Building and/or energy efficiency techniques to review and evaluate complex systems and/or alternate methods or materials of construction and provide recommendations as to compliance with the requirements of this code. The cost of such consultant shall be paid by the applicant. (Ord. 3470 § 1, 2019; Ord. 3386 § 1, 2016; Ord. 3287 § 1, 2013).

CALGreen Chapters

- Chapter 1 Administration
- Chapter 2 Definitions
- Chapter 3 Green Building
- Chapter 4 Residential Mandatory Measures
- Chapter 5 Nonresidential Mandatory Measures
- Chapter 6 Referenced Organizations and Standards
- Chapter 7 Installer and Special Inspector Qualifications
- Chapter 8 Compliance Forms and Worksheets
- Appendix A4 Voluntary Tiers (Residential)
- Appendix A5 Voluntary Tiers (Nonresidential)

Covered today

Chapter 1: ADMINISTRATION

Purpose. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

Chapter 1: ADMINISTRATION

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

Chapter 2: DEFINITIONS

New terms this code cycle:

- Construction site
- Disinfected tertiary recycled water
- Recycled water supply system

Chapter 3: GREEN BUILDING

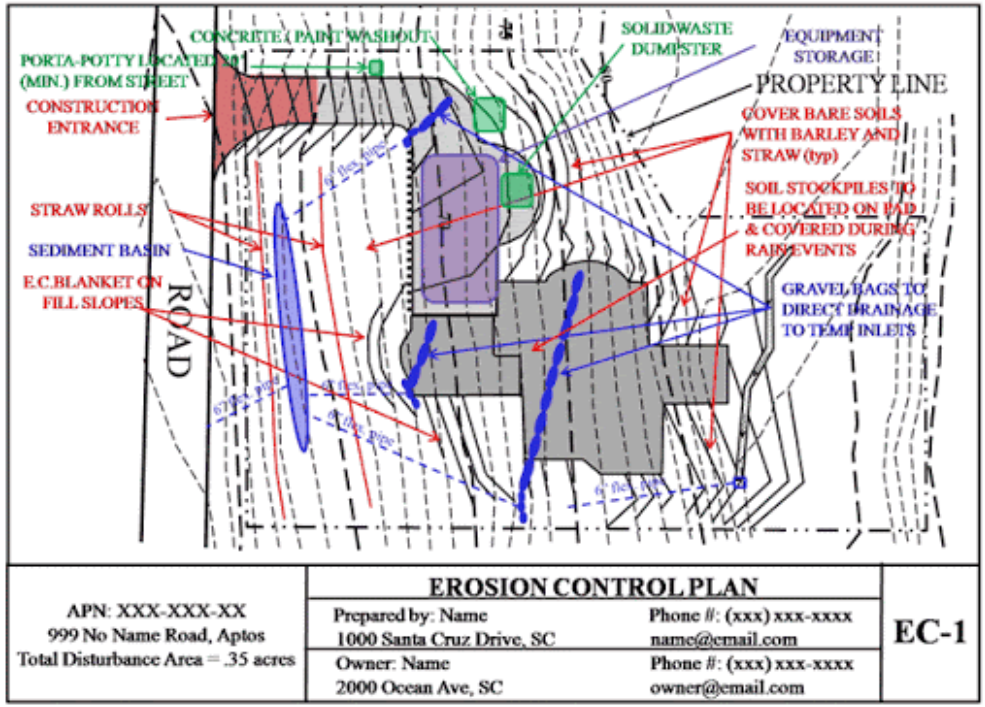
Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

5.1 Planning And Design

Scope. Proper planning and design helps protect the integrity of the site as well as adjacent properties.



IN THE CODE:

5.101.1 Scope. The provisions of this division 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.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Stormwater pollution prevention

When it rains, the water runs off roofs and driveways into the street. Runoff picks up fertilizer, oil, pesticides, dirt, bacteria and other pollutants as it makes its way through storm drains and ditches - untreated - to our streams, rivers, lakes and the ocean.

These sediment pollutants are the biggest contributors to pollution in receiving bodies of water.

IN THE CODE:

5.106.1 Stormwater pollution prevention. Newly constructed projects and additions which disturb less than one acre shall prevent the pollution of stormwater runoff from the construction activities though one or more on the following measures:

5.106.1. Local ordinance

5.106.2. Best management practices

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Bicycle Parking

Providing short- and long-term bicycle parking encourages bicycle use which takes cars off the road, reducing greenhouse gas emissions and traffic while promoting a healthier lifestyle.

IN THE CODE:

5.106.4.1.1 Short term bicycle parking. If visitor traffic, provide bicycle racks within 200' of entrance, for **5%** of parking, minimum of 1 two-bike rack.

5.106.4.1.2 Long term bicycle parking. For new buildings with 10 or more tenant-occupants or addition with 10 new parking spaces provide **secure** bicycle parking for **5%** of spaces, minimum of 1.

5.106.4.2 Public schools and community colleges

5.106.4.2.1 Student bicycle parking. Minimum 4 two-bike racks per new building

5.106.4.2.2 Staff bicycle parking. Minimum 2 **secure** bicycle racks per new building

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Designated parking for clean air vehicles. Promote the use of clean air vehicles and carpooling to conserve natural resources and reduce greenhouse gas emissions.

TABLE 5.106.5.2

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

IN THE CODE:

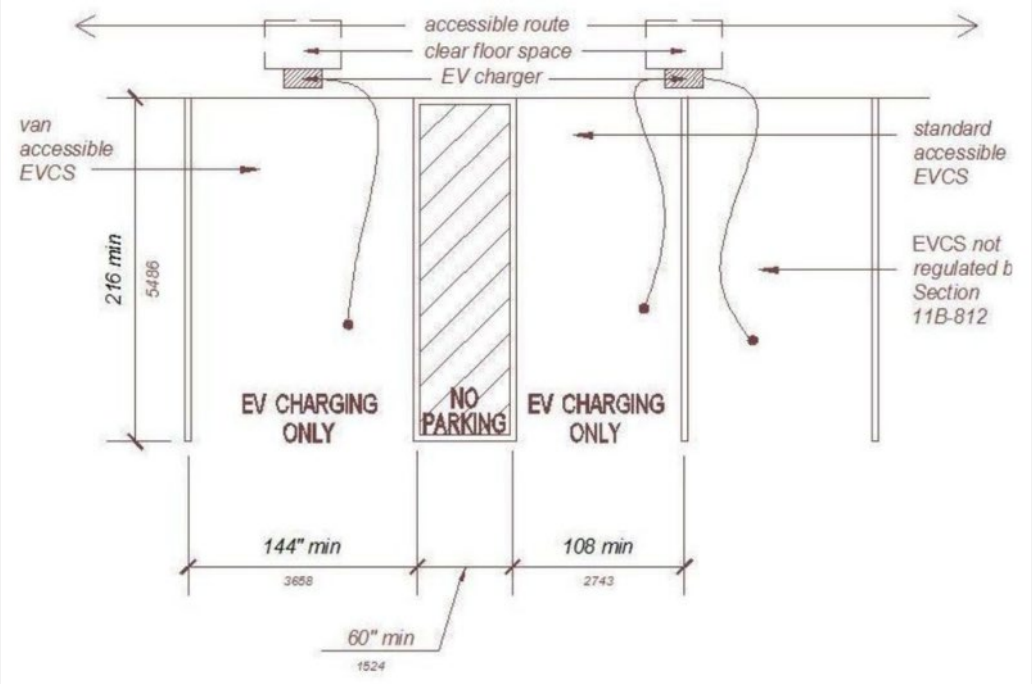
5.106.5.2 Designated parking for clean air vehicles. In new projects or additions that add 10 or more parking spaces, provide designated parking for low-emitting, fuel-efficient and carpool/van per Table 5.106.5.2

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Electric vehicle (EV) charging. [N]

Clearly delineate plans for EVs in construction documents



IN THE CODE:

5.106.3 Electric vehicle (EV) charging. [N]

5.106.5.3.1 Single charging space.

5.106.5.3.2 Multiple charging space.

Construction plans shall indicate and specify type and location of EVSE, raceway, plan design and circuit, and calculations per section.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

EV charging space calculation [N]

TABLE 5.106.5.3.3

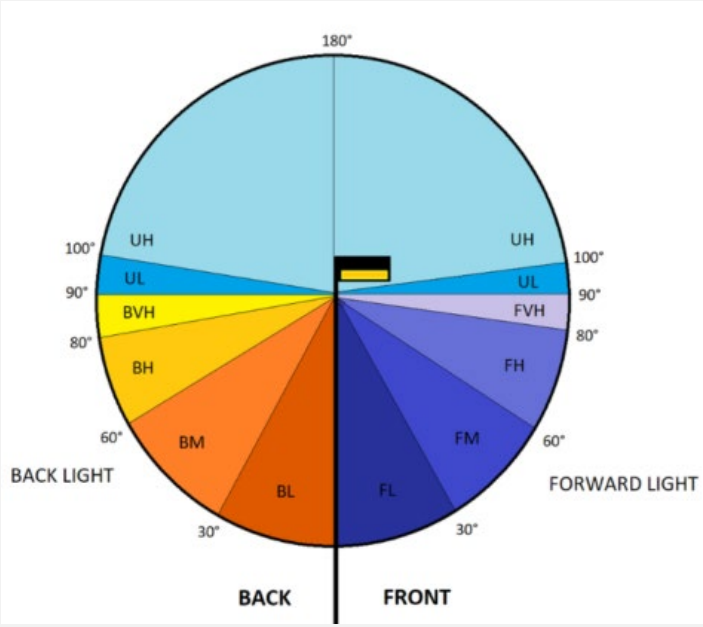
TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total[1]

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

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Light pollution reduction. [N] Light pollution occurs when outdoor light fixtures let excess light escape into the night sky, while light trespass occurs when light shines onto neighboring properties. Light pollution disrupts ecosystems, has adverse health effects and wastes energy.



