

2016

California Fire Code

**County Amendment
Package**

Adoption Format

2016 ordinance language proposed for adoption

1 **ORDINANCE NO. 16-022**

2
3 **AN ORDINANCE OF THE COUNTY OF ORANGE, CALIFORNIA REPEALING THE**
4 **CALIFORNIA FIRE CODE, 2013 EDITION ORDINANCE 13-014 AND ADOPTING BY**
5 **REFERENCE THE CALIFORNIA FIRE CODE, 2016 EDITION WITH APPENDIX B, BB, C,**
6 **CC, H, X, Y, and Z and AMENDMENTS THERETO.**

7
8 **FIRE CODE**

9 **Section 3-3-1. Fire Code Adopted**

10 The 2016 California Fire Code, based on the International Fire Code, 2015 Edition, with
11 errata, published by International Code Council (ICC), and the whole thereof, including
12 Appendix B, Appendix BB, Appendix C, Appendix CC, Appendix H, and the addition of Appendix
13 X, Appendix Y, and Appendix Z are hereby adopted by the County of Orange for the purpose of
14 prescribing regulations governing conditions hazardous to the life and property from fire and
15 explosion, save and except such portions as are hereinafter added, deleted, modified or
16 amendment. One copy of all the above is now on file in the office of the Clerk for public
17 inspection and is adopted with the same force and effect as through set out herein in full.

18
19 **Section 3-3-2. Enforcement and Inspection**

20 The California Fire Code with amendments shall be enforced by the Orange County Fire
21 Authority, which shall be operated under the Fire Chief of the Orange County Fire Authority.
22 The Fire Chief of the Orange County Fire Authority may detail such members of the fire
23 authority as inspectors as shall be necessary from time to time.

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25 **Section 3-3-3. Chapter 1**

1 **Chapter 1 Scope and Administration** is adopted in its entirety with the following
2 amendments:

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4 **Section 109.4 Violation penalties** is hereby revised as follows:

5 **109.4 Violation penalties.** Persons who shall violate a provision of this code or shall
6 fail to comply with any of the requirements thereof or shall fail to comply with any
7 issued orders or notices or who shall erect, install, alter, repair or do work in violation of
8 the approved construction documents or directive of the fire code official, or of a permit
9 or certificate used under provisions of this code, shall result in penalties assessed as
10 prescribed in the OCFA Prevention Field Services adopted fee schedule. Each day that a
11 violation continues after due notice has been served shall be deemed a separate
12 offense.

13 **Section 109.4.2 Infraction and misdemeanor** is hereby added as follows:

14 **109.4.2 Infraction and misdemeanor.** Persons operating or maintaining any
15 occupancy, premises or vehicle subject to this code that shall permit any fire or life safety
16 hazard to exist on premises under their control shall be guilty of an infraction. Persons
17 who fail to take immediate action to abate a fire or life safety hazard when ordered or
18 notified to do so by the chief or a duly authorized representative are guilty of a
19 misdemeanor.
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21 **Section 3.3.4. Chapter 2**

22 **Chapter 2 Definitions** is adopted in its entirety with the following amendments:

23 **Sections 202 General Definitions** is hereby revised by adding "OCFA," "Sky Lantern," and
24 "Spark Arrester" as follows:
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202 General Definitions

OCFA: Orange County Fire Authority, fire authority having jurisdiction.

SKY LANTERN. An airborne lantern typically made of paper, Mylar, or other lightweight material with a wood, plastic, or metal frame containing a candle, fuel cell, or other heat source that provides buoyancy.

SPARK ARRESTER. A listed device constructed of noncombustible material specifically for the purpose of meeting one of the following conditions:

1. Removing and retaining carbon and other flammable particles/debris from the exhaust flow of an internal combustion engine in accordance with California Vehicle Code Section 38366.
2. Fireplaces that burn solid fuel in accordance with California Building Code Chapter 28.

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Section 3.3.5. Chapter 3

Chapter 3 General Requirements is adopted in its entirety, with the exception of section 308.1.4, with the following amendments:

Section 304.1.2 Vegetation is hereby revised as follows:

304.1.2 Vegetation. Type, amount, or arrangement of weeds, grass, vines or other growth that is capable of being ignited and endangering property needing to comply with OCFA Guidelines, shall be cut down, thinned, and removed by the owner or occupant of the premises in accordance with OCFA Guideline C-05 "Vegetation Management Guideline—Technical Design for New Construction, Fuel Modification Plans, and Maintenance Program. Vegetation clearance requirement in urban-wildland interface areas shall be in accordance with Chapter 49.

1 **Section 305.6 Hazardous Conditions** is hereby added as follows:

2 **305.6 Hazardous conditions.** Outdoor fires are not allowed when predicted sustained
3 winds exceed 8 MPH during periods when relative humidity is less than 25%, or a red flag
4 condition has been declared or public announcement is made, when an official sign was
5 caused to be posted by the fire code official, or when such fires present a hazard as
6 determined by the fire code official.

7 **Section 305.7 Disposal of rubbish** is hereby added as follows:

8 **305.7 Disposal of rubbish.** Rubbish, trash or combustible waste material shall be
9 burned only within an approved incinerator and in accordance with Section 307.2.1.

10 **Section 307 OPEN BURNING, RECREATIONAL FIRES AND PORTABLE OUTDOOR**
11 **FIREPLACES** is hereby amended as follows:

12 **SECTION 307 OPEN BURNING, RECREATIONAL FIRES, FIRE PITS, FIRE**
13 **RINGS, AND PORTABLE OUTDOOR FIREPLACES**

14 **Sections 307.6 Outdoor Fireplaces, Fire Pits, Fire Rings, or similar devices used at**
15 **Group R Occupancies** is hereby added as follows:

16 **307.6 Outdoor Fireplaces, Fire Pits, Fire Rings, or similar devices used at**
17 **Group R Occupancies.** Outdoor fireplaces, fire pits, fire rings, or similar exterior
18 devices used at Group R shall comply with this section.

19 **Exception:** Barbeques, grills, and other portable devices intended solely for
20 cooking.

