


City of Calistoga

Staff Report

TO: Honorable Mayor and City Council
FROM: Clif Castle, Contract Building Official
Steve Campbell, Fire Chief
VIA: Charlene Gallina, Planning & Building Director
DATE: November 3, 2010
SUBJECT: 2010 California Building Standards Code Adoption

APPROVAL FOR FORWARDING:



William C. Norton, Interim City Manager

1
2 **REQUEST:** Consideration of an Ordinance, initiated by the City of Calistoga, repealing
3 Title 15, California Building Standards specifically, Chapters: 15.01 General Provisions,
4 15.04 Administrative Code, 15.08 California Building Code, 15.12 California Electrical
5 Code, 15.16 California Mechanical Code, 15.20 Uniform Plumbing Code, 15.24 California
6 Energy Code, 15.28 California Historical Building Code, 15.32 California Fire Code, 15.36
7 California Existing Building Code, 15.40 California Reference Standards, 15.44 Uniform
8 Code for the Abatement of Dangerous Buildings, and 15.48 Uniform Housing Code of the
9 Calistoga Municipal Code, and adopting the 2010 California Building Standards Code, Title
10 24, as adopted by the California State Building Standards Commission.

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12 **RECOMMENDATION:** Adopt Ordinance No. 672.

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14 **BACKGROUND/DISCUSSION:** On October 19, 2010, the City Council held a public
15 hearing to consider an Ordinance adopting the 2010 California Building Standards Code.
16 Following staff's presentation, public comment and Council discussion, the Council took
17 action to introduce an Ordinance establishing a new set of Building and Fire Standards for
18 Calistoga.

19
20 **FISCAL IMPACT:** The adoption of the 2010 California Building Standards Codes and the
21 related family of codes will not have a fiscal impact on the City.

22
23 **ATTACHMENT:**
24 1. Final Ordinance

ORDINANCE NO. 672

1 AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CALISTOGA, COUNTY OF
2 NAPA, STATE OF CALIFORNIA, REPEALING TITLE 15, CALIFORNIA BUILDING
3 STANDARDS, SPECIFICALLY, CHAPTERS: 15.01 GENERAL PROVISIONS, 15.04
4 ADMINISTRATIVE CODE, 15.08 CALIFORNIA BUILDING CODE, 15.12 CALIFORNIA
5 ELECTRICAL CODE, 15.16 CALIFORNIA MECHANICAL CODE, 15.20 UNIFORM
6 PLUMBING CODE, 15.24 CALIFORNIA ENERGY CODE, 15.28 CALIFORNIA
7 HISTORICAL BUILDING CODE, 15.32 CALIFORNIA FIRE CODE, 15.36 CALIFORNIA
8 EXISTING BUILDING CODE, 15.40 CALIFORNIA REFERENCE STANDARDS, 15.44
9 UNIFORM CODE FOR THE ABATEMENT OF DANGEROUS BUILDINGS, AND 15.48
10 UNIFORM HOUSING CODE OF THE CALISTOGA MUNICIPAL CODE, AND ADOPTING
11 THE 2010 CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, AS ADOPTED BY
12 THE CALIFORNIA STATE BUILDING STANDARDS COMMISSION
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14 **WHEREAS**, the City Council of the City of Calistoga at its regular meeting of
15 _____, 2010 and _____, 2010 considered as one of its items of
16 business, noticed in accordance with Government Code Sections 65090 and 50022.3, this
17 ordinance to be adopted in accordance with Government Code Section 65850;
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19 **WHEREAS**, the California Building Standards Commission completed the adoption
20 and approval of the California Building Standards Code on July 1, 2010;
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22 **WHEREAS**, the International Code Council (ICC) has published these model codes
23 that provide jurisdictions such as the City of Calistoga with a complete set of model
24 building-related regulations for adoption. These model codes are updated approximately
25 every three years to reflect the development of improved building construction techniques;
26

27 **WHEREAS**, the California codes were last adopted on November 6, 2007 when the
28 City Council passed Ordinance No. 646 adopting the 2007 California Building Standards
29 Code and related family of codes;
30

31 **WHEREAS**, the Calistoga Building Standards Advisory and Appeals Board at their
32 meeting of September 30, 2010 considered as one of its items of business staff
33 recommendations on the 2010 California Building Standards Code and recommended
34 approval to the City Council;
35

36 **WHEREAS**, the City Council is hereby repealing Title 15, California Building
37 Standards, specifically Chapters: 15.01 General Provisions, 15.04 Administrative Code,
38 15.08 California Building Code, 15.12 California Electrical Code, 15.16 California
39 Mechanical Code, 15.20 Uniform Plumbing Code, 15.24 California Energy Code, 15.28
40 California Historical Building Code, 15.32 California Fire Code, 15.36 California Existing
41 Building Code, 15.40 California Reference Standards, 15.44 Uniform Code for the
42 Abatement of Dangerous Buildings, and 15.48 Uniform Housing Code of the Calistoga
43 Municipal Code, to include the 2010 California Building Standards Code, Title 24 of the
44 California Code of Regulations, as adopted by the State Building Standards Commission;
45

