



## Legislation Details (With Text)

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**File created:** 10/9/2019 **In control:** Permit and Resource Management  
**On agenda:** 11/12/2019 **Final action:**  
**Title:** 2:00 P.M. - Building and Fire Code Amendments  
**Sponsors:** Permit and Resource Management  
**Indexes:**  
**Attachments:** 1. 01.SUMMARY.Building and Fire Code Amendments.pdf, 2. Attachment A-Board Resolution.pdf, 3. Attachment B-Draft Fire Code Ordinance.pdf, 4. Attachment C-Draft Building Code Ordinance.pdf, 5. Attachment D-Draft Notice of CEQA Exemption.pdf, 6. WORD VERSION Attachment C-Draft Building Code Ordinance.pdf

Date	Ver.	Action By	Action	Result
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**To:** Sonoma County Board of Supervisors  
**Department or Agency Name(s):** Permit and Resource Management Department  
**Staff Name and Phone Number:** Nathan Quarles, 565-1146  
**Vote Requirement:** Majority  
**Supervisory District(s):** Countywide

**Title:**  
**2:00 P.M. - Building and Fire Code Amendments**

### Recommended Action:

- Conduct a public workshop to consider the proposed changes to the state model code updates for building and fire safety. In addition, consider other possible local regulations that reach beyond the state codes such as requiring all electric appliances or construction (REACH Codes).
- Adopt a Resolution introducing, reading the title of, and waiving further reading of proposed Ordinances Amending Chapters 7 and 13 of the Sonoma County Code, and Direct the Clerk of the Board to set a Public Hearing for November 18, 2019, to consider adoption of the ordinances, accepting by reference the 2019 edition of the California model codes with local amendments.

### Executive Summary:

This action is to make amendments to Chapters 7 and 13 of the Sonoma County Code (SCC) to address changes to the California Code of Regulations, Title 24, Parts 1-12, commonly referred to as the "model codes", which govern the design and construction of structures and the maintenance of life safety systems within structures for fire prevention. The model codes were amended and adopted in January of this year. The State of California, as required, subsequently published the documents within 180 days (July 1, 2019). Each local jurisdiction then has 180 days to make any local amendments pertinent to the jurisdiction. The effective date of those local amendments must coincide with effective date of the model codes which is January 1, 2020. Local amendments must be provided to the California Building Standards Commission along with findings upon adoption of the ordinance. Local amendments are permitted if reasonably necessary due to

local climatic, geographical, and topographical conditions. The proposed ordinances represent adoption of the model codes with local amendments, as well as other technical and administrative revisions to Chapters 7 and 7A and Chapter 13.

This agenda item also includes a discussion on REACH codes or regulations that exceed the State model codes. The most prominent being energy codes, however, the concept of REACH codes can apply to fire prevention. Energy REACH codes vary by jurisdiction with the main components being higher energy efficiency construction, 100% electric dwellings, a photovoltaic (PV) system matching the energy needs of the dwelling and a battery backup system to match the dwelling. There is a desire to work with local stakeholders and for the Board to consider the variety of options to find the best fit for unincorporated Sonoma County. Upon receiving direction, staff can return to the Board and make recommendations about how to proceed.

The building codes and REACH codes are approved by two different state agencies and local adoption can be independent of each other. The building codes are mandatory with a hard deadline of January 1, 2020. The REACH codes are voluntary with no mandated deadline. Local jurisdictions have flexibility both in the scope and in the timing for adopting REACH codes.

#### **Discussion:**

#### **Sonoma County Code Chapter 7 - Building Regulations**

#### **Model Codes:**

The International Code Council (ICC) revises and publishes model building codes on a three year cycle. The State of California amends the ICC codes and various state agencies adopt the model codes also in a three-year cycle, but roughly six months behind ICC.

The model codes include main branches of construction such as the building code, fire code, residential, plumbing, mechanical, and electrical codes. Also included are model codes dealing with energy consumption and efficiency, green building and waste reduction, historic buildings and existing buildings. The formal names include the California Building Code, the California Fire Code, etc.