21 **Section 307.6.1 Gas-fueled devices** is hereby added as follows:

22 **307.6.1 Gas-fueled devices.** Outdoor fireplaces, fire pits and similar devices fueled
23 by natural gas or liquefied-petroleum gas are allowed when approved by the Building
24 Department and the device is designed to only burn a gas flame and not wood or other
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1 solid fuel. At R-3 occupancies, combustible construction shall not be located within
2 three feet of an atmospheric column that extends vertically from the perimeter of the
3 device. At other R occupancies, the minimum distance shall be ten feet. Where a
4 permanent Building Department approved hood and vent is installed, combustible
5 construction may encroach upon this column between the bottom of the hood and the
6 vent opening. Where chimneys or vents are installed, they shall have a spark arrester
7 as defined in Section 202.

8 **Section 307.6.2 Devices using wood or fuels other than natural gas or liquefied-**
9 **petroleum gas** is hereby added as follows:

10 **307.6.2 Devices using wood or fuels other than natural gas or liquefied-**
11 **petroleum gas.** Fireplaces burning wood or other solid fuel shall be constructed in
12 accordance with the California Building Code. Fires in a fireplace shall be contained
13 within a firebox with an attached chimney. The opening in the face of the firebox shall
14 have an installed and maintained method of arresting sparks. The burning of wood or
15 other solid fuel in a device is not allowed within 15 feet of combustible structures, unless
16 within a permanent or portable fireplace. Conditions which could cause a fire to spread
17 within 25 feet of a structure or to vegetation shall be eliminated prior to ignition. Fires in
18 devices burning wood or solid fuel shall be in accordance with Sections 305, 307, and
19 308.

20 **Section 307.6.2.1 Where prohibited** is hereby added as follows:

21 **307.6.2.1 Where prohibited.** The burning of wood and other solid fuels shall not be
22 conducted within a fuel modification zone. Wood and other solid fuel burning fires in
23 devices other than permanent fireplaces are not allowed within Wildfire Risk Areas
24 (WRA) and Wildland-Urban Interface Areas (WUI) or in locations where conditions could
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1 cause the spread of fire to the WRA or WUI, unless determined by the Fire Code Official
2 that the location or design of the device should reasonably prevent the start of a
3 wildfire.

4 **Section 309.2.1 Indoor charging of electric carts/cars** is hereby added as follows:

5 **309.2.1 Indoor charging of electric carts/cars.** Indoor charging of electric
6 carts/cars where the combined volume of all battery electrolyte exceeds 50 gallons shall
7 comply with following:

- 8 1. Spill control and neutralization shall be provided and comply with Section 608.5.
- 9 2. Room ventilation shall be provided and comply with Section 608.6.1
- 10 3. Signage shall be provided and comply with Section 608.7.1
- 11 4. Smoke detection shall be provided and comply with Section 608.9.

12 **Section 320 Fuel Modification Requirements for New Construction** is hereby added as
13 follows:

14 **320 Fuel Modification Requirements for New Construction.** All new structures
15 and facilities adjoining land containing hazardous combustible vegetation shall be
16 approved and in accordance with the requirements of OCFA Guideline C-05 "Vegetation
17 Management Guideline – Technical Design for New Construction Fuel Modification Plans
18 and Maintenance Program."

19 **Section 321 Clearance of brush or vegetation growth from roadways** is hereby added as
20 follows:

21 **321 Clearance of brush or vegetation growth from roadways.** The fire code official
22 is authorized to cause areas within 10 feet (3048 mm) on each side of portions of
23 highways and private streets which are improved, designed or ordinarily used for vehicular
24 traffic, to be cleared of flammable vegetation and other combustible growth.
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1 Measurement shall be from the flow-line or the end of the improved edge of the roadway
2 surfaces.

3 **Exception:** Single specimens of trees, ornamental shrubbery or cultivated ground
4 cover such as green grass, ivy, succulents or similar plants used as ground covers,
5 provided that they do not form a means of readily transmitting fire.

6 **Section 322 Unusual Circumstances** is hereby added as follows:

7 **322 Unusual circumstances.** The fire code official may suspend enforcement of the
8 vegetation management requirements and require reasonable alternative measures
9 designed to advance the purpose of this code if determined that in any specific case that
10 any of the following conditions exist:

- 11 1. Difficult terrain.
- 12 2. Danger of erosion.
- 13 3. Presence of plants included in any state and federal resources agencies, California
14 Native Plant Society and county-approved list of wildlife, plants, rare, endangered
15 and/or threatened species.
- 16 4. Stands or groves of trees or heritage trees.
- 17 5. Other unusual circumstances that make strict compliance with the clearance of
18 vegetation provisions undesirable or impractical.

19 **Section 323 Use of Equipment** is hereby added as follows:

20 **323 Use of equipment.** Except as otherwise provided in this section, no person shall
21 use, operate, or cause to be operated in, upon or adjoining any hazardous fire area any
22 internal combustion engine which uses hydrocarbon fuels, unless the engine is equipped
23 with a spark arrester as defined in Section 202 maintained in effective working order, or
24 the engine is constructed, equipped and maintained for the prevention of fire.
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Exceptions:

1. Engines used to provide motor power for trucks, truck tractors, buses, and passenger vehicles, except motorcycles, are not subject to this section if the exhaust system is equipped with a muffler as defined in the Vehicle Code of the State of California.
2. Turbocharged engines are not subject to this section if all exhausted gases pass through the rotating turbine wheel, there is no exhaust bypass to the atmosphere, and the turbocharger is in good mechanical condition

Section 323.1 Use of Equipment and Devices Generating Heat, Sparks or Open Flames

is hereby added as follows:

323.1 Equipment and devices generating heat, sparks or open flames. During any time of the year within Wildfire Risk Areas, within or immediately adjacent to any forest- or brush-covered land or non-irrigated grass-covered land, no person shall use or operate any welding equipment, cutting torches, tar pots, grinding devices, or other tools or equipment that may produce a spark, fire, or flame that could result in a wildfire without doing the following:

1. First clearing away all flammable material, including snags, from the area around such operation for a distance of 30 feet or other approved method to reduce fire spread into the wildlands. If 30 foot clearing cannot be achieved then an alternate method shall be approved by the AHJ prior to work starting.
2. Maintain one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

1 3. Stop work when winds are 8 MPH or greater during periods when relative humidity
2 is less than 25%, or a red flag condition has been declared or public
3 announcement is made, when an official sign was caused to be posted by the fire
4 code official, or when such fires present a hazard as determined by the fire code
5 official.

