

2018 International Building Code Update

Introduction:

On May 6th, 2019 Council has given approval for staff to move forward with the adoption of the 2018 International Building Codes.

Historically the City has adopted a newer version of International Building Codes about every 6 years. The last building code update was in 2014. The City currently enforces the 2012 International Codes, the 2015 version of NFPA 99, and the 2017 National Electrical Code.

The following codes proposed to be adopted are:

- ***2018 International Building Code***
- ***2018 International Residential Code***
- ***2018 International Fire Code***
- ***2018 International Mechanical Code***
- ***2018 International Plumbing Code***
- ***2018 International Fuel and Gas Code***
- ***2017 International Electrical Code***
- ***2018 International Energy Conservation Code***
- ***2018 International Property Maintenance Code***
- ***2018 International Existing Building Code (NEW)***
- ***2018 International Swimming Pool and Spa Code (NEW)***
- ***1997 Uniform Code for Abatement of Dangerous Buildings***
- ***National Fire Protection Association (NFPA) 99 Standard for Health Care Facilities – 2018 Edition***

- *International Fire Code modifications. Representatives from the Fire Districts will be present.*
- *International Building Code Modifications*
 - *Allowing extraction methods other than water-based and noncombustible solvents for the extraction of hash and hemp oil in a High-hazard Group H-3 occupancy.*
- *International Residential Code Modifications*
 - *Requiring automatic Fire Sprinkler Systems in residential town homes.*
 - *Removing the language for Lumber Sheathing in section R803.1 in the IRC and IBC definitions that allowed any gaps less than 1/2 inch to be considered solid sheathing.*
 - *Adopting Appendix F for Radon Control Methods*
 - *Adopting Appendix J for Existing Buildings and Structures*
 - *Adopting Appendix Q in the IRC for Tiny Houses*
 - *Adopting Appendix T in the IRC for Solar-Ready Provisions*
- *National Electrical Code Modifications*
 - *Adding language for automatic adoption of National Electrical Code as adopted by the State of Colorado*
- *International Energy Conservation Code Modifications*
 - *Adopting Appendix CA and RA in the Energy Code for future solar energy installations*

Proposed modifications:

- **2018 International Building Code**

109.3 Building permit valuations. The applicant for a permit shall provide an estimated project valuation at the time of application. Permit valuations shall include the value of all work, including foundation work, structural and non-structural building components, electrical, plumbing, mechanical and interior finish materials. Project valuation shall be calculated by the Building Division based on the most recent building valuation data (BVD) promulgated and published by the International Code Council (ICC). The higher of the applicant stated valuation and the building division calculated valuation shall be used to determine building permit fees. Final building permit valuation shall be set by the building official.

202 *Definitions.* Add the following text under the definition of "**ROOF DECK**":

~~Solidly sheathed deck shall be defined as decking consisting of American Plywood Association (APA) approved wood structural panel sheathing.~~

~~Closely fitted deck shall be defined as decking consisted of APA approved wood structural panel sheathing or lumber sheathing conforming to the requirements of Tables 2304.8(1) through 2304.8(5) in which no gap between members exceeds one half of one inch.~~

~~Spaced decking shall be defined as lumber sheathing conforming to the requirements of Tables 2304.8(1) through 2304.8(5) in which any gap between members exceeds one half of one inch.~~

~~307.5 High hazard Group H-3.~~ Add the following use to this section:

~~Occupancies involved in the water based and noncombustible solvent based extraction of hash oil. All other occupancies involved in the extraction of hash oil are not permitted.~~

~~307.5.1 Extraction of hash oil.~~ Add the following section:

307.5.1 Extraction of hash oil. Occupancies involving the ~~water based and noncombustible solvent based~~ extraction of hash oil shall be classified as H-3 occupancies and shall comply with the requirements of this code and referenced codes for such occupancy classification. ~~All other occupancies involved in the extraction of hash oil are not permitted.~~

~~419 Live/Work Units.~~ Delete entire section.

903.3.1.3 NFPA 13D sprinkler systems Amend to read in its entirety:

903.3.1.3 NFPA 13D sprinkler systems. Automatic sprinkler systems installed Group R-3, Group R-4, Condition 1: and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D.

