

California Building Energy & Green Code Development

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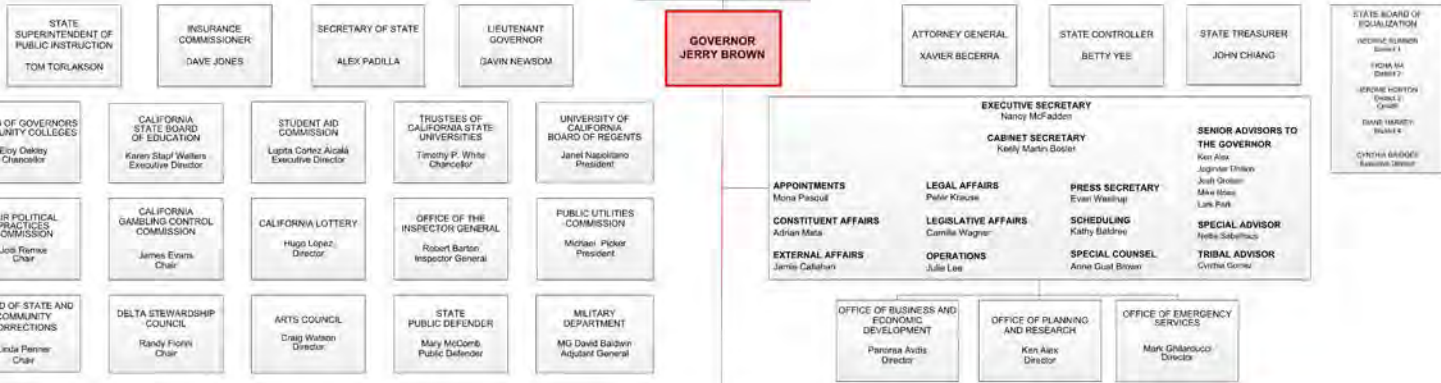
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California Code Adoption Process

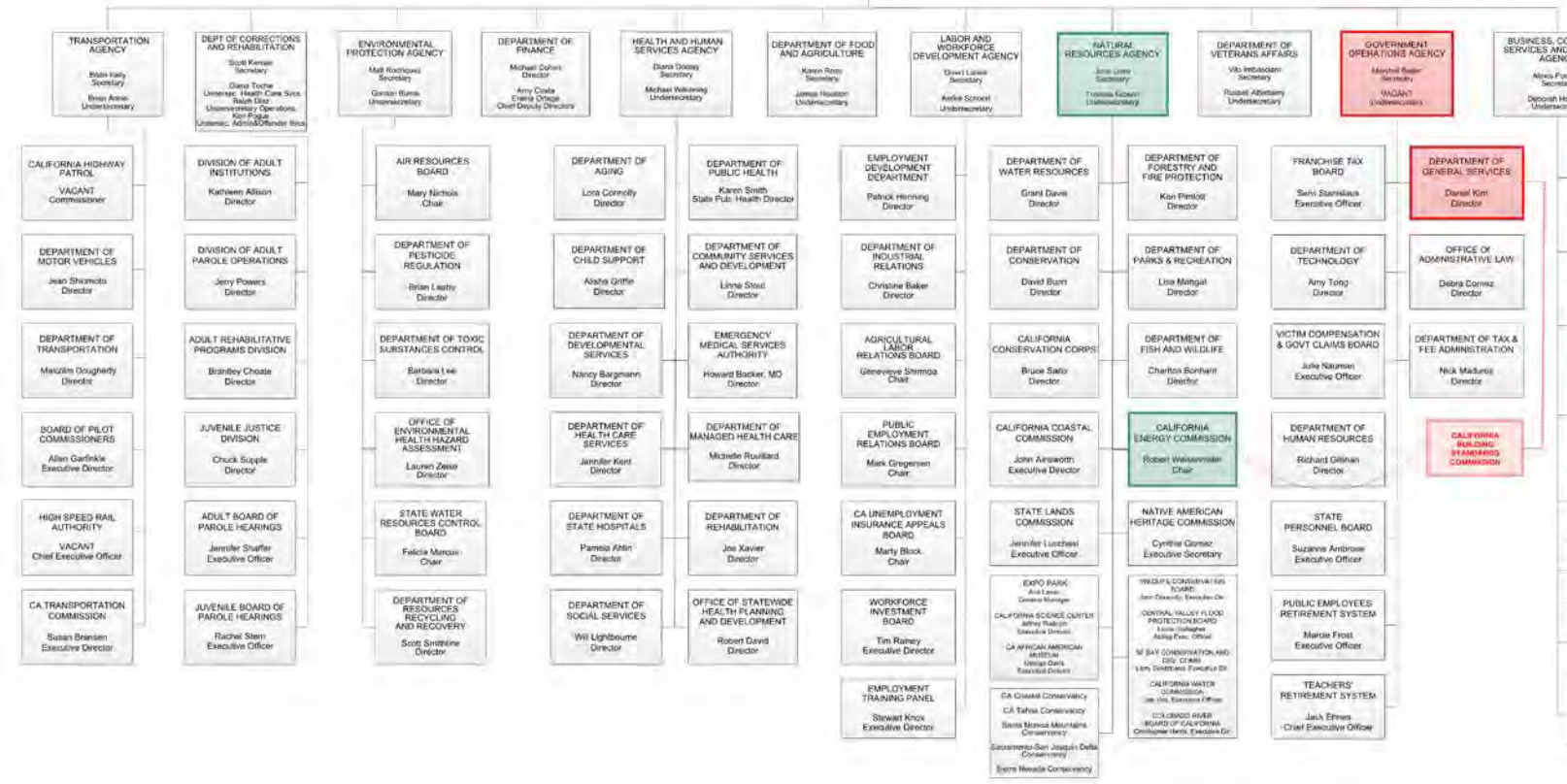
- The power of the California code adoption process rests on several principals:
 - The enabling legislation primarily sets out procedures, not detailed criteria and timelines
 - A key principal of code adoption is that the state code is published every three years – tied to the model code development cycle. The code is kept up to date automatically with the model code process
 - The energy code while developed independently by the California Energy Commission is on the same publication schedule.

