Agenda Item 3

AGENDA ITEM SUMMARY
City Council

April 16, 2019

STAFF

Tom DeMint, PFA Fire Chief
Bob Poncelow, Fire Marshal
Bronwyn Scurlock, Legal

SUBJECT

Second Reading of Ordinance No. 047, 2019, Amending Chapter 9 of the Code of the City of Fort Collins and Adopting by Reference the 2018 International Fire Code, with Amendments.

EXECUTIVE SUMMARY

This Ordinance, unanimously adopted on First Reading on March 19, 2019, adopts the 2018 International Fire Code (IFC), as amended. The International Code Council (ICC) publishes updated codes every three years. The Poudre Fire Authority Board of Directors has reviewed and approved the IFC and is requesting it be adopted as amended. Poudre Fire Authority (PFA) is responsible for the enforcement and administration of the IFC within the City. PFA routinely reviews new codes, proposes local amendments, and seeks adoption of the IFC changes by the City Council. The proposed amendments, developed in conjunction with the local Fire Code Review Committee, include several changes to the City Code. There were a few significant changes to the IFC, including provisions related to mobile food vendors, higher education laboratories, plant material processing and extraction (cannabis), mobile fueling service, energy systems and the retroactive installation of fire suppression systems in eating and drinking establishments with an occupant load in excess of 299. A proposed City Code amendment mandates at least one means of egress (stairs) be provided in buildings under construction that exceed one story in height.

STAFF RECOMMENDATION

Staff recommends adoption of the Ordinance on Second Reading.

ATTACHMENTS

1. First Reading Agenda Item Summary, March 19, 2019 (w/o attachments) (PDF)
2. Ordinance No. 047, 2019 (PDF)
AGENDA ITEM SUMMARY
City Council
March 19, 2019

STAFF

Tom DeMint, PFA Fire Chief
Bob Poncelow, Fire Marshal
Bronwyn Scurlock, Legal

SUBJECT

Public Hearing and First Reading of Ordinance No. 047, 2019, Amending Chapter 9 of the Code of the City of Fort Collins and Adopting by Reference the 2018 International Fire Code, with Amendments.

EXECUTIVE SUMMARY

The purpose of this item is to adopt the 2018 International Fire Code (“IFC”), as amended. The International Code Council (“ICC”) publishes updated codes every three years. The Poudre Fire Authority Board of Directors has reviewed and approved the IFC and is requesting it be adopted as amended. Poudre Fire Authority (“PFA”) is responsible for the enforcement and administration of the IFC within the City. PFA routinely reviews new codes, proposes local amendments, and seeks adoption of the IFC changes by the City Council. The proposed amendments, developed in conjunction with the local Fire Code Review Committee, include several changes to the City Code. There were a few significant changes to the IFC, including provisions related to mobile food vendors, higher education laboratories, plant material processing and extraction (cannabis), mobile fueling service, energy systems and the retroactive installation of fire suppression systems in eating and drinking establishments with an occupant load in excess of 299. A proposed City Code amendment mandates at least one means of egress (stairs) be provided in buildings under construction that exceed one story in height.

STAFF RECOMMENDATION

Staff recommends adoption of the Ordinance on First Reading.

BACKGROUND / DISCUSSION

At its June 2018 PFA Board meeting, the PFA Board adopted Resolution 18-6 Appointing the Fire Code Review Committee (FCRC). (Attachment 2) This volunteer committee was asked to review the 2018 IFC and the proposed amendments.

The FCRC completed its work on Thursday, October 18, 2018 with a unanimous recommendation to adopt the 2018 IFC, along with the accompanying amendments. (Attachment 4) At its November 13, 2018 meeting, the PFA Board unanimously approved the IFC adoption and amendments with Resolution 18-16. (Attachment 1)

The FCRC met for several two-hour sessions to review the IFC. PFA Fire Prevention staff participated in this review with the FCRC, which included detailed discussions of every significant Code change and all current and proposed amendments. Existing language and new published changes to the IFC were reviewed, along with current local and proposed IFC amendments. This process provided both staff and committee members important insights about community issues/concerns and the appropriate application of the IFC. The hard work and commitment shown by the FCRC has provided PFA with a quality community safety resource, tailored to local community needs.
Since the Fort Collins Building Department adopts many other International Codes, including the International Building Code, and includes its own amendments, staff has included all these amendments in the IFC amendments that are relevant to both Codes. Similar processes occur with PFA’s other fire and life safety partners, including the Town of Timnath and Larimer and Weld Counties.

The FCRC reviewed all the proposed changes to the IFC, including changes that were adopted as part of the 2018 International Building Code (IBC) adoption for the City of Fort Collins, which included local amendments to the IBC. Since Chapter 9 (Fire Protection Systems) and Chapter 10 (Means of Egress) is the same in the IBC and IFC as published by the ICC, it is essential that local amendments between the IBC and IFC be correlated and, as the building department is primarily tasked with the enforcement of Chapters 9 and 10, it makes sense for the IFC to be amended in the same way the local building official amended the IBC. These two chapters account for almost 50% of the total local amendments to the IFC.

The FCRC’s primary goal was the reduction of local amendments to the Code. They were able to reduce the total number, as well as focus the amendments that were brought forward on local community needs. The local amendment for fire sprinklers has been maintained as it has been since the 1980s and as it is adopted by the local building departments. Of note, many other fire jurisdictions in Northern Colorado have, or are considering, similar amendments to specify fire suppression systems as a vital fire safety provision.

New IFC Code provisions exist for the regulation of Mobile Food Vendors. This is in direct response to several significant fires and explosions across the country involving food trucks. Cooking fires have always been a leading cause of fires and brick and mortar restaurants must comply with special safety requirements due to the hazard. This includes adequate ventilation, extinguishing systems, special fire extinguishers, and of course, egress for the staff if an incident happens. The new Code provisions were developed in conjunction with the National Food Truck Association, which strongly supports fire and life safety for their members.

A new chapter in the IFC addresses plant extraction processes. Many of the provisions were developed in conjunction with the cannabis industry in Colorado and with heavy involvement from PFA staff.

New hazards often are identified as new technology develops and society evolves, and two significant changes to the IFC are the result. As the City’s electrical energy distribution system adapts to growth and demand, one option to provide peak demands or to meet high demands is the use of electrical storage systems. This includes batteries and capacitors, often using new battery chemistries as part of the system. These batteries can be small enough to mount in a home garage or as large as semi-trailers and, depending on the actual battery make-up, can catch on fire (as was seen with Li-Ion batteries in cell phone and hover boards most recently). These large batteries are subject to overheating and ignition and often cannot be extinguished using conventional firefighting means; the new chapter provides guidance on the safe installation and maintenance of this emerging technology.

