

ORDINANCE NO. ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GARDEN GROVE AMENDING TITLE 18 OF THE GARDEN GROVE MUNICIPAL CODE AND ADOPTING BY REFERENCE THE FOLLOWING PRIMARY CODES WITH CERTAIN AMENDMENTS, DELETIONS, AND ADDITIONS THERETO: CALIFORNIA BUILDING CODE, 2019 EDITION; CALIFORNIA RESIDENTIAL CODE, 2019 EDITION; CALIFORNIA ELECTRICAL CODE, 2019 EDITION; CALIFORNIA MECHANICAL CODE, 2019 EDITION; CALIFORNIA PLUMBING CODE, 2019 EDITION; CALIFORNIA ENERGY CODE, 2019 EDITION; CALIFORNIA HISTORICAL BUILDING CODE, 2019 EDITION; CALIFORNIA FIRE CODE, 2019 EDITION; CALIFORNIA EXISTING BUILDING CODE, 2019 EDITION; CALIFORNIA GREEN BUILDING STANDARDS CODE, 2019 EDITION; CALIFORNIA REFERENCED STANDARDS CODE, 2019 EDITION; AND CERTAIN SECONDARY CODES INCLUDING THE INTERNATIONAL PROPERTY MAINTENANCE CODE, 2018 EDITION, AS PUBLISHED BY THE INTERNATIONAL CODE COUNCIL; AND THE INTERNATIONAL SWIMMING POOL AND SPA CODE, 2018 EDITION, AS PUBLISHED BY THE INTERNATIONAL CODE COUNCIL

City Attorney Summary

This Ordinance adopts and amends the 2019 Editions of the California Building, Residential, Plumbing, Electrical, Mechanical, Energy, Historical Building, Fire, Existing Building, Green Building, and Referenced Standards Codes, adopted by the State of California. This Ordinance further adopts the 2018 Editions of the International Property Maintenance and International Swimming Pool and Spa Codes.

A. RECITALS.

(i) Article 2 of Chapter 1 of Part 1 of Division 1 of Title 5 of the California Government Code (§§ 50022.1 et seq.) authorizes the adoption, by reference, of the California Building Code, 2019 Edition; the California Residential Code, 2019 Edition; the California Electrical Code, 2019 Edition; the California Mechanical Code, 2019 Edition; the California Plumbing Code, 2019 Edition; the California Energy Code, 2019 Edition; the California Historical Building Code, 2019 Edition; the California Fire Code, 2019 Edition; the California Existing Building Code, 2019 Edition; the California Green Building Standards Code, 2019 Edition; and the California Referenced Standards Code, 2019 Edition as adopted into the California Code of Regulations, Title 24, Parts 2 through 6 and Parts 8 through 12 respectively (collectively, the "California Building Standards Code"); the International Property Maintenance Code, 2018 Edition; and the International Swimming Pool and Spa Code, 2018 Edition.

(ii) Pursuant to the provisions of the California Health and Safety Code Section 17958, 17958.5 and 17958.7, it is determined that the amendments of building standards

within the California Building Standards Code in this Ordinance are reasonably necessary because of local climatic, geological, or topographical conditions as more particularly identified in Section 7 of this Ordinance.

(iii) Adoption by reference of those additional Uniform Codes is not subject to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

(iv) A duly noticed public hearing, as required by California Government Code Section 50022.3, has been conducted and concluded prior to the adoption of this Ordinance.

(v) All legal prerequisites to the adoption of this Ordinance have occurred.

B. ORDINANCE

NOW, THEREFORE, the City Council of the City of Garden Grove does hereby find, determine and ordain as follows:

SECTION 1: Title 18 of the Garden Grove Municipal Code, entitled Building Codes and Regulations, of the City of Garden Grove is hereby amended as set forth herein, provided that said amendments shall not apply to, or excuse any violation thereof occurring prior to the effective date of this Ordinance and provided further that the California Building Standards Code and Uniform Codes as adopted by reference and amended by Ordinance No. 2876 of this City shall continue to be applicable to construction for which permits have been issued prior to the effective date of this Ordinance.

SECTION 2: Chapter 18.04 of Title 18 of the Garden Grove Municipal Code is hereby repealed and replaced in its entirety to read as follows:

Chapter 18.04

CODES ADOPTED BY REFERENCE

Section:

18.04.010 Codes Designated — Filing.

18.04.010 Codes Designated — Filing.

The California Building Code, 2019 Edition, based on the 2018 International Building Code as published by the International Code Council, including Division II of Chapter 1, and appendices H, I and J; California Residential Code, 2019 Edition, based on the 2018 International Residential Code as published by the International Code Council, including Division II of Chapter 1, and appendices H, J and V; California Electrical Code, 2019 Edition, based on the 2017 National Electrical Code as published by the National Fire Protection Association; California Mechanical Code, 2019 Edition, based on the 2018 Uniform Mechanical Code as published by the International Association

of Plumbing and Mechanical Officials, including appendices B and C; California Plumbing Code, 2019 Edition, based on the 2018 Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials, including appendices A, B, C, D, G, H, and I; California Energy Code, 2019 Edition, as published by the International Code Council; California Historical Building Code, 2019 Edition, as published by the International Code Council; California Fire Code, 2019 Edition, based on the 2018 International Fire Code as published by the International Code Council, including appendices B, BB, C, and CC; California Existing Building Code, 2019 Edition, based on the 2018 International Existing Building Code as published by the International Code Council; California Green Building Standards Code, 2019 Edition, as published by the International Code Council; and California Referenced Standards Code, 2019 Edition, as published by the International Code Council as adopted into the California Code of Regulations, Title 24, Parts 2 through 6, and 8 through 12 respectively; International Property Maintenance Code, 2018 Edition as published by the International Code Council; and International Swimming Pool and Spa Code, 2018 Edition as published by the International Code Council; are hereby adopted by reference as the Building Codes and Regulations of the City of Garden Grove, together with amendments set forth in Chapters 18.12, 18.14, 18.24 and 18.32 of this Title.