6 4. Keep a cell phone nearby and call 911 immediately in case of a fire.

7 **Section 323.2 Spark Arresters** is hereby added as follows:

8 **323.2 Spark arresters.** Spark arresters shall comply with Section 202, and when affixed
9 to the exhaust system of engines or vehicles subject to Section 323 shall not be placed or
10 mounted in such a manner as to allow flames or heat from the exhaust system to ignite
11 any flammable material.

12 **Section 324 Sky Lanterns or similar devices** is hereby added as follows:

13 **324 Sky Lanterns or similar devices.** The ignition and/or launching of a Sky Lantern
14 or similar device is prohibited.

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16 **Section 3-3-6. Chapter 4**

17 **Chapter 4: Emergency Planning and Preparedness.** Adopt only the sections, subsections,
18 and amendment listed below:

19 **401**

20 **401.3.4**

21 **401.9**

22 **402**

23 **403.2**

24 **404.5-404.6.6**
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1 **407**

2 **Section 407.5** is revised as follows:

3 **407.5 Hazardous Materials Inventory Statement.** Where required by the fire
4 code official, each application for a permit shall include OCFA's Chemical Classification
5 Packet in accordance with Section 5001.5.2.

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7 **Section 3-3-7. Chapter 5**

8 **Chapter 5 Fire Service Features** is adopted in its entirety with the following amendments:

9 **SECTION 501.1 Scope** is revised as follows:

10 **501.1 Scope.** Fire service features for buildings, structures and premises shall comply
11 with this chapter and, where required by the fire code official, with OCFA Guideline B-
12 09, "Fire Master Plan for Commercial & Residential Development." Fire service features
13 for buildings, structures and premises located in State Responsibility Areas shall also
14 comply with OCFA Guideline B-09a, "Fire Safe Development in State Responsibility
15 Areas."

16 **Section 510.1 Emergency responder radio coverage** is revised as follows:

17 **510.1 Emergency responder radio coverage in new buildings.** All new buildings
18 shall have approved radio coverage for emergency responders within the building based
19 upon the existing coverage levels of the public safety communication systems of the
20 jurisdiction at the exterior of the building. This section shall not require improvement of
21 the existing public safety communication systems. The Emergency Responder Radio
22 Coverage System shall comply with the local authority having jurisdiction's ordinance
23 and this code.

24 **Exceptions:**

1. Where it is determined by the fire code official that the radio coverage system is not needed.
2. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency radio coverage system.

This section shall not apply to the following:

1. Existing buildings or structures, unless required by the Building Official and OCFA for buildings and structures undergoing extensive remodel and/or expansion.
2. Elevators.
3. Structures that are three stories or less without subterranean storage or parking and that do not exceed 50,000 square feet on any single story.
4. Wood-constructed residential structures four stories or less without subterranean storage or parking that are not built integral to an above ground multi-story parking structure.
5. Should construction that is three stories or less that does not exceed 50,000 square feet on any single story include subterranean storage or parking, then this ordinance shall apply only to the subterranean areas.

Section 510.2 Emergency responder radio coverage in existing buildings is deleted without replacement:

Section 510.4.2.2 Technical Criteria is revised as follows:

510.4.2.2 Technical criteria. The fire code official shall maintain a document providing the specific technical information and requirements for the emergency

1 responder radio coverage system. This document shall contain, but not be limited to, the
2 various frequencies required, the location of radio sites, effective radiated power of radio
3 sites, and other supporting technical information.

- 4 1. The frequency range supported from the 800 MHz Countywide Communications
5 System shall be 851-869 MHz (base transmitter frequencies).
- 6 2. The frequency range supported to the 800 MHz Countywide Communications System
7 shall be 806-824 MHz (radio field transmit frequencies).
- 8 3. A public safety radio amplification system shall include filters to reject frequencies
9 below 851 MHz and frequencies above 869 MHz by a minimum of 35dB.
- 10 4. All system components must be 100 percent compatible with analog and digital
11 modulations after installation without adjustments or modifications. The systems
12 must be capable of encompassing the frequencies stated herein and capable of
13 future modifications to a frequency range subsequently established by the
14 jurisdiction.
- 15 5. Active devices shall have a minimum of -50 dB 3rd order intermodulation protection.
- 16 6. All active in-building coverage devices shall be FCC Part 90 Type Certified

17 **Section 510.5.1 Approval prior to installation** is revised as follows:

18 **510.5.1 Approval prior to installation.** Amplification systems capable of operating
19 on frequencies licensed to any public safety agency by the FCC shall not be installed
20 without prior plan submittal, coordination and approval from Orange County
21 Communications and a copy of the approved plan provided to of the fire and building
22 code officials.

23 **Section 510.5.2 Minimum qualification of personnel** is revised as follows:
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1 **510.5.2 Minimum qualifications of personnel.** The minimum qualifications of the
2 system designer and lead installation personnel shall include both of the following:

- 3 1. A valid FCC-issued general radio operator's license.
4 2. Certification of in-building system training issued by a nationally recognized
5 organization, school or a certificate issued by the manufacturer of the equipment
6 being installed.

7 **Section 510.5.3 Acceptance test procedure** item 7 is revised as follows:

8 **510.5.3 Acceptance test procedure.** When an emergency responder radio coverage
9 system is required, and upon completion of installation, the building owner shall have
10 the radio system tested to ensure that two-way coverage on each floor of the building is
11 not less than 90 percent. The test procedure shall be conducted as follows: ...

- 12 7. As part of the installation a spectrum analyzer or other suitable test equipment shall
13 be utilized to ensure spurious oscillations are not being generated by the subject
14 signal booster. This test shall be conducted at the time of installation and
15 subsequent annual inspections by the FCC licensed technician hired by the property
16 owner and an OCSD/Communications Division FCC-certified technician.