46 **WHEREAS**, the City Council finds that in order to best protect the health, safety and
47 welfare of the citizens of the Calistoga, the building standards within the community should
48 comply with State law, except for certain modifications and amendments to the model
49 codes that are based on local climatic, geographical and/or topographical conditions;

50
51 **WHEREAS**, the City Council further finds that use of the most up-to-date California
52 codes is necessary and proper to ensure uniformity in the implementation of building
53 regulations for new construction, alteration, repair, demolition, maintenance, and use of any
54 building or structure in the City of Calistoga; and

55
56 **WHEREAS**, the City Council, based on the materials presented and
57 recommendations of the Building Official, Fire Chief, Planning and Building Director and the
58 Building Standards Advisory and Appeals Board of the City of Calistoga, finds that it is
59 necessary to make procedural and administrative modifications to the model codes as
60 allowed under California Health and Safety Code Section 17958.

61
62 The City Council of the City of Calistoga does ordain as follows:

63
64 **SECTION ONE:** Adoption

65
66 The City Council of the City of Calistoga adopts this Ordinance repealing Title 15,
67 California Building Standards, specifically Chapters: 15.01 General Provisions, 15.04
68 Administrative Code, 15.08 California Building Code, 15.12 California Electrical Code,
69 15.16 California Mechanical Code, 15.20 Uniform Plumbing Code, 15.24 California Energy
70 Code, 15.28 California Historical Building Code, 15.32 California Fire Code, 15.36
71 California Existing Building Code, 15.40 California Reference Standards, 15.44 Uniform
72 Code for the Abatement of Dangerous Buildings, and 15.48 Uniform Housing Code of the
73 Calistoga Municipal Code, and adopting and replacing Title 15 with the 2010 California
74 Building Standards Code, Title 24 of the California Code of Regulations, as adopted by the
75 State Building Standards Commission as follows: 2010 California Administrative Code (Part
76 1 of Title 24); 2010 California Building Code (Part 2 of Title 24, Volumes 1 and 2); 2010
77 California Residential Code (Part 2.5 of Title 24); 2010 California Electrical Code (Part 3 of
78 Title 24); 2010 California Mechanical Code (Part 4 of Title 24); 2010 California Plumbing
79 Code (Part 5 of Title 24); 2010 California Energy Code (Part 6 of Title 24); 2010 California
80 Historical Building Code (Part 8 of Title 24); 2010 California Fire Code (Part 9 of Title 24);
81 2010 California Existing Building Code (Part 10 of Title 24); 2010 California Green Building
82 Standards Code (Part 11 of Title 24); 2010 California Referenced Standards Code (Part 12
83 of Title 24).

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85 **SECTION TWO:** Findings

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87 A. The City Council of the City of Calistoga finds that in order to best protect the
88 health, safety and welfare of the citizens of the City of Calistoga, the standards of building
89 within the City must conform with State law except where local conditions warrant more
90 restrictive regulations.

91
92 B. Pursuant to Section 17958 of the California Health and Safety Code, the
93 governing body of the City of Calistoga, in its ordinance adopting the State Building

94 Standards Code and uniform industry codes, may establish amendments which are more
95 restrictive in nature than those regulations adopted by the State of California commonly
96 referred to as Title 24 of the California Code of Regulations. Based on the materials
97 presented and by the recommendation of the Building Official, the Fire Chief, the Planning
98 & Building Director and the Calistoga Building Standards Advisory and Appeals Board, the
99 City Council further finds that it is necessary to make modifications to the California
100 Building Standards Code and to adopt or not adopt certain appendices to the Code. Under
101 the provisions of Section 17958.5 of the California Health and Safety Code, local
102 amendments shall be based on climatic, geographical and topographical conditions. As
103 such, the City Council finds that the following local conditions exist:

- 104
- 105 1. **Climate.** The City, on an average, experiences an approximate annual
106 rainfall of 38 inches. This rainfall can normally be expected between October
107 and April. During the winter months, the City may experience periods of
108 heavy rain, which causes local flooding, erosion and contributes to slope
109 instability. Winter storms are often accompanied by high winds, which have
110 uprooted trees and damaged power lines. The City has also experienced
111 periodical days of heavy fog, which could delay the response time for fire
112 fighting apparatus, and prevent early discovery of structure fires.

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114 Wind is a factor in the spread of fire in that burning embers are carried with
115 the wind to adjacent exposed areas. Calistoga has a characteristic southerly
116 wind, which originates from the San Francisco Bay and becomes a factor in
117 the control of fires. Further, in the dry season, Calistoga experiences an
118 occasional north wind of significant velocity, which is recognized by Fire
119 Officials to be a significant concern with regard to fire spread.

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121 During the dry period, temperatures range from 70 degrees to over 100
122 degrees. These temperatures are often accompanied by a wildland-urban
123 interface, creating a hazardous fire condition. With increased development
124 spreading into the brush covered foothill areas, wind driven fires could have
125 severe consequences, as has been demonstrated on several occasions
126 throughout the State.