SECTION 3: Chapter 18.12 of Title 18 of the Garden Grove Municipal Code is hereby repealed and replaced in its entirety to read as follows:

Chapter 18.12

BUILDING CODE

Sections:

18.12.010	Section 101.1 Amended — Title.
18.12.020	Section 113 Amended — Board of Appeals.
18.12.030	Section 105.2 Amended — Work exempt from permit.
18.12.040	Section [F]903.2 Amended — Where required.
18.12.050	Table 1505.1 Amended — Roofing Classification.
18.12.060	Section 1505.1.3 Amended — Roof coverings within all other areas.

18.12.010 Section 101.1 Amended — Title. Section 101.1 is hereby amended to read as follows:

101.1 Title. These regulations shall be known as the Building Code of the City of Garden Grove, hereinafter referred to as "this Code."

18.12.020 Section 113 Amended — Board of Appeals. Section 113 (including subsections) is hereby amended and restated to read as follows:

113 Board of Appeals. The Administrative Board of Appeals for the City shall hear and decide appeals of orders, decisions or determinations made by the Building Official relative to the application and interpretations of the Building Codes and Regulations of the City of Garden Grove including, without limitation, this Code. Refer to Title 2, Chapter 2.54, of this Code.

18.12.030 Section 105.2 Amended — Work exempt from permit. Item # 2 under Building is hereby amended to read as follows:

2. Masonry and/or concrete fences not over three (3) feet high and other fences not over seven (7) feet high.

18.12.040 Section [F]903.2 Amended — Where required. Section [F]903.2 is hereby amended by adding the following after the first paragraph:

Notwithstanding any other provisions in this Code, approved automatic sprinkler systems shall be installed and maintained in accordance with the latest edition of NFPA Standard 13 throughout all new buildings or structures, regardless of fire walls, with a gross floor area of 6,000 square feet or more, or with a total height of 55 feet or more above grade, or containing three or more stories.

Buildings or structures which presently exceed 6,000 square feet of floor area constructed prior to the adoption of this Code, upon or to which any alteration or additions are to be made which would add more than 2,000 square feet to the existing square footage of this building, shall have automatic sprinklers installed, as required herein and above.

Buildings or structures which presently do not exceed 6,000 square feet of floor area, to which any alterations or additions are made, and after such alterations or additions the floor area will exceed 8,000 square feet, shall have automatic sprinkler systems installed, as required herein and above. (Balance of Section to remain unchanged.)

18.12.050 Table 1505.1 Amended — Roofing Classification. Table 1505.1 is hereby amended by the deletion of Table 1505.1 and the addition of a new Table 1505.1 thereto to read as follows:

TABLE 1505.1^a
 MINIMUM ROOF COVERING CLASSIFICATION
 FOR TYPES OF CONSTRUCTION

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	B	B	B	B	B	B

For SI: 1 foot = 304.8mm, 1 square foot = 0.0929m²

a. Unless otherwise required in accordance with Chapter 7A.

18.12.060 Section 1505.1.3 Amended – Roof coverings within all other areas.
 Section 1505.1.3 is hereby amended by the deletion of the entire section and the addition of a new section thereto, to read as follows:

1505.1.3 Roof coverings within all other areas. The entire roof covering of every existing structure where more than 50 percent of the total area is replaced within any one-year period, the entire roof covering of every new structure, and any roof covering applied in the alteration, repair or replacement of the roof of every existing structure, shall be a fire-retardant roof covering that is at least Class B.

SECTION 4: Chapter 18.14 of Title 18 of the Garden Grove Municipal Code is hereby repealed and replaced in its entirety to read as follows:

Chapter 18.14

RESIDENTIAL CODE

Sections:

- 18.14.010 Section R101.1 Amended — Title.
- 18.14.020 Section R112 Amended — Board of Appeals.
- 18.14.030 Section R902.1 Amended — Roofing covering materials.
- 18.14.040 Section R902.1.3 Amended — Roof coverings in all other areas.
- 18.14.050 Section R902.2 Amended — Fire-retardant-treated shingles and shakes.

18.14.010 Section R101.1 Amended — Title. Section 101.1 is hereby amended to read as follows:

R101.1 Title. These provisions shall be known as the Residential Code of the City of Garden Grove, and shall be cited as such and will be referred to herein as "this Code."

18.14.020 Section R112 Amended — Board of Appeals. Section R112 is hereby amended and restated to read as follows:

R112 Board of Appeals. The Administrative Board of Appeals for the City shall hear and decide appeals of orders, decisions or determinations made by the Building Official relative to the application and interpretations of the Building Codes and Regulations of the City of Garden Grove including, without limitation, this Code. Refer to Title 2, Chapter 2.54, of this Code.

18.14.030 Section R902.1 Amended - Roof covering materials.

Section R902.1 is hereby amended to read as follows:

R902.1 Roofing covering materials. Roofs shall be covered with materials as set forth in Sections R904 and R905. A minimum Class A or B roofing shall be installed in areas designated by this section or where the edge of the roof is less than 3 feet from a lot line. Class A and B roofing required by this section to be listed shall be tested in accordance with UL 790 or ASTM E 108.

Exceptions:

1. Class A roof assemblies include those with coverings of brick, masonry and exposed concrete roof deck.
2. Class A roof assemblies include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible decks.
3. Class A roof assemblies include minimum 16 ounces per square foot copper sheets installed over combustible decks.
4. Class A roof assemblies include slate installed over underlayment over combustible decks.

18.14.040 Section R902.1.3 Amended - Roof coverings in all other areas. Section R902.1.3 is hereby amended to read as follows:

R902.1.3 Roof coverings in all other areas. The entire roof covering of every existing structure where more than 50 percent of the total roof area is replaced within any one-year period, the entire roof covering of every new structure and any roof covering applied in alteration, repair or replacement of the roof of every existing structure, shall be a fire-retardant roof covering that is at least Class B.