Mobile Fueling service is a societal change that may also increase community risk. This service includes a truck with a tank and pump on board that brings the gas station to the customer. While not yet in Fort Collins, this practice is present in other parts of the country. The risk of a spill and fire is increased since the normal safety provisions found at a fueling station may not be present. The new Code provisions set minimum standards to perform the fueling operations safely.

Historically, the United States has suffered some of the largest multiple life-loss fires in Assembly occupancies. Dating back to 1929, when 22 people died in the Study Nightclub fire, through the 1940s where over 800 people died in the Rhythm Club and Coconut Grove fires and continuing to this century when 100 died in 2003 at the Station Nightclub and 36 perished at the Ghost Ship Collective in 2016. Assembly occupancies that serve alcohol have historically presented an increased risk to communities. Fort Collins has experienced fatalities in these occupancies with two citizens losing their lives in the Peoples Bar fire in late 1986.

The National Institute of Standards (NIST) completed a study of fires in Assembly occupancies and the risk to communities today, and recommended the following:
“NIST recommends that model codes require sprinkler systems, and that state and local authorities adopt and aggressively enforce this provision:

a) For all new nightclubs regardless of size, and

b) For existing nightclubs with an occupancy limit greater than 100 people”

The ICC reviewed a code change proposal from NIST to accomplish this recommendation; however, that proposal was modified to maintain the current Code language that requires fire suppression when the occupant load exceeds 100 for new assemblies that serve alcohol, and to include a new provision to require retroactive installation of a fire suppression system when an existing assembly that serves alcohol has an occupant load in excess of 299 people.

Staff recognizes this will be a significant financial impact on those establishments with more than 299 occupants that currently do not have fire suppression systems. Due to PFA’s long standing requirement to sprinkler buildings over 5,000 square feet, and provisions within the Code since 2000 that require new eating and drinking assemblies to have fire suppression when the occupant load exceeds 99 (about 1,500 square feet), it is not anticipated to impact a significant number of businesses. Staff will work with each establishment to develop a plan and timeline for compliance; there are fewer than five establishments that may be subject to these provisions.

The Poudre Valley Fire Protection District (PVFPD) adopted the 2018 IFC at its December 27, 2018 meeting, covering the unincorporated areas of Larimer and Weld Counties. The PVFPD adoption is currently awaiting ratification by the Larimer and Weld County Commissioners. The Town of Timnath is also in the process of adopting the recommended Code and amendments. The amendments for these other adoptions are very similar to these proposed amendments, with the primary differences being in the correlation of the amendments that were made to the IBC by the other jurisdictions. Additionally, the restrictions on the sale and possession of fireworks are not part of the PVFPD (Larimer and Weld County) adoption due to restrictions in Colorado Revised Statutes that limit a fire district’s ability to regulate fireworks.

**BOARD / COMMISSION RECOMMENDATION**

The Poudre Fire Authority Board of Directors reviewed these amendments at its November 13, 2018 meeting and unanimously passed Resolution 18-16, recommending adoption of the 2018 IFC as amended to the City of Fort Collins, Town of Timnath and the Poudre Valley Fire Protection District (PVFPD).

Adoption of the 2018 IFC as Amended has been unanimously recommended by the Fire Code Review Committee (Attachment 4) and the Poudre Fire Authority Board of Directors. (Attachment 3)

**PUBLIC OUTREACH**

The Fire Code Review Committee was appointed by the PFA Board of Directors and provided a cross section of Code users and those impacted by the Code. This group met five times and unanimously supported the final adoption and amendments. The PFA Board of Directors reviewed, and by resolution, recommended that the 2018 IFC as Amended be adopted by the City of Fort Collins, the Town of Timnath and the Poudre Valley Fire Protection District. The PVFPD unanimously adopted the Code and amendments at its December 10, 2018 meeting. Timnath is in the process of adopting the Code and it is being submitted to Larimer and Weld Counties for ratification.

**ATTACHMENTS**

1. Resolution 18-16 Recommend Adoption of 2018 IFC (PDF)
2. Resolution 18-6 Appointment of FCRC members (PDF)
3. PFA Board of Directors meeting minutes, November 13, 2018 (PDF)
4. Fire Code Review Committee minutes, October 18, 2018 (PDF)
ORDINANCE NO. 047, 2019
OF THE COUNCIL OF THE CITY OF FORT COLLINS
AMENDING CHAPTER 9 OF THE CODE OF THE CITY OF FORT COLLINS AND ADOPTING BY REFERENCE THE 2018 INTERNATIONAL FIRE CODE, WITH AMENDMENTS

WHEREAS, the City has previously adopted the 2015 International Fire Code (“IFC”), with amendments, in order to minimize the human suffering and property loss from fire; and

WHEREAS, the 2018 edition of the IFC represents the most current version now available; and

WHEREAS, a Fire Code Review Committee, formed by the Poudre Fire Authority (“PFA”) in 2018 for the purpose of reviewing the 2018 IFC, has unanimously recommended that the jurisdictions being served by the PFA adopt the 2018 IFC with certain amendments tailored to the circumstances in Fort Collins and jurisdictions served by the PFA; and

WHEREAS, the Fire Prevention staff of the PFA, working in conjunction with the Fire Code Review Committee, has also reviewed the 2018 IFC and the amendments proposed by the Committee and has recommended that the jurisdictions being served by the PFA adopt the 2018 IFC with the local amendments; and

WHEREAS, at its November 13, 2018, meeting, the PFA Board of Directors approved Resolution 18-16 recommending that the 2018 IFC with the local amendments be adopted by those jurisdictions being served by the PFA; and

WHEREAS, in compliance with Article II, Section 7, the City Clerk published in the Fort Collins Coloradoan such notice of hearing concerning adoption of the 2018 International Fire Code on March 3, 2019, and March 10, 2019; and

WHEREAS, attached as Exhibit “A” and incorporated herein by reference is the Notice of Public Hearing dated March 3, 2019, that was so published and which the Council hereby finds meets the requirements of Article II, Section 7 of the City Charter.