IN THE CODE:

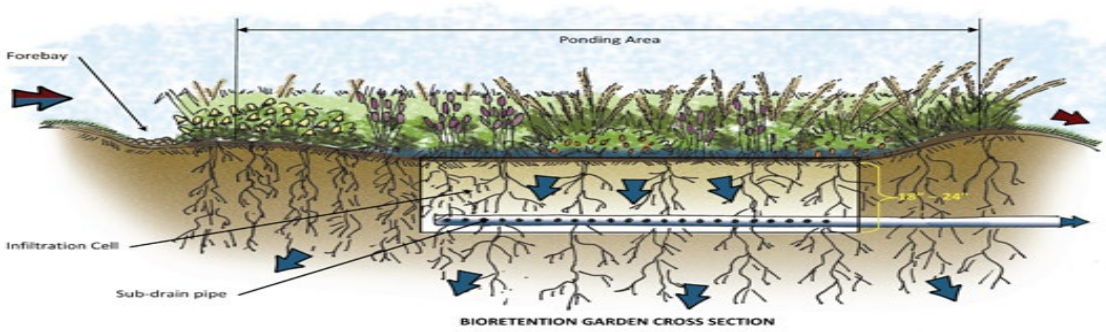
5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following:

1. Comply with CEC Lighting Zones 1-4
2. Backlight, Uplight, Glare (BUG) ratings
3. BUG ratings per Table 5.106.8 or local ordinance

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Grading and paving. Managing surface water flows helps prevent flooding, erosion, damage to adjacent property and pollution from stormwater runoff during construction.



IN THE CODE:

5.106.10 Grading and paving. Construction plans shall indicate how site grading and drainage will manage surface water flows to keep water from entering buildings.

Potential Methods:

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

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.106: Site Development

Shade trees. [DSA-SS]

Trees that shade buildings can help reduce solar heat absorbed through windows and roofs which can save cooling costs

IN THE CODE:

5.106.12 Shade trees. [DSA-SS]

Shade tree plantings shall be installed to provide shade over the following areas within 15 years:

5.106.12.1 Surface parking. **50%***

5.106.12.2 Landscape area. **20%**

5.106.12.3 Hardscape areas. **20%***

*except where covered by solar

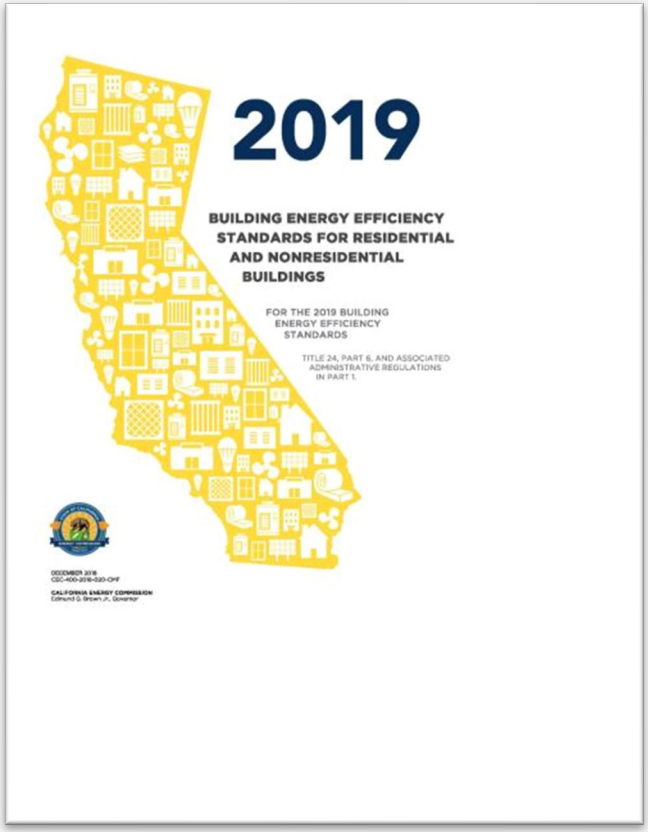
Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

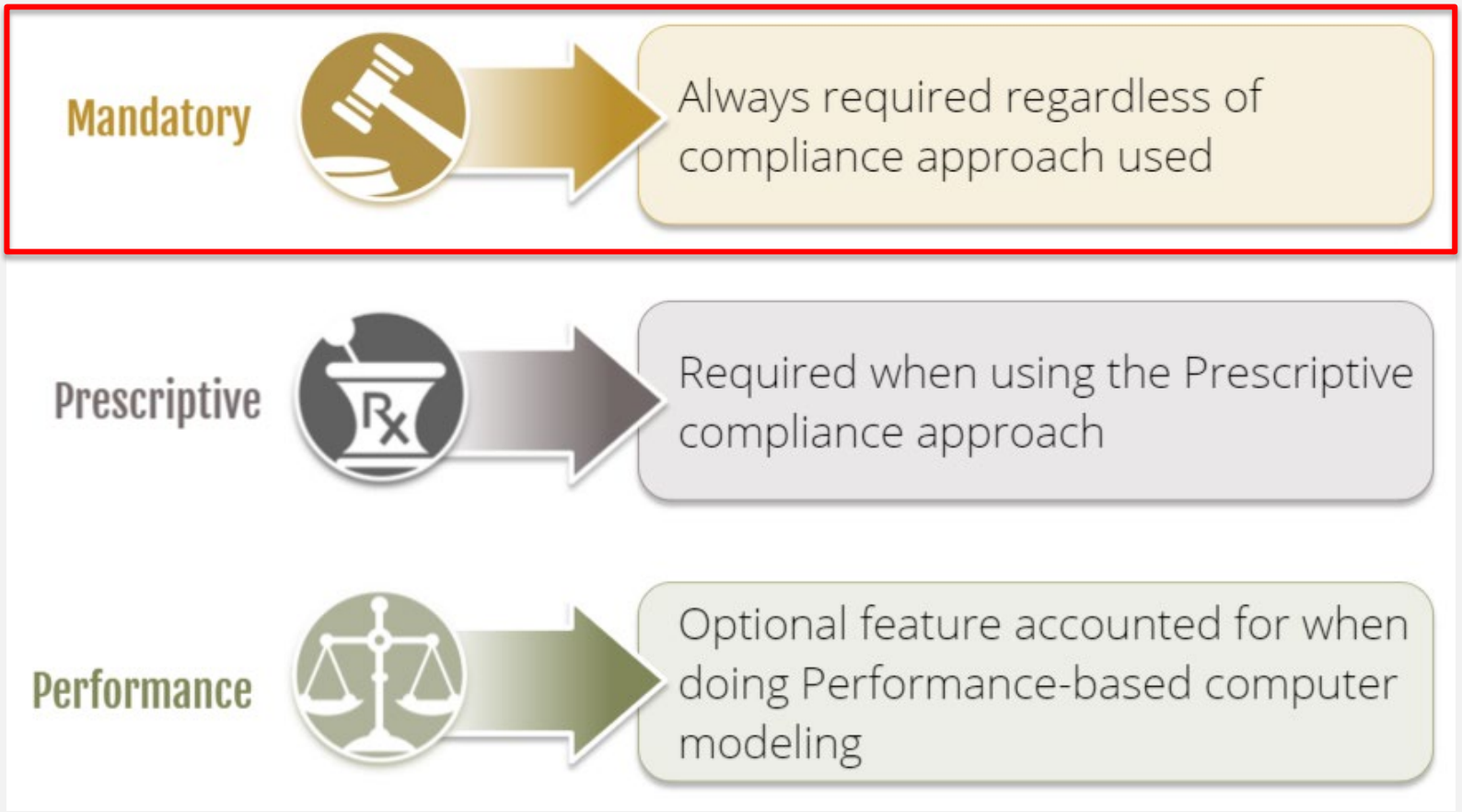
Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

5.2 Energy Efficiency

Scope. For the purposes of mandatory energy efficiency standards in the code, the California Energy Commission will continue to adopt mandatory measures.