18.14.050 Section R902.2 Amended — Fire-retardant-treated shingles and shakes. The first paragraph of Section R902.2 is hereby amended to read as follows:

R902.2 Fire-retardant-treated shingles and shakes. Fire-retardant-treated wood shakes and shingles are wood shakes and shingles complying with UBC Standard 15-3 or 15-4 which are impregnated by the full-cell vacuum-pressure process with fire-retardant chemicals, and which have been qualified by UBC

Standard 15-2 for use on Class A or B roofs. Fire-retardant-treated wood shakes and shingles shall comply with ICC-ES EG107 and with the weathering requirements contained in Health and Safety Code Section 13132.7 (j). Each bundle shall bear labels from an ICBO accredited quality control agency identifying their roof-covering classification and indicating their compliance with ICC-ES EG 107 and with the weathering requirements contained in Health and Safety Code Section 13132.7(j).

SECTION 5: Chapter 18.24 of Title 18 of the Garden Grove Municipal Code is hereby repealed and replaced in its entirety to read as follows:

Chapter 18.24

PLUMBING CODE

Sections:

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| 18.24.010 | Section 610.8 Amended — Size of Meter and Building Supply Pipe Using Table 610.4. |
| 18.24.020 | Table 610.4 Amended — Fixture Unit Table for Determining Water Pipe and Meter Sizes. |

18.24.010 Section 610.8 Amended — Size of Meter and Building Supply Pipe Using Table 610.4. The last paragraph of Section 610.8 is hereby amended to read as follows:

No building supply pipe shall be less than one (1) inch in diameter for single-family dwellings and 3/4 inch in diameter for all other buildings.

18.24.020 Table 610.4 Amended — Fixture Unit Table for Determining Water Pipe and Meter Sizes. Footnote Number 2 of Table 610.4 is hereby amended to read as follows:

2. Building supply - not less than 1" diameter for each single-family dwelling unit, and not less than 3/4" diameter for all other buildings.

SECTION 6: Chapter 18.32 of Title 18 of the Garden Grove Municipal Code is hereby repealed and replaced in its entirety to read as follows:

Chapter 18.32

FIRE CODE

Sections:

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|-----------|--|
| 18.32.010 | Enforcement and Inspections. |
| 18.32.020 | Amendments to 2019 California Fire Code. |

18.32.010 Enforcement and Inspections. The 2019 California Fire Code shall be enforced by the Orange County Fire Authority, which shall be operated under the Director of Fire Services of the Orange County Fire Authority. The Director of Fire Services of the Fire Authority may detail such members of the Fire Authority as inspectors as shall be necessary from time to time.

18.32.020 Amendments to the 2019 California Fire Code.

**Chapter 1
Scope and Administration**

Chapter 1, Scope and Administration, is adopted in its entirety, with the exception of Section 109, and with the following amendments:

Section 110.4, Violation penalties, is amended to read as follows:

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

Section 110.4.2, Infraction and misdemeanor, is hereby added as follows:

110.4.2 Infraction and misdemeanor. Persons operating or maintaining any occupancy, premises or vehicle subject to this code that shall permit any fire or life safety hazard to exist on premises under their control shall be guilty of an infraction. Persons who fail to take immediate action to abate a fire or life safety hazard when ordered or notified to do so by the chief or a duly authorized representative are guilty of a misdemeanor.

**Chapter 2
Definitions**

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

Section 202, General Definitions, is amended by adding "OCFA," and "Spark Arrester" as follows:

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

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.

Chapter 3 General Requirements

Chapter 3, General Requirements, is adopted in its entirety, with the exception of Sections 308.1.4, 311.5 through 311.5.5, 318, and 319, and with the following amendments:

Section 304.1.2, Vegetation, is amended to read as follows:

304.1.2 Vegetation. Weeds, grass, vines or other growth that is capable of being ignited and endangering property, shall be cut down and removed by the owner or occupant of the premises. Vegetation clearance requirement in urban-wildland interface areas shall be in accordance with Chapter 49. Type, amount, arrangement, and maintenance of vegetation in a fuel modification area, interior slope, or similarly hazardous area shall be in accordance with OCFA Guideline C-05 "Vegetation Management Guideline—Technical Design for New Construction, Fuel Modification Plans, and Maintenance Program."

Section 305.6, Hazardous conditions, is added to read as follows:

305.6 Hazardous conditions. Outdoor fires burning wood or other solid fuel are not allowed when any of the following conditions applies:

1. when predicted sustained winds exceed 8 MPH and relative humidity is less than 25%, or a red flag condition has been declared
2. when an official sign was caused to be posted by the fire code official, or a public announcement is made

No outdoor fires using any fuel type are permitted when predicted sustained winds exceed 20 MPH or when such fires present a hazard as determined by the fire code official.

Section 305.7, Disposal of rubbish, is added to read as follows:

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

Section 307.6, Outdoor Fireplaces, Fire Pits, Fire Rings, or similar devices used at Group R Occupancies, is added to read as follows:

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

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

Section 307.6.1, Gas-fuel devices, is hereby added as follows:

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

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

307.6.2 Devices using wood or fuels other than natural gas or liquefied-petroleum gas. Permanent outdoor fireplaces burning wood or other solid fuel shall be constructed in accordance with the California Building Code with clearance from combustible construction and building openings as required therein. Fires in a fireplace shall be contained within a firebox with an attached chimney. The opening in the face of the firebox shall have an installed and maintained method of arresting sparks.

The burning of wood or other solid fuel in a device is not allowed within 25 feet of combustible structures unless within an approved permanent fireplace, Conditions which could cause a fire to spread within 25 feet of a structure or to vegetation

shall be eliminated prior to ignition. Fires in devices burning wood or solid fuel shall be in accordance with Sections 305, 307, and 308.

Exceptions:

1. Portable fireplaces and fire rings/pits equipped with a device to arrest sparks shall be located at least 3' from combustible construction at R-3 occupancies,
2. Portable fireplaces, and fire pits/rings equipped with a device to arrest sparks, shall be located at least 15 feet from combustible structures at other R occupancies.

Section 307.6.2.1, Where prohibited, is hereby added as follows:

307.6.2.1 Where prohibited. The burning of wood and other solid fuels shall not be conducted within a fuel modification zone, Wildfire Risk Area (WRA), Wildland-Urban Interface Area (WUI), or in locations where conditions could cause the spread of fire to the WRA or WUI.