The California Building Standards Code was published on July 1, 2019, and local jurisdictions are obligated to implement the State codes, as adopted by the State within 180 days after State publication. Local jurisdictions can make local amendments that are equal to or more stringent, but local jurisdictions cannot relax the State codes. The State codes go into effect January 1, 2020, regardless of local amendments. As such, any local amendments must be in effect before the January 1, 2020 deadline. Amendments or changes to the model codes are administered by the State's Building Standards Commission.

During this code cycle there has been interest to have local jurisdictions adopt energy codes that exceed the model energy codes. These are referred to as REACH codes. Any modifications or exceedances of energy codes, such as the REACH codes, have a separate approval process administered by the California Energy Commission. REACH codes can be reviewed by local jurisdictions in concert with the State's model codes or at any time chosen by the local jurisdiction. There is no mandate to adopt REACH codes, nor is there a mandate as to when to adopt REACH codes. Local jurisdictions have tremendous flexibility on the content and timing of REACH codes, provided any amendments meet the minimum of the 2019 California Energy Code.

#### **Model Code Changes:**

In each code cycle we see many changes based on what has been learned in the previous three years. The changes run the gambit of minor to significant changes. In this code cycle the most significant change is within

the California Energy Code and is the requirement for all new residential structures to have photovoltaic (PV) solar panels. The Energy Code sets out a formula to size the photovoltaic system. This formula is based on the floor area of the dwelling, the number of dwellings and the climate zone where the dwelling is being constructed. The climate zones are set by zip codes.

Sonoma County has 51 zip codes and 40 of these are in climate zone 2. Climate zone 1 consists of the coastal areas. The table below presents the sizes of the required PV systems in kilowatts based on floor area and climate zone.

Conditioned Floor Area in square feet	1,000	2,000	3,000	1,500
Climate Zone 1	2.1	2.9	3.6	2.5
Climate Zone 2	1.8	2.5	3.1	2.1
County Average	1.9	2.5	3.2	2.2
Cost (average)	\$9,400	\$12,700	\$16,000	\$11,000

A rough cost estimate is approximately \$3-4 per watt installed. The cost of compliance for this one new regulation for a 1,500 square foot home (average size home in California) in climate zone 1 is approximately \$7,500 to \$10,000. It should be noted this regulation undersizes PV systems relative to average demands. The electrical demand for the average California home is approximately 560 kW-hours per month whereas a 2.5 kW PV system will generate approximately 375 Kw-hours per month averaged over a year.

The 2016 model codes required that dwellings be made “solar ready”. The 2019 requirement to purchase and install the PV system is an additional cost relative to the 2016 model codes.

## **Sonoma County Code (SCC): Adoption of Model Codes and Local Amendments**

### **SCC section 7-13; Adoption of Model Codes**

**Section 7-13** is the section of our local code utilized to adopt and recognize the California model codes. This item proposes to update SCC Section 7-13 to recognize the 2019 versions of the model codes. In addition, staff propose to amend the model codes relative to specific administrative provisions such as the time limit of building applications and permits, projects that are exempt from needing a building permit, appeals, definitions, and to ensure the building codes are consistent with the fire code. Since 2010 there has been a long standing exemption to fire sprinklers in accessory and U occupancies 3000 square feet and less. This has been extended to other occupancies to allow for greater water supplies and cost savings to property and business owners. It is not cost effective for structures less than 3000 to be equipped with sprinklers due to the regulations on fire pumps.

### **SCC Section 7-7; Agricultural Exemptions:**

Section 7-7 allows for agricultural structures to be exempted from needing a building permit. This item proposes to add an additional criterion for a structure to be eligible for this exemption. The proposed criterion is that the structure is to not have been constructed before applying for either a building permit or before applying for an exemption.

### **SCC Section 7-12; Building permits in water scarce area:**

Section 7-12 regulates when and under what circumstances dwelling units can be constructed in water scarce areas three and four, the most limited water zones. The proposed edits are intended to clarify the existing language regarding the use of easements within zone three and zone four. This proposal does not create a new

regulation nor relaxes existing regulations. This is a state definition. The amendment is to allow for the proper identification and requirement to apply sprinklers in remodels and additions. The Table located in chapter 9 of the fire code has not changed and is still applied to remodels of greater than 75% to be retrofitted with the life safety system.