- 127
- 128 2. **Geographical.** The City is susceptible to seismic hazards resulting from
129 movement along any one of several known faults in the area. The most
130 serious direct earthquake hazard threat is from the damage or collapse of
131 buildings and other structures due to ground movement. In addition to
132 damage caused by earthquakes, there is a possibility of earthquake-induced
133 landslides. Fire is often the major form of damage resulting from
134 earthquakes. Most earthquake-induced fires start because of damage to gas
135 lines, power lines or heat producing appliances. Such fires expose residential
136 and other development within the City to an increased risk of conflagration. In
137 addition, unstable slopes have been identified in the City, which present a
138 significant potential for landslides. In the event of a major earthquake or
139 landslide, many areas of the City may not be accessible to emergency
140 equipment and, if bridges or roads are damaged, the City may be isolated
141 from outside assistance. Several areas within the City of Calistoga offer poor

142 access for the delivery of public safety services because of the severity of
143 slopes and the existence of natural barriers such as the Napa River and its
144 tributaries such as Garnett Creek and Cyrus Creek.

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146 3. **Topographical.** The City borders include hilly terrain on the southwest
147 portions of the City. The roadway systems in these hills are designed around
148 the lay of the land with respect to narrow, winding and steep access ways.
149 The grades of these roadways sometimes exceed 25% and road widths of
150 less than 12 feet are not uncommon. The Napa River and other small water
151 ways run directly through the City and could impact emergency response
152 during disasters. The water supply within the City is directly affected by the
153 topographical layout. The water distribution system consists of pressure
154 zones, which carry water by gravity from various reservoirs. Water flow within
155 the City can vary from less than 100 gallons per minute to flows in excess of
156 1,000 gallons per minute. This wide variation causes major problems to
157 development as well as to fire suppression efforts. The hilly terrain
158 contributes to drainage, erosion and slope instability problems for some
159 development.

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161 **SECTION THREE:** Title 15, California Building Standards Codes, repealed and adopted.

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163 Title 15 California Building Standard Codes of the Calistoga Municipal Code is
164 hereby repealed and adopted to read as follows:

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167 **Title 15**

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169 **CALIFORNIA BUILDING STANDARDS CODES**

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171 **Chapters:**

- 172
173 15.01 General Provisions
174 15.04 2010 California Administrative Code, Part 1 of Title 24
175 15.08 2010 California Building Code, Part 2 of Title 24 (Volumes 1 & 2)
176 15.12 2010 California Residential Code Part 2.5 of Title 24
177 15.16 2010 California Electrical Code, Part 3 of Title 24
178 15.20 2010 California Mechanical Code, Part 4 of Title 24
179 15.24 2010 California Plumbing Code, Part 5 of Title 24
180 15.28 2010 California Energy Code, Part 6 of Title 24
181 15.32 2010 California Historical Building Code, Part 8 of Title 24
182 15.36 2010 California Fire Code, Part 9 of Title 24
183 15.40 2010 California Existing Building Code, Part 10 of Title 24
184 15.44 2010 California Green Building Standards Code, Part 11 of Title 24
185 15.48 2010 California Referenced Standards, Part 12 of Title 24
186 15.50 Building Standards Advisory and Appeals Board
187 15.52 Violations

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Chapter 15.01

GENERAL PROVISIONS

Sections:

- 15.01.010 Scope
- 15.01.020 Building Division

15.01.010 Scope

The provisions of this chapter shall apply to all buildings and structures located in the City.

15.01.020 Building Division

A. There is established a Building Division for the City to perform technical building inspections, code enforcement, plan check, mobile home inspection and cross connection control services; and to enforce state mandated codes related to construction.

B. The Building Official thereof shall supervise and have charge of all permit issuance and inspections of work relating to, and the enforcement of the construction regulations adopted in this chapter.

Chapter 15.04

ADMINISTRATIVE CODE

Sections:

15.04.010 Adoption

For the purpose of establishing proper regulations for the administration of the various codes covered in this Title, the 2010 California Administrative Code, is adopted and made a part of this code by reference.

Chapter 15.08

CALIFORNIA BUILDING CODE

Sections:

- 15.08.010 Adoption
- 15.08.020 Amendments

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15.08.010 Adoption

For the purpose of establishing proper regulations for building construction, the 2010 California Building Code, Vol. 1 & 2, Appendix A (Employee Qualifications), Appendix F (Rodentproofing), Appendix G (Flood-Resistant Construction), Appendix H (Signs), Appendix I (Patio Covers), Appendix J (Grading), referred to as the "International Building Code" or "IBC," is adopted as amended and made a part of this code by reference.

Chapter 15.12

CALIFORNIA RESIDENTIAL CODE

Sections:

15.12.010 Adoption

15.12.010 Adoption

For the purpose of establishing proper regulations for building construction, the 2010 California Residential Code, Appendix A (Sizing and Capacities of Gas Piping), Appendix F (Radon Control Methods), Appendix G (Swimming Pools, Spas and Hot Tubs), Appendix H (Patio Covers), Appendix J (Existing Buildings and Structures), Appendix P (Sizing of Water Piping System), referred to as the "International Building Code" or "IBC," is adopted as amended and made a part of this code by reference.