California Energy Code

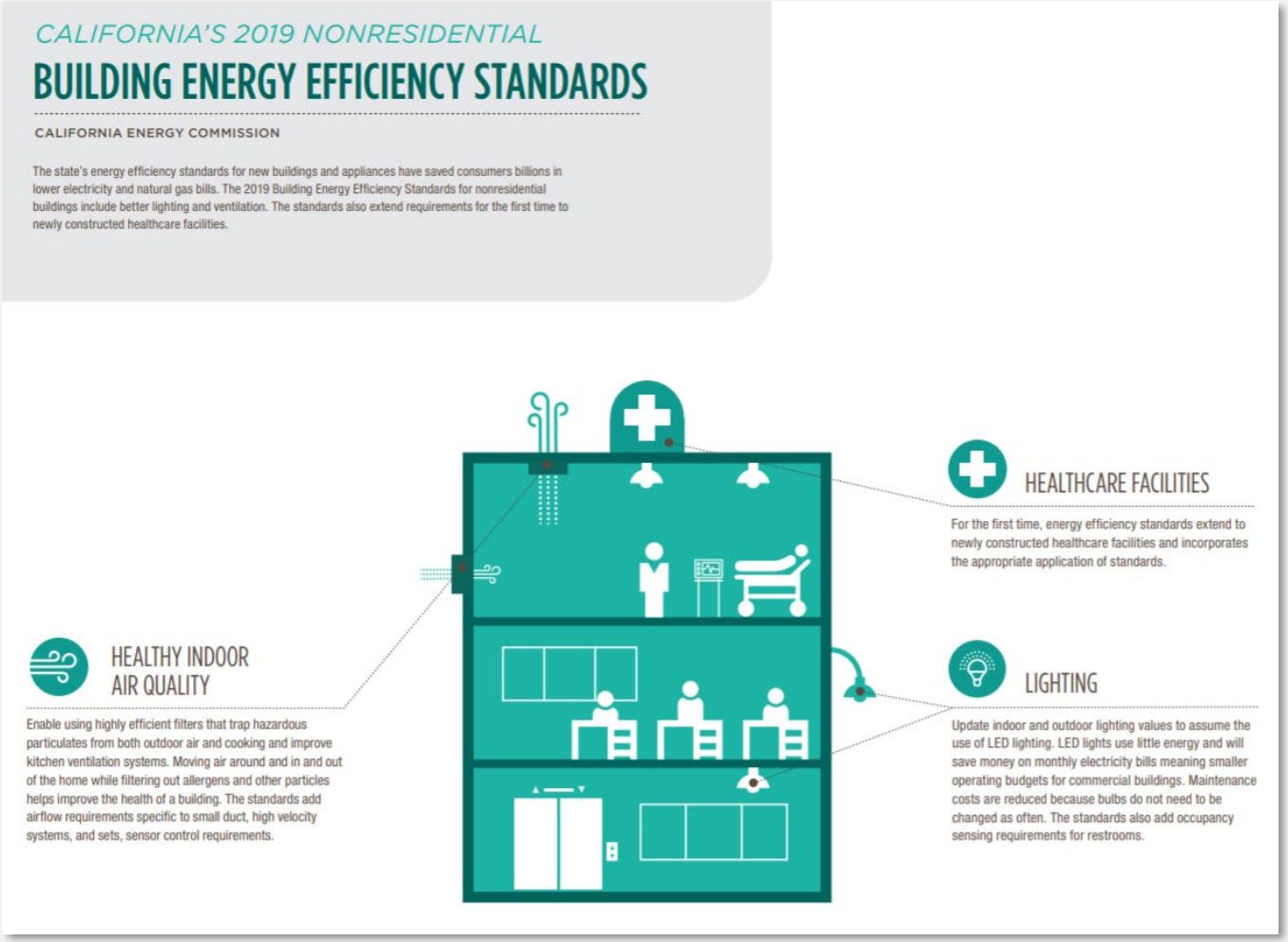


California Energy Code

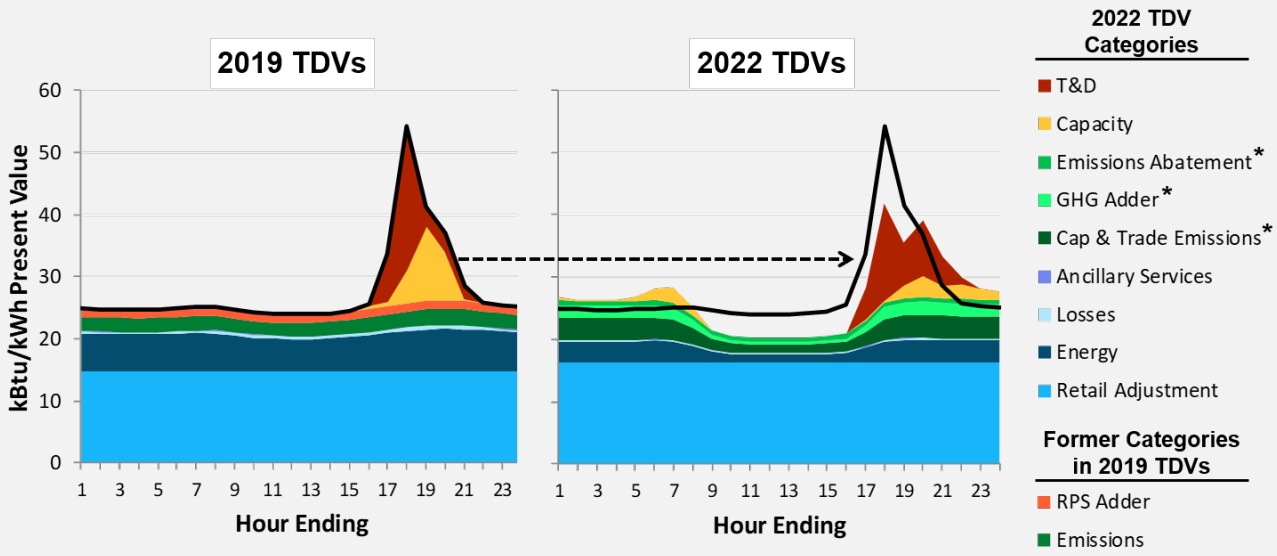
Mandatory measures address:

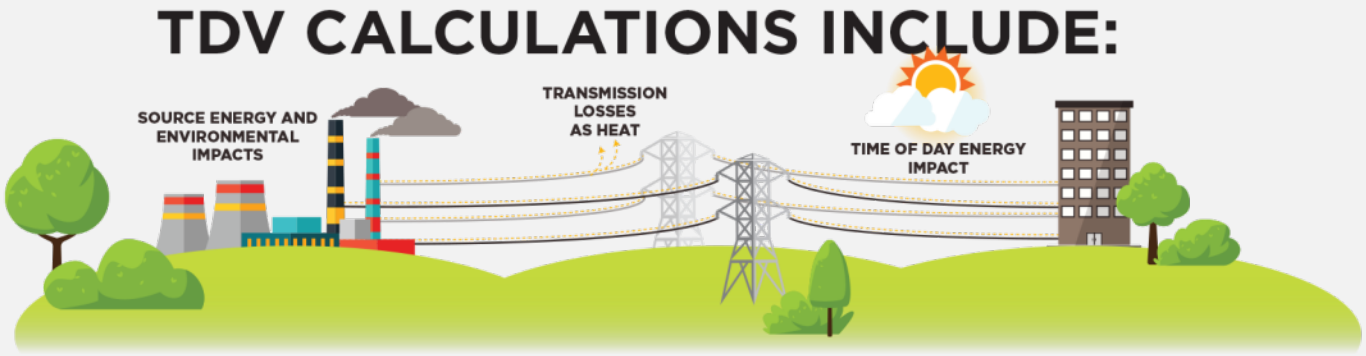
1. Window performance and rating
2. Minimum requirements for ventilation filtration and quantities for use types
3. Indoor air quality
4. Indoor lighting controls
5. Outdoor lighting controls and equipment

California Energy Code: New for 2019



California Energy Code: Time Dependent Valuation



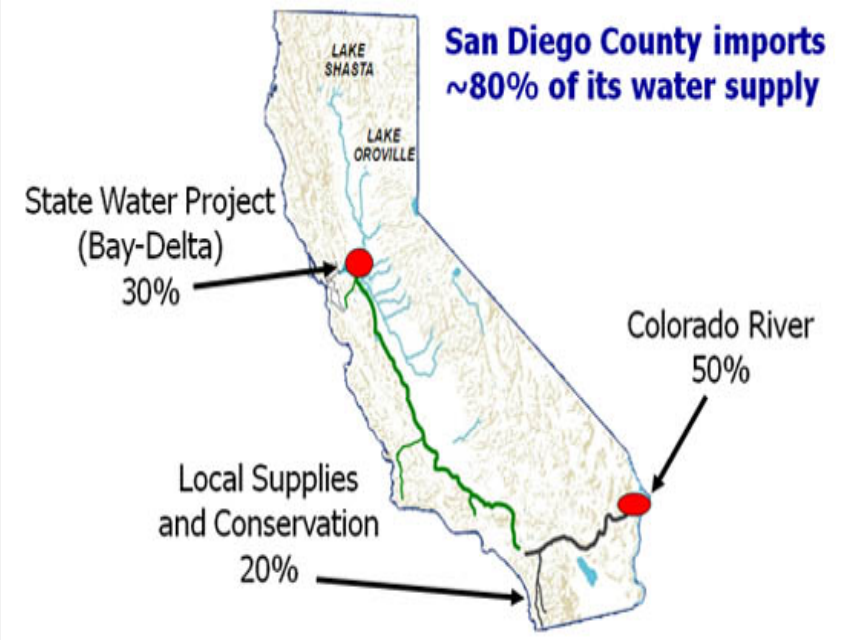


Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

5.3 Water efficiency and conservation



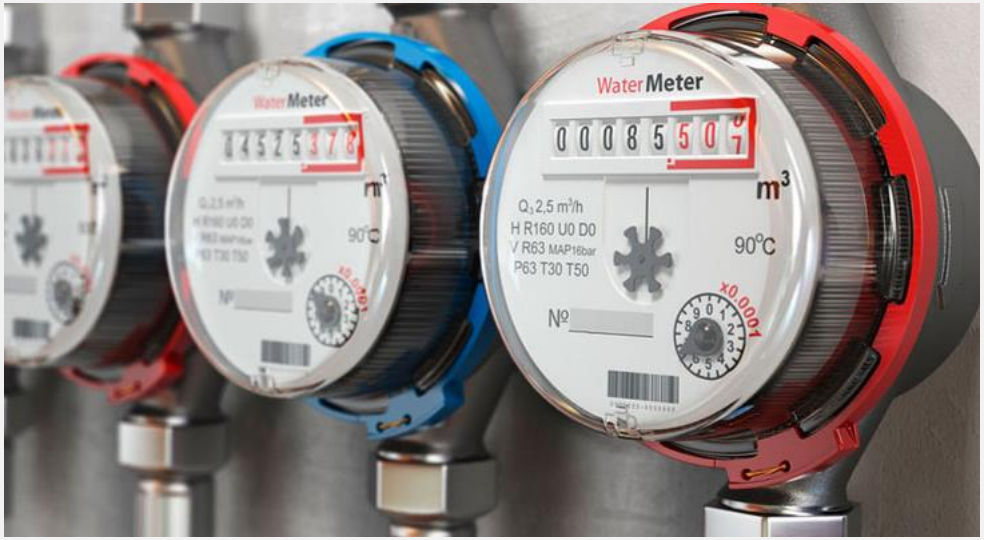
IN THE CODE:

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

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.303: Indoor Water Use

Meters. Submeters measure the water consumption of individual units rather than a master meter for the whole building, allowing building managers to allocate water and sewer costs to residents. When tenants are responsible for their own costs, they are more likely to reduce use.



IN THE CODE:

5.303.1.1 Meters. Separate submeters and metering devices

5.303.1.1 New buildings or additions in excess of 50,000 sf require separate submeters

5.303.1.2 Excess consumption. For any tenant that is projected to consume more than 1,000 gal/day require a submeter or metering device

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.303: Indoor Water Use

Water conserving plumbing fixtures and fittings. Putting a maximum threshold on water fixtures can greatly reduce indoor water use, saving water and money.

IN THE CODE:

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.

5.303.1.1 Waters Closets: = 1.28 gal/flush

5.303.1.2 Urinals: = 0.125 wall-mounted / 0.5 gal/flush floor

5.303.1.3.1 Single Showerheads: = 1.8 gpm @ 80 psi

5.303.1.3.2 Multiple Showerheads: combined flow of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gpm @ 80 psi

5.303.3.4.1 Nonresidential lavatory faucets: = 0.5 gpm @ 60 psi

5.303.3.4.2 Kitchen faucets: = 1.8 gpm @ 60 psi; temporary increase to 2.2 gpm allowed but shall default to 1.8gpm

5.303.3.4.2 Wash fountains: = 1.8 gpm @ 60 psi

5.303.3.4.4 Metering Faucets: = 0.20 gallons per cycle

5.303.3.4.4 Metering Faucets for wash fountains: = 0.20 gallons per minute/20 inches rim space

5.303.4 Areas of additions and alterations. Provisions of 5.303.3 apply to new fixtures in additions or areas of alteration.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.303: Indoor Water Use

Commercial kitchen equipment.