CALIFORNIA STATE GOVERNMENT – THE EXECUTIVE BRANCH

PEOPLE OF CALIFORNIA



STATE BOARD OF EQUALIZATION
 MEMBER NUMBER 1
 ELOHA DUBAY
 MEMBER 7
 ELOHA DUBAY
 CHIEF OF STAFF
 ELOHA DUBAY
 MEMBER 4
 ELOHA DUBAY
 MEMBER 5
 ELOHA DUBAY
 MEMBER 6
 ELOHA DUBAY
 MEMBER 8
 ELOHA DUBAY
 MEMBER 9
 ELOHA DUBAY
 MEMBER 10
 ELOHA DUBAY
 MEMBER 11
 ELOHA DUBAY
 MEMBER 12
 ELOHA DUBAY



Building Standards Commission Mission & History

The California Building Standards Commission (CBSC) is within the Department of General Services and is charged in state law with the responsibility to administer the process of approving and adopting building standards for publication in the California Building Standards Code (Title 24 of the California Code of Regulations).

Building Standards Commission History

1949: House Resolution 183 established a panel to study the building code issue. One of the comments in that report was:

The State has no one agency concerned principally with building regulations. There are at least ten state agencies having some degree of authority in this field, and not one of them is responsible for taking the lead in coordinating the activity of all of them. This produces two kinds of confusion - conflict between state agencies themselves and too many kinds of relationships between State and local agencies.

Building Standards Commission History

1953: The State Building Standards Law established a California Building Standards Commission (CBSC) with limited powers to control the building standards regulatory process. CBSC was unsuccessful in its attempts to resolve longstanding problems that made it almost impossible for users of the code to understand and comply with its requirements.

Building standards continued to be located in different titles of the California Administrative Code:

Health in Title 17, Fire Marshal in Title 22, etc.

Building Standards Commission Mission & History

1975

The Warren-Alquist State Energy Resources Conservation and Development Act was based on a legislative finding that the rapid growth rate in the demand for electric energy was in part due to wasteful, uneconomic, inefficient, and unnecessary uses of power.

California Energy Commission

In 1974 the California legislature passed the **Warren-Alquist Act**, establishing the California Energy Commission and authorizing the Commission to establish energy requirements for both residential and commercial buildings. The first statewide energy requirements are established in 1975 by the Department of Housing and Community Development for all low-rise residential buildings.