WHEREAS, the City Council has determined that it is in the best interests of the health, safety and welfare of the City and its citizens that the 2018 IFC with the local amendments in substantially the form recommended by the Fire Code Review Committee and the PFA staff be adopted.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That Section 9-1 of the Code of the City of Fort Collins is hereby repealed in its entirety and reenacted to read as follows:

Sec. 9-1. Adoption of the International Fire Code, 2018 Edition.
Pursuant to the authority conferred by Article II, Section 7 of the Charter and by Section 31-16-201 et seq., C.R.S., there is hereby adopted by reference as the fire code of the City, for the purposes of safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises, International Fire Code, 2018 Edition, as promulgated by the International Code Council. Except as any portion of this fire code is herein after added to, deleted, modified or amended in this Chapter, this fire code shall include all articles and appendices in the International Fire Code, 2018 Edition. Not less than three (3) copies of this fire code shall be on file in the office of the Fire Marshal and may be inspected at regular business hours and purchased from the Fire Prevention Bureau at a price not to exceed one hundred dollars ($100.00) per copy. The provisions of this fire code shall be controlling within the limits of the City of Fort Collins.

Section 2. That Section 9-2 of the Code of the City of Fort Collins is hereby repealed in its entirety and reenacted to read as follows:

Sec. 9-2 Amendments, additions, and deletions.

The following articles, sections, divisions, subsections and appendices of the International Fire Code, 2018 Edition, are hereby added, amended, deleted and renumbered, except as noted, to read as follows:

(1) **Section 101.1 Title** is hereby amended to read as follows:

101.1 Title. These regulations shall be known as the Fire Code of the City of Fort Collins, hereinafter referred to as “this code”.

(2) **Section 103.4 Liability and 103.4.1 Legal defense** is hereby amended to read as follows:

103.4 Liability. The fire code official, member of the board of appeals, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or omission or by reason of an act or omission in the discharge of official duties, unless such act or omission is willful and wanton, as provided in the Colorado Governmental Immunity Act, Section 24-10-101, et seq., C.R.S.

103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act or omission performed by that officer or employee in the lawful discharge of duties and under the provisions of this code, unless such act or omission is willful and wanton, as provided in the Colorado Governmental Immunity Act, Section 24-10-101 et seq., C.R.S. shall be defended by a legal representative of the jurisdiction until the final termination of the proceedings. The fire code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the
provisions of this code; and any officer of the department of fire prevention, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.

(3) **Section 109.1 Board of appeals established** is hereby amended to read as follows:

109.1 Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals to be known as the Fire Board of Appeals. The members of the City of Fort Collins Building Review Board, as appointed from time to time, shall constitute the Fire Board of Appeals. The fire code official shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire code official. Application for an appeal and all process and procedures for an appeal shall be as stipulated in the International Building Code, Section 113 as amended and adopted by the City of Fort Collins.

(4) **Section 109.3** is hereby deleted in its entirety.

(5) **Section 110.4 Violation penalties** is hereby 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 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 guilty of a misdemeanor, and upon conviction shall be subject to the penalties, costs and orders as provided by Section 1-15 of the City Code. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

(6) **Section 110.5 Work commencing before permit issuance** is hereby added to read as follows:

110.5 Work commencing before permit issuance. In addition to penalties set forth in Section 110.4, any person or firm who, before obtaining the necessary permit(s), commences any construction of, or work on, a building, structure, fire protection system, fire alarm system, or fire extinguishing system that is not otherwise exempted from obtaining a permit, shall be subject to a processing and penalty fee in addition to the standard prescribed permit fee. Such additional fine shall be equal to the permit fee, except that such fine shall not be less than $50 or more than $1,000 for the first such violation. A person or firm committing the same such violation repeatedly is subject to processing and penalty fees equal to double the amount of the permit fee or double the amount of the preceding violation, whichever is greater, for every same such subsequent violation committed thereafter within any 180-day period.
A new Section 114 Reporting of emergencies and false alarms is hereby added and reads in its entirety as follows:

SECTION 114 – REPORTING OF EMERGENCIES AND FALSE ALARMS

114.1 General. Reporting of fires and hazardous materials releases shall be in accordance with Section 114.

114.2 Reporting Emergencies. In the event a fire occurs or the discovery of a fire, smoke, or unauthorized release of flammable, combustible, or hazardous materials on any property occurs, the owner, owners authorized representative, or occupant shall, without delay, report such condition to the fire department.

114.3 False Alarms. False alarms shall not be given, signaled, or transmitted or caused or permitted to be given, signaled or transmitted in any manner.

Section 202, Definitions, terms are hereby amended or added in alphabetical sequence in the following respects:

DWELLING. A building used exclusively for residential occupancy and for permitted accessory uses, including single-family dwellings, two-family dwellings and multi-family dwellings. The term dwelling shall not include hotels, motels, homeless shelters, seasonal overflow shelters, tents, or other structures designed or used primarily for temporary occupancy. Any dwelling shall be deemed to be a principal building.

DWELLING UNIT. One or more rooms and a single kitchen and at least 1 bathroom, designed, occupied or intended for occupancy as separate quarters for the exclusive use of a single family for living, cooking, and sanitary purposes, located in a single-family, two-family or multi-family dwelling, or mixed-use building.

FAMILY. Any number of persons who are all related by blood, marriage, adoption, guardianship, or other duly authorized custodial relationship, and who live together as a single housekeeping unit and share common living, sleeping, cooking and eating facilities.

GRADE (ADJACENT GROUND ELEVATION). The lowest point of elevation of the finished surface of the ground, paving, or sidewalk between the building and the property line or, when the property line is more than 5 feet (1.524 m) from the building, between the building and a line 5 feet (1.524 m) from the building.

ROOM, SLEEPING (BEDROOM). A habitable room within a dwelling or other housing unit designed primarily for the purpose of sleeping. The presence of a bed, cot, mattress, convertible sofa or other similar furnishing used for sleeping purposes shall be prima facie evidence that such space or room is a sleeping room. The presence of closets or similar storage facilities shall not be considered relevant factors in determining whether or not a room is a sleeping room.
TOWNHOUSE. A single-family dwelling unit constructed as part of a group of two or more attached individual dwelling units.

(9) A new Subsection 307.2.2 Time and atmospheric restrictions is hereby added and reads in its entirety as follows:

307.2.2 Time and Atmospheric Restrictions. Open burning shall only be performed when time and atmospheric conditions comply with the limits set forth in the Open Burning Permit.

(10) Section 307.4.1 Bonfires is hereby amended and reads in its entirety as follows:

307.4.1 Bonfires. A bonfire shall not be conducted within 100 feet (30 m) of a structure or combustible material unless the fire is contained in a barbecue pit. Conditions that could cause a fire to spread within 100 feet (30 m) of a structure shall be eliminated prior to ignition.