Chapter 15.16

CALIFORNIA ELECTRICAL CODE

Sections:

15.16.010 Adoption

15.16.010 Adoption

For the purpose of establishing proper regulations for building construction and for installation of electrical systems, the 2010 California Electrical Code, otherwise identified as the National Electrical Code, 2008 Edition, referred to as the "National Electrical Code" (NEC) is adopted and made a part of this code by reference.

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Chapter 15.20

CALIFORNIA MECHANICAL CODE

Sections:

15.20.010 Adoption

15.20.010 Adoption

For the purpose of establishing proper regulations for building construction and for the installation of mechanical systems, the 2010 California Mechanical Code, otherwise identified as the Uniform Mechanical Code, 2009 Edition, and referred to as the "Uniform Mechanical Code" or "UMC," is adopted and made a part of this code by reference.

Chapter 15.24

CALIFORNIA PLUMBING CODE

Sections:

15.24.010 Adoption

15.24.010 Adoption

For the purpose of establishing proper regulations for building construction and for the installation of plumbing systems, the 2010 California Plumbing Code, including Appendix A (Recommended Rules for Sizing the Water Supply System), Appendix B (Explanatory Notes on Combination Waste and Vent System), Appendix D (Sizing Storm Water Drainage System), Appendix G (Graywater Systems), Appendix I (Installation Standards), otherwise identified as the Uniform Plumbing Code, 2009 Edition, and referred to as the "Uniform Plumbing Code," or "UPC," is adopted and made a part of this code by reference.

Chapter 15.28

CALIFORNIA ENERGY CODE

Sections:

15.28.010 Adoption

15.28.010 Adoption

For the purpose of establishing proper regulations for building construction and energy conservation, the 2010 Energy Code is adopted and made a part of this code by reference.

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Chapter 15.32

CALIFORNIA HISTORICAL BUILDING CODE

Sections:

15.32.010 Adoption

15.32.010 Adoption

For the purpose of establishing proper regulations for building construction as it relates to historical buildings, the 2010 California Historical Building Code is adopted and made a part of this code by reference.

Chapter 15.36

CALIFORNIA FIRE CODE

Sections:

15.32.010 Adoption
15.32.020 Definitions
15.32.030 Amendments
15.32.040 Establishment of limits

15.32.010 Adoption

For the purpose of establishing proper regulations for building construction, the 2010 California Fire Code, Appendix B and Appendix BB (Fire Flow Requirements for Buildings), Appendix C and Appendix CC (Fire Hydrant Locations and Distribution), Appendix D (Fire Apparatus Access Roads), Appendix E (Hazard Categories), Appendix F (Hazard Ranking), Appendix G (Cryogenic Fluids-Weight and Volume Equivalents), Appendix H (Hazardous Materials Management Plans and Hazardous Inventory Statement), Appendix I (Fire Protection Systems—Noncompliant Conditions), Appendix J (Emergency Responder Radio Coverage) and referred to as the "International Fire Code" or "IFC," is adopted as amended and made a part of this code by reference.

15.32.020 Definitions

For the purposes of this chapter, the words in this Chapter shall have the following meaning:

- A. Wherever the word "jurisdiction" is used in the California Fire Code, it shall refer to the City of Calistoga.

376 B. Where the party responsible for the enforcement of the California Fire Code is given
377 the title of "Fire Marshal" it shall refer to the City of Calistoga Fire Chief or his/her
378 designee.

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380 **15.32.030 Amendments**

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382 The California Fire Code shall be amended to read as follows:

383

384 A. Amend Chapter 1, Division II Administration, Part 1 General Provisions, Section 102
385 Applicability. Section 102.1 Construction and Design Provisions is amended by
386 adding the following:

387

388 **102.1 Construction and design provisions.**

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390 5. Existing structures to which additions, alterations or repairs are made that
391 involve: the addition, removal or replacement of fire resistive construction related
392 to property lines; additions, alteration or repairs to fire protection systems,
393 additions or alterations made that impact emergency vehicle access; or
394 alterations made that impact the egress system.

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396 B. Amend Chapter 1, Division II Administration, Part 2 Administrative Provisions,
397 Section 105 Permits. Section 105.6.47 Additional Permits is amended by adding the
398 following:

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400 **105.6.47 Additional permits.**

401 In addition to the operational permits required by Section 105.6, the following
402 permits shall be obtained from the Building Division prior to engaging in the following
403 activities, operations, practices or functions:

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405 4. Apartment, Hotel, Motel and Bed & Breakfast. An operational permit is required
406 to operate an apartment house, hotel, motel and bed & breakfast.

407 5. Day Care. An operational permit is required to operate a day care occupancy
408 with an occupant load over eight (8) persons.

409 6. Emergency Responder Radio Coverage System. An operational permit is
410 required for buildings and/or facilities with emergency responder radio coverage
411 systems and related equipment.

412 7. Winery Caves – Public Accessible. An operational permit is required to operate a
413 winery cave that is accessible to the public.