Exceptions:

1. Permanent fireplaces that are not located in a fuel modification zone.
2. Where determined by the Fire Code Official that the location or design of the device should reasonably prevent the start of a wildfire.

Section 308.1.6.3, Sky lanterns, is amended to read as follows:

308.1.6.3 Sky lanterns. A person shall not ignite, release, or cause to be released a sky lantern.

Section 321, Fuel Modification Requirements for New Construction, is added to read as follows:

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

Section 322, Clearance of brush or vegetation growth from roadways, is added to read as follows:

322 Clearance of brush or vegetation growth from roadways. The fire code official is authorized to cause areas within 10 feet (3048 mm) on each side of portions of highways and private streets which are improved, designed or ordinarily used for vehicular traffic, to be cleared of flammable vegetation and other

combustible growth. Measurement shall be from the flow-line or the end of the improved edge of the roadway surfaces.

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

Section 323, Unusual Circumstances, is added to read as follows:

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

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

Section 324, Use of Equipment, is added to read as follows:

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

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 324.1, Equipment and devices generating heat, sparks or open flames, is added to read as follows:

324.1 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.
3. Stop work when winds are 8 MPH or greater during periods when relative humidity is less than 25%, or a red flag condition has been declared or public announcement is made, when an official sign was caused to be posted by the fire code official, or when such fires present a hazard as determined by the fire code official.
4. Keep a cell phone nearby and call 911 immediate in case of fire.

Section 324.2, Sparks arresters, is added to read as follows:

324.2 Spark arresters. Spark arresters shall comply with Section 202, and when affixed to the exhaust system of engines or vehicles subject to Section 324 shall not be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite any flammable material.

**Chapter 4
Emergency Planning and Preparedness**

Chapter 4, Emergency Planning and Preparedness. Only the following sections, subsections, and amendment are adopted as listed below:

- 401 – 401.9
- 402
- 403.2

403.5 – 403.5.4

403.10.2.1.1

403.13 – 403.13.3

404.5 – 404.6.6

407

Section 407.5 is amended to read as follows:

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

Chapter 5 Fire Service Features

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

Section 501.1, Scope, is amended to read as follows:

501.1 Scope. Fire service features for buildings, structures and premises shall comply with this chapter and, where required by the fire code official, with OCFA Guideline B-09, "Fire Master Plan for Commercial & Residential Development." Fire service features for buildings, structures and premises located in State Responsibility Areas, and Local Responsibility Areas designated as Very High Hazard Fire Severity Zone shall also comply with OCFA Guideline B-09a, "Fire Safe Development in State Responsibility Areas, and Local Responsibility Areas designated as Very High Hazard Fire Severity Zone".

Section 510.1 Emergency responder radio coverage in new buildings is amended to read as follows:

510.1 Emergency responder radio coverage in new buildings. All new buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. This section shall not require improvement of the existing public safety communication systems. The Emergency Responder Radio Coverage System shall comply with the Orange County Sheriff's Department, Communications and Technology Division guidelines and specifications and, where the functionality or performance requirements in the California Fire Code are more stringent, this code.

Exceptions:

1. In buildings or structures where it is determined by the fire code official that the radio coverage system is not needed, including but not limited to the following:
 - a. Existing buildings or structures, unless required by the Building Official and OCFA for buildings and structures undergoing extensive remodel and/or expansion.
 - b. Elevators.
 - c. Structures that meet all of the following:
 - i. Three stories or less, and
 - ii. Do not have subterranean storage or parking, and
 - iii. Do not exceed 50,000 square feet on any single story.
 - d. Structures that meet all of the following:
 - i. Residential structures four stories or less, and
 - ii. Constructed of wood, and
 - iii. Do not have subterranean storage or parking, and
 - iv. Are not built integral to an above ground multi-story parking structure.

Should a structure that is three stories or less and 50,000 square feet or smaller on any single story include subterranean storage or parking, then this chapter shall apply only to the subterranean areas.
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 the facility, the fire code official shall have the authority to accept an automatically activated emergency radio coverage system.

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

Section 510.3, Permit required, is deleted without replacement.

**Chapter 6
Building Services and Systems**

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

**Chapter 7
Fire and Smoke Protection Features**

Chapter 7, Fire and Smoke Protection Features, is adopted in its entirety without amendments.

Chapter 8 Interior Finish, Decorative Materials and Furnishings

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

Chapter 9 Fire Protection and Life Safety Systems

Chapter 9, Fire Protection and Life Safety Systems, is adopted in its entirety with the following amendments:

Section 903.2, Where required, is amended to read as follows:

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

1. New Buildings: Notwithstanding any applicable provisions of Sections 903.2.1 through 903.2.19 an automatic fire-extinguishing system shall also be installed in all occupancies when the total building area exceeds 5,000 square feet (465 m²) as defined in Section 202, regardless of fire areas or allowable area.

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

2. Existing Buildings: Notwithstanding any applicable provisions of this code, an automatic sprinkler system shall be provided in an existing building when an addition occurs and when one of the following conditions exists:
 - a. When an addition is 33% or more of the existing building area, and the resulting building area exceeds 5,000 square feet (465 m²) as defined in Section 202; or
 - b. When an addition exceeds 2,000 square feet and the resulting building area exceeds 5,000 square feet.
 - c. An additional story is added above the second floor regardless of fire areas or allowable area.

Exception: Additions to Group R-3 occupancies shall comply with Section 903.2.8 (2).

Section 903.2.8, Group R, is amended to read as follows:

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

New Buildings: An automatic sprinkler system shall be installed throughout all new buildings.

Existing R-3 Buildings: An automatic sprinkler system shall be installed throughout when one of the following conditions exists:

- a. When an addition is 50% or more of the existing building area as defined in Section 202, and greater than 1000 square feet within a two year period; or,
- b. An addition when the existing building is already provided with automatic sprinklers; or,
- c. When an existing Group R Occupancy is being substantially renovated, and where the scope of the renovation is such that the Building Code Official determines that the complexity of installing a sprinkler system would be similar as in a new building.