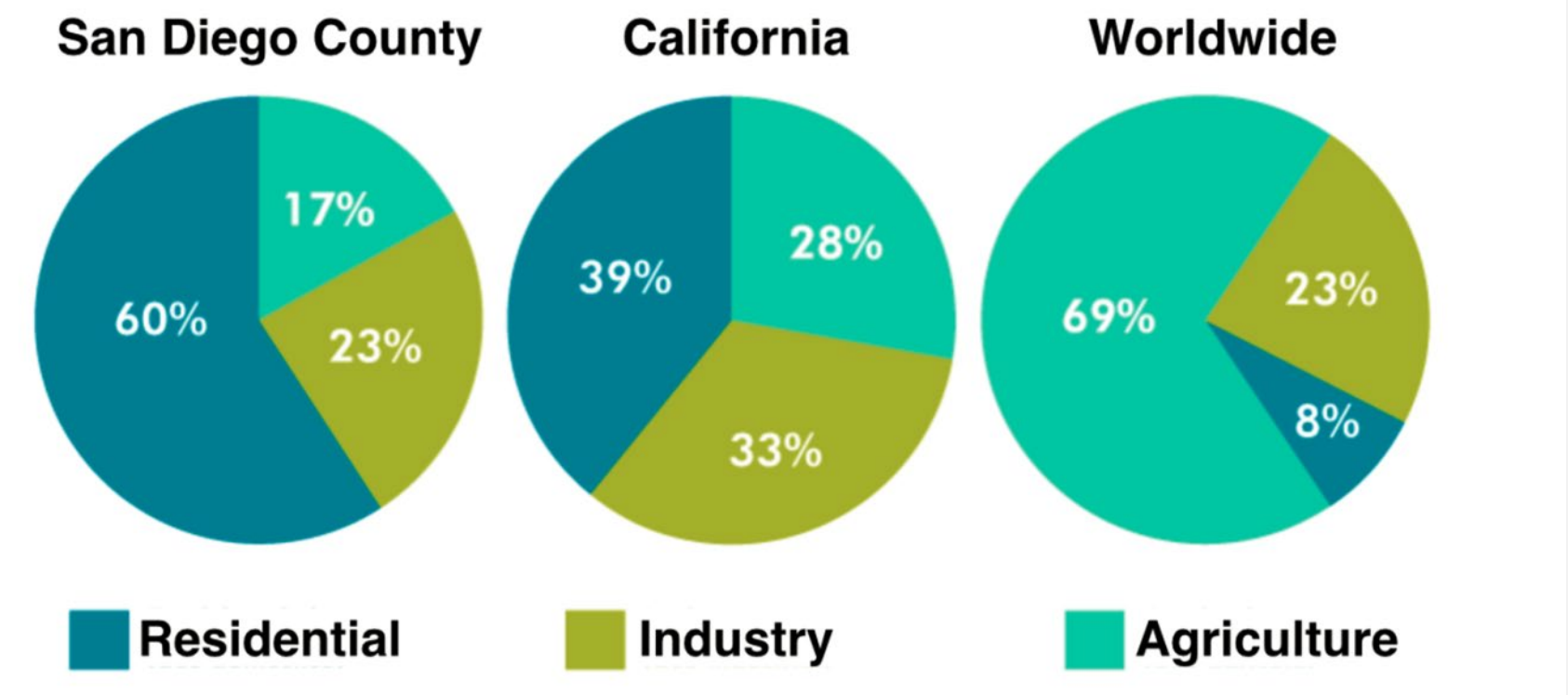
5.303.4.1 Restricting the flow and timing of food waste disposers in commercial kitchens can save significant water.

IN THE CODE:

5.303.4 Commercial kitchen equipment.

5.303.4.1 Food waste disposers shall modulate the use of water to 1 gpm or automatically shut off after 10 minutes of inactivity. They must use no more than 8 gpm of water.

OUTDOOR WATER USE



Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.304: Outdoor Water Use

Outdoor potable water use in landscape areas.
Reducing outdoor water use helps preserve potable (i.e. drinkable) water.

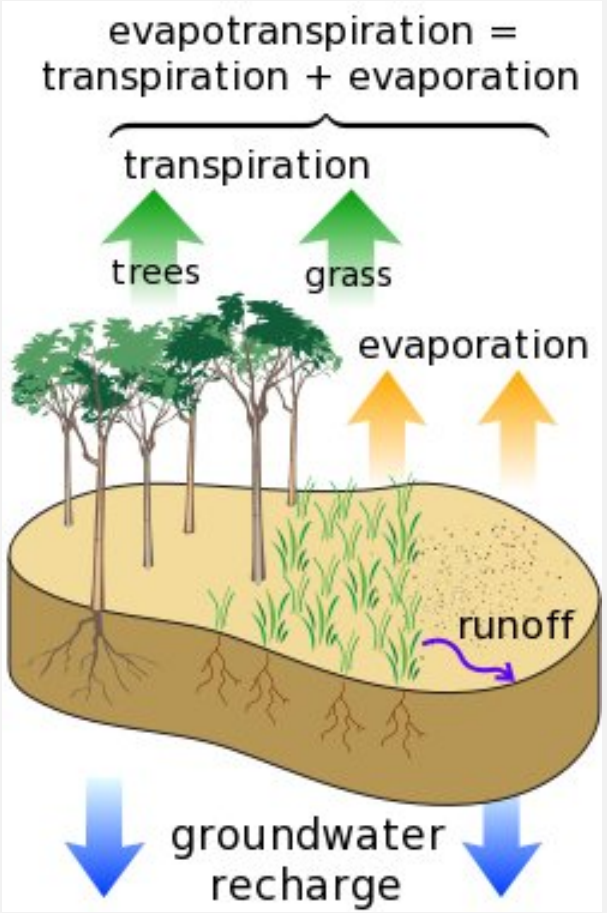
IN THE CODE:

5.304.1 Outdoor potable water use in landscape areas.
Nonresidential developments shall comply with local water efficient landscape ordinance or the current California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) in the California Code of Regulations, whichever is more stringent.

5.304.6 Outdoor potable water use in landscape areas.
For public school and community college with an aggregate landscape area of at least 500 sf or at least 1,200 sf rehabilitated Projects shall comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) in the California Code of Regulations except the evapotranspiration rate shall be 0.65 with an additional water allowance for special landscape areas of 0.35.
Any landscape area of 2,500 sf or less may comply with the prescriptive measures of Appendix D of the MWELO

City of Chula Vista Green Building Ordinances

Chapter 20.12 Chula Vista Landscape Water Conservation Ordinance



Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.305: Water Reuse Systems

Recycled water supply systems. Newly constructed recycled water systems use graywater (untreated waste water that has not come into contact with toilet waste) such as from bathtubs, showers, clothes washing machines, and laundry tubs or rainwater for landscape irrigation, thus saving potable water.

IN THE CODE:

5.305.1 Recycled water supply systems.

Shall be installed in accordance with the California Plumbing Code

5.305.1.1 Outdoor recycled water supply systems. Where municipal recycled water source is available to a site, both a potable supply system and a recycled supply system shall be provided for aboveground and subsurface irrigation to all landscape irrigation systems.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

5.4 Material conservation and resource efficiency

Two major areas of debris make up the great pacific garbage patch.

Smaller versions are present in the North Atlantic and Indian oceans.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Scope. Buildings are extremely resource intensive – the building process requires tons of energy, water, and materials, and generates significant waste. We can conserve resources by making buildings more durable and reducing waste throughout the construction process.

IN THE CODE:

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.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.407: Water Resistance and Moisture Management

Weather protection.

Moisture can damage a building's longevity by causing issues like mold, rot, and pest infiltration.

IN THE CODE:

5.407.1 Weather protection. Provide a weather resistant exterior wall and foundation envelope.

5.407.2 Moisture control. Employ moisture control measures by the following means:

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 opening to prevent water intrusion into buildings

5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered and use nonabsorbent floor and wall finishes 2 feet around and perpendicular to opening plus at least one of the following or equivalent:

- Installed awning 4 feet in depth.
- Roof overhang 4 feet in depth.
- Door is recessed 4 feet.

5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.408: Construction Waste Reduction, Disposal and Recycling

Construction waste management. Each year close to 9 million tons of construction and demo (C&D) debris is disposed in CA landfills – that's ~22% of the waste stream. C&D generally consists of wood, drywall, metal, concrete, cardboard and plant debris (green waste). Much of this material can be reused or recycled.

IN THE CODE:

5.408.1 Construction waste management.

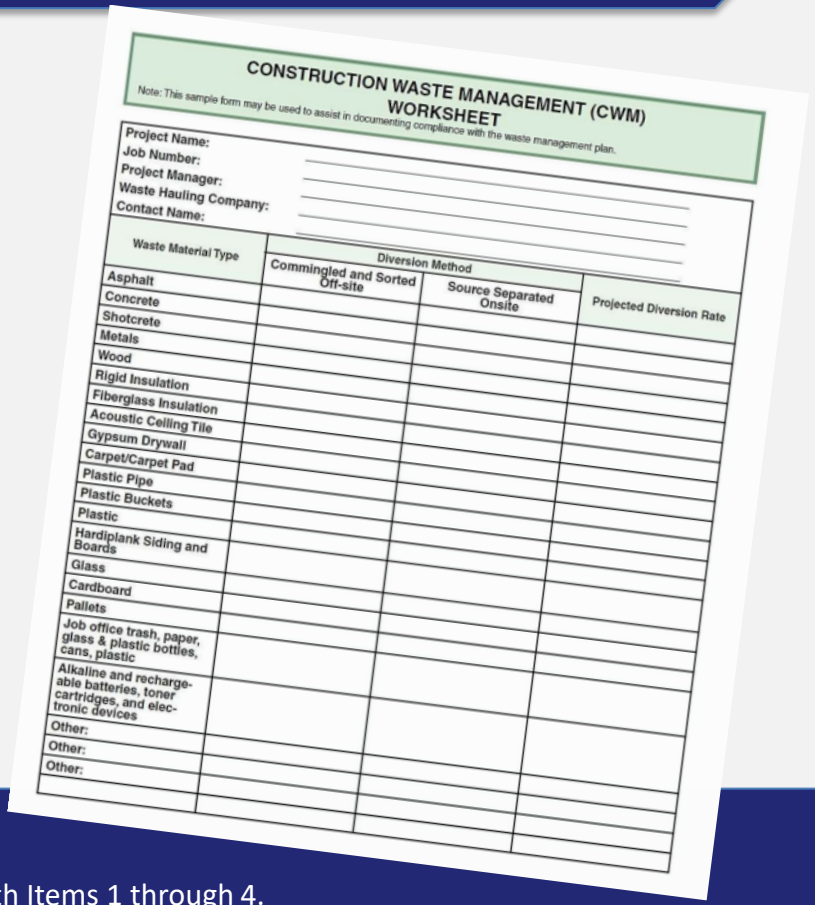
Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste with either 5.408.1.1, 5.408.1.2 or 5.408.1.3 or meet a more stringent ordinance.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.408: Construction Waste Reduction, Disposal and Recycling

Construction waste management plan.

Creating a plan and getting all subcontractors on board will promote recycling efforts and reduce pressure on landfills and the need to harvest new resources.