414

415 C. Delete Chapter 1, Division II Administration, Part 2 Administration Provisions,
416 Section 109.3 Violation Penalties.

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418 D. Amend Chapter 1, Division II, Administration, Part 2 Administrative Provisions,
419 Section 111 Stop Work Order. Section 111.4 Failure to Comply is amended to read
420 as follows:

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111.4 Failure to comply.

Any person, who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to a penalty as prescribed in CMC Chapter 1.08.

- E. Amend Chapter 5 Fire Service Features, Section 505 Premises Identification. Section 505.1 Address Identification is amended to read as follows:

505.1 Address identification.

New and existing buildings shall have approved **illuminated or reflective** address number, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 inches (101.6mm) high with a minimum stroke width of 0.5 inch (12.7mm). Where access is by means of private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.

- F. Amend Chapter 5 Fire Service Features, Section 510 Emergency Responder Radio Coverage. Section 510.1 Emergency Responder Radio Coverage in Buildings is amended to read as follows:

510.1 Emergency responder radio coverage in buildings.

All buildings **and winery caves** shall have approved radio coverage for emergency responders within the building **or winery cave** based upon the existing coverage levels of public safety communication systems of the jurisdiction, at the exterior of the building. This section shall not require improvement of existing public safety communication systems.

Exceptions:

1. Where approved by the building official and the fire code official, a wired communication system in accordance with Section 907.2.13.2 may be permitted to be installed in lieu of an approved radio coverage system.
2. Where it is determined by the fire code official that the radio coverage system is not necessary.

- G. Amend Chapter 6 Building Services and Systems, Section 605 Electrical Equipment, Wiring and Hazards. Section 605 is amended by adding the following:

605.11 Solar photovoltaic installations.

605.11.1 Marking. PV systems must be marked. Marking is needed to provide emergency responders with appropriate warning and guidance with respect to working around and isolating the solar electric system. This can facilitate identifying energized electrical lines that connect the solar modules to the inverter, as these shall not be cut when venting for smoke removal. Materials used for marking must

471 be weather resistant. It is required that Underwriters Laboratories Marking and
472 Labeling System 969 (UL 969) be used as standard to determine weather rating.
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474 **605.11.1.1 Main service disconnect.** For both commercial and residential
475 applications, the marking of the AC shut off devices and shall be placed adjacent
476 to the main service disconnect in a location clearly visible from the location where
477 the lever is operated.
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479 For integrated systems, a sign at the main panel shall state the following as
480 outlined in Section 605.11.1.2.1 below:
481

482 **CAUTION: INTEGRATED PHOTOVOLTAIC SYSTEM ON SITE!**

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484 **605.11.1.1.1 Marking content and format.**

- 485 a. Marking content: **CAUTION: SOLAR ELECTRIC SYSTEM.**
486 b. Red background.
487 c. White lettering.
488 d. Minimum 3/8" letter height.
489 e. All capital letters.
490 f. Arial or similar font, non-bold.
491 g. Reflective, weather resistant material suitable for the environment (durable
492 adhesive materials may meet this requirement).
493

494 **605.11.1.2 Marking for direct current conduit, raceways, enclosures, cable**
495 **assemblies, and junction boxes.** Marking is required on all interior and exterior
496 DC conduit, raceways, enclosures, cable assemblies, and junction boxes to alert
497 the Fire Service to avoid cutting them. Marking shall be placed on all interior and
498 exterior DC conduit, raceways, enclosures, and cable assemblies, every 10 feet,
499 at turns and above and/or below penetrations and all DC combiner and junction
500 boxes.
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502 **6.05.11.1.2.1 Marking content and format.**

- 503 a. Marking content: **CAUTION: SOLAR CIRCUIT.**
504 b. Red background.
505 c. White lettering.
506 d. Minimum 3/8" letter height.
507 e. All capital letters.
508 f. Arial or similar font, non-bold.
509 g. Reflective, weather resistant material suitable for the environment (durable
510 adhesive materials meet this requirement).
511

512 **605.11.1.3 Inverters.** The inverter is a device used to convert DC electricity from
513 the solar system to AC electricity for use in the building's electrical system or the
514 grid. For example:
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516 **CAUTION: SOLAR CIRCUIT**
517 **CAUTION: SOLAR ELECTRIC SYSTEM**
518 **INVERTER LOCATED IN _____.**

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605.11.2 Access, pathways and smoke ventilation. Access and spacing requirements shall be observed in order to:

- a. Ensure access to the roof.
- b. Provide pathways to specific areas of the roof.
- c. Provide for smoke ventilation opportunities area.
- d. Provide emergency egress from the roof.

The Fire Chief or Building Official may allow exceptions to this requirement where access, pathway or ventilation requirements are reduced due to:

- e. Proximity and type of adjacent exposures.
- f. Alternative access opportunities (as from adjoining roofs).
- g. Ground level access to the roof area in question.
- h. Adequate ventilation opportunities beneath solar array (as with significantly elevated or widely-spaced arrays).
- i. Adequate ventilation opportunities afforded by module set back from other rooftop equipment (example: shading or structural constraints may leave significant areas open for ventilation near HVAC equipment).
- j. Automatic ventilation device.
- k. New technology, methods, or other innovations that ensure adequate fire department access, pathways and ventilation opportunities.