Exceptions:

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

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

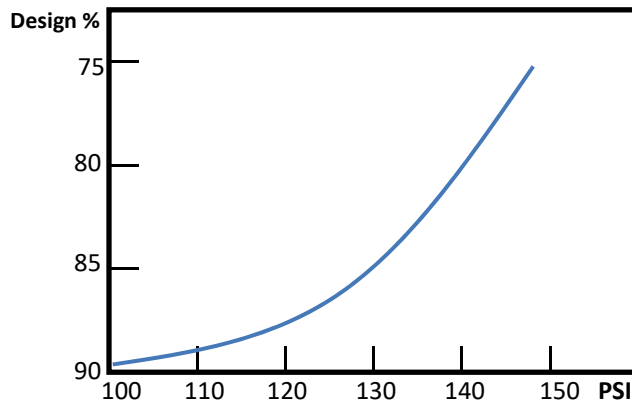
An automatic sprinkler system designed in accordance with Section 903.3.1.3 shall not be utilized in Group R-2.1 or R-4 occupancies.

Section 903.3.5.3, Hydraulically calculated systems, is added to read as follows:

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

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

**TABLE 903.3.5.3
Hydraulically Calculated Systems**



**Chapter 10
Means of Egress**

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

**Chapter 11
Construction Requirements for Existing Buildings**

Chapter 11 Construction Requirements for Existing Buildings. Only those sections and subsections are adopted as listed below:

- 1103.7
- 1103.7.3

1103.7.3.1

1103.7.8 – 1103.7.8.2

1103.7.9 – 1103.7.9.10

1103.8 – 1103.8.5.3

1103.9.1

1107

1113

1114

1115

1116

Chapter 12 Energy Systems

Chapter 12, Energy Systems, is adopted in its entirety with the following amendment:

Section 1201.1.1, Other systems, is added to read as follows:

1201.1.1 Other systems. Where required by the fire code official, other systems and operations including but not limited to battery systems assembly, battery reconditioning and storage, research and development of battery storage systems, electric vehicle manufacturing and testing, and battery charging systems for cars and carts inside of buildings or structures, shall comply with this chapter.

Exception: When approved by the fire code official, charging stations for electric vehicles located in open parking garages of Type I or II construction.

Chapter 20 Aviation Facilities

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

Chapter 21 Dry Cleaning

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

Chapter 22 Combustible Dust-Producing Operations

Chapter 22, Combustible Dust-Producing Operations, is adopted in its entirety without amendments.

Chapter 23
Motor Fuel-Dispensing Facilities and Repair Garages

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

Chapter 24
Flammable Finishes

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

Chapter 25
Fruit and Crop Ripening

Chapter 25, Fruit and Crop Ripening, is deleted in its entirety.

Chapter 26
Fumigation and Insecticidal Fogging

Chapter 26, Fumigation and Insecticidal Fogging, is deleted in its entirety.

Chapter 27
Semiconductor Fabrication Facilities

Chapter 27, Semiconductor Fabrication Facilities, is adopted in its entirety without amendments.

Chapter 28
Lumber Yards and Agro-Industrial, Solid Biomass and Woodworking Facilities

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

Section 2801.2, Permit, is amended to read as follows:

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

Section 2808.2, Storage site, is amended to read as follows:

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

Section 2808.3, Size of piles, is amended to read as follows:

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

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

1. Storage yard areas and materials-handling equipment selection, design and arrangement shall be based upon sound fire prevention and protection principles.
2. Factor that lead to spontaneous heating shall be identified in the plan, and control of the various factors shall be identified and implemented, including provisions for monitoring the internal condition of the pile.
3. The plan shall include means for early fire detection and reporting to the public fire department; and facilities needed by the fire department for fire extinguishment including a water supply and fire hydrants.
4. Fire apparatus access roads around the piles and access roads to the top of the piles shall be established, identified and maintained.
5. Regular yard inspections by trained personnel shall be included as part of an effective fire prevention maintenance program.

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

Section 2808.4, Pile separation, is amended to read as follows:

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

Section 2808.7, Pile fire protection, is amended to read as follows:

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

Section 2808.9, Material-handling equipment, is amended to read as follows:

2808.9 Material-handling equipment. All material-handling equipment operated by an internal combustion engine shall be provided and maintained with an

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

Section 2808.11, Temperature control, is added to read as follows:

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

Section 2808.11.1, Pile temperature control, is added to read as follows:

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

Section 2808.11.2, New material temperature control, is added to read as follows:

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

Section 2808.12, Water availability, is added to read as follows:

2808.12 Water availability. Facilities with over 2500 cubic feet shall provide a water supply. The minimum fire flow shall be no less than 500 GPM @ 20 psi for a minimum of 1 hour duration for pile heights up to 6 feet and 2 hour duration for pile heights over 6 feet. If there is no water purveyor, an alternate water supply with storage tank(s) shall be provided for fire suppression. The water supply tank(s) shall provide a minimum capacity of 2500 gallons per pile (maximum 30,000 gallons) for piles not exceeding 6 feet in height and 5000 gallons per pile (maximum 60,000) for piles exceeding 6 feet in height. Water tank(s) shall not be used for any other purpose unless the required fire flow is left in reserve within the tank at all times. An approved method shall be provided to maintain the required amount of water within the tank(s).

Section 2808.13, Tipping area, is added to read as follows:

2808.13 Tipping area. Tipping areas shall comply with the following:

1. Tipping areas shall not exceed a maximum area of 50 feet by 50 feet.
2. Material within a tipping area shall not exceed 5 feet in height at any time.

3. Tipping areas shall be separated from all piles by a 20 foot wide fire access lane.
4. A fire hydrant or approved fire water supply outlet shall be located within 150 feet of all points along the perimeter of the tipping area.
5. All material within a tipping area shall be processed within 5 days of receipt.