17 **Section 510.6.1 Testing and proof of compliance** is revised as follows:

18 **510.6.1 Testing and proof of compliance.**

19 The owner of the building or their representative shall have the emergency responder
20 radio coverage system ~~shall be~~ inspected and tested annually or where structural
21 changes occur including additions or remodels that could materially change the original
22 field performance tests. Testing shall consist of the following:

- 23 1. In-building system components shall be tested to determine general functional
24 operability.
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1 2. Signal boosters shall be tested to ensure that the gain is the same as it was upon
2 initial installation and acceptance.

3 3. Backup batteries and power supplies shall be tested under load of a period of
4 one hour to verify that they will properly operate during an actual power outage. If
5 within the 1-hour test period the battery exhibits symptoms of failure, the test shall
6 be extended for additional 1-hour periods until the integrity of the battery can be
7 determined.

8 4. Other active components shall be checked to verify operation within the
9 manufacturer's specifications.

10 5. If noncompliance is found, the FCC licensed technician will assess improvements
11 necessary and provide such information to OCSD Communications and the fire and
12 building code officials.

13 56. At the conclusion of the testing, a certification report, which shall verify
14 compliance with Section 510.5.3, shall be submitted to OCSD Communications and
15 the fire and building code officials.

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17 **Section 3-3-8. Chapter 6**

18 **Chapter 6 Building Services and Systems** is adopted in its entirety without amendments.

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20 **Section 3-3-9. Chapter 7**

21 **Chapter 7 Fire-Resistance-Rated Construction** is adopted in its entirety without
22 amendments.

23
24 **Section 3-3-10. Chapter 8**

1 **Chapter 8 Interior Finish, Decorative Materials and Furnishings** is adopted in its
2 entirety without amendments.

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4 **Section 3-3-11. Chapter 9**

5 **Chapter 9 Fire Protection Systems** is adopted in its entirety with the following
6 amendments:

7 **Section 903.2 Where required** is hereby revised as follows:

8 **903.2 Where required.** Approved automatic sprinkler systems in buildings and
9 structures shall be provided when one of the following conditions exists:

- 10 1. **New buildings:** Notwithstanding any applicable provisions of Sections 903.2.1
11 through 903.2.19, an automatic fire-extinguishing system shall also be installed in
12 all occupancies when the total building area exceeds 5,000 square feet as defined
13 in Section 202, regardless of fire areas or allowable area, or is more than two
14 stories in height.

15 **Exception:** Subject to approval by the Fire Code Official, open parking
16 garages in accordance with Section 406.5 of the California Building Code.

- 17 2. **Existing Buildings:** Notwithstanding any applicable provisions of this code, an
18 automatic sprinkler system shall be provided in an existing building when an
19 addition occurs and one of the following conditions exists:

- 20 a. When an addition is 33% or more of the existing building area, and the
21 resulting building area exceeds 5000 square feet
22 b. When an addition exceeds 2000 square feet and the resulting building
23 area exceeds 5000 square feet.
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1 c. An additional story is added above the second floor regardless of fire
2 areas or allowable area.

3 **Exception:** Additions and/or alterations to Group R-3 occupancies shall
4 comply with Section 903.2.8(2).

5 **Section 903.2.8 Group R** is hereby revised as follows:

6 **903.2.8 Group R.** An automatic sprinkler system installed in accordance with Section
7 903.3 shall be provided throughout all buildings with a Group R fire area as follows:

8 1. **New Buildings:** An automatic sprinkler system shall be installed throughout all
9 new buildings.

10 2. **Existing Buildings:** All existing buildings shall be equipped with automatic fire
11 sprinkler systems when alteration or addition meets the following conditions:

12 a. **Alteration:** When the area of the existing structure is greater than 5,500 square
13 feet and the area of alteration within any two-year period exceeds 50% of the
14 area of the existing structure.

15 **Exception** When the cost of installing an approved automatic sprinkler
16 system exceeds 5% of the cost of the alteration, with the approval of
17 the Fire Code Official, the required automatic sprinkler system may be
18 omitted. The sprinkler system cost shall be calculated at \$1.65 per
19 square foot.

20 b. **Addition:** The addition and existing building shall be equipped with automatic
21 fire sprinkler system when the total square footage of the addition is greater
22 than 550 square feet and the structure with the addition is 5,500 square feet
23 or greater
24

25 **Exceptions:**

- 1 2. Existing Group R-3 occupancies converted to Group R-3.1 occupancies and not
2 housing bedridden clients, not housing nonambulatory clients above the first floor,
3 and not housing clients above the second floor.
- 4 2. Existing Group R-3 occupancies converted to Group R-3.1 occupancies housing only
5 one bedridden client and complying with Section 435.8.3.3 of the California Building
6 Code.
- 7 3. Pursuant to Health and Safety Code, Section 13113, occupancies housing ambulatory
8 children only, none of whom are mentally ill children or children with intellectual
9 disabilities, and the buildings or portions thereof in which such children are housed
10 are not more than two stories in height, and building or portions thereof housing
11 such children have an automatic fire alarm system activated by approved smoke
12 detectors.
- 13 4. Pursuant to Health and Safety Code, Section 13143.6, occupancies licensed for
14 protective social care which house ambulatory clients only, none of whom is a child
15 (under the age of 18 years), or who is elderly (65 years of age or over).

16 When not used in accordance with Section 504.2 or 506.3 of the California Building
17 Code, an automatic sprinkler system installed in accordance with Section 903.3.1.2 shall
18 be allowed in Group R-2.1 occupancies.

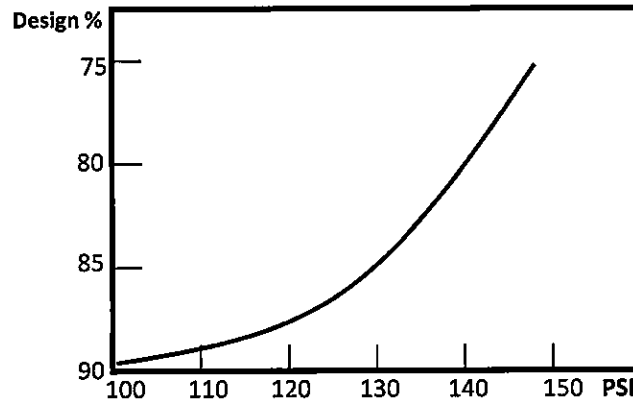
19 An automatic sprinkler system designed in accordance with Section 903.3.1.3 shall not
20 be utilized in Group R-2.1 or R-4 occupancies.