CONSTRUCTION WASTE MANAGEMENT (CWM) WORKSHEET

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name:
Job Number:
Project Manager:
Waste Hauling Company:
Contact Name:

Waste Material Type	Diversion Method		Projected Diversion Rate
	Commingled and Sorted Off-site	Source Separated Onsite	
Asphalt			
Concrete			
Shotcrete			
Metals			
Wood			
Rigid Insulation			
Fiberglass Insulation			
Acoustic Ceiling Tile			
Gypsum Drywall			
Carpet/Carpet Pad			
Plastic Pipe			
Plastic Buckets			
Plastic			
Hardiplank Siding and Boards			
Glass			
Cardboard			
Pallets			
Job office trash, paper, glass & plastic bottles, cans, plastic			
Alkaline and rechargeable batteries, toner cartridges, and electronic devices			
Other:			
Other:			
Other:			

IN THE CODE:

5.408.1.1 Construction waste management plan.

Submit a construction waste management plan in conformance with Items 1 through 4.

1. Identify waste materials
2. Specify sorted onsite or bulk mixed
3. Identify diversion facilities
4. Specify amount diverted by weight or volume

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

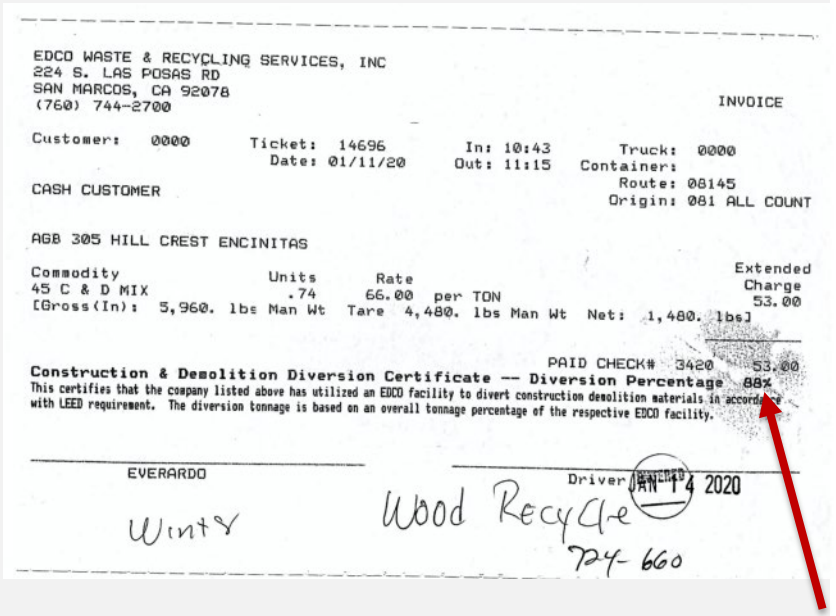
Section 5.408: Construction Waste Reduction, Disposal and Recycling

Waste management company.

Find a waste management company can divert an appropriate % of C&D and make sure to get a diversion receipt.

Documentation.

Ask for the diversion certificate up front.



EDCO WASTE & RECYCLING SERVICES, INC
224 S. LAS POSAS RD
SAN MARCOS, CA 92078
(760) 744-2700

INVOICE

Customer: 0000 Ticket: 14696 Date: 01/11/20 In: 10:43 Out: 11:15 Truck: 0000 Container: Route: 08145 Origin: 081 ALL COUNT

CASH CUSTOMER

AGB 305 HILL CREST ENCINITAS

Commodity	Units	Rate	Extended Charge
45 C & D MIX	.74	66.00 per TON	53.00

[Gross(In): 5,960. lbs Man Wt Tare 4,480. lbs Man Wt Net: 1,480. lbs]

PAID CHECK# 3420 53.00

Construction & Demolition Diversion Certificate -- Diversion Percentage 88%

This certifies that the company listed above has utilized an EDCO facility to divert construction demolition materials in accordance with LEED requirement. The diversion tonnage is based on an overall tonnage percentage of the respective EDCO facility.

EVERARDO

Driver

RECEIVED JAN 14 2020

Wintv

Wood Recycle

724-660

IN THE CODE:

5.408.1.2 Waste management company.
Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste diversion rates are compliant.

5.408.1.4 Documentation.
Documentation shall be provided.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.408: Construction Waste Reduction, Disposal and Recycling

Universal Waste. [A]

Universal Waste items are considered common hazardous waste items like fluorescent lamps and mercury-containing thermostats. They have to be disposed of properly.

Excavated soil and land clearing debris.

100% of cleared landscaping should be reused or recycled.

IN THE CODE:

5.408.2 Universal Waste. [A]

Additions and alterations to a building or tenant space shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly.

5.408.3 Excavated soil and land clearing debris.

100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.410: Building Maintenance and Operation

Recycling by occupants.
Promote recycling efforts and reduce pressure on landfills and the need to harvest new resources by providing easily accessible recycling areas.

IN THE CODE:

5.410.1 Recycling by occupants.
Provide readily accessible areas that serve the entire building and are identified for recycling.

5.410.11 Additions. All additions in a 12-month period that increase floor area by 30% or more must provide recycling.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.410: Building Maintenance and Operation

Commissioning. [N]

Commissioning is an intensive quality assurance process that begins during design and continues through construction, occupancy, and operations. It ensures that the building operates as the owner intended and that staff are prepared to operate and maintain its systems and equipment.

IN THE CODE:

5.410.2 Commissioning. [N]

For new buildings 10,000 sf and over building commissioning shall be included in the design and construction processes. Commissioning requirements shall include:

- Owner's Project Requirements
- Basis of Design
- Commissioning measures in construction documents
- Commissioning plan
- Functional performance testing
- Documentation and training, including systems manual
- Commissioning report

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.410: Building Maintenance and Operation

Testing and adjusting.

Proper adjustment of the building systems can ensure maximum efficiency of the equipment operation as well improve the indoor air quality for occupants, as well as enhance the lifetime of equipment.

IN THE CODE:

5.410.4 Testing and adjusting.

Shall be required for new buildings less than 10,000 sf or new systems to serve an addition or alterations of 1,000 sf or greater or valuation >$200,000. To include:

- Renewable energy systems
- Landscape irrigation systems
- Water reuse systems

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

5.5 Environmental quality

Scope.

Humans spend ~90% of their time indoors. This chapter covers ways to improve indoor air quality which leads to comfort and better health for occupants.

IN THE CODE:

5.501.1 Scope.

The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.503: Fireplaces

Fireplaces.
Combustion gasses from fireplaces can compromise indoor air quality and occupants' health.

IN THE CODE:

5.503.1 Fireplaces.

Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Temporary ventilation.

The use of the permanent HVAC system during construction without proper protection can cause contamination that affects building occupants upon completion.

HVAC filters remove particulates from the air. The higher the MERV (Minimum Efficiency Reporting Value) is, the more efficient the filter is at removing particles.

IN THE CODE:

5.504.1 Temporary ventilation.

If the permanent ventilation system is used during construction MERV 8 filters must be used and replaced.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Covering of duct openings and protection of mechanical equipment during construction.

Debris and dust from construction can lodge in HVAC units and ductwork if not covered.

IN THE CODE:

5.504.3 Covering of duct openings and protection of mechanical equipment during construction.

At the time of rough inspection until final startup of the heating, cooling and ventilation equipment.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Finish material pollutant control.

Caulks, sealants, adhesives, and paints can off-gas toxic compounds for months, creating indoor air pollution and adverse health effects.

IN THE CODE:

5.504.4 Finish material pollutant control.
Finish materials shall comply with this section.

5.504.4.1 Adhesives, sealants and caulks
Table 5.504.4.1 ADHESIVE VOC LIMIT
Table 5.504.4.2 SEALANT VOC LIMIT
5.504.4.3 Paints and coatings
Table 5.504.4.3 ARCHITECTURAL CCOATINGS VOC LIMIT
5.504.4.3.1 Aerosol paints and coatings shall meet the PWMIR Limits for ROC and other requirements.
PWMIR=Product Weighted Maximum Incremental Reactivity
ROC= Report on Carcinogens (USDHHS)

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Carpet systems.

Carpet can off-gas VOCs and formaldehyde, compromising to indoor air quality.

IN THE CODE:

5.504.4.4 Carpet systems.
All carpet installed in the interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label Plus Program
2. California Dept. of Public Health
3. NSF/ANSI 140 Gold
4. SCSIA Gold
5. CHPS High Performance Products Database

5.504.4.4.1 Carpet cushion
5.504.4.4.2 Carpet adhesive

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Composite wood products.

Formaldehyde is often used as a binder in building products such as plywood, particleboard, and other composite wood products. Formaldehyde can off-gas and decrease indoor air quality.

TABLE 5.504.4.5
FORMALDEHYDE LIMITS[1]
Maximum Formaldehyde Emissions in Parts per Million

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[2]	0.13

IN THE CODE:

5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's ATCM, see Table 5.504.4.5

5.504.4.5.3 Documentation. Verification of compliance with this section shall include at least one of the following:

1. Product certifications and specifications
2. Chain of custody certifications
3. Product labeled CCR Title 17
4. Product labeled PS-1 or PS-2 standards of Engineered Wood Association

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Resilient flooring.
Resilient flooring products can emit formaldehyde and other VOCs. Third party certification systems exist to approve products for low emissions.

IN THE CODE:
5.504.4.6 Resilient flooring.
Where resilient flooring is installed, at least 80% shall comply with one or more of the following:

1. CHPS High Performance Products Database
2. RFCI FloorScore program
3. California Dept. of Public Health
4. UL Greenguard

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.504: Pollutant Control

Filters.
High MERV HVAC filters remove particulates from the air.

Environmental tobacco smoke (ETS) control.
Improve indoor air quality and reduce secondhand smoke exposure to protect non-smokers.

IN THE CODE:

5.504.5.3 Filters.
In mechanically ventilated buildings provide MERV 13 filters for outside and return air, prior to occupancy.

5.504.7 Environmental tobacco smoke (ETS) control.
Where outdoor areas are provided for smoking, prohibit smoking within 25’ of building entries, outdoor intakes and operable windows.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.505: Indoor Moisture Control

Indoor moisture control. Indoor moisture can lead to rot and mold which cause respiratory issues and decrease durability of the building.