Section 2808.14, Emergency Contact, is added to read as follows:

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

Chapter 29 Manufacture of Organic Coatings

Chapter 29, Manufacture of Organic Coatings, is adopted in its entirety without amendments.

Chapter 30 Industrial Ovens

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

Chapter 31 Tents, Temporary Special Event Structures and Other Membrane Structures

Chapter 31, Tents, Temporary Special Event Structures and Other Membrane Structures, is adopted in its entirety without amendments.

Chapter 32 High-Piled Combustible Storage

Chapter 32, High-Piled Combustible Storage, is adopted in its entirety without amendments.

Chapter 33 Fire Safety During Construction and Demolition

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

**Chapter 34
Tire Rebuilding and Tire Storage**

Chapter 34, Tire Rebuilding and Tire Storage, is adopted in its entirety without amendments.

**Chapter 35
Welding and Other Hot Work**

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

**Chapter 36
Marinas**

Chapter 36, Marinas, is adopted in its entirety without amendments.

**Chapter 37
Combustible Fibers**

Chapter 37, Combustible Fibers, is adopted in its entirety without amendments.

**Chapter 39
Processing and Extraction Facilities**

Chapter 39, Processing and Extraction Facilities, is adopted in its entirety without amendments.

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

Chapter 48, Motion Picture and Television Production Studio Sound Stages, Approved Production Facilities and Production Locations, is adopted in its entirety without amendments.

**Chapter 49
Requirements for Wildland-Urban Interface Fire Areas**

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

Section 4906.3, Requirements, is amended to read as follows:

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

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

Section 4908, Fuel modification requirements for new Construction, is added to read as follows:

4908 Fuel modification requirements for new construction. All new buildings to be built or installed in a Wildfire Risk Area shall comply with the following:

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.”
 - a. 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.

Chapter 50 Hazardous Materials – General Provisions

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 amended to read 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 added to read 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.

Chapter 51 Aerosols

Chapter 51, Aerosols, is adopted in its entirety without amendments.

Chapter 53 Compressed Gases

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

Chapter 54 Corrosive Materials

Chapter 54, Corrosive Materials, is adopted in its entirety without amendments.

Chapter 55 Cryogenic Fluids

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

Chapter 56 Explosives and Fireworks

Chapter 56, Explosives and Fireworks, is adopted in its entirety with the following amendments:

Section 5608.2 Firing is hereby added to read as follows:

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

Section 5608.3 Application for Permit is added to read as follows:

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

Chapter 57 Flammable and Combustible Liquids

Chapter 57, Flammable and Combustible Liquids, is adopted in its entirety with the exception of Section 5707, with the following amendment:

Section 5707 On-Demand Mobile Fueling Operations is deleted without replacement.

Section 5701.1.1 Mobile fueling is added as follows:

Section 5701.1.1 Mobile fueling. On-demand mobile fueling of Class I, II, and III liquids into the fuel tanks of vehicles is prohibited.

Chapter 58 Flammable Gases and Flammable Cryogenic Fluids

Chapter 58, Flammable Gases and Flammable Cryogenic Fluids, is adopted in its entirety with the exception of Section 5809 and with the following amendment:

Section 5801.1, Scope, is amended to read as follows:

Section 5801.1 Scope. The storage and use of flammable gases and flammable cryogenic fluids shall be in accordance with this chapter, NFPA 2 and NFPA 55. Compressed gases shall also comply with Chapter 53 and cryogenic fluids shall also comply with Chapter 55. Flammable cryogenic fluids shall comply with Section 5806. Hydrogen motor fuel-dispensing stations and repair garages and their associated above-ground hydrogen storage systems shall also be designed, constructed and maintained in accordance with Chapter 23. Mobile fueling of gaseous and liquid hydrogen, compressed natural gas (CNG), and liquefied natural gas (LNG) into the fuel tanks of vehicles is prohibited.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 605).
2. Liquefied petroleum gases and natural gases regulated by Chapter 61.
3. Fuel-gas systems and appliances regulated under the California Mechanical Code and the California Plumbing Code other than gaseous hydrogen systems and appliances.
4. Pyrophoric gases in accordance with Chapter 64.
5. Section 5809 Mobile Gaseous Fueling of Hydrogen-Fueled Vehicles is deleted without replacement.

Chapter 59 Flammable Solids

Chapter 59, Flammable Solids, is adopted in its entirety without amendments.

Chapter 60 Highly Toxic and Toxic Materials

Chapter 60, Highly Toxic and Toxic Materials, is adopted in its entirety without amendments.

**Chapter 61
Liquefied Petroleum Gases**

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

**Chapter 62
Organic Peroxides**

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

**Chapter 63
Oxidizer, Oxidizing Gases, and Oxidizing Cryogenic Fluids**

Chapter 63, Oxidizer, Oxidizing Gases, and Oxidizing Cryogenic Fluids, is adopted in its entirety without amendments.

**Chapter 64
Pyrophoric Materials**

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

**Chapter 65
Pyroxylin (Cellulose Nitrate) Plastics**

Chapter 65, Pyroxylin (Cellulose Nitrate) Plastics, is adopted in its entirety without amendments.

**Chapter 66
Unstable (Reactive) Materials**

Chapter 66, Unstable (Reactive) Materials, is adopted in its entirety without amendments.

**Chapter 67
Water-Reactive Solids and Liquids**

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

**Chapter 80
Referenced Standards**

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

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

Section 6.7.3 is amended to read as follows:

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

Section 8.3.3.1 is amended to read as follows:

8.3.3.1 When fire sprinkler systems are installed in shell buildings of undetermined use (Spec Buildings) other than warehouses (S occupancies), fire sprinklers of the quick-response type shall be used. Use is considered undetermined if a specific tenant/occupant is not identified at the time the fire sprinkler plan is submitted. Sprinklers in light hazard occupancies shall be one of the following:

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

Section 8.15.1.2.7 is amended to read as follows:

8.15.1.2.7 Concealed spaces filled with noncombustible insulation shall not require sprinkler protection when approved by the fire code official.