21 **Section 903.3.5.3 Hydraulically calculated systems** is hereby added as follows:

22 **903.3.5.3 Hydraulically calculated systems.** The design of hydraulically calculated
23 fire sprinkler systems shall not exceed 90% of the water supply capacity.
24

1 **Exception:** When static pressure exceeds 100 psi, and when required by the fire
2 code official, the fire sprinkler system shall not exceed the water supply capacity
3 specified by Table 903.3.5.3.

4 **TABLE 903.3.5.3**
5 **Hydraulically Calculated Systems**



13 **Section 3-3-12. Chapter 10**

14 **Chapter 10 Means of Egress** is adopted in its entirety without amendments.

15
16 **Section 3-3-13. Chapter 11**

17 **Chapter 11 Construction Requirements for Existing Buildings.** Adopt only those

18 Sections and Subsections listed below:

19 **1103.7**

20 **1103.7.3**

21 **1103.7.3.1**

22 **1103.7.8 – 1103.7.8.2**

23 **1103.7.9 – 1103.7.9.10**

24 **1103.8 – 1103.8.5.3**

25 **1107**

1 **1113**

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6 **Section 3-3-14. Chapter 20**

7 **Chapter 20 Aviation Facilities** is adopted in its entirety without amendments.

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9 **Section 3-3-15. Chapter 21**

10 **Chapter 21 Dry Cleaning** is adopted in its entirety without amendments.

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12 **Section 3-3-16. Chapter 22**

13 **Chapter 22 Combustible Dust-Producing Operations** is adopted in its entirety without
14 amendments.

15
16 **Section 3-3-17. Chapter 23**

17 **Chapter 23 Motor Fuel-Dispensing Facilities and Repair Garages** is adopted in its
18 entirety without amendments.

19
20 **Section 3-3-18. Chapter 24**

21 **Chapter 24 Flammable Finishes** is adopted in its entirety without amendments.

22
23 **Section 3-3-19. Chapter 27**

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1 **Chapter 27 Semiconductor Fabrication Facilities** is adopted in its entirety without
2 amendments.

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4 **Section 3-3-20. Chapter 28**

5 **Chapter 28 Lumber Yards and Agro-Industrial, Solid Biomass and Woodworking**
6 **Facilities** is adopted in its entirety with the following amendments:

7 **Section 2801.2 Permit** is hereby revised as follows:

8 **2801.2 Permit.** Permits shall be required as set forth in Section 105.6 and 105.6.29.

9 **Section 2808.2 Storage site** is hereby revised as follows:

10 **2808.2 Storage site.** Storage sites shall be level and on solid ground, elevated soil lifts
11 or other all-weather surface. Sites shall be thoroughly cleaned and approval obtained
12 from the fire code official before transferring products to the site.

13 **Section 2808.3 Size of piles** is hereby revised as follows:

14 **2808.3 Size of piles.** Piles shall not exceed 15 feet in height, 50 feet in width and 100
15 feet in length.

16 **Exception:** The fire code official is authorized to allow the pile size to be increased
17 where a fire protection plan is provided for approval that includes, but is not limited
18 to, the following:

- 19
- 20 1. Storage yard areas and materials-handling equipment selection, design and
21 arrangement shall be based upon sound fire prevention and protection principles.
 - 22 2. Factor that lead to spontaneous heating shall be identified in the plan, and
23 control of the various factors shall be identified and implemented, including
24 provisions for monitoring the internal condition of the pile.
- 25

- 1 3. The plan shall include means for early fire detection and reporting to the public
2 fire department; and facilities needed by the fire department for fire
3 extinguishment including a water supply and fire hydrants.
- 4 4. Fire apparatus access roads around the piles and access roads to the top of the
5 piles shall be established, identified and maintained.
- 6 5. Regular yard inspections by trained personnel shall be included as part of an
7 effective fire prevention maintenance program.

8 Additional fire protection called for in the plan shall be provided and shall be installed
9 in accordance with this code. The increase of the pile size shall be based upon the
10 capabilities of the installed fire protection system and features.

11 **Section 2808.4 Pile Separation** is hereby revised as follows:

12 2808.4. Pile separation. Piles shall be separated from adjacent piles by a minimum
13 distance of 20 feet. Additionally, piles shall have a minimum separation of 100 feet from
14 combustible vegetation.

15 **Section 2808.7 Pile fire protection** is hereby revised as follows:

16 **2808.7 Pile fire protection.** Automatic sprinkler protection shall be provided in
17 conveyor tunnels and combustible enclosures that pass under a pile. Combustible
18 conveyor systems and enclosed conveyor systems shall be equipped with an approved
19 automatic sprinkler system. Oscillating sprinklers with a sufficient projectile reach are
20 required to maintain a 40% to 60% moisture content and wet down burning/smoldering
21 areas.

22 **Section 2808.9 Material-handling equipment** is hereby revised as follows:

23 **2808.9 Material-handling equipment.** All material-handling equipment operated by
24 an internal combustion engine shall be provided and maintained with an approved spark
25

1 arrester. Approved material-handling equipment shall be available for moving wood
2 chips, hogged material, wood fines and raw product during fire-fighting operations.

3 **Section 2808.11 Temperature control** is hereby added as follows:

4 **2808.11 Temperature control.** The temperature shall be monitored and maintained
5 as specified in Sections 2808.11.1 and 2808.11.2.

6 **Section 2808.11.1 Pile temperature control** is hereby added as follows:

7 **2808.11.1 Pile temperature control.** Piles shall be rotated when internal
8 temperature readings are in excess of 165 degrees Fahrenheit.

9 **Section 2808.11.2 New material temperature control** is hereby added as follows:

10 **2808.11.2 New material temperature control.** New loads delivered to the facility
11 shall be inspected and tested at the facility entry prior to taking delivery. Material with
12 temperature exceeding 165 degrees Fahrenheit shall not be accepted on the site. New
13 loads shall comply with the requirements of this chapter and be monitored to verify that
14 the temperature remains stable.