IN THE CODE:

5.505.1 Indoor moisture control.

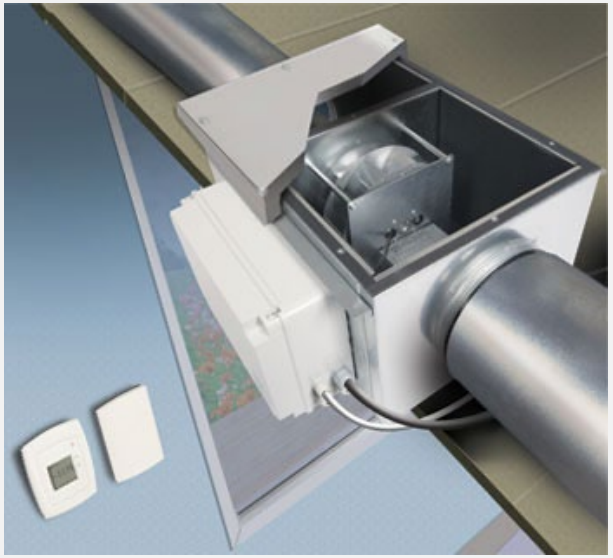
Buildings shall meet or exceed the provisions of the California Building Standards Code. CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls).

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.506: Indoor Air Quality

Outside air delivery.

Properly ventilating brings in fresh air, exhausts stale air, and helps reduce unwanted indoor moisture.



Carbon dioxide (CO2) monitoring.

Too much CO2 can harm humans. Demand control ventilation can save energy and increase air quality by monitoring CO2 levels and triggering increased ventilation when needed.

IN THE CODE:

5.506.1 Outside air delivery.
For mechanically or naturally ventilated spaces in buildings meet minimum requirements of Section 120.1 (Requirements For Ventilation) of the California Energy Code.

5.506.2 Carbon dioxide (CO2) monitoring.
For buildings or additions equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120.1(c)(4).

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.507: Environmental Comfort

Acoustical control.

The goal is to reduce sound levels enough to carry out activities inside the building without distraction or discomfort of unwanted noise.

IN THE CODE:

5.507.4 Acoustical control.

Employ building assemblies and components with Sound Transmission Class (STC) values using either the prescriptive or performance method.

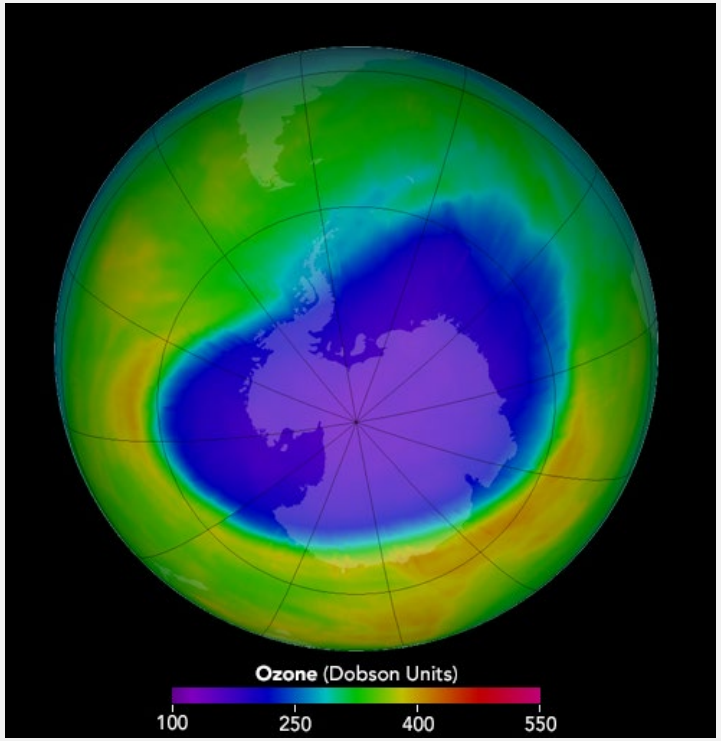
5.507.4.2.2 An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.

5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant and public spaces shall have an STC of at least 40.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.508: Outdoor Air Quality

Ozone depletion and greenhouse gas reductions. Commonly used chemicals in HVAC and refrigeration systems can degrade the ozone layer and have a significant impact on climate change.



IN THE CODE:

5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with this section.

5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.

5.508.1.2 Halons. Install HVAC, refrigeration, and fire suppression equipment that do not contain Halons.

Chapter 5: NONRESIDENTIAL MANDATORY MEASURES

Section 5.508: Outdoor Air Quality

Supermarket refrigerant leak reduction.

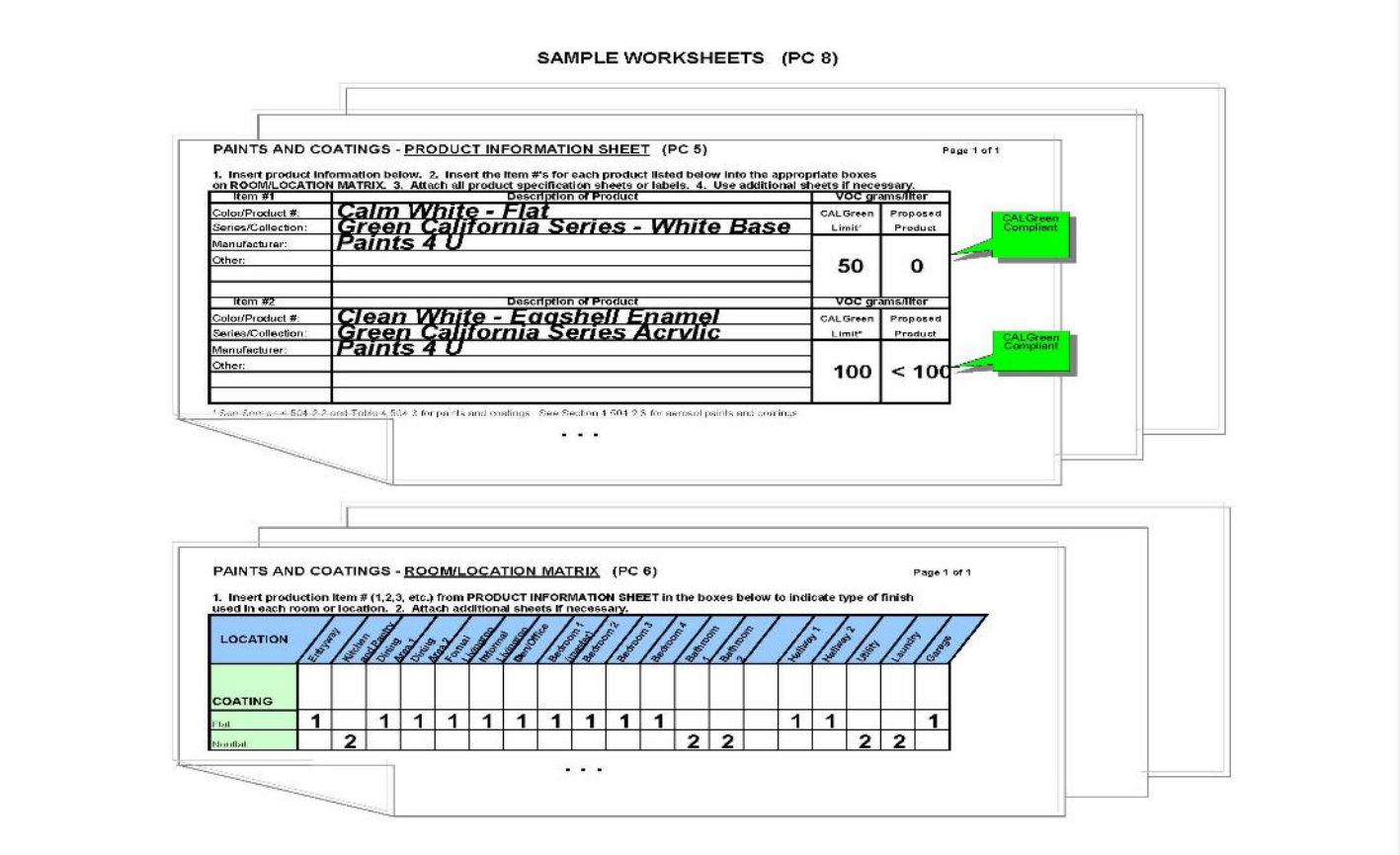
Detecting refrigerant leaks can save money and reduce environmental and human health hazards.

IN THE CODE:

5.508.2 Supermarket refrigerant leak reduction.

New commercial refrigeration systems shall comply with this section when installed in retail food stores 8,000 sf or more of conditioned area.

Chapter 8: COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL



SAMPLE WORKSHEETS (PC 8)

PAINTS AND COATINGS - PRODUCT INFORMATION SHEET (PC 5)

Page 1 of 1

1. Insert product information below. 2. Insert the Item #'s for each product listed below into the appropriate boxes on ROOM/LOCATION MATRIX. 3. Attach all product specification sheets or labels. 4. Use additional sheets if necessary.

Item #1	Description of Product	VOC grams/liter	
Color/Product #:	Calm White - Flat	CALGreen Limit*	Proposed Product
Series/Collection:	Green California Series - White Base		
Manufacturer:	Paints 4 U	50	0
Other:			

CALGreen Compliant

Item #2	Description of Product	VOC grams/liter	
Color/Product #:	Clean White - Eggshell Enamel	CALGreen Limit*	Proposed Product
Series/Collection:	Green California Series Acrylic		
Manufacturer:	Paints 4 U	100	< 100
Other:			

CALGreen Compliant

* See Section 4.504.2.2 and Table 4.504.2 for paints and coatings. See Section 4.504.2.3 for aerosol paints and coatings.

. . .