Building Standards Commission History

1991: AB 47 transferred the adoption authority of the following state agencies to the California Building Standards Commission (CBSC):

- Department of Housing and Community Development (HCD)
- Office of the State Fire Marshal (SFM)
- Office of Statewide Health Planning and Development (OSHPD)
- Office (now Division) of the State Architect (DSA)

Building Standards Commission History

2001-5: This is the era when the controversy over the International Code Council (ICC) model building code and the National Fire Protection Association (NFPA) model building code was unresolved and thus there was no 2001 or 2004 edition of a California Building Code (or related and dependent Title 24 Parts). The California Building Standards Commission continued to believe that the available model building codes were not appropriate replacements for the 1997 Uniform Building Code. This situation continued until the 2007 edition of the California Building Standards Code, in whole, was published.

Building Standards Commission History

2011: The 2010 edition of the California Building Standards Code (Title 24, California Code of Regulations) became effective on January 1, 2011. This edition includes the first ever California Green Building Standards Code (Part 11 of Title 24, CCR). It applies green design and construction standards to most new buildings. Some provisions are voluntary. The nonresidential provisions were developed by the California Building Standards Commission (CBSC) staff while residential provisions were developed by the Department of Housing and Community Development (HCD).

Building Standards Current Commission Organization

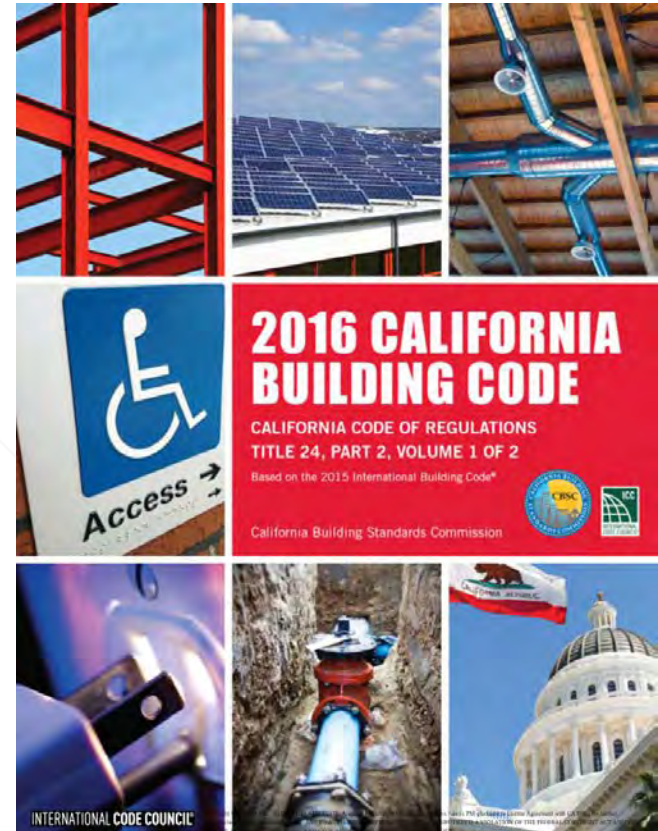
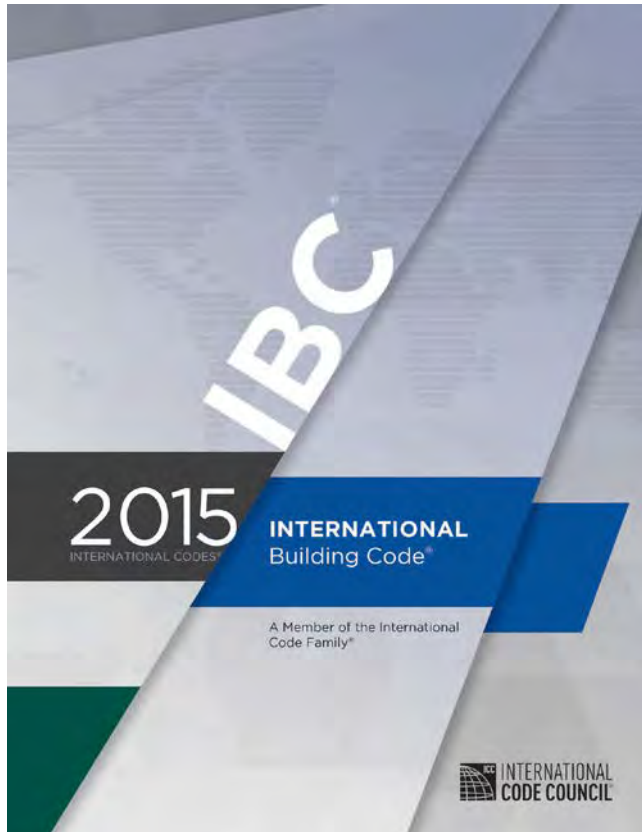
The CBSC has 10 members appointed to 4 year terms by the Governor and confirmed by the state Senate.