Section 11.1.1.1 is added to read as follows:

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

Section 11.2.3.1.1.1 is added to read as follows:

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

- 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 amended as follows:

Section 7.1.2 is amended to read 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 amended as follows:

Section 7.3.1.1 is amended to read 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 amended as follows:

Section 6.2.8.1 is added to read as follows:

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

Exceptions:

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

Section 6.2.9 is amended to read as follows:

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

- (1) A post indicator valve installed not less than 40 ft (12 m) from the building
 - (a) For buildings less than 40 ft (12 m) in height, a post indicator valve shall be permitted to be installed closer than 40 ft (12 m) but at least as far from the building as the height of the wall facing the post indicator valve.
- (2) A wall post indicator valve
- (3) An indicating valve in a pit, installed in accordance with Section 6.4
- (4) A backflow preventer with at least one indicating valve not less than 40 ft (12 m) from the building
 - (a) For buildings less than 40 ft (12 m) in height, a backflow preventer with at least one indicating valve shall be permitted to be installed closer than 40 ft (12 m) but at least as far from the building as the height of the wall facing the backflow preventer.
- (5) Control valves installed in a fire-rated room accessible from the exterior
- (6) Control valves in a fire-rated stair enclosure accessible from the exterior

Section 10.1.5 is added to read as follows:

10.1.5 All ferrous pipe and joints shall be polyethylene encased per AWWA C150, Method A, B, or C. All fittings shall be protected with a loose 8-mil polyethylene

tube or sheet. The ends of the tube or sheet shall extend past the joint by a minimum of 12 inches and be sealed with 2 inch wide tape approved for underground use. Galvanizing does not meet the requirements of this section.

Exception: 304 or 316 Stainless Steel pipe and fittings

Section 10.4.1.1 is amended to read as follows:

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

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

Section 10.4.1.1.1 is added to read as follows:

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

Section 10.4.3.2 is hereby deleted and replaced as follows:

10.4.3.2 Where fire service mains enter the building adjacent to the foundation, the pipe may run under a building to a maximum of 204 inches, as measured from the interior face of the exterior wall to the center of the vertical pipe. The pipe under the building or building foundation shall be 304 or 316 stainless steel and shall not contain mechanical joints or it shall comply with 10.4.3.2.1 through 10.4.3.2.4.

Appendices

Appendix B is adopted in its entirety with amendments outlined in Guideline B-09.

Appendices BB, C, and CC are adopted in their entirety without amendments.

SECTION 7: Findings. Pursuant to the provisions of the California Health & Safety Code Section 17958.7, it is determined that the amendments of building standards within the California Building Standards Code in this Ordinance are reasonably necessary because of local climatic, geological, or topographical conditions, and as more specifically described below.

A. FINDINGS.

I. Climatic Conditions

- A. Garden Grove is located in a semi-arid Mediterranean type climate. It annually experiences extended periods of high temperatures with little or no precipitation. Hot, dry (Santa Ana) winds, which may reach speeds of 70 M.P.H. or greater, are also common to the area. These climatic conditions

cause extreme drying of vegetation and common building materials. Frequent periods of drought and low humidity add to the fire danger. This predisposes the area to large destructive fires (conflagration). In addition to directly damaging or destroying buildings, these fires are also prone to disrupt utility services. Obstacles generated by a strong wind, such as fallen trees, street lights and utility poles will greatly impact the response time to reach an incident scene.

- B. The climate alternates between extended periods of drought and brief flooding conditions. Flood conditions may affect the Orange County Fire Authority's ability to respond to a fire or emergency condition. Floods may also disrupt utility services to buildings and facilities within the City.
- C. Garden Grove is in a suburban area which is fully developed. Water demand in this densely populated area far exceeds the quantity supplied by natural precipitation; and although the population continues to grow, the already-taxed water supply does not. California is projected to increase in population by nearly 10 million over the next quarter of a century with 50 percent of that growth centered in Southern California. Due to storage capacities and consumption, and a limited amount of rainfall future water allocation is not fully dependable. This necessitates the need for additional and on-site fire protection features.
- D. These dry climatic conditions and winds contribute to the rapid spread of even small fires originating in high-density housing or vegetation. These fires spread very quickly and create a need for increased levels of fire protection. The added protection of fire sprinkler systems and other fire protection features will supplement normal fire department response by providing immediate protection for the building occupants and by containing and controlling the fire spread to the area of origin. Fire sprinkler systems will also reduce the use of water for firefighting by as much as 50 to 75 percent.
- E. The local water supply is "hard" and contains high amounts of minerals which can negatively affect the plumbing used for supply and drain lines in buildings.
- F. Untreated wood roofs cause or contribute to serious fire hazard and to the rapid spread of fires when such fires are accompanied by high winds. Pieces of burning wooden roofs become flying brands and are carried by the wind to other locations and thereby spread fire quickly.

II. Topographical conditions

- A. Traffic and circulation congestion is an artificially created, obstructive topographical condition, which is common throughout the City.
- B. These topographical conditions combine to create a situation that places fire department response time to fire occurrences at risk and makes it necessary to provide automatic on-site fire-extinguishing systems and other protection measures to protect occupants and property.

III. Geological Conditions

Garden Grove is located in a highly active seismic area in Orange County. The Orange County region is a densely populated area that has buildings constructed over and near a vast and complex network of faults that are believed to be capable of producing future earthquakes similar or greater in size than the 1994 Northridge and the 1971 Sylmar earthquakes. Earthquake faults run along the northeast and southwest boundaries of Orange County. The Newport-Inglewood Fault, located within Orange County was the source of the destructive 1933 Long Beach earthquake (6.3 magnitude) which took 120 lives and damaged buildings in an area from Laguna Beach to Marina Del Rey to Whittier. In December 1989, another earthquake occurred in the jurisdiction of Irvine at an unknown fault line. Regional planning for reoccurrence of earthquakes is recommended by the state of California, Department of Conservation.