307.4.1.1 Bonfire Size. The fuel package pile for a bonfire must be approved prior to ignition and shall not exceed 10 feet (3048 mm) in diameter and 8 feet (2438 mm) in height unless approved by the fire code official. Based on atmospheric conditions, location, adjacent structures, combustible materials or wildland fire danger ratings, smaller fuel package piles may be required. Fuels for a bonfire shall be clean, dry, untreated wood products only. Fuel shall not be added to the bonfire once it is ignited without prior approval of the fire code official. The use of Class I flammable liquids is prohibited. Class II combustible liquids may only be used prior to ignition and only in accordance with an approved ignition plan.

(11) Section 307.4.2 Recreational fires is hereby amended and reads in its entirety as follows:

307.4.2 Recreational fires. Recreational fires shall not be conducted within 25 feet (7620 mm) of a structure or combustible material. Conditions that could cause a fire to spread within 25 feet (7620 mm) of a structure shall be eliminated prior to ignition. Recreational fires must be approved prior to ignition and shall have a permit as required in accordance with Section 307.2.

(12) Section 307.4.3 Outdoor fireplaces is hereby deleted and replaced and reads in its entirety as follows:

307.4.3 Outdoor Fireplaces. Outdoor fireplaces shall be used in accordance with the manufacturer’s instructions. Outdoor fireplaces shall not be placed closer to combustibles than stated in the manufacturer’s instructions and if the manufacturer’s instructions are not available, or do not establish a distance, they shall not be operated within 15 feet (4572 mm) of a structure or combustible material. Outdoor fireplaces shall not be operated underneath a structure of any type. Outdoor fireplaces shall be gas or liquid fueled.
Exception: Outdoor fireplaces at one and two-family dwellings may use approved solid fuels.

(13) Section 308.1.6.3 Sky lanterns is hereby deleted and replaced and reads in its entirety as follows:

308.1.6.3 Sky lanterns. The use of sky lanterns, tethered or untethered, is prohibited.

(14) Section 503.1 Where required is hereby amended and reads in its entirety as follows:

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3 and Appendix D “Fire Apparatus Access Roads”.

(15) Section 503.2 Specifications is hereby amended and reads in its entirety as follows:

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8 and Appendix D “Fire Apparatus Access Roads”.

(16) Section 503.2.1 Dimensions is hereby amended and reads in its entirety as follows:

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 14 feet (4267 mm).

(17) Section 505.1 Address identification is hereby amended and reads in its entirety as follows:

Section 505.1 Address Identification. New and existing buildings or facilities shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Address identification shall be maintained.

505.1.1 Addresses shall be assigned by the governmental entity having jurisdiction (Fort Collins, Timnath, or County) and shall comply with the Larimer County Street Naming and Addressing Standards as contained in the Larimer County Urban Area Street Standards.

505.1.2 The approved address numerals shall be visible from the street fronting the property, and posted on a contrasting background.
505.1.3 The address numerals for any commercial or industrial buildings shall be placed at a height to be clearly visible from the street. They shall be a minimum of eight inches in height unless distance from the street or other factors dictate larger numbers.

**Table 505.1.3**

<table>
<thead>
<tr>
<th>Distance from street curb to building</th>
<th>Letter/number size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 100 feet</td>
<td>8 inches(^1)</td>
</tr>
<tr>
<td>101 – 150 feet</td>
<td>10 inches(^1)</td>
</tr>
<tr>
<td>151 – 200 feet</td>
<td>12 inches(^1)</td>
</tr>
<tr>
<td>201 – 350 feet</td>
<td>14 inches(^2)</td>
</tr>
<tr>
<td>351 – 500 feet</td>
<td>16 inches(^2)</td>
</tr>
<tr>
<td>501 – 700 feet</td>
<td>20 inches(^2)</td>
</tr>
<tr>
<td>In excess of 700 feet</td>
<td>As approved by the Fire Code Official(^3)</td>
</tr>
</tbody>
</table>

For SI: 1 foot=304.8 mm, 1 inch=25.4 mm

\(^1\) 8”– 12” numbers shall be a minimum 1” stroke

\(^2\) 13”– 20” numbers shall be a minimum 1 ½” stroke

\(^3\) 21” and larger shall have proportional strokes to ensure visibility

505.1.4 The address numerals for one- and two-family dwellings shall be a minimum four inches posted on a contrasting background. If bronze or brass numerals are used, they shall only be posted on a black background for visibility.

505.1.5 Monument signs may be used in lieu of address numerals on the building as approved by the fire code official.

505.1.6 Buildings with multiple suites, apartments or units shall have the individual suites, apartments or units provided with individual identification numbers in sequential order. Suites, apartments or units located on the first floor shall be identified by numbers within the 100 or 1000 range or series; suites, apartments or units located on the second floor shall be identified by numbers within the 200 or 2000 range or series; suites, apartments or units located on the third floor units shall be identified by numbers within the 300 or 3000 range or series. Higher floors shall follow this same numbering sequence.

505.1.7 Buildings, either individually or part of a multi-building complex, that have emergency access lanes on sides other than on the addressed street side, shall have the address numbers and street name on each side that fronts the fire lane.
505.1.8 Buildings that are addressed on one street, but are accessible from an adjoining street, shall have the address numbers and street name on each side that is adjacent to that other street.

505.1.9 Approved signage shall be provided in conspicuous locations within buildings to provide clear direction to locate any suite, apartment or unit within the building.

505.1.10 Multiple building complexes shall be provided with approved signage as needed to direct first responders to individual buildings.

505.1.11 Multiple building complexes that have a single street address for the entire complex shall utilize alpha or numeric characters to identify the individual buildings. Such identification shall be assigned to the buildings in a sequential order following a clock-wise direction starting at the main entrance to the complex.

(18) Section 507.2 Type of water supply is hereby amended and reads in its entirety as follows:

507.2 Type of water supply. A water supply shall consist of pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required sustainable fire flow.

(19) Section 507.5 Fire hydrant systems is hereby amended and reads in its entirety as follows:

507.5 Fire hydrant systems. Fire hydrant systems shall comply with Sections 507.5.1 through 507.5.6 and Appendix C.

507.5.1 Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 300 feet (91 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

Exceptions:

1. For Group U occupancies and One-and Two-Family Dwelling occupancies, the distance requirement shall be 400 feet (121 m).