The Secretary of the Government Operations Agency is the voting chairperson. Excluding the Chairperson, the appointed membership of the CBSC must include: one architect; one mechanical, electrical or fire protection engineer; one structural engineer; one contractor; one person from organized labor; one local building official; one local fire official; & three members of the general public.

Building Standards Current Commission Organization

Additional overlapping requirements are: 1. At least one member shall have a physical disability as defined. 2. At least one member shall be experienced and knowledgeable in barrier free architecture and sensitive to the requirements necessary to ensure public buildings are accessible to, and usable by, persons with physical disabilities. 3. At least one member shall be experienced and knowledgeable in building energy efficiency standards. 4. At least one member shall be experienced and knowledgeable in sustainable building, design, construction, and operation.

2015 IBC is the Basis for the current 2016 CBC (3 year IBC cycle + 1 year)



CA State Agency Adoptions

Department of Housing and Community Development (**HCD**)

Office of the State Fire Marshal (**SFM**)

Division of the State Architect (**DSA**)

Office of Statewide Health Planning and Development (**OSHPD**)

The California Department of Public Health (**CDPH**)

Department of Industrial Relations, Division of Occupational Safety and Health (**DOSH**)

California Energy Commission (**CEC**)

State Historical Building Safety Board (**SHBSB**)

Department of Food and Agriculture (**AGR**)

Department of Water Resources (**DWR**)

Board of State and Community Corrections (**BSCC**)

California State Library (**CSL**)

Department of Consumer Affairs (**DCA**)

CBSC Advisory Committees

- Accessibility Committee (ACCESS);
- Plumbing, Electrical, Mechanical, and Energy Committee (PEME);
- Building, Fire and Other Committee (BFO);
- Structural Design/Lateral Forces Committee (SD/LF);
- Health Facilities Committee (HF);
- Green Building Committee (GREEN).

Other California Codes - the “Tossed Salad”

2016 California Codes are based upon:

2015 International Building Code – ICC

Chapters 1-10 of the 2015 International Residential Code =
2016 California Residential Code - ICC

2015 International Fire Code – ICC

2015 International Existing Building Code – Partial
Adoption to replace deleted IBC Chapter 34 - ICC

2014 National Electrical Code – NFPA

2015 Uniform Mechanical Code + Residential - IAPMO

2015 Uniform Plumbing Code + Residential – IAPMO

2016 Energy Code – California Energy Commission

2016 CALGreen California Green Building Standards Code –
now applies to alterations as well as new construction

ICC Code Committees and California

[A] = Administrative Code Development Committee;

[BE] = IBC - Means of Egress Code Development Committee;

[BF] = IBC - Fire Safety Code Development Committee;

[BG]= IBC- General Code Development Committee;

[BS] = IBC - Structural Code Development Committee;

~~[E] = International Energy Conservation Code Development Committee
(Commercial Energy Committee or Residential Energy Committee, as
applicable);~~ **CA Energy Commission Building Performance Standards**

[EB] = International Existing Building Code Development Committee;

[FI] = International Fire Code Development Committee;