Designation of ridge, hip, and valley does not apply to roofs with 2-in-12 or less pitch. All roof dimensions are measured to centerlines.

Roof access points shall be defined as areas where ladders are not placed over openings (i.e., windows or doors) and are located at strong points of building construction and in locations where they will not conflict with overhead obstructions (i.e., tree limbs, wires, or signs).

605.11.2.1 Residential systems - single and two-unit residential dwellings.

Plan review is required on all residential systems.

605.11.2.1.1 Access/Pathways.

- a. Residential buildings with hip roof layouts: Modules shall be located in a manner that provides one (1) three-foot (3') wide clear access pathway from the eave to the ridge on each roof slope where modules are located. The access pathway shall be located at a structurally strong location on the building (such as a bearing wall).
- b. Residential buildings with a single ridge: Modules shall be located in a manner that provides two (2) three-foot (3') wide access pathways from the eave to the ridge on each roof slope where modules are located.
- c. Hips and Valleys: Modules shall be located no closer than one and one half (1.5) feet to a hip or a valley if modules are to be placed on both sides of a hip or valley. If the modules are to be located on only one side of a

566 hip or valley that is of equal length then the modules shall be placed
567 directly adjacent to the hip or valley.
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569 **605.11.2.1.2 Smoke ventilation.** The modules shall be located no higher
570 than three feet (3') below the ridge.
571

572 **605.11.2.2 Commercial buildings and residential housing comprised of**
573 **three (3) or more units.** Plan review is required on all commercial systems.
574

575 **Exception:** If the Fire Chief or Building Official determines that the roof
576 configuration is similar to residential (such as in the case of townhouses,
577 condominiums, or single family attached buildings), a determination to apply the
578 residential access and ventilation requirements may be granted. Examples of
579 these requirements appear at the end of this policy.
580

581 **605.11.2.2.1 Access.** There shall be a minimum six foot (6') wide clear
582 perimeter around the edges of the roof.
583

584 Exception: If either axis of the building is 250 feet or less, there shall be a
585 minimum four feet (4') wide clear perimeter around the edges of the roof.
586

587 **605.11.2.2.2 Pathways.** Pathways shall be established in the design of the
588 solar installation. Pathways shall meet the following requirements:
589

- 590 a. Shall be over structural members.
- 591 b. Centerline axis pathways shall be provided in both axis of the roof.
592 Centerline axis pathways shall run on structural members or over the next
593 closest structural member nearest to the center lines of the roof.
- 594 c. Shall be straight line not less than 4 feet (4') clear to skylights and/or
595 ventilation hatches.
- 596 d. Shall be straight line not less than 4 feet (4') clear to roof standpipes.
- 597 e. Shall provide not less than 4 feet (4') clear around roof access hatch with
598 at least one not less than 4 feet (4') clear pathway to parapet or roof edge.
599

600 **605.11.2.2.3 Smoke ventilation.**

- 601 a. Arrays shall be no greater than 150 by 150 feet in distance in either axis.
- 602 b. Ventilation options between array sections shall be one of the following:
 - 603 1. A pathway 8 feet (8') or greater in width.
 - 604 2. Four feet (4') or greater in width pathway and bordering on existing
605 roof skylights or ventilation hatches.
 - 606 3. Four feet (4') or greater in width pathway and bordering four feet (4') x
607 8 feet 8' "venting cutouts" every 20 feet (20') on alternating sides of the
608 pathway.
609

610 **605.11.3 Location of direct current (DC) conductors.** Conduit, wiring systems,
611 and raceways for photovoltaic circuits shall be located as close as possible to the
612 ridge or hip or valley and from the hip or valley as directly as possible to an outside
613 wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs

614 between sub arrays and to DC combiner boxes shall use design criteria that
615 minimize total amount of conduit on the roof by taking the shortest path from the
616 array to the DC combiner box. The DC combiner boxes are to be located such that
617 conduit runs are minimized in the pathways between arrays. To limit the hazard of
618 cutting live conduit in venting operations, DC wiring shall be run in metallic conduit or
619 raceways when located within enclosed specs in a building and shall be run, to the
620 maximum extent possible, along the bottom of load-bearing members.

621
622 **605.11.4 Location alternating current (AC) and direct current (DC) shut off**
623 **devices.**

624
625 **605.11.4.1 DC shut off device.** A DC shut off device approved by the California
626 Electric Code shall be installed as close to the PV modules as possible. Proper
627 marking as described in Section 605.11.1 shall be provided.

628
629 **605.11.4.2 AC shut off device.** An AC shut off device approved by the California
630 Electric Code shall be installed near the main service panel in line with the
631 inverter.

632
633 **605.11.5. Non-habitable buildings.** Not applicable to this section. Examples of
634 non-habitable structures include, but are not limited to, parking shade structures,
635 solar trellises, etc.