(20) A new subsection 607.5 Solid-fuel fired cooking appliances is hereby added and reads in its entirety as follows:


(21) Section 901.4.6.1 Access is hereby amended and reads in its entirety as follows:
901.4.6.1 Access. Automatic sprinkler system risers, fire pumps and controllers shall be provided with ready access. Where located in a fire pump room or automatic sprinkler system riser room, the door shall be permitted to be locked provided that the key is available at all times. The door opening width shall be 32 inches clear or as wide as the largest piece of equipment, whichever is larger.

(22) Section 903.2.1.1 Group A-1 is hereby amended and reads in its entirety as follows:

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided throughout stories containing Group A-1 occupancies and throughout all stories from the Group A-1 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds 5000 square feet (464 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multiple-theater complex.

(23) Section 903.2.1.3 Group A-3 is hereby amended and reads in its entirety as follows:

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided throughout stories containing Group A-3 occupancies and throughout all stories from the Group A-3 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds 5000 square feet (464 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

(24) Section 903.2.1.4 Group A-4 is hereby amended and reads in its entirety as follows:

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided throughout stories containing Group A-4 occupancies and throughout all stories from the Group A-4 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds 5000 square feet (464 m²).
2. The fire area has an occupant load of 300 or more.

3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

(25) Section 903.2.1.8 Group B is hereby added and reads in its entirety as follows:

903.2.1.8 Group B. An automatic sprinkler system shall be provided for fire areas containing Group B occupancies when the fire area exceeds 5000 square feet (464 m²).

(26) Section 903.2.3 Group E is hereby amended and reads in its entirety as follows:

903.2.3 Group E. An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 5000 square feet (464 m²) in area.

2. The Group E fire area is located on a floor other than a level of exit discharge serving such occupancies.

Exception: In buildings where every classroom has not fewer than one exterior exit door at ground level, an automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area.

3. The Group E fire area has an occupant load of 300 or more.

(27) Section 903.2.4 Group F-1 is hereby amended and reads in its entirety as follows:

903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 5000 square feet (464 m²).

2. A Group F-1 fire area is located more than three stories above grade plane.

3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2500 square feet (232 m²).

(28) Section 903.2.4.2 Group F-2 is hereby added to read as follows:

903.2.4.2 Group F-2. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-2 occupancy where one of the following conditions exists:
1. A Group F-2 fire area exceeds 5000 square feet (464 m$^2$).

2. A Group F-2 fire area is located more than three stories above grade plane.

3. The combined area of all Group F-2 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m$^2$).

(29) Section 903.2.6 Group I is hereby amended to read as follows:

903.2.6 Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. An automatic sprinkler system is not required where group I-4 day care facilities are at the level of exit discharge and where every room where care is provided has not fewer than one exterior exit door and the fire area does not exceed 5000 square feet (464 m$^2$).

2. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided, all floors between the level of care and the level of exit discharge, and all floors below the level of exit discharge other than areas classified as an open parking garage.

(30) Section 903.2.7 Group M is hereby amended to read as follows:

903.2.7 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 5000 square feet (464 m$^2$).

2. A Group M fire area is located more than three stories above grade plane.

3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m$^2$).

4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5000 square feet (464 m$^2$).

(31) Section 903.2.9 Group S-1 is hereby amended to read as follows:

903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 5000 square feet (464 m$^2$).
2. A Group S-1 fire area is located more than three stories above grade plane.

3. The combined area of all Group S-1 fire areas on all floors including any mezzanines, exceeds 24,000 square feet (2230 m$^2$)

4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5000 square feet (464 m$^2$).

5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2500 square feet (232 m$^2$).

(32) *Section 903.2.9.1 Repair Garages* is hereby amended to read as follows:

**903.2.9.1 Repair Garages.** An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the International Building Code, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 5000 square feet (464 m$^2$).

2. Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 5000 square feet (464 m$^2$).


4. A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5000 square feet (464 m$^2$).

(33) *Section 903.2.10 Group S-2 enclosed parking garages* is hereby amended in its entirety to read as follows:

**903.2.10 Group S-2.** An automatic sprinkler system shall be provided throughout all buildings containing a Group S-2 occupancy where one of the following conditions exists:

1. A Group S-2 fire area exceeds 5000 square feet (464 m$^2$).

2. A Group S-2 fire area is located more than three stories above grade plane.

**Exception:** open parking garages

(34) *Section 903.2.11.1.3 Basements* is hereby amended to read as follows:

**903.2.11.1.3 Basements.** Where any portion of a basement is located more than 75 feet (22,860 mm) from openings required by Section 903.2.11.1, the basement shall be equipped throughout with an approved automatic sprinkler system.
Section 903.3.1.2 NFPA 13R sprinkler systems is hereby amended to read as follows:

903.3.1.2 NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies throughout in accordance with NFPA 13 Section 903.3.1.1.

Exception: NFPA 13R is allowed when the following conditions exist:

1. The building does not contain more than 6 individual dwelling units and the units are separated from each other with a 1 hour barrier to the roof deck.

2. The building does not contain more than 12 individual dwelling units and is divided into no more than 6 individual dwellings units (complying with number 1 above) by a minimum 2 hour fire barrier.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 of the International Building Code, shall be measured from the horizontal assembly creating separate buildings.

Section 907.2.10 Single-and multiple-station smoke alarms is amended by adding a second paragraph thereto to read as follows:

When one or more sleeping rooms are added or created in existing Group R Occupancies, the entire building shall be provided with smoke detectors located and installed as required for new Group R Occupancies described herein.

Section 907.8.6 Excessive false alarms, is hereby added, to read in its entirety as follows:

907.8.6 Excessive False Alarms. An excessive number of false alarms shall be defined as 2 alarm activations for a fire alarm system within a 60 day period provided that any such activations are not the result of a cause reasonably beyond the control of the owner, tenant or operator of the building. In the event of an excessive number of false alarms, the fire code official may order the building owner, tenant or operator of the building, or party responsible for the building to take reasonable actions necessary to prevent false alarms. These actions may include: repair or replacement of the faulty alarm components, addition of tamper proof devices, modification of system design, and repair of other building components which affect alarm system performance. The fire code official may also require the building owner, tenant or operator or party responsible for the building to obtain an approved maintenance contract with a qualified fire alarm maintenance technician as required by NFPA 72 to provide continuous maintenance service of the system.