~~[FG] = International Fuel Gas Code Development Committee; “U” Code~~

~~[MI] = International Mechanical Code Development Committee; “U” Code~~

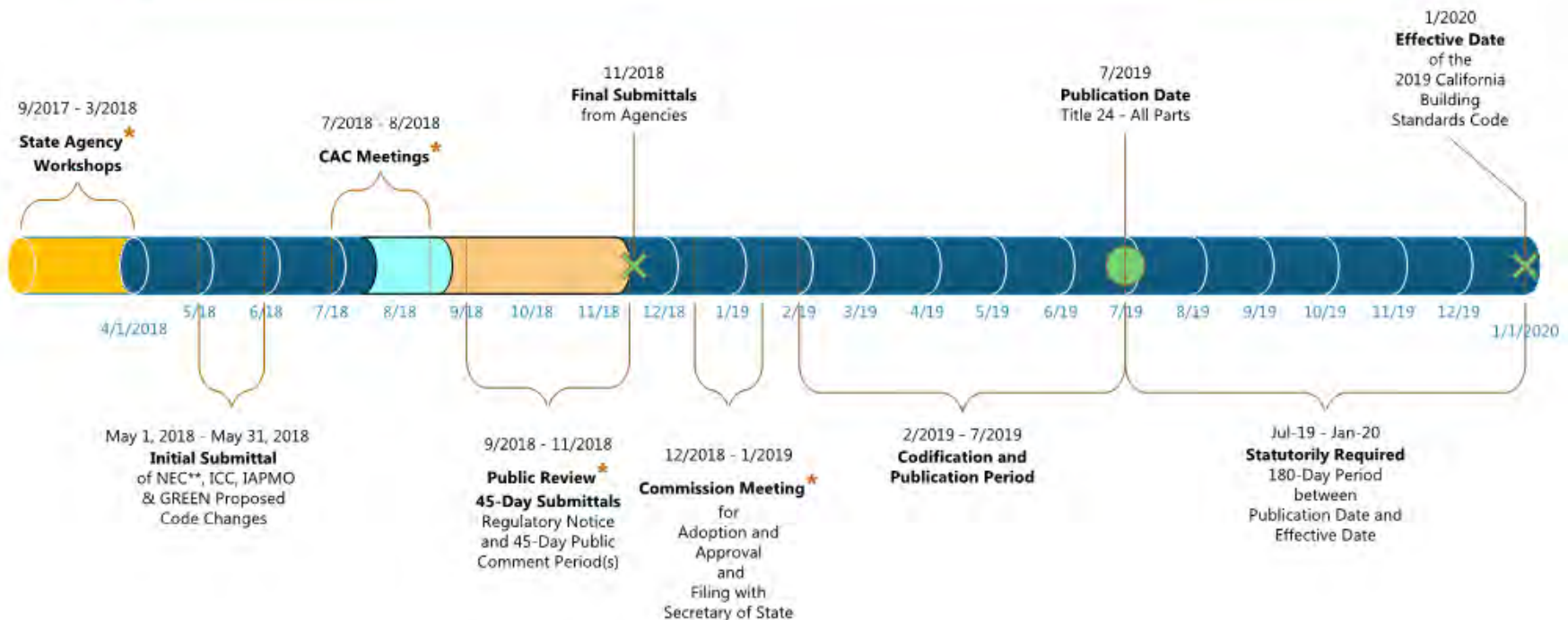
~~[PI] = International Plumbing Code Development Committee. “U” Code~~

Building Standards Commission Adoption Cycle

2019 California Building Standards Code, Title 24

Effective January 1, 2020

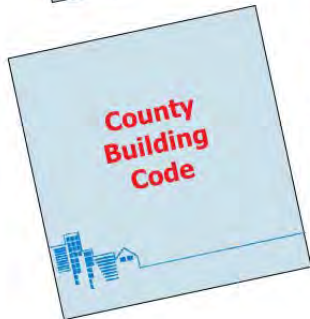
2018 Triennial Code Adoption Cycle



Building Standards Local Adoption & Amendments

Guide for Local Amendments of Building Standards

This guide provides information for local government and Fire Protection Districts on the requirements of state law for local amendments to building standards.



July 2016



An educational publication from the
California Building Standards Commission
Available at www.bsc.ca.gov

Local Government

Enforcement: Except for building occupancies subject to state agency enforcement, local government must enforce Title 24 as published by the CBSC. Examples of buildings subject to state enforcement include hospitals, prisons, state government buildings, University of California buildings, California State University buildings, and Community College buildings.

Building Standards Local Adoption & Amendments

Code by Default: The majority of local governments adopt the published Title 24 by reference in local ordinances. This is commonly called an adoption ordinance. If local government does not adopt Title 24 by local ordinance, Title 24 is the applicable code by default. Title 24 applies throughout the state and to all building occupancies, whether or not the local government adopts.

Local Amendments under the California Building Standards Law:

Health and Safety Code Sections 18941.5, with reference to HSC Section 17958.7, allows for more restrictive local amendments that are reasonably necessary because of local climatic, geological, or topographical conditions. Section 101.7.1 of Part 11 of Title 24, known as the California Green Building Standards Code, provides that local climatic, geological, or topographical conditions include environmental conditions established by the city, county, or city and county.