1808.1 General. Amend to read in its entirety:

1808.1 General. Footings shall be designed and constructed in accordance with Sections 1805.1 through 1805.9. Footings and foundations shall be built on undisturbed soil, compacted fill material or CLSM. Compacted fill material shall be placed in accordance with Section 1803.5. CLSM shall be placed in accordance with 1803.6. All footing and foundation systems for additions and new structures shall be designed by a structural engineer licensed by the State of Colorado. Submitted plans for these systems shall be wet-stamped and signed by the engineer of record at the time of permit application.

- **2018 International Residential Code**

R105.2 Work exempt from permit. Amend to read in its entirety:

R105.2 Work exempt from permit. Permits shall not be required for the following. Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 square feet.
2. Fences not over 6 feet high.
3. Retaining walls that are not over 4 feet in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.
4. Water tanks supported directly on grade if the capacity does not exceed 5,000 gallons and the ration of height to diameter or width does not exceed 2 to 1.
5. Sidewalks and driveways.
6. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work that is not part of the scope of a larger permissible project.
7. Prefabricated swimming pools that are less than 24 inches deep.
8. Swings and other portable playground equipment.
9. Window awnings supported by an exterior wall which do not project more than 54 inches from the exterior wall and do not require additional support.
10. Decks not exceeding 120 square feet in area, that are not more than 30 inches above grade at any point, are not attached to a dwelling unit and do not serve the exit door required by Section R311.4.
11. Hoop houses as defined in Section 3102.2 of the International Building Code that do not exceed 400 square feet in floor area, that are not occupied by the general

public, and that do not contain mechanical or electrical devices, equipment or systems.

Electrical:

1. Listed cord-and-plug connected temporary decorative lighting.
2. Reinstallation of attachment plug receptacles but not the outlets therefor.
3. Replacement of branch circuit overcurrent devices of the required capacity in the same location.
4. Electrical wiring, devices, appliances, apparatus or equipment operating at less than 25 volts and not capable of supplying more than 50 watts of energy.
5. Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.

Gas:

1. Portable heating, cooking or clothes drying appliances.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
3. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Mechanical:

1. Portable heating appliances.
2. Portable ventilation appliances.
3. Portable cooling unit.
4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
6. Portable evaporative cooler.
7. Self-contained refrigeration systems containing 10 pounds (4.54 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (746W) or less.
8. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Plumbing:

The stopping of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work

shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.

The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

R108.3 Building permit valuations. Amend to read in its entirety:

R108.3 Building permit valuations. The applicant for a permit shall provide an estimated project valuation at the time of application. Permit valuations shall include the total value of all work, including foundation work, structural and non-structural building components, electrical, gas, plumbing, mechanical and interior finish materials. Project valuation shall be calculated by the Building Division based on the most current data published by ICC Building Valuation Data Sheet and the higher of the applicant stated valuation and the building division calculated valuation shall be used to determine building permit fees. Final building permit valuation shall be set by the building official.

TABLE R301.2(1) - CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Ground and Roof Snow Load	Wind Design*		Seismic Design Category	Subject To Damage From			Winter Design Temp	Ice Barrier Underlayment Required	Flood Hazards	Air Freezing Index	Mean Annual Temp
	Speed (mph)	Topographic Effects		Weathering	Frost line depth	Termite					
30 psf	135 mph** Vult Exp. C	Yes	"B"	Severe	36"	Slight	1° F	Yes	1979 Firm	1500	45 F
Manual J Design Criteria											
Elevation	Latitude	Winter Heating 99% Dry Bulb	Summer Cooling 1% Dry Bulb	Altitude Correction Factor	Indoor Design Temperature	Design Temperature Cooling	Heating Temperature Difference				
5459 ft.	39° North	-7	95	Varies	72°	75°	79°				
Cooling Temperature Difference	Wind Velocity Heating	Wind Velocity Cooling	Coincident Wet Bulb	Daily Range	Winter Humidity	Summer Humidity	--				
20°	15 mph	7.5 mph	59	High (H)	50%	50%	--				
** Approximately Equivalent to 105 mph V ^{asd} (three second gust) Exposure C (see Table R301.2.1.3 for conversion)											

SECTION R313 AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.1 Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in townhomes.

Exception: An automatic residential fire sprinkler system shall not be required where additions or alterations are made to existing townhouses that do not have an automatic residential fire system installed.