### **Sonoma County Code Chapter 13 -Sonoma County Fire Safety Ordinance**

#### **Fire Hardening:**

The Permit Sonoma, Fire Prevention Division has fire code authority for all new residential construction in the unincorporated areas and for most new commercial construction, which was delegated to the County's Fire Prevention Division by the fire districts (Section 13-15), and has authority for both residential and commercial construction within County Service Area #40 (CSA #40). Each fire district within Sonoma County is responsible for enforcing the fire code for existing business occupancies. Several fire districts contract with the County's Fire Prevention Division to perform inspection and enforcement services (Schell-Vista Fire Protection District FPD, Graton FPD, Occidental FPD, and Timber Cove FPD). Incorporated cities are responsible for adopting and enforcing their own fire and building codes for both residential and commercial buildings. Additionally, Sonoma County Fire Prevention Division is responsible for review and inspections required by Title 14 of the Natural Resources Code, Division 1.5, Chapter 7, Subchapter 2, as delegated by the California Department of Forestry and Fire Protection, for all new construction located in the State Responsibility Area (SRA).

Permit Sonoma Fire Prevention and Building Division staff worked with a core group of fire service agencies to make local amendments to the California Fire Code. The fire service agencies included representatives from: Sonoma Valley Fire and Rescue Authority, Santa Rosa Fire Department, Petaluma Fire Department, Rohnert Park Department of Public Safety, Sebastopol Fire Department, Healdsburg Fire Department, and a fire district representative. Several meetings were conducted for all interested persons over a period of eight months. By undertaking this collaborative effort, all jurisdictions within the county will have essentially the same language contained in their fire codes, thus creating uniformity among all fire codes within the county.

The only impact and noticeable changes from previous 2016 code is Substantial Improvement definition which has been adopted by the state and is amended based on square feet. This is only intended to apply the county ordinance of residential and commercial fire sprinklers when the substantial improvement is over 75%. All other previous required retrofit percentages have not changed since 2010. Cannabis regulations have been carried over from 2016 code and do not have any additional regulatory requirements other than what is required by state model codes. Fire Safe Standards have been updated by Board of Forestry. The purpose to the changes was to bring the previous version up to model language. The language proposed in roads and driveways is more restrictive in that existing private roads and private driveways will now have required improvements such as turnouts and turnarounds when buildings are being rebuilt or have a change in use. Fireworks was amended from previous 2016 to include the ability for the Fire Marshal / Fire Warden to not allow for pyrotechnic displays in a fire district jurisdiction when the County Fire Marshal / Fire Warden believes that the display will propose a threat to life and property based on weather and topographical conditions or when located in the State Responsibility Area.

#### **Vegetation Management:**

In September 2018, Permit Sonoma staff submitted the "Wildfire Adopted Sonoma County: Education and Incentives for Safe & Resilient Communities" project for funding under the FEMA Hazard Mitigation Grant Program (HMGP).

When awarded, this \$6.7 million dollar grant project will provide funding to the County of Sonoma for proactive vegetation management inspections for Defensible Space, and free Structure Hardening assessments. Structure Hardening assessments will identify building elements that make homes vulnerable to wildfire ignition, and prioritize “retrofit” solutions, such as the installation of ember resistant vent products, roofing upgrades, or windows better able to withstand heat exposure. The grant includes “incentive” funding for property owners to carry out recommended improvements.

Grant inspections and building assessments will provide us with data to assist in making informed decisions about code adoption modifications that could exceed construction standards currently in California Building Code Chapter 7A Wildland Urban Interface (WUI).

### **Exceeding Model Codes**

#### **REACH Codes -- General:**

Whether discussing energy production or efficiency, green building codes and waste reduction or reuse, building codes and safety or fire codes and fire resiliency, the conversation tends towards cost of compliance and the cost-benefit of the new codes. Given that local jurisdictions can exceed the State’s model codes, local jurisdictions often wrestle with re-drawing the cost-benefit line.

A good example has been building codes to protect structures during earthquakes. Today’s building codes are designed to prevent a catastrophic structural failure, i.e. collapse, and to minimize fatalities. They are not intended to prevent structural damage. While the occupants may survive a significant earthquake, structures will likely sustain structural damage. Local jurisdictions can decide to increase the building codes and require construction above the State model codes, in this case to ensure the structure sustains minimal damage. The consequence is the increased cost of construction, with the benefit being that the structure will not sustain structural damage and the owner will not incur the cost of rebuilding. This concept applies to seismic codes, energy efficiency, fire hardening or almost any genre of codes in effect today.