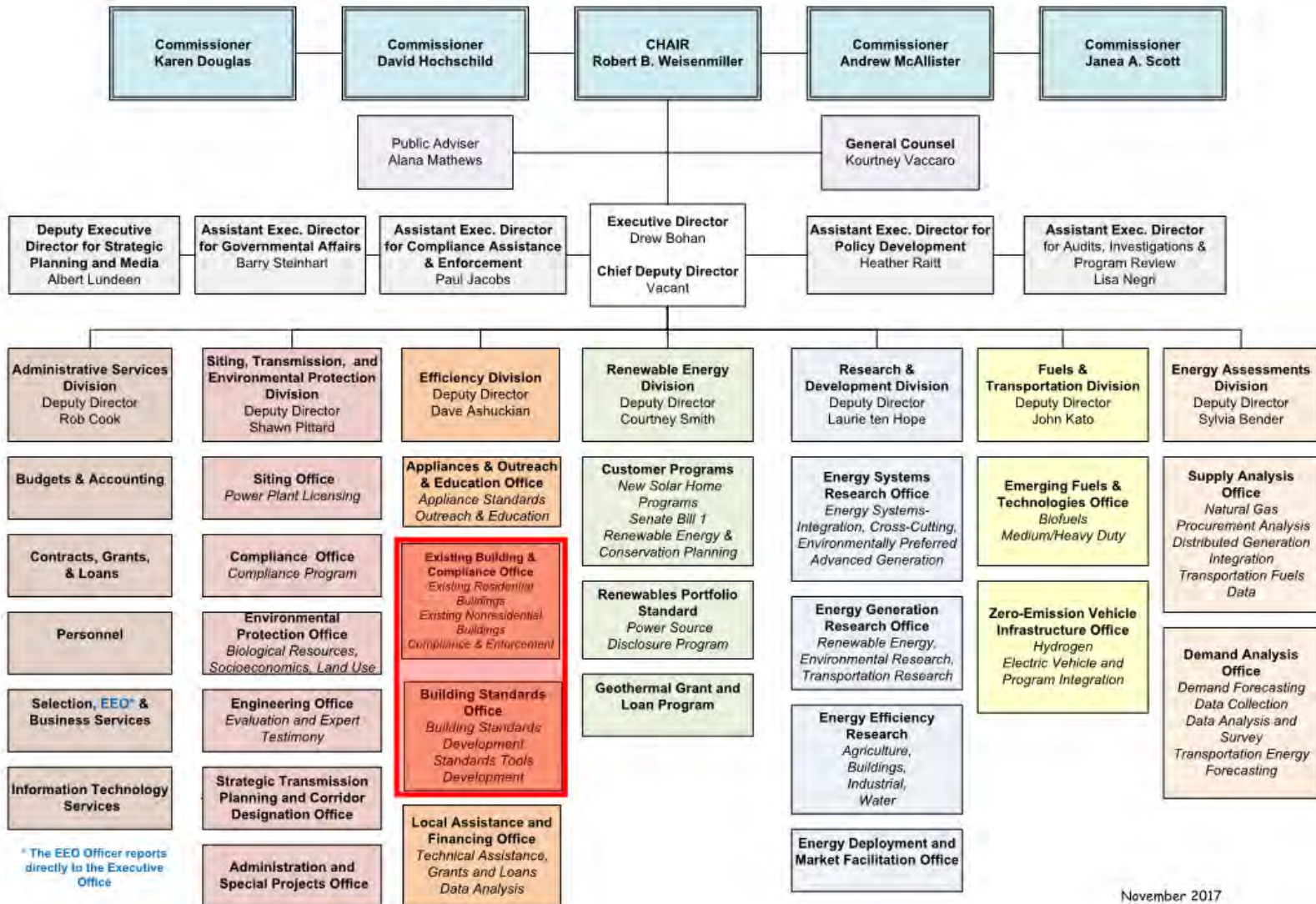
California Energy Commission

Commissioners at the California Energy Commission

The governor appoints, with Senate confirmation, five commissioners to staggered five-year terms. The commissioners must come from and represent specific areas of expertise: law, environment, economics, science/engineering, and the public at large.