PAINTS AND COATINGS - ROOM/LOCATION MATRIX (PC 6)

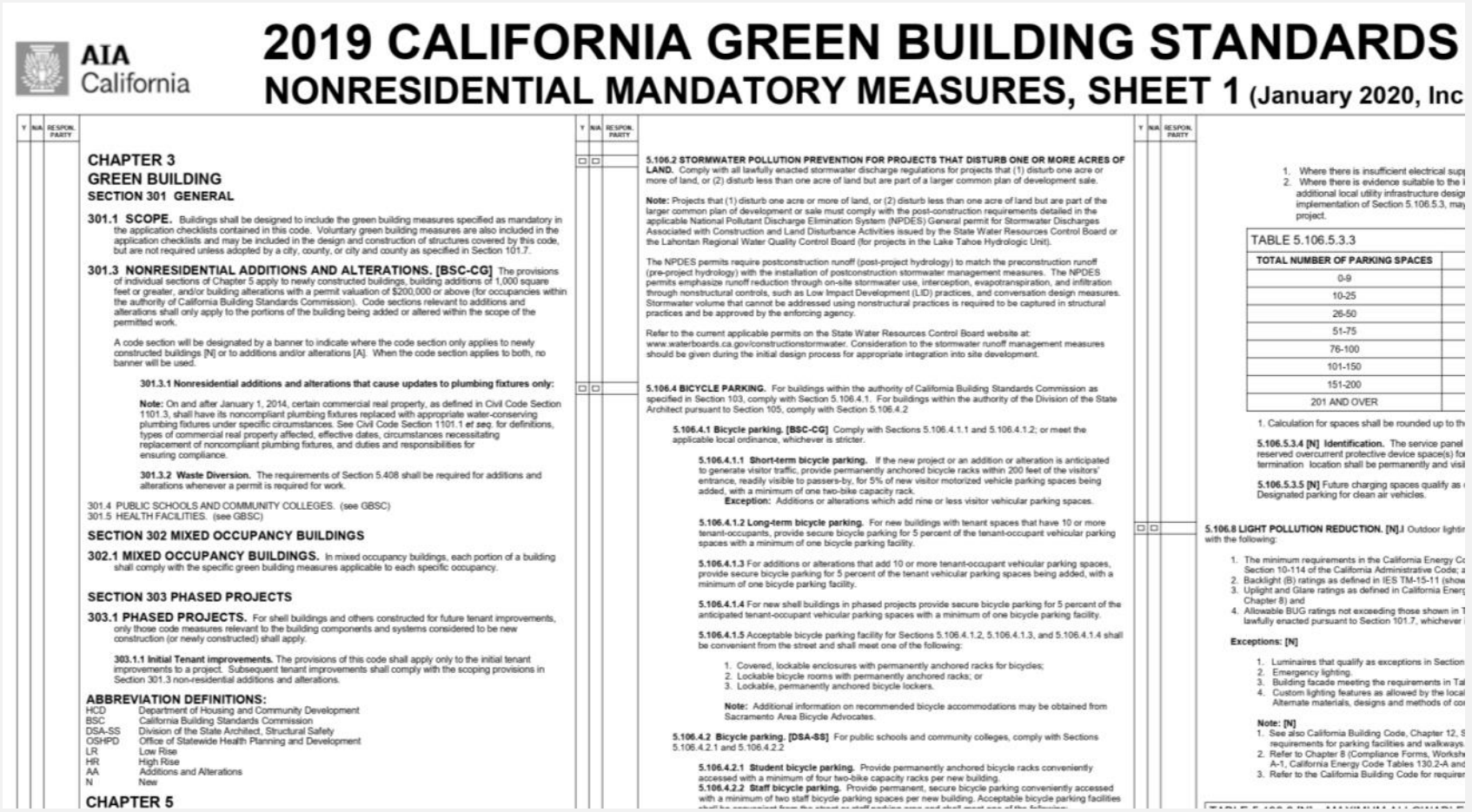
Page 1 of 1

1. Insert production Item # (1,2,3, etc.) from PRODUCT INFORMATION SHEET in the boxes below to indicate type of finish used in each room or location. 2. Attach additional sheets if necessary.

LOCATION	Entryway	Kitchen	Nook/Booth	Dining	Area 1	Dining	Area 2	Formal	Living/Sitting	Informal	Living/Sitting	Den/Office	Bedroom 1	Living/Sitting	Bedroom 2	Bedroom 3	Bedroom 4	Bathroom 1	Bathroom 2	Hallway 1	Hallway 2	Utility	Laundry	Garage
COATING																								
Flat	1			1	1	1		1		1		1	1		1	1				1	1			1
Nonflat		2																2	2			2	2	

. . .

Chapter 8: COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL



AIA California

2019 CALIFORNIA GREEN BUILDING STANDARDS

NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Inc

Y | N/A | 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 5 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 GBSC)
301.5 HEALTH FACILITIES. (see GBSC)

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:

HCD	Department of Housing and Community Development
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

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 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 conversation 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. 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 convenient 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

1. Where there is insufficient electrical sup
2. Where there is evidence suitable to the l additional local utility infrastructure desig implementation of Section 5.106.5.3, may project.

TABLE 5.106.5.3.3

TOTAL NUMBER OF PARKING SPACES	
0-9	
10-25	
26-50	
51-75	
76-100	
101-150	
151-200	
201 AND OVER	

1. Calculation for spaces shall be rounded up to th

5.106.5.3.4 [N] Identification. The service panel reserved overcurrent protective device space(s) fo termination location shall be permanently and visi

5.106.5.3.5 [N] Future charging spaces qualify as Designated parking for clean air vehicles.

5.106.8 LIGHT POLLUTION REDUCTION. [N] Outdoor lightir with the following:

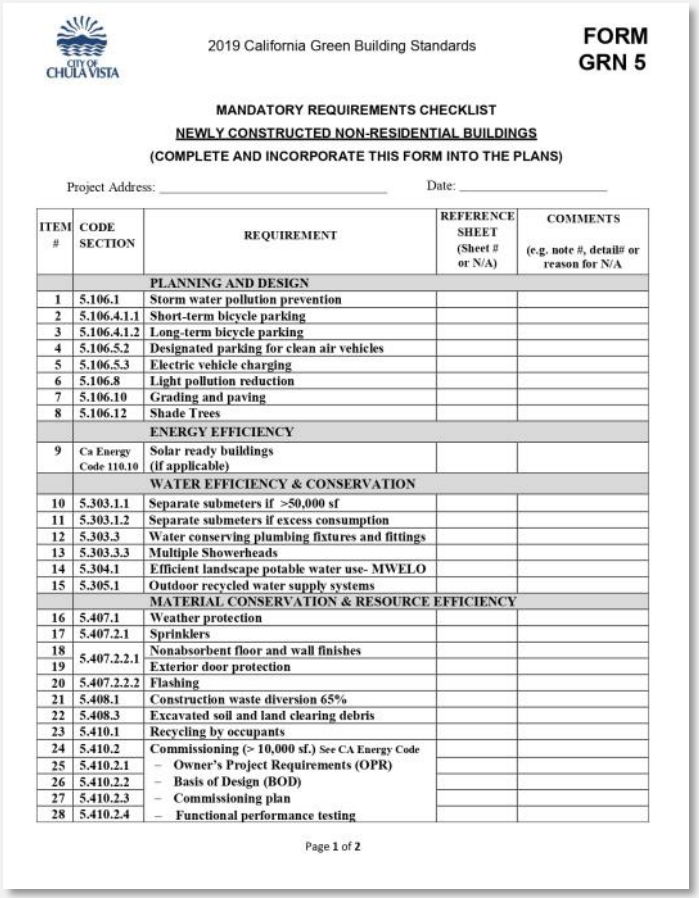
1. The minimum requirements in the California Energy Co Section 10-114 of the California Administrative Code; a
2. Backlight (B) ratings as defined in IES TM-15-11 (show
3. Uplight and Glare ratings as defined in California Energ Chapter 8) and
4. Allowable BUG ratings not exceeding those shown in T lawfully enacted pursuant to Section 101.7, whichever

Exceptions: [N]

1. Luminaires that qualify as exceptions in Section
2. Emergency lighting.
3. Building facade meeting the requirements in Tal
4. Custom lighting features as allowed by the local Alternate materials, designs and methods of co

Note: [N]
1. See also California Building Code, Chapter 12, S requirements for parking facilities and walkways.
2. Refer to Chapter 8 (Compliance Forms, Worksh A-1, California Energy Code Tables 130.2-A and
3. Refer to the California Building Code for requirer

Chapter 8: COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL



CITY OF CHULA VISTA

2019 California Green Building Standards

FORM GRN 5

MANDATORY REQUIREMENTS CHECKLIST

NEWLY CONSTRUCTED NON-RESIDENTIAL BUILDINGS

(COMPLETE AND INCORPORATE THIS FORM INTO THE PLANS)

Project Address: _____ Date: _____

ITEM #	CODE SECTION	REQUIREMENT	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail# or reason for N/A
		PLANNING AND DESIGN		
1	5.106.1	Storm water pollution prevention		
2	5.106.4.1.1	Short-term bicycle parking		
3	5.106.4.1.2	Long-term bicycle parking		
4	5.106.5.2	Designated parking for clean air vehicles		
5	5.106.5.3	Electric vehicle charging		
6	5.106.8	Light pollution reduction		
7	5.106.10	Grading and paving		
8	5.106.12	Shade Trees		
		ENERGY EFFICIENCY		
9	Ca Energy Code 110.10	Solar ready buildings (if applicable)		
		WATER EFFICIENCY & CONSERVATION		
10	5.303.1.1	Separate submeters if >50,000 sf		
11	5.303.1.2	Separate submeters if excess consumption		
12	5.303.3	Water conserving plumbing fixtures and fittings		
13	5.303.3.3	Multiple Showerheads		
14	5.304.1	Efficient landscape potable water use- MWELO		
15	5.305.1	Outdoor recycled water supply systems		
		MATERIAL CONSERVATION & RESOURCE EFFICIENCY		
16	5.407.1	Weather protection		
17	5.407.2.1	Sprinklers		
18	5.407.2.2.1	Nonabsorbent floor and wall finishes		
19		Exterior door protection		
20	5.407.2.2.2	Flashing		
21	5.408.1	Construction waste diversion 65%		
22	5.408.3	Excavated soil and land clearing debris		
23	5.410.1	Recycling by occupants		
24	5.410.2	Commissioning (> 10,000 sf.) See CA Energy Code		
25	5.410.2.1	– Owner's Project Requirements (OPR)		
26	5.410.2.2	– Basis of Design (BOD)		
27	5.410.2.3	– Commissioning plan		
28	5.410.2.4	– Functional performance testing		

Page 1 of 2

CITY OF CHULA VISTA

2019 California Green Building Standards

FORM GRN 5

ITEM #	CODE SECTION	REQUIREMENT	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A)
29	5.410.2.5.1	– Systems manual		
30	5.410.2.5.2	– Systems operations training		
31	5.410.2.6	– Commissioning report		
32	5.410.4	Testing and adjusting (< 10,000 sf.)		
33	5.410.4.2	– Systems		
34	5.410.4.3	– Procedures		
35	5.410.4.3.1	– HVAC balancing		
36	5.410.4.4	– Reporting		
37	5.410.4.5	– Operation and maintenance manual		
38	5.410.4.5.1	– Inspections and reports		
		ENVIRONMENTAL QUALITY		
39	5.503.1	Fireplaces and Woodstoves		
40	5.504.1	Temporary ventilation		
41	5.504.3	Covering of duct openings and protection of mechanical equipment during construction		
42	5.504.4	Finish material pollutant control		
43	5.504.4.1	– Adhesives, sealants, and caulks		
44	5.504.4.3	– Paints and coatings		
45	5.504.4.3.1	– Aerosol paints and coatings		
46	5.504.4.3.2	– Verification		
47	5.504.4.4	Carpet systems		
48	5.504.4.4.1	Carpet cushion		
49	5.504.4.5	Composite wood products		
50	5.504.4.6	Resilient flooring systems		
51	5.504.5.3	Filters MERV 13		
52	5.504.7	Environmental tobacco smoke (ETS) control		
53	5.505.1	Indoor moisture control		
54	5.506.2	Carbon dioxide (CO_2) monitoring (if applicable)		
55	5.507.4.1	Exterior noise transmission prescriptive method		
56		– Exterior noise transmission for roof		
57		– Exterior noise transmission for walls		
58		– Exterior noise transmission for windows		
59	5.507.4.2	Exterior noise transmission performance method		
60	5.507.4.3	Interior sound transmission		
61	5.508.1	Ozone depletion and greenhouse gas reductions		
62	5.508.2	Supermarket refrigerant leak reduction		