636
637 **605.11.6 Ground mounted photovoltaic arrays.** Ground-mounted, freestanding
638 photovoltaic arrays are subject to the setback and height requirements for accessory
639 structures as specified in CMC Title 17 Zoning. A clear brush area of ten feet (10') is
640 required for ground mounted photovoltaic arrays.

641
642 **605.11.7 Roofing materials.** Roofing material installed under the arrays shall be
643 Class A material throughout as defined by the current edition of the California
644 Building Code.

645
646 H. Amend Chapter 9 Fire Protection Systems, Section 903 Automatic Sprinkler
647 Systems. Section 903.2 Where Required is amended by adding the following:

648
649 **903.2.19 Additions & alterations.**

650 If deemed necessary by the Fire Code Official additions to existing residential and
651 non-residential buildings that increase the square footage by 50% of the existing
652 gross floor area and/or results in the building exceeding 3,600 square feet shall be
653 installed with an automatic fire sprinkler system throughout.

654
655 **903.2.20 Repairs.**

656 For the purposes of this section for automatic fire sprinkler system requirements,
657 and if deemed necessary by the Fire Code Official, repairs to existing buildings that
658 have sustained damage of more than 50% of the floor area or more than 50% of the
659 value of the building shall meet the requirements for a new building.

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903.2.21 Change in occupancy.

For the purposes of this section for automatic fire sprinkler system requirements, a proposed change in use or occupancy to an existing building that would result in a more hazardous use or occupancy shall meet the requirements for a new building.

- I. Amend Chapter 49 Requirements for Wildland-Urban Interface Fire Areas. Section 4903 Plans is amended by adding the following:

SECTION 4903 PLANS.

4903.1. General. A Wildland Fire Protection Plan (WFPP) shall be submitted by licensed or registered fire protection specialists/consultant knowledgeable in the field of Wildland Urban Interface Fire Protection.

4903.2. Requirements. The following requirements shall be included in the WFPP:

4903.2.1 Sheltering in place (SIP). During a wildfire, SIP shall be considered if the homes and community as a whole can meet all of the following features:

- a. Constructed of ignition resistant materials.
- b. Protected eaves.
- c. Residential fire sprinklers.
- d. Maintain fire resistive landscape with a minimum 100-foot defensible space surrounding all structures.
- e. Class "A" non-combustible roof assembly.
- f. Dual pane or tempered glass windows.
- g. Chimneys with spark arrestors ½ inch screening.
- h. Adequate roadway and driveway widths – meeting designed standards.
- i. Adequate water supply and water flow for firefighting (2,500 gpm).
- j. Vegetation-modification zones and fire department approved landscape plans.

4903.2.2 Water supply. List parcel size, required hydrant spacing, required flow for firefighting (2,500 GPM in Wildland Interface Areas), and show existing and proposed hydrant locations.

4903.2.3 Fire access. Address main access, secondary access, road width, driving surface improvement, capacity (weight of fire apparatus is 75,000 lbs), grade, angle of approach/departure, obstructions, gates, fire lane marking, turnarounds meeting Fire Department design template, and on-going maintenance of these elements.

Note: If the project can not provide secondary access, the applicant shall provide alternatives or justify why it is not needed.

Individual property owners are responsible for maintaining driveways, gates and signs on their own parcel in compliance with fire codes. Private roads and other access components, including gates and signs within the project shall also be

710 maintained in compliance with fire codes in perpetuity. Identify what entity (not a
711 named individual) is responsible for on-going road maintenance, and how that
712 will be funded and monitored.

713
714 Address all of the following:

- 715 a. Organization responsible for road maintenance (cannot be dissolved or
- 716 unfunded).
- 717 b. Funding obligation, which shall be shared by all project owners.
- 718 c. Responsibility to participate conveyed with property transfer.
- 719 d. Failure to maintain road elements in compliance with fire codes subjects
- 720 owners to potential fines and forced abatement by the fire agency or the
- 721 County, with charges, including administrative costs and penalties, liened
- 722 against the property.
- 723

724 **4903.2.4 Urban wildland interface area.** This is land in an area designated or
725 identified as a Hazardous Fire Area. Hazardous Fire Area is any geographic
726 area mapped by the State or the City of Calistoga as a high or very high fire
727 hazard area, or as set forth by the City of Calistoga that contains the type and
728 condition of vegetation, topography, weather, and structure density to potentially
729 increase the possibility of vegetation conflagration fires. (Refer to City Council
730 Resolution #2008-104 for map of the City of Calistoga's Fire Hazard Severity
731 Zone.)

732
733 **4903.2.5 Fire protection systems.** Fire sprinklers are required for all newly
734 constructed buildings.

735
736 **4903.2.6 Defensible space.** Address code minimums (100 feet) and show
737 proposed modifications. If the fire behavior model (Refer to Section 4903.2.8)
738 indicates a greater distance, incorporate it here and reference the fire modeling.