15 **Section 2808.12 Water availability** is hereby added as follows:

16 **2808.12 Water Availability.** Facilities with over 2500 cubic feet shall provide a water
17 supply. The minimum fire flow shall be no less than 500 GPM @ 20 psi for a minimum of
18 1 hour duration for pile heights up to 6 feet and 2 hour duration for pile heights over 6
19 feet. If there is no water purveyor, an alternate water supply with storage tank(s) shall
20 be provided for fire suppression. The water supply tank(s) shall provide a minimum
21 capacity of 2500 gallons per pile (maximum 30,000 gallons) for piles not exceeding 6
22 feet in height and 5000 gallons per pile (maximum 60,000) for piles exceeding 6 feet in
23 height. Water tank(s) shall not be used for any other purpose unless the required fire
24

1 flow is left in reserve within the tank at all times. An approved method shall be provided
2 to maintain the required amount of water within the tank(s).

3 **Section 2808.13 Tipping area** is hereby added as follows:

4 **2808.13 Tipping areas** shall comply with the following:

- 5 1. Tipping areas shall not exceed a maximum area of 50 feet by 50 feet.
- 6 2. Material within a tipping area shall not exceed 5 feet in height at any time.
- 7 3. Tipping areas shall be separated from all piles by a 20 foot wide fire access lane.
- 8 4. A fire hydrant or approved fire water supply outlet shall be located within 150 feet of
9 all points along the perimeter of the tipping area.
- 10 5. All material within a tipping area shall be processed within 5 days of receipt.

11 **Section 2808.14 Emergency Contact** is hereby added as follows:

12 **2808.14 Emergency Contact.** The contact information of a responsible person or
13 persons shall be provided to the Fire Department and shall be posted at the entrance to
14 the facility for responding units. The responsible party should be available to respond to
15 the business in emergency situation.

16
17 **Section 3-3-21. Chapter 29**

18 **Chapter 29 Manufacture of Organic Coatings** is adopted in its entirety without
19 amendments.

20
21 **Section 3-3-22. Chapter 30**

22 **Chapter 30 Industrial Ovens** is adopted in its entirety without amendments.

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24
25 **Section 3-3-23. Chapter 31**

1 **Chapter 31 Tents and Other Membrane Structures** is adopted in its entirety without
2 amendments.

3
4 **Section 3-3-24. Chapter 32**

5 **Chapter 32 High-Piled Combustible Storage** is adopted in its entirety without
6 amendments.

7
8 **Section 3-3-25. Chapter 33**

9 **Chapter 33 Fire Safety During Construction and Demolition** is adopted in its entirety
10 without amendments.

11
12 **Section 3-3-26. Chapter 34**

13 **Chapter 34 Tire Rebuilding and Tire Storage** is adopted in its entirety without
14 amendments.

15
16 **Section 3-3-27. Chapter 35**

17 **Chapter 35 Welding and Other Hot Work** is adopted in its entirety without amendments.

18
19 **Section 3-3-28. Chapter 36**

20 **Chapter 36 Marinas** is adopted in its entirety without amendments.

21
22 **Section 3-3-29. Chapter 37**

23 **Chapter 37 Combustible Fibers** is adopted in its entirety without amendments.
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25

1 **Section 3-3-30. Chapter 48**

2 **Chapter 48 Motion Picture and Television Production Studio Sound Stages, Approved**

3 **Production Facilities and Production Locations** is adopted in its entirety without
4 amendments.

5
6 **Section 3-3-31. Chapter 49**

7 **Chapter 49 Requirements for Wildland-Urban Interface Fire Areas** is adopted in its
8 entirety with the following amendments:

9 **Section 4906.3 Requirements** is hereby revised as follows:

10 **4906.3 Requirements.** Hazardous vegetation and fuels around all applicable buildings
11 and structure shall be maintained in accordance with the following laws and regulations:

- 12 1. Public Resources Code, Section 4291.
- 13 2. California Code of Regulations, Title 14, Division 1.5, Chapter 7, Subchapter 3,
14 Section 1299 (see guidance for implementation "General Guideline to Create
15 Defensible Space").
- 16 3. California Government Code, Section 51182.
- 17 4. California Code of Regulations, Title 19, Division 1, Chapter 7, Subchapter 1,
18 Section 3.07.
- 19 5. OCFA Guideline C-05 "Vegetation Management Guideline – Technical Design for
20 New Construction Fuel Modification Plans and Maintenance Program."

21 **Section 4908 Fuel Modification Requirements for New Construction** is hereby added as
22 follows:

23 **4908 Fuel Modification Requirements for New Construction.** All new buildings to
24 be built or installed in a Wildfire Risk Area shall comply with the following:
25

1. Preliminary fuel modification plans shall be submitted to and approved by the fire code official prior to or concurrently with the approval of any tentative map.
2. Final fuel modification plans shall be submitted to and approved by the fire code official prior to the issuance of a grading permit.
3. The fuel modification plans shall meet the criteria set forth in the Fuel Modification Section of OCFA Guideline C-05 "Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program."
 - 3.1 The fuel modification plan shall include provisions for the maintenance of the fuel modification in perpetuity.
4. The fuel modification plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approval from the fire code official.
5. All elements of the fuel modification plan shall be maintained in accordance with the approved plan and are subject to the enforcement process outlined in the Fire Code.

Section 3-3-32. Chapter 50

Chapter 50 Hazardous Materials – General Provisions is adopted in its entirety with the following amendments.

Section 5001.5.2 Hazardous Materials Inventory Statement (HMIS), is hereby revised as follows:

5001.5.2 Hazardous Materials Inventory Statement (HMIS). Where required by the fire code official, an application for a permit shall include Orange County Fire Authority's Chemical Classification Packet, which shall be completed and approved prior to approval of plans, and/or the storage, use or handling of chemicals on the premises. The Chemical Classification Packet shall include the following information:

1. Product Name.
2. Component.
3. Chemical Abstract Service (CAS) number.
4. Location where stored or used.
5. Container size.
6. Hazard classification.
7. Amount in storage.
8. Amount in use-closed systems.
9. Amount in use-open systems.

Section 5003.1.1.1 Extremely Hazardous Substances is hereby added as follows:

5003.1.1.1 Extremely Hazardous Substances. No person shall use or store any amount of extremely hazardous substances (EHS) in excess of the disclosable amounts (see Health and Safety Code Section 25500 et al) in a residential zoned or any residentially developed property.