Section 1009.6 Areas of refuge is amended to read as follows:

1009.6 Areas of refuge Areas of refuge are not required in buildings not more than 4 stories above grade plane. Every required area of refuge shall be accessible from the space it serves by an accessible means of egress.
(39)  *Section 1009.8 Two-way communication exception #1* is amended to read as follows:

**Exception:**

1. Two-way communication systems are not required at the landing serving each elevator or bank of elevators of buildings not required to provide areas of refuge in accordance with Section 1009.6.

(40)  *Section 1010.1.5 Floor elevation* is amended by adding a new Exception (7), to read as follows:

7. Exterior doors serving individual *dwelling units*, other than the main entrance door to a *dwelling unit*, may open at one intervening exterior step that is equally spaced between the interior floor level above and exterior landing below, provided that the step has a minimum tread depth of 12 inches, a maximum riser height of 7 ¾ inches (7.75") (19.68cm), and a minimum width equal to the door width, and further provided that the door does not swing over the step.

(41)  *Section 1011.11 Handrails* is hereby amended to read as follows:

1011.11 *Handrails.* Stairways of more than 1 riser shall have handrails on each side and shall comply with Section 1014. Where glass is used to provide the handrail, the handrail shall also comply with Section 2407.

**Exceptions:**

1. Stairways within dwelling units and spiral stairways are permitted to have a handrail on one side only.

2. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails.

3. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.

4. Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.

(42)  *Section 1015.8 Window openings* first paragraph is hereby amended to read as follows:

1015.8 *Window openings.* Windows in Group R-2 and R-3 buildings including dwelling units, where the top of the sill of an operable window opening is located less than 24 inches
above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with one of the following:

(43) **Section 1015.9 Below grade openings** is hereby added to read as follows:

**1015.9 Below grade openings.** All area wells, stair wells and light wells attached to any building that are located less than 36 inches from the nearest intended walking surface and deeper than 36 inches below the surrounding ground level, creating an opening with a horizontal dimension greater than 24 inches measured perpendicularly from the building, with the side walls of such well having a slope steeper than 2 horizontal to 1 vertical shall be protected with guardrails conforming to this Section around the entire opening, or be provided with an equivalent barrier.

**Exceptions:**

1. The access side of stairways need not be barricaded.

2. Area wells provided for emergency escape and rescue windows may be protected with approved grates or covers that comply with Section 1029.4 of this code.

3. Covers and grates may be used over stairways and other openings used exclusively for service access or for admitting light or ventilation.

(44) **Section 1030.1 General Exceptions #1** is hereby amended to read as follows:

**Exceptions:**

1. Basements with a ceiling height of less than 72 inches (1828.8 mm), shall not be required to have emergency escape and rescue openings.

(45) **Section 1030.3.1 Minimum height from floor** is added to read as follows:

**1030.3.1 Minimum height from floor.** Emergency escape and rescue window openings that are located more than 72 inches (1829 mm) above the finished grade shall have a sill height of not less than 24 inches (609 mm) measured from the finished interior side floor.

**Exception:**
Emergency escape and rescue openings located over a roof surface with a slope of 4:12 or less and extending a minimum of 5 feet (1524 mm) horizontally outward from the window.

(46) **Section 1030.4 Window Wells** is amended by adding a new exception to read as follows:

**Exception:**
With the window in the full open position, the bottom window well step may encroach a maximum of 12 inches (304 mm) into the minimum horizontal projection, provided the well meets the criteria of 1 and 2 below:

1. The bottom of the well is not less than 36 inches wide (914 mm), centered horizontally on the openable portion of the emergency escape and rescue opening, and

2. An unobstructed clear horizontal projection of 36 inches (914 mm) is maintained at the centerline of the openable portion of the emergency escape and rescue door or window.

(47) *Section 1030.6 Drainage* is hereby added to read as follows:

**1030.6 Drainage.** All window wells shall be designed for proper drainage by connecting to the building’s foundation drainage system required by Section 1805.4.2 or by an approved alternative method. The inlet to the drainage system shall be a minimum of 4 inches (101 mm) below the window sill. Where no drains are required, the window well surface shall be a minimum of 4 inches (101 mm) below the window sill.

**Exceptions:**

1. A drainage system for window wells is not required when the foundation is on well-drained soil or sand-gravel mixture soils as determined by the foundation engineer of record.

2. A drainage system is not required for new window wells on additions to existing dwellings.

(48) *Section 3311.1 Stairways required* is hereby amended and reads in its entirety as follows:

**[BE] 3311.1 Stairways required.** Where building construction exceeds 20 feet (6096 mm) or one story in height above the lowest level of fire department vehicle access, a temporary or permanent stairway shall be provided to all floors that are provided with secured decking or flooring. As construction progresses, such stairway shall be extended to within one floor of the highest point of construction having secured decking or flooring.

(49) *Section 5001.1 Scope Exception #10* is hereby amended to read as follows:

**Exceptions:**

10. The production, processing and storage of distilled spirits and wines in wooden barrels and casks when the facility is in conformance with the DISCUS “Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities”.

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(50) Section 5601.1.3 Fireworks is hereby amended by deleting Exception 2 and 4 and renumbering the remaining exceptions to read as follows:

**5601.1.3 Fireworks.** The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 5604.
2. The use of fireworks for fireworks display as allowed in Section 5608.

(51) Section 5701.1 Nonapplicability Item # 10 is hereby amended to read as follows:

10. The production, processing and storage of distilled spirits and wines in wooden barrels and casks when the facility is in conformance with the DISCUS “Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities”.

(52) Section 5704.2.9.6.1 Location where above-ground tanks are prohibited is hereby amended to read as follow:

**5704.2.9.6.1 Locations where above-ground tanks are prohibited.** Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited in accordance with City of Fort Collins Land Use Code.

(53) Section 5704.3.3 Indoor storage Exception #2 is hereby amended to read as follows:

**5704.3.3 Indoor storage.** Storage of flammable and combustible liquids inside buildings in containers and portable tanks shall be in accordance with Sections 5704.3.3.1 through 5704.3.3.10.

Exceptions:

1. Liquids in the fuel tanks of motor vehicles, aircraft, boats or portable or stationary engines.
2. The production, processing and storage of distilled spirits and wines in wooden barrels and casks when the facility is in conformance with the DISCUS “Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities”.

(54) Section 5706.2.4.4 Locations where above-ground tanks are prohibited is hereby amended to read as follows:

**5706.2.4.4 Locations where above-ground tanks are prohibited.** The storage of Class I and II liquids in above-ground storage tanks is prohibited within the limits established
by law as the limits of districts in which such storage is prohibited in accordance with the City of Fort Collins Land Use Code.