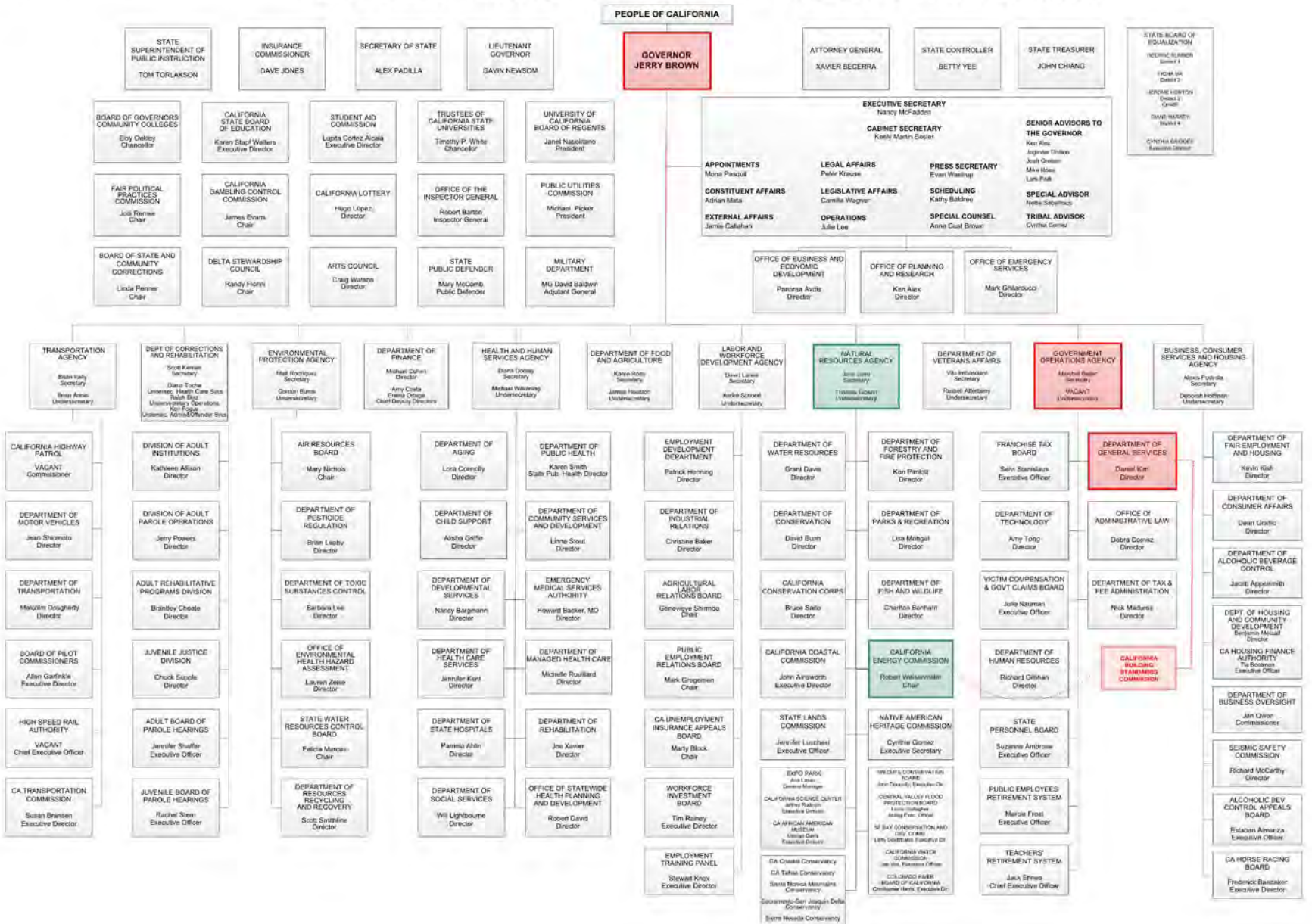
California Energy Commission

Organizational Chart for the California Energy Commission



* The EEO Officer reports directly to the Executive Office

CALIFORNIA STATE GOVERNMENT – THE EXECUTIVE BRANCH



California Energy Code

- The California Energy Code (CEC), part 6 of the California Building Standards Code which is title 24 of the California Code of Regulations, also titled The Energy Efficiency Standards for Residential and Nonresidential Buildings, were created by the California Building Standards Commission in 1978 in response to a legislative mandate to reduce California's energy consumption.
- The CEC is developed by the California Energy Commission and is **not** based on any ASHRAE Standards or on the International Energy Conservation Code

California Energy Code Scoping

§ 25130. Nonresidential building

“Nonresidential” building means any building which is heated or cooled in its interior, and is of an occupancy type other than **Type H, I, or J**, as defined in the Uniform Building Code, 1973 edition, as adopted by the International Conference of Building Officials.

1973 UBC

~~H = hotels and apartment house~~

~~I = Dwellings and lodging houses~~

~~J = Private garages and carports~~

California Energy Code Scoping

§ 25131. Residential building

“Residential building” means any hotel, motel, apartment house, lodging house, single- and dwelling, or other residential building which is heated or mechanically cooled.