Section 3-3-33. Chapter 51

Chapter 51 Aerosols is adopted in its entirety without amendments.

Section 3-3-34. Chapter 53

Chapter 53 Compressed Gases is adopted in its entirety without amendments.

Section 3-3-35. Chapter 54

Chapter 54 Corrosive materials is adopted in its entirety without amendments.

1 **Section 3-3-36. Chapter 55**

2 **Chapter 55 Cryogenic Fluids** is adopted in its entirety without amendments.

3
4 **Section 3-3-37. Chapter 56**

5 **Chapter 56 Explosives and Fireworks** is adopted in its entirety with the following
6 amendments:

7 **Section 5608.2 Firing** is hereby added as follows:

8 **5608.2 Firing.** All fireworks displays, regardless of mortar, device, or shell size, shall be
9 electrically fired.

10 **Section 5608.3 Application for Permit** is hereby added as follows:

11 **Section 5608.3 Application for Permit.** A diagram of the grounds on which the
12 display is to be held showing the point at which the fireworks are to be discharged, the
13 fallout area based on 100 feet per inch of shell size, the location of all buildings, roads,
14 and other means of transportation, the lines behind which the audience will be
15 restrained, the location of all nearby trees, telegraph or telephone line, or other
16 overhead obstructions shall be provided to OCFA.

17
18 **Section 3-3-38. Chapter 57**

19 **Chapter 57 Flammable and Combustible Liquids** is adopted in its entirety without
20 amendments.

21
22 **Section 3-3-39. Chapter 58**

23 **Chapter 58 Flammable Gases and Flammable Cryogenic Fluids** is adopted in its entirety
24 without amendments.
25

1 **Section 3-3-40. Chapter 59**

2 **Chapter 59 Flammable Solids** is adopted in its entirety without amendments.
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5 **Section 3-3-41. Chapter 60**

6 **Chapter 60 Highly Toxic and Toxic Materials** is adopted in its entirety without
7 amendments.

8
9 **Section 3-3-42. Chapter 61**

10 **Chapter 61 Liquefied Petroleum Gases** is adopted in its entirety without amendments.

11
12 **Section 3-3-43. Chapter 62**

13 **Chapter 62 Organic Peroxides** is adopted in its entirety without amendments.

14
15 **Section 3-3-44. Chapter 63**

16 **Chapter 63 Oxidizers, Oxidizing Gases, and Oxidizing Cryogenic Fluids** is adopted in its
17 entirety without amendments.

18
19 **Section 3-3-45. Chapter 64**

20 **Chapter 64 Pyrophoric Materials** is adopted in its entirety without amendments.

21
22 **Section 3-3-46. Chapter 65**

23 **Chapter 65 Pyroxylin (Cellulose Nitrate) Plastics** is adopted in its entirety without
24 amendments.
25

1 **Section 3-3-47. Chapter 66**

2 **Chapter 66 Unstable (Reactive) Materials** is adopted in its entirety without amendments.
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4
5 **Section 3-3-48. Chapter 67**

6 **Chapter 67 Water-Reactive Solids and Liquids** is adopted in its entirety without
7 amendments.

8
9 **Section 3-3-49. Chapter 80**

10 **Chapter 80 Referenced Standards** is adopted in its entirety with the following amendments:

11 **NFPA 13, 2016 Edition, Standard for the Installation of Sprinkler Systems** is hereby
12 amended as follows:

13 **Section 6.7.3** is hereby revised as follows:

14 **6.7.3** Fire department connections (FDC) shall be of an approved type. The location shall
15 be approved and be no more than 150 feet from a public hydrant. The FDC may be
16 located within 150 feet of a private fire hydrant when approved by the fire code official.
17 The size of piping and the number of 2½" inlets shall be approved by the fire code official.
18 If acceptable to the water authority, it may be installed on the backflow assembly. Fire
19 department inlet connections shall be painted OSHA safety red or as approved. When the
20 fire sprinkler density design requires more than 500 gpm (including inside hose stream
21 demand), or a standpipe system is included, four 2½" inlets shall be provided.

22 **Section 8.3.3.1** is hereby revised as follows:

23 **8.3.3.1** When fire sprinkler systems are installed in shell buildings of undetermined use
24 (Spec Buildings) other than warehouses (S occupancies), fire sprinklers of the quick-
25

1 response type shall be used. Use is considered undetermined if a specific
2 tenant/occupant is not identified at the time the fire sprinkler plan is submitted.

3 Sprinklers in light hazard occupancies shall be one of the following:

- 4 (1) Quick-response type as defined in 3.6.4.8
- 5 (2) Residential sprinklers in accordance with the requirements of 8.4.5
- 6 (3) Quick response CMSA sprinklers
- 7 (4) ESFR sprinklers
- 8 (5) Standard-response sprinklers used for modifications or additions to existing light
9 hazard systems equipped with standard-response sprinklers
- 10 (6) Standard-response sprinklers used where individual standard-response sprinklers
11 are replaced in existing light hazard systems

12 **Section 11.1.1.1** is hereby added as follows:

13 **11.1.1.1** When fire sprinkler systems are required in buildings of undetermined use
14 other than warehouses, they shall be designed and installed to have a fire sprinkler
15 density of not less than that required for an Ordinary Hazard Group 2 use, with no
16 reduction(s) in density or design area. Warehouse fire sprinkler systems shall be
17 designed to Figure 16.2.1.3.2 (d) curve "G". Use is considered undetermined if a specific
18 tenant/occupant is not identified at the time the sprinkler plan is submitted. Where a
19 subsequent use or occupancy requires a system with greater capability, it shall be the
20 responsibility of the occupant to upgrade the system to the required density for the new
21 use or occupancy.

22 **Section 11.2.3.1.1.1** is hereby added as follows:

23 **11.2.3.1.1.1** The available water supply for fire sprinkler system design shall be
24 determined by one of the following methods, as approved by the fire code official:
25

- 1) Subtract the project site elevation from the low water level for the appropriate pressure zone and multiply the result by 0.433;
- 2) Use a maximum of 40 psi, if available;
- 3) Utilize the OCFA water-flow test form/directions to document a flow test conducted by the local water agency or an approved third party licensed in the State of California.