(55)  *Section 5806.2 Limitations* is hereby amended to read as follows:

**5806.2 Limitations.** Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited in accordance with the City of Fort Collins Land Use Code.

(56)  *Section 6104.2 Maximum capacity within established limits* is hereby amended to read as follows:

**6104.2 Maximum capacity with established limits.** Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2000 gallons (7570L) in accordance with the City of Fort Collins Land Use Code.

(57)  *Section 6109.13 Protection of containers* the exception is hereby deleted to read as follows:

**6109.13 Protection of containers.** LP-gas containers shall be stored within a suitable enclosure or otherwise protected against tampering. Vehicle impact protection shall be provided as required by Section 6107.4.

(58)  *Chapter 80 Referenced Standards* is hereby amended by adding the following additional referenced standard in alphabetical and numerical sequence:

**DISCUS** Distilled Spirits Council of the United States  
1250 Eye Street, NW Suite 400  
Washington, DC 20005

<table>
<thead>
<tr>
<th>Standard reference number</th>
<th>Title</th>
<th>Referenced in code section number</th>
</tr>
</thead>
</table>
|                           | 3rd Edition, June 2005  
Recommended Fire Protection Practices  
For Distilled Spirits Beverage Facilities | 5001.1, 5701.2, 5704.3.3 |

**NFPA** National Fire Protection Association  
1 Batterymarch Park  
Quincy, MA 02169-7471
(59) Appendix A is deleted in its entirety.

(60) Appendix B is deleted in its entirety and readopted to read as follows:

**APPENDIX B**

**FIRE-FLOW REQUIREMENTS FOR BUILDINGS**

**SECTION B101 GENERAL**

**B101.1 Scope.** The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

**SECTION B102 DEFINITIONS**

**B102.1 Definitions.** For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for firefighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m²), used to determine the required fire flow.

**SECTION B103 MODIFICATIONS**

**B103.1 Decreases.** The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

**B103.2 Increases.** The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

**B103.3 Areas without water supply systems.** For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the International Wildland-Urban Interface Code.

**SECTION B104 FIRE-FLOW CALCULATION AREA**

<table>
<thead>
<tr>
<th>Standard reference number</th>
<th>Title</th>
<th>Referenced in code section number</th>
</tr>
</thead>
<tbody>
<tr>
<td>96-14</td>
<td>Standard for Ventilation Control and Fire Protection Of Commercial Cooking Operations</td>
<td>609.5</td>
</tr>
</tbody>
</table>
B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B 104.2 Area separation. Portions of buildings which are separated by fire walls without openings, constructed in accordance with the International Building Code, are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type 1A and Type 1B construction. The fire-flow calculation area of buildings constructed of Type 1A and Type 1B construction shall be the area of the three largest successive floors.

Exception:

Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105 FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow requirements for one- and two-family dwellings shall be 1,000 gallons per minute in urban areas and 500 gallons per minute in rural areas.

Exception:

A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>FIRE FLOW REQUIREMENTS (gpm)</th>
<th>MAXIMUM SPACING BETWEEN HYDRANTS (feet)</th>
<th>MAXIMUM DISTANCE FROM THE CLOSEST POINT ON A BUILDING TO A HYDRANT (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>1,500</td>
<td>600</td>
<td>300d</td>
</tr>
</tbody>
</table>

TABLE B105
<table>
<thead>
<tr>
<th>Urban - One and Two Family Dwelling</th>
<th>1,000</th>
<th>800</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural - One and Two Family Dwelling</td>
<td>500</td>
<td>800</td>
<td>400</td>
</tr>
</tbody>
</table>

For SI: 1 foot=304.8 mm, 1 gallon=3.81 l

a. Reduce by 100 feet for dead-end streets or roads.
b. Where streets are provided with median dividers that cannot be crossed by fire fighters pulling hose lines, or are arterial streets, hydrant spacing shall average 500 feet (152 m) on each side of the street and be arranged on an alternating basis.
c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet (305 m) to provide for transportation hazards.
d. For buildings equipped with a standpipe, see Section 507.5.1.1.

**B105.3 Water supply for buildings equipped with an automatic sprinkler system.**

For buildings equipped with an approved automatic sprinkler system, the water supply shall be capable of providing the greater of:

1. The automatic sprinkler system demand, including hose stream allowance.
2. The required fire-flow.

**SECTION B106 REFERENCED STANDARDS**

ICC IBC—15 International Building Code B104.2,

ICC IFC --- 15 International Fire Code Table B105.1(1) & B105.2

ICC IWUIC—15 International Wildland-Urban Interface Code B103.3

ICC IRC --- 15 International Residential Code Table B105.1(1)

NFPA 1142—12 Standard on Water Supplies for Suburban and Rural Fire Fighting B103.3

(61) Appendix C is deleted in its entirety and readopted to read as follows:

**APPENDIX C**

**FIRE HYDRANT LOCATIONS AND DISTRIBUTION**
SECTION C101 GENERAL

C101.1 Scope. Fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed or moved into the jurisdiction.

SECTION C102 LOCATION

C102.1 Fire hydrant locations. Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

SECTION C103 NUMBER OF FIRE HYDRANTS

C103.1 Fire hydrants available. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table B105 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

SECTION C104 CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

SECTION C105 DISTRIBUTION OF FIRE HYDRANTS

C105.1 Hydrant spacing. The average spacing between fire hydrants shall not exceed that listed in Table B105.

Exception:

The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service. Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table B105.

(62) Appendix D is deleted in its entirety and readopted to read as follows:

APPENDIX D
FIRE APPARATUS ACCESS ROADS

SECTION D101 GENERAL
D10l.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the International Fire Code.

SECTION D102 REQUIRED ACCESS

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 80,000 pounds (36,287 kg).

D102.2 Access road construction. All access roadways must be all weather driving surfaces capable of supporting fire apparatus. Surface shall be asphalt, concrete, or compacted road base and engineered for the imposed loads.

D102.2.1 Temporary emergency access. Compacted road base or chip shall only be used for a temporary emergency access. Temporary access shall be available as long as the site is under construction. Thereafter permanent fire lanes shall be accessible and unobstructed at all times.

D102.2.2 Permanent emergency access. All permanent points of access shall be hard decks consisting of asphalt or concrete designed to HS 20 or support 40 tons (36,287 kg). Compacted road base or other surfaces engineered and capable of supporting the imposed loads may be approved for ground mounted solar installations, cell towers and similar isolated facilities and structures when approved by the fire code official.