739
740 **4903.2.7 Vegetation management.** Discuss how fuel modification will be
741 maintained. Indicate who the responsible party is (individual property owner or
742 other entity) and how this will be handled in perpetuity. It is not acceptable to
743 have an association charged with the task if that organization can dissolve itself
744 or become ineffective for lack of funding. Individual property owners are
745 responsible for maintaining their own parcel in compliance with fire codes.
746 Parcels of open space easements, road easements, and similar land uses within
747 the project shall also have vegetation maintained in a fire-safe manner in
748 perpetuity. Identify which entity (not a named individual) is responsible for on-
749 going vegetation maintenance and how that will be funded and monitored.

750
751 Address all of the following:

- 752 a. Organization responsible for maintenance (cannot be dissolved or unfunded).
- 753 b. Funding obligation, which shall be shared by all project owners.
- 754 c. Responsibility to participate conveyed with property transfer.
- 755 d. Failure to maintain in fire-safe manner subjects owners to potential fines, and
- 756 forced abatement by the City of Calistoga Fire Department, with charges,
- 757 including administrative costs and penalties, liened against the property.

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4903.2.8 Fire behavior model. Identify the specific model and version being used. Clearly identify your source for worst-case and summer and fall weather conditions. Ensure all additional supplemental information is included, such as product examples or clearing methods and is in full compliance with the California Building Standards Codes and local amendments.

15.32.40 Establishment of limits.

A. Establishment of Limits of Districts in which Storage of Flammable or Combustible Liquids in Outside Aboveground Tanks is Prohibited:

The limits referred to in Sections 3404.2.9.6 of the California Fire Code, in which the storage of flammable or combustible liquids is restricted, are hereby established as follows: Storage of 16 gallons or more is prohibited in all areas unless a permit is issued by the Fire Code Official.

B. Establishment of Districts of Limits in which Storage of Liquefied Petroleum Gases is Prohibited:

The limits referred to in Section 3804.2 of the California Fire Code, in which storage of liquefied petroleum gas is prohibited, are hereby established as follows: Storage is prohibited in all areas of the City unless a permit is issued by the Fire Code Official.

C. Establishment of Limits of Districts in which Storage of Explosives and Blasting Agents is Prohibited:

The limits referred to in Section 3308.1 of the California Fire Code, in which storage of explosives and blasting agents is prohibited, are hereby established as follows: Storage is prohibited in all areas of the City, unless a permit is issued by the Fire Code Official.

D. Establishment of Limits of Districts in which the Storage of Compressed Gases is Prohibited:

The limits referred to in Section 3004.1 of the California Fire Code in which the storage of compressed gases is prohibited, are hereby established as follows: Storage of 16 gallons or more is prohibited in all areas of the City unless a permit is issued by the Fire Code Official.

E. Establishment of Limits of Districts in which the Storage of Stationary Tanks of Flammable Cryogenic Fluids is Prohibited:

The limits referred to in Section 3204.3 of the California Fire Code in which the storage of flammable cryogenic fluids in stationary containers is prohibited, are hereby established as follows: Storage is prohibited in all areas of the City unless a permit is issued by the Fire Code Official.

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F. Establishment of Limits of Districts in which the Storage of Hazardous Materials is Prohibited:

The limits referred to in Section 2704.1 of the California Fire Code in which the storage of hazardous materials is prohibited, are hereby established as follows: Storage is prohibited in all areas of the City unless a permit is issued by the Fire Code Official.

Chapter 15.40

CALIFORNIA EXISTING BUILDING CODE

Sections:

15.40.010 Adoption

15.40.010 Adoption

For the purpose of establishing proper regulations for building construction, the 2010 California Existing Building Code otherwise identified as the International Existing Building Code, 2009 Edition, and referred to as the "International Existing Building Code," or "IEBC," is adopted and made a part of this code by reference.

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Chapter 15.44

CALIFORNIA GREEN BUILDING STANDARDS

Sections:

15.44.010 Adoption

15.44.010 Adoption

For the purpose of establishing proper regulations for building construction, the 2010 California Green Building Standards is adopted and made a part of this code by reference.

Chapter 15.48

CALIFORNIA REFERENCE STANDARDS

Sections:

15.48.010 Adoption

15.48.010 Adoption

For the purpose of establishing proper regulations for building construction, the 2010 California Referenced Standards is adopted and made a part of this code by reference.

Chapter 15.50

BUILDING STANDARDS ADVISORY AND APPEALS BOARD

“Not Repealed & Amended”

Chapter 15.52

VIOLATIONS

“Not Repealed & Amended”

SECTION FIVE:

If any section or portion of this ordinance is for any reason held to be invalid and or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance.

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SECTION SIX:

THIS ORDINANCE shall take effect. **January 1, 2011**. Before expiration of fifteen (15) days after its passage by the City Council, the City Clerk shall cause to be published a summary of this ordinance in a newspaper of general circulation within the City of Calistoga.

THIS ORDINANCE was introduced with the first reading waived at the City of Calistoga City Council meeting of the _____**2010** and was passed and adopted at a regular meeting of the Calistoga City Council on the _____**2010**, by the following vote:

- AYES:**
- NOES:**
- ABSTAIN:**
- ABSENT:**

JACK GINGLES, Mayor

ATTEST:

SUSAN SNEDDON, City Clerk