NFPA 13D 2016 Edition, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes is hereby amended as follows:

Section 7.1.2 is hereby revised as follows:

7.1.2 The sprinkler system piping shall not have separate control valves installed unless supervised by a central station, proprietary, or remote station alarm service.

NFPA 14, 2013 Edition, Installation of Standpipe and Hose Systems is hereby amended as follows:

Section 7.3.1.1 is hereby is deleted in its entirety and replaced as follows:

7.3.1.1 Class I and III Standpipe hose connections shall be unobstructed and shall be located not less than 18 inches or more than 24 inches above the finished floor. Class II Standpipe hose connections shall be unobstructed and shall be located not less than 3 feet or more than 5 feet above the finished floor.

NFPA 24, 2016 Edition, Standard for the Installation of Private Fire Service Mains and Their Appurtenances is hereby amended as follows:

Section 6.2.8.1 is hereby added as follows:

6.2.8.1 All indicating valves controlling fire suppression water supplies shall be painted OSHA red.

Exceptions:

- 1 2. Brass or bronze valves on sprinkler risers mounted to the exterior of the building
2 may be left unpainted.
- 3 2. Where OS&Y valves on the detector check assembly are the only control valves,
4 at least one OS&Y valve shall be painted red.

5 **Section 6.2.9** is hereby amended as follows:

6 All connections to private fire service mains for fire protection systems shall be arranged
7 in accordance with one of the following so that they can be isolated:

8 (1) A post indicator valve installed not less than 40 ft (12 m) from the
9 building

10 (a) For buildings less than 40 ft (12 m) in height, a post indicator valve
11 shall be permitted to be installed closer than 40 ft (12 m) but at least as far
12 from the building as the height of the wall facing the post indicator valve.

13 (2) A wall post indicator valve

14 (3) An indicating valve in a pit, installed in accordance with Section 6.4

15 (4) A backflow preventer with at least one indicating valve not less than 40 ft
16 (12 m) from the building

17 (a) For buildings less than 40 ft (12 m) in height, a backflow preventer with
18 at least one indicating valve shall be permitted to be installed closer than
19 40 ft (12 m) but at least as far from the building as the height of the wall
20 facing the backflow preventer.

21 (5) Control valves installed in a fire-rated room accessible from the exterior

22 (6) Control valves in a fire-rated stair enclosure accessible from the exterior

23 **Section 10.1.5** is hereby added as follows:
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1 **10.1.5** All ferrous pipe and joints shall be polyethylene encased per AWWA C150, Method
2 A, B, or C. All fittings shall be protected with a loose 8-mil polyethylene tube or sheet.
3 The ends of the tube or sheet shall extend past the joint by a minimum of 12 inches and
4 be sealed with 2 inch wide tape approved for underground use. Galvanizing does not meet
5 the requirements of this section.

6 **Exception:** 304 or 316 Stainless Steel pipe and fittings

7 **Section 10.4.1.1** is hereby revised as follows:

8 **10.4.1.1** All bolted joint accessories shall be cleaned and thoroughly coated with asphalt
9 or other corrosion-retarding material after installation.

10 **Exception:** Bolted joint accessories made from 304 or 316 stainless steel.

11 **Section 10.4.1.1.1** is hereby added as follows:

12 **10.4.1.1.1** All bolts used in pipe-joint assembly shall be 316 stainless steel.

13 **Section 10.4.3.2** is hereby deleted and replaced as follows:

14 **10.4.3.2** Where fire service mains enter the building adjacent to the foundation, the
15 pipe may run under a building to a maximum of 24 inches, as measured from the
16 interior face of the exterior wall to the center of the vertical pipe. The pipe under the
17 building or building foundation shall be 304 or 316 stainless steel and shall not contain
18 mechanical joints or it shall comply with Sections 10.4.3.2.1 through 10.4.3.2.4.

20 **Appendices**

21 **Appendix B** is adopted in its entirety without amendments.

22 **Appendix BB** is adopted in its entirety without amendments.

23 **Appendix C** is adopted in its entirety without amendments.

24 **Appendix CC** is adopted in its entirety without amendments.
25

1 **Appendix H** is adopted in its entirety without amendments.

2 **Appendix X, OCFA Guideline B-09** (Revised January/1/16) is adopted in its entirety.

3 **Appendix Y, OCFA Guideline B-09a** (January/01/16) is adopted in its entirety.

4 **Appendix Z, OCFA Guideline C-05** (August/05/16) is adopted in its entirety.

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This ordinance shall take effect and be in full force thirty (30) days from and after its passage and before the expiration of fifteen (15) days after the passage thereof, shall be published once in an adjudicated newspaper in the County of Orange.

THE FOREGOING was **PASSED** and **ADOPTED** by the following vote of the Orange County Board of Supervisors on November 22, 2016, to wit:

AYES: Supervisors: ANDREW DO, TODD SPITZER, MICHELLE STEEL
SHAWN NELSON, LISA A. BARTLETT

NOES:
EXCUSED:
ABSTAINED:

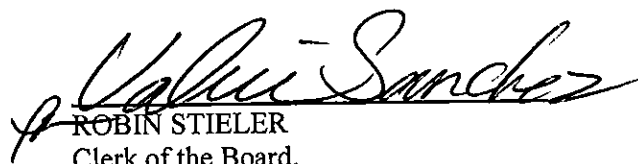


CHAIRWOMAN

STATE OF CALIFORNIA)
) ss:
COUNTY OF ORANGE)

I, ROBIN STIELER, Clerk of the Board of Orange County, California, hereby certify that a copy of this document has been delivered to the Chairman of the Board and that the above and foregoing Ordinance was duly and regularly adopted by the Orange County Board of Supervisors.

IN WITNESS WHEREOF, I have hereto set my hand and seal.



ROBIN STIELER
Clerk of the Board.
County of Orange, State of California



Ordinance No.: 16-022
Agenda Date: 11/22/2016
Item No.: 32



I certify that the foregoing is a true and correct copy of the Ordinance adopted by the Board of Supervisors, Orange County, State of California

Robin Stieler, Clerk of the Board of Supervisors.

By: _____
Deputy