D102.2.2 Installation timing. All required access roads must be installed and serviceable before aboveground construction begins.

SECTION D103 MINIMUM SPECIFICATIONS

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm) exclusive of shoulders. (See Figure D103.1)

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade. Exception: Grades steeper than 10 percent as approved by the fire code official based on geographic or location conditions. (See section D105.5 for aerial fire apparatus access roads.)

D103.3 Turning radius. The minimum turning radius shall be 25 feet (7.6 m) inside radius and 50 feet (15.2 m) outside radius.

D103.4 Angle of Approach/Departure. Grade changes upon a fire apparatus access road or when entering or exiting from or to a fire apparatus access road shall not exceed a ten (10) percent angle of approach or angle of departure.

Figure D103.1
100' HAMMERHEAD
EMERGENCY ACCESS EASEMENT

(USE: PRIVATE PROPERTY ONLY)
100' DIAMETER
CUL-DE-SAC
FOR USE ON PUBLIC OR PRIVATE PROPERTY

ALTERNATIVE HAMMERHEAD
EMERGENCY ACCESS EASEMENT
(FIRE LANE)
USE: PRIVATE PROPERTY ONLY

EXAMPLE BUILDING

MUST CONNECT TO
PUBLIC R.O.W.
D103.5 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (46 m) shall be provided with width and turnaround provisions in accordance with Table D103.4.

**TABLE D103.4**

REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

<table>
<thead>
<tr>
<th>LENGTH (feet)</th>
<th>MINIMUM WIDTH (feet)</th>
<th>TURNAROUNDS REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-150</td>
<td>20</td>
<td>None required</td>
</tr>
<tr>
<td>151-660</td>
<td>20</td>
<td>100-foot hammerhead, 100-foot Cul-de-sac in accordance with Figure D103.1</td>
</tr>
<tr>
<td>Over 660</td>
<td>Special Approval Required</td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm

D103.5.1 Second Point of Access Required. A second point of access shall be required when the primary access roadway exceeds 660 feet (201 m) in length.

**Exception:** Where all dwelling units beyond 660 feet (201 m) are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.3, access from two directions shall not be required.

D103.5.2 Third Point of Access Required. A third point of access will be required when any access road exceeds a distance of 1320 feet (1/4 mile) (402 m) in length.

**Exception:** Where all dwelling units beyond 660 feet (201 m) are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.3, access from only two directions shall be required.

D103.5.3 Fourth Point of Access Required. A fourth point of access will be required when access road exceeds a distance of 2640 feet (1/2 mile) (804 m) in length.

**Exception:** Where all dwelling units beyond 660 feet (201 m) are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.3, access from only three directions shall be required.

D103.5.4 Access location. Where two or more points of access are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line.
D103.6 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway, the gate shall be not less than 12 feet (3658 mm).
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Methods of locking the gate shall be approved by the fire code official.
7. Manual opening gates shall not be locked with a padlock or chain and padlock unless the padlock is approved by the fire code official and is compatible with the approved Key Boxes in use by the fire department.
8. Gate design and locking device specifications shall be submitted for approval by the fire code official prior to installation.
9. Electric gate operators, where provided, shall be listed in accordance with UL325.
10. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

D103.7 Signs. Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING-FIRE LANE signs complying with Figure D 103.6 or other approved sign. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by section D103.6.1 or D103.6.2.
D103.7.1 Roads 20 to 26 feet in width. Fire lane signs as specified in D103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7925 mm).

D103.7.2 Roads more than 26 feet in width. Fire lane signs as specified in D103.6 shall be posted on one side of fire apparatus access roads more than 26 feet wide (7925 mm) and less than 32 feet wide (9754 mm).

D103.7.2 Minimum Overhead Clearance. Fire access roads shall have a minimum overhead clearance for the entire width of the access road of not less than 14 feet (4267 mm).

SECTION D 104
COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

D104.1 Buildings exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.

Exception: Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height may have a single approved fire apparatus access road when the buildings are equipped throughout with approved automatic sprinkler systems.

D104.2 Buildings exceeding 62,000 square feet in area. Buildings or facilities having a gross building area of more than 62,000 square feet (5760 m²) shall be provided with two separate and approved fire apparatus access roads.
Exception: Projects having a gross building area of up to 124,000 square feet (11,520 m²) that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

D104.3 Remoteness. Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

SECTION D105
AERIAL FIRE APPARATUS ACCESS ROADS

D105.1 Where required. Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9144 mm), approved aerial fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.

D105.2 Width. Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm), exclusive of shoulders, in the immediate vicinity of any building or portion of building more than 30 feet (9144 mm) in height if the fire access road is not a dead end. Dead end fire apparatus access roads for aerial apparatus access shall be a minimum of 30 feet (9144 mm) wide.

D105.3 Proximity to building. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet (4572 mm) and a maximum of 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.

D105.4 Obstructions. Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building. Other obstructions shall be permitted to be placed with the approval of the fire code official.

D105.5 Grade. Aerial fire apparatus access roads adjacent to the building shall not exceed 5 percent in grade.

SECTION D106
MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS

D106.1 Projects having more than 100 dwelling units. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are
equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1.

D106.2 Projects having more than 200 dwelling units. Multiple-family residential projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.

SECTION D 107
ONE- OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS

D107.1 One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads and that comply with Section D103.4.4.

Exceptions: Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.3, access from two directions shall not be required.

The number of dwelling units on a single fire apparatus access road shall not exceed 30 dwelling units unless fire apparatus access roads will connect with future development, as determined by the fire code official.

D108 REFERENCED STANDARDS
ASTM F 2200—05 Standard Specification for Automated Vehicular Gate Construction D103.5
ICC IFC—12 International Fire Code D101.5, D107.1
UL 325—02 Door, Drapery, Gate, Louver, and Window Operators and Systems, with Revisions through February 2006 D103.5

(63) Appendix F is hereby adopted in its entirety.

(64) Appendix L is hereby adopted in its entirety.

(65) Appendix N is hereby adopted in its entirety.

Introduced, considered favorably on first reading, and ordered published this 19th day of March, A.D. 2019, and to be presented for final passage on the 16th day of April, A.D. 2019.

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Mayor

ATTEST:

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City Clerk

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Passed and adopted on final reading on the 16th day of April, A.D. 2019.

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Mayor

ATTEST:

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City Clerk