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



DIV 5.1 PLANNING AND DESIGN

SITE DEVELOPMENT

- STORM WATER POLLUTION PREVENTION BMP
- BICYCLE PARKING
- DESIGNATED PARKING
- SINGLE ELECTRIC VEHICLE (EV) CHARGING SPACE REQUIREMENTS
- MULTIPLE ELECTRIC VEHICLE (EV) CHARGING SPACE REQUIREMENTS
- EV CHARGING CALCULATION

- IDENTIFICATION WITH FUTURE CHARGING DESIGNATED SPACES
- LIGHT POLLUTION REDUCTION
- GRADING AND PAVING



DIV 5.3 WATER EFFICIENCY AND CONSERVATION

INDOOR WATER USE

- SEPARATE WATER SUBMETERS FOR SUBSYSTEMS
- PRESCRIPTIVE REDUCED FLOW RATES FOR WATER CLOSETS SHOWERHEADS
- WALL MOUNTED URINALS (VIA 2015 EMERGENCY)
- FAUCETS AND FOUNTAINS ADDED PRESCRIPTIVE ONLY FLOW RATES FOR FIXTURES IN SECTION 5.303.3.4
- PLUMBING FIXTURES AND FITTINGS (STANDARDS)

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



OUTDOOR WATER USE

***ADDED VIA 2015 EMERGENCY REGULATIONS**

- 5.304.1 SCOPE (PREVIOUSLY WATER BUDGET)
- 5.304.2 OUTDOOR LANDSCAPE AREAS ≥ 500 FT² (PREVIOUSLY WATER BUDGET)
- 5.304.3 OUTDOOR WATER USE IN REHABILITATED LANDSCAPE PROJECTS $\geq 2,500$ FT² (PREVIOUSLY IRRIGATION DESIGN)
- 5.304.4 OUTDOOR WATER USE IN LANDSCAPE AREAS ≤ 2500 FT² (**NEW SECTION**)
- 5.304.5 GRAYWATER OR RAINWATER USE IN LANDSCAPE AREAS < 2500 FT² (**NEW SECTION**)

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



**DIV 5.4 MATERIAL CONSERVATION AND
RESOURCE EFFICIENCY**

**WATER RESISTANCE AND MOISTURE
MANAGEMENT**

- WEATHER PROTECTION
- MOISTURE CONTROL
- ENTRIES AND OPENINGS

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



**DIV 5.4 MATERIAL CONSERVATION AND
RESOURCE EFFICIENCY**
**CONSTRUCTION WASTE REDUCTION,
DISPOSAL AND RECYCLING**

- CONSTRUCTION WASTE REDUCTION OF 50%
 - WASTE MANAGEMENT PLAN
 - WASTE MANAGEMENT COMPANY
 - WASTE MANAGEMENT ALTERNATIVE
 - DOCUMENTATION
-
- EXCAVATED SOIL AND LAND CLEARING DEBRIS

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



**DIV 5.5 ENVIRONMENTAL QUALITY
POLLUTANT CONTROL**

- FIREPLACES
- TEMPORARY CONSTRUCTION VENTILATION
- FINISH MATERIAL POLLUTANT CONTROL
 - CARPET SYSTEMS
 - COMPOSITE WOOD PRODUCTS
 - RESILIENT FLOORING SYSTEMS
- FILTER REQUIREMENTS FOR SMALL H.E. DUCTLESS UNITS

**INDOOR AIR QUALITY
INDOOR MOISTURE CONTROL**

- INDOOR AIR QUALITY**
- OUTDOOR AIR DELIVERY
 - CO₂ MONITORING

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



BUILDING MAINTENANCE AND OPERATION

- RECYCLING BY OCCUPANTS
- BUILDING COMMISSIONING FOR NEW BUILDINGS 10,000 FT² AND OVER
- OPR AND BOD
- TESTING AND ADJUSTING FOR BUILDINGS LESS THAN 10,000 FT²

**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES**



ENVIRONMENTAL COMFORT

- ACOUSTICAL CONTROL
- EXTERIOR NOISE TRANSMISSION FOR BOTH PRESCRIPTIVE AND PERFORMANCE METHODS

OUTDOOR AIR QUALITY

OZONE AND GREENHOUSE GAS REDUCTION

SUPERMARKET REFRIGERANT LEAKAGE
REDUCTION FOR RETAIL FOOD STORES
8,000 FT² OR MORE
REFRIGERANT PIPING

VALUES

REFRIGERATED SERVICES CASES

REFRIGERANT RECEIVERS

PRESSURE TESTING

EVACUATION

Thanks for your Time!

Any Questions??