Page 2 of 2

Chapter 8: COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL

CITY OF CHULA VISTA

Provide 3 ring binders for every building permit. In the binder provide tabs to section the binder for the following documents:

PERMIT
Inspection Record Card
Inspection Continuation sheet

SPECIAL INSPECTION
1) Property Owner/Contractor Agreement (Form 4540)
2) Application to Perform Off-Site Fabrication (Form 4541)
3) Certificate of Compliance for Off-Site Fabrication (Form 4542)
4) Special Inspector Start Work Notification (Form 4545) for each Special Inspector assigned to project
5) Daily Special Inspection Reports (organize reports with most current report on top and categorize by soil, concrete, structural steel/welding/bolting, spray applied fireproofing)
6) Structural Observation Reports from Engineer of Record
7) Special Inspection Agency Final Letter of Approval for Inspection/Testing (Form 4543) or Agency Final Letter
8) Final Letter of Approval from Owner (Form 4544)

DOCUMENTS FOR FINAL INSPECTION (as necessary)
1) Project RFI's
2) City of Chula Vista Checklist for Energy Code and Green Building Code for Field Inspection
3) City of Chula Vista form for Certification of CPVC and PEX piping systems installation
4) Otay Water Meter Certification for Potable water
5) Copy of SDGE Work Order
6) City of Chula Vista Circuit Card (Form4537)
7) Ground Fault Certification (Electrical over 1000A/150V to ground)
8) City of Chula Vista Roof Covering Certification (Form 4534)
9) City of Chula Vista Insulation Certificate (Form 4550)
10) Glue Lam Beam Certification
11) State Elevator Certification
12) Title 24 Energy Code documentation (MECH/LTG and HERS rating)

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Appendix A5: NONRESIDENTIAL VOLUNTARY MEASURES

CATEGORY	ENVIRONMENTAL PERFORMANCE GOAL	TIER 1	TIER 2
All	Minimum Mandatory (See Mandatory Checklist)	Meet all of the provisions of Chapter 5 (See Tier 1 Checklist)	Meet all of the provisions of Chapter 5 (See Tier 2 Checklist)
DIVISION 5.1 Planning and Design	Designated Parking for Fuel Efficient Vehicles	Approx. 10% of total spaces	Approx. 12% of total spaces
	Electric Vehicle Charging	Approx. 8% of total spaces	Approx. 10% of total spaces
	Cool Roof to Reduce Heat Island Effect	Roof Slope < 2:12 SRI 75 Roof Slope > 2:12 SRI 16	Roof Slope < 2:12 SRI 82 Roof Slope > 2:12 SRI 27
		1 additional Elective from Division A5.1	3 additional Electives from Division A5.1
DIVISION 5.2 Energy Efficiency	Energy Performance[2a, 2b]	Outdoor lighting power 90% of Part 6 allowance	Outdoor lighting power 90% of Part 6 allowance
		If applicable, solar water-heating system with minimum solar savings fraction of 0.15	If applicable, solar water-heating system with minimum solar savings fraction of 0.15
		Warehouse door seals	Warehouse door seals
		Comply with day lighting requirements	Comply with day lighting requirements
		Exhaust heat recovery	Exhaust heat recovery
		Energy Budget 95% or 90% of Part 6 calculated value of allowance	Energy Budget 90% or 85% of Part 6 calculated value of allowance
DIVISION 5.3 Water Efficiency and Conservation	Indoor Water Use	12% Savings	20% Savings
		1 additional Elective from Division A5.3	3 additional Electives from Division A5.3
DIVISION 5.4 Material Conservation and Resource Efficiency[3]	Construction Waste Reduction	At least 65% reduction	At least 80% reduction
	Recycled Content	Utilize recycled content materials for 10% of total material cost	Utilize recycled content materials for 15% of total material cost
		1 additional Elective from Division A5.4	3 additional Electives from Division A5.4
DIVISION 5.5 Environmental Quality	Low-VOC Resilient Flooring	90% of flooring meets VOC limits	100% of flooring meets VOC limits[1]
	Low-VOC Thermal Insulation	Comply with VOC limits	Install no-added formaldehyde insulation and comply with VOC limits
		1 additional Elective from Division A5.5	3 additional Electives from Division A5.5
Additional Measures		1 additional Elective from any division	3 additional Electives from any division
Approximate Total Measures		15	25

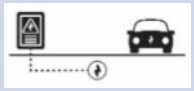
CalGreen Tier 1 and 2

There are voluntary packages of above minimum green practices, called Tiers. These **include all the mandatory** CALGreen measures **plus additional required practices**, and a set number of **optional measures**

Appendix A5: NONRESIDENTIAL VOLUNTARY MEASURES

Electric Vehicles Tier 1

Increase quantity and/or increase equipment infrastructure

EV Capable		Raceway (conduit), electrical capacity (breaker space)
EV Ready		Raceway (conduit), electrical service capacity, overcurrent protection devices, wire, and suitable termination points such as junction box (i.e. full circuit)
EV Charger Installed		All the equipment needed to deliver electrical energy from an electricity source to a Plug-in Electric Vehicle (PEV's) battery

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION
DIVISION 5.1 Planning and Design (continued)	Mandatory	Storm water pollution prevention for projects that disturb less than 1 acre of land	5.106.1 through 5.106.2
	Mandatory	Short-term bicycle parking	5.106.4.1.1
	Mandatory	Long-term bicycle parking	5.106.4.1.2 through 5.106.4.1.5
	Mandatory	Designated parking for clean air vehicles	5.106.5.2
	Tier 1 Prerequisite	*Designated parking—10% of parking capacity w/ parking stall markings and stall identification*	*A5.106.5.1, A5.106.5.1.1, A5.106.5.1.3, A5.106.5.1.4*
	Mandatory	Parking stall marking	5.106.5.2.1
	Mandatory	Single charging space requirements	5.106.5.3.1
	Mandatory	Multiple charging space requirements [N]	5.106.5.3.2
	Tier 1 Prerequisite	*Electric vehicle (EV) charging [N] w/ associated electrical panel identification and designated parking allowance*	*A5.106.5.3, A5.106.5.3.1, A5.106.5.3.3, A5.106.5.3.4*
	Mandatory	EV charging space calculation [N] (with exceptions)	5.106.5.3.3
	Mandatory	[N] Identification	5.106.5.3.4
	Mandatory	[N] Future charging spaces	5.106.5.3.5
	Mandatory	Light pollution reduction [N] (with exceptions and notes)	5.106.8
	Mandatory	Grading and paving (exception for additions and alterations not altering the drainage path)	5.106.10
	Tier 1 Prerequisite	*Cool roof (A5.106.11.2.2): SRI 75 when ≤ 2:12, SRI 16 when > 2:12*	*A5.106.11.2*

(continued)

Appendix A5: NONRESIDENTIAL VOLUNTARY MEASURES

Example of Tiering

Mandatory

Tier Prerequisite

Tier Elective

DIVISION 5.2 Energy Efficiency		Mandatory	Meet the minimum Energy Efficiency Standard	*5.201.1*				
		Tier 1 Prerequisite	*Energy Performance Outdoor lighting power 90% of Part 6*	*A5.203.1.1.1*				
		Tier 1 Prerequisite	*If applicable, Service for water heating in restaurants 8,000 sf or greater*	*A5.203.1.1.2*				
		Tier 1 Prerequisite	Energy Budget 95% or 90% of Part 6 calculated value of allowance	*A5.203.1.2.1*				
	SELECT ONE ELECTIVE	*Elective*	*On-site renewable energy w/ documentation*	*A5.211.1 A5.211.1.1*				
		Elective	*Green power*	*A5.211.3*				
		Elective	*Elevators w/ car lights and fan*	*A5.212.1.1 A5.212.1.1.1*				
		Elective	*Escalators w/ controls*	*A5.212.1.2*				
		Elective	*Controls that reduce energy*	*A5.212.1.4*				
		Elective	*Steel framing*	*A5.213.1*				

Chula Vista Green Building Ordinance History

1980 Resource Conservation Commission Launched

2008 Photovoltaic pre-wiring requirements

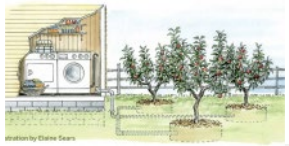
2008 Increased energy efficiency standards

2013 Solar water heating pre-plumbing

2013 Residential graywater stub-out

2013 Shade Tree Policy Number 576-19

Integration of Energy Efficiency into Planning through consideration of emissions in projects



2019 Chapter 15.28.020 Residential graywater stub-out

2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024

CALGreen launched as voluntary program:

Content developed from:

LEED
Collaborative for High Performance Schools
Build It Green, Green Point Rated
ASHRAE 189 (draft) Standard

2010 CALGreen Adopted

2013 CALGreen Adopted

2016 CALGreen Adopted

2019 CALGreen Adopted - more stringent than LEED in Energy and Water Use

2022 CALGreen Under Development

FUTURE BUILDING CODES FOCUSING ON EMISSIONS REDUCTIONS

Chula Vista Green Building Ordinance History

- 2012 Program Highlights

PROGRAM HIGHLIGHTS

- California Energy Code training for plans examiners and building inspectors.
- Reach code adopted at 15-20% higher efficiency than California's Title 24.
- Expedited permitting for CalGreen's Tier 2 (30% more efficient than Title 24).
- Pre-wiring/plumbing required for solar electric and solar thermal systems.
- Updated guidelines for Air Quality Improvement Plans for large projects.
- Integration of sustainability considerations into the City's Design Manual.
- Development of site- and community-planning evaluation tools (underway).

Chula Vista has distinguished itself as a local government leader by integrating energy efficiency, green building, and other sustainable planning principles into every aspect of the development design review, project approval, and construction inspection process.

CALGreen 2019
Nonresidential

QUESTIONS?

Thank you for attending.

Information for this presentation was taken from the 2019 California Green Building Standards Code, the Guide to the 2019 California Green Building Standards Code and the CALGreen website: https://www.hcd.ca.gov/building-standards/calgreen/index.shtml