- A. Previous earthquakes have been accompanied by disruption of traffic flow and fires. A severe seismic event has the potential to negatively impact any rescue or fire suppression activities because it is likely to create obstacles similar to those indicated under the high wind section above. The October 17, 1989, Santa Cruz earthquake resulted in one major fire in the Marina District (San Francisco). When combined with the 34 other fires locally and over 500 responses, the department was taxed to its fullest capabilities. The Marina fire was difficult to contain because mains supplying water to the district burst during the earthquake. This situation creates the need for both additional fire protection and automatic on-site fire protection for building occupants. State Department of Conservation noted in their 1988 report (Planning Scenario on a Major Earthquake on the Newport-Inglewood Fault Zone, page 59), "unfortunately, barely meeting the minimum earthquake standards of building codes places a building on the verge of being legally unsafe."
- B. Road circulation features located throughout the County also make amendments reasonably necessary. Located through the City are major roadways, highways and flood control channels that create barriers and slow response times. Street and storm drain design, accompanied by

occasional heavy rainfall, causes roadway flooding and at times may make an emergency access route impassable.

C. Portions of the County near Garden Grove contain active or former oil production fields. These areas contain a variety of naturally occurring gasses, liquids and vapors. These compounds present toxicity or flammability hazards to building occupants. Evaluation of these hazards and the risks they pose to development is necessary for implementation of appropriate mitigation.

D. The viability of the public water system would be questionable after a major seismic event. This would leave tall buildings vulnerable to uncontrolled fires due to a lack of available water and an inability to pump sufficient quantities of any available water to floors above the 75-foot level.

Due to the topographical conditions of sprawling development separated by waterways and narrow and congested streets and the expected infrastructure damage inherent in seismic zones described above, it is prudent to rely on automatic fire sprinkler systems to mitigate extended fire department response time and keep fires manageable with reduced fire flow (water) resources available for a given structure. Additional fire protection is also justified to match the current resources of firefighting equipment and personnel within the Orange County Fire Authority.

B. APPLICATION OF FINDINGS TO AMENDMENTS TO CALIFORNIA BUILDING STANDARDS CODE.

CODE SECTION	TITLE (Clarification)	FINDINGS
CBC 105.2		I & III
CBC 903.2		I & III
CBC Table 1505.1		I
CBC 1505.1.3		I
CRC R902.1		I
CRC 902.1.3		I
CRC 902.2		I
CRC 610.8		I & III
CPC Table 610.4		I & III
CFC 110.4	Violation penalties	Administrative
CFC 110.4.2	Infraction & Misdemeanor	Administrative
CFC 202	General definitions	Administrative
CFC 304.1.2	OCFA Vegetation Management	I
CFC 305.6	Hazardous conditions	I & II

CFC 305.7	Disposal of rubbish	I & II
CFC 307.6	Outdoor Fire Places, etc.	Administrative
CFC 307.6.1	Gas-fueled devices	I & II
CFC 307.6.2	Devices using wood or fuels other than natural gas or LPG	I & II
CFC 307.6.2.1	Where prohibited	I & II
CFC 308.1.6.3	Sky lanterns	I
CFC 309.2.1	Indoor charging of electric cars	Administrative
CFC 321	Fuel modification requirements for new construction	I
CFC 322	Clearance of brush or vegetation growth from roadways	I
CFC 323	Unusual circumstances	Administrative
CFC 324	Use of equipment	I
CFC 324.1	Use of equipment and devices generating heat, sparks or open flames	I
CFC 324.2	Spark arrestors	I & II
CFC 407.5	Hazardous material inventory statement	I & II
CFC 501.1	Scope	Administrative , I, II & III
CFC 510.1	Emergency responder radio coverage	Administrative
CFC 903.2	Where required (Sprinklers)	I, II & III
CFC 903.2.8	Group R (Sprinklers)	I, II & III
CFC 903.3.5.3	Hydraulically calculated systems	I & II
CFC 1201.1.1.1	Other systems	I, II, III
CFC 2801.2	Permit	Administrative
CFC 2808.2	Storage site	Administrative
CFC 2808.3	Size of piles	I
CFC 2808.4	Pile separation	I
CFC 2808.7	Pile fire protection	I
CFC 2808.9	Material-handling equipment	I
CFC 2808.11	Temperature control	I
CFC 2808.11.1	Pile temperature control	I
CFC 2808.11.2	New material temperature control	I
CFC 2808.12	Water availability for piles	I
CFC 2808.13	Tipping area	I
CFC 2808.14	Emergency contact	Administrative
CFC 4906.3	Requirements-OCFA Vegetation Management Guideline	I
CFC 4908	Fuel modification requirements for new construction	I
CFC 5001.5.2	Hazardous materials inventory statement	Administrative
CFC 5003.1.1.1	Extremely hazardous substances	I & III

CFC 5608.2	Firing	Administrative
CFC 5608.3	Application for permit	Administrative
CFC 5701.1.1	Mobile Fueling	I & III
CFC 5801.1	Scope	I & III
CFC Chapter 80	Reference Standards	N/A
CFC	2016 NFPA 13 (Sprinkler Systems)	Administrative II & III
CFC	2016 NFPA 13-D (Single Family Sprinkler Systems)	I & II
CFC	2013 NFPA 14 (Standpipe Systems)	Administrative
CFC	2016 NFPA 24 (Underground Water Supply Systems)	Administrative III

SECTION 8: Filing with the California Building Standards Commission. A copy of this Ordinance shall be filed with the California Building Standards Commission by the City Clerk of the City of Garden Grove as required by Health & Safety Code Section 17958.7.

SECTION 9: Severability. If any section, subsection, subdivision, sentence, clause, phrase, or portion of this Ordinance is, for any reason, held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance. The City Council hereby declares that it would have adopted this Ordinance and each section, subsection, subdivision, sentence, clause, phrase, or portion thereof, irrespective of the fact that any one or more section, subsection, subdivision, sentence, clause, phrase, or portion thereof be declared invalid or unconstitutional.

SECTION 10: The Mayor shall sign and the City Clerk shall certify to the passage and adoption of this Ordinance and shall cause the same, or the summary thereof, to be published and posted pursuant to the provisions of law. This Ordinance shall take effect thirty (30) days after adoption, or January 1, 2020, whichever is later.