#### **REACH Codes -- Energy:**

Current energy codes require structures to be “solar ready”. The 2019 energy codes require PV systems sized pursuant to a published formula. Local jurisdiction have the ability to adopt additional requirements beyond the 2019 energy code, i.e. REACH codes. Three main provisions typified by the REACH codes are 1) 100% electric homes, 2) PV systems sized to match the estimated electrical demand based on the individual dwelling, and 3) battery backup sized to match the PV system.

These provisions add to the cost of construction, however costs are recovered over time. There are many assumptions and variables that go into evaluating costs and savings. Some of these include the number of people in a given house, their behavior, the orientation of the dwelling as related to the sun, shading from trees and other structures, cost and longevity of electric appliances versus gas appliances, and the cost of the utility connection for gas services (a savings). The cost of PV systems under REACH codes is roughly double that of the 2019 Energy Codes. The cost of one battery backup ranges from \$7,600 for a Tesla Powerwall to \$10,000 for a Sonnen Powerwall, plus \$2,500 to \$4,500 for installation. Just accounting for the solar and battery components, the REACH codes represent at least a \$20,000 cost increase over the 2019 energy model codes.

The number of new dwellings potentially affected by REACH codes in the unincorporated County is estimated to be 185 dwelling structures annually. This is the average number of primary dwellings over the last 20 years.

In the last year, the number of permits for dwelling structures is 151 permits.

**Options:**

**No Action:** In the absence of a local jurisdiction adopting the State's model codes and/or local amendments to the State's model codes, the State model codes go into effect January 1, 2020.

**Adopt Model Codes with Local Amendments:** The Board can adopt the proposed ordinances for modifications to SCC Chapter 7 and for modifications to SCC Chapter 13. The proposed ordinances modify specific provisions of the State's model codes as discussed above. Upon submittal to the State, these ordinances will be reviewed by the State's Building Standards Commission.

**Exceed State Model Codes:** The Board can adopt regulations that exceed the State's model codes in almost any genre of regulations - structural, energy, fire hardening - provided these do not relax the State's model codes.

**Adopt REACH Codes:** The Board can adopt REACH codes specifically for energy consumption. The Board has great flexibility in terms of energy efficient appliances, insulation requirements, mandating 100% electric homes, requiring a specific amount of solar PV panels and/or requiring a specific amount of battery backup systems. The only limitation is any local adoption must be at least equal to the 2019 energy codes.

**Recommendations:**

7-13(A) adopts the model codes; 7-13(B)-(H) are local amendments. Staff recommends adoption of the two attached proposed ordinances: Chapter 7 for the new building codes and local amendments; and Chapter 13 for the fire codes and local amendments.

Staff recommends deferring adoption of additional regulations for fire hardening, vegetation management and energy code. Deferring additional regulations will allow Sonoma County to learn from voluntary approaches associated with grants for fire hardening and vegetation management and as well as from implementation of the REACH Codes experienced by other jurisdictions.

**Prior Board Actions:**

11/01/2016: The Board adopted revisions amending Chapter 7, 7A, 7C and 7D

11/01/2016: The Board adopted Resolution #16-0417

10/20/2015: The Board adopted revisions amending Chapter 7

11/05/2013: The Board adopted revisions amending Chapter 7 and 7D2

11/05/2013: The Board adopted revisions amending Chapter 13

11/02/2010: The Board adopted revisions amending Chapter 7 and 7A

05/04/2010: The Board adopted revisions amending Chapter 13

**FISCAL SUMMARY**

**Narrative Explanation of Fiscal Impacts:**

There are no known fiscal impacts

**Narrative Explanation of Staffing Impacts (If Required):**

There are no known staffing impacts

**Attachments:**

Attachment A-Board Resolution

Attachment B-Draft Fire Code Ordinance

Attachment C-Draft Building Code Ordinance

Attachment D-Draft CEQA Exemption

**Related Items “On File” with the Clerk of the Board:**

Fire Code Ordinance Amendment-Redlined

Building Code Ordinance Amendment-Redlined