R313.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904 or NFPA 13D.

R313.2 One and Two-Family Dwellings automatic fire sprinkler systems. Delete entire section.

~~R803.1 Lumber Sheathing. Amend to read in its entirety:~~

~~**R803.1 Lumber Sheathing.** Allowable spans for lumber used as roof sheathing shall conform to Table 803.1. Spaced lumber sheathing for wood shingle and shake roofing shall conform to the requirements of Section R905.7 and R905.8. Spaced lumber sheathing is not allowed in Seismic Design Category D2. Lumber sheathing installed with any gap exceeding one-half inch shall not be considered to be solid or closely-fitted sheathing, and shall be defined as spaced sheathing.~~

Appendices. The following appendices are adopted in their entirety:

Appendix A (IFGS): Sizing and Capacities of Gas Piping

Appendix B (IFGS): Sizing of Venting Systems Serving Appliances Equipped with Draft Hoods, Category 1 Appliances, and Appliances Listed for Use with Type B Vents

Appendix C (IFGS): Exit Terminals of Mechanical Draft and Direct-vent Venting Systems

Appendix D (IFGS): Recommended Procedure for Safety Inspection of an Existing Appliance Installation

Appendix F: Radon Control Methods (NEW)

Appendix H: Patio Covers

Appendix T: Solar-Ready Provisions – Detached One-and Two Family Dwellings and Townhouses. (NEW)

- **2018 International Fire Code**

Section 6. Section 5-86 of the Code is repealed in its entirety and reenacted to read as follows:

(a) *Adoption.* The International Fire Code, 2018 Edition, is hereby adopted by reference and incorporated into this article as though fully set forth herein as the fire code of the City of Wheat Ridge. One copy of said International Fire Code shall be filed in the office of the city clerk and may be inspected during regular business hours. Except as otherwise provided hereafter, such code is adopted in full, including the outline of contents and index contained herein. Only Appendices B, C, D, F, H, I, K, L and M, published by the International Code Council are hereby adopted by reference. The 2012⁸ International Fire Code shall be known as the “I.F.C.” or the “fire code” and may be cited and referred to as such.

(b) *Amendments.* The International Fire Code adopted by this section is amended as follows. Section numbers referred to herein refer to and correspond with the section numbers of the 2012 International Fire Code.

103.4.1 Legal Defense is amended to read in its entirety:

103.4.1 Legal Defense. Any suit instituted against any officer or employee of any fire protection district or any officer or employee of the City of Wheat Ridge because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the fire protection district or City by which he or she is employed by the legal representative of the fire protection district or City by which he or she is employed until the final termination of the proceedings. The fire code official, city officer or employee 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 or employee of the department of fire prevention or the City, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or reason of any acts or omission in the performance of official duties in connection therewith.

Section 105.6.51 Assisted Living Facilities is added as follows:

Section 105.6.51 Assisted living facilities. An operational permit is required to operate an assisted living facility.

Section 105.6.52 Door Side Trash Collection is added as follows:

Section 105.6.52 Door Side Trash Collection. An operational permit is required to operate door side trash collection in R-2 occupancies.

Section 105.6.53 Sheltering in A and E Occupancies is added as follows:

Section 105.6.53 Sheltering in A and E occupancies. An operational permit is required to operate sheltering in A and E occupancies for one night or more.

Section 108 Board of Appeals is amended as follows:

108.1 Board of appeals established. Appeals of decisions and determinations made by the Building Official or the fire code official shall comply with the process and procedures set forth in City of Wheat Ridge Municipal Code Sections 2-59 and 5-25.

108.2 Limitations on authority. is unchanged and adopted as written.

108.3 Qualifications. is deleted in its entirety.

109.4 Violation penalties is amended to read in its entirety:

109.4 Violation penalties. Any person or entity 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 or repair work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate issued under the provisions of this code, shall be guilty of a misdemeanor, punishable by a fine of not more than \$1,000.00 dollars or by imprisonment not exceeding 90 days, or both such fine and imprisonment; provided, however, that no person under the age of eighteen (18) years shall be subjected to imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense. The denial, suspension, revocation, or restriction of any permit or other privilege conferred by this code shall not be regarded as a penalty for purposes of this chapter.

Section 111.1 Order is amended as follows:

111.1 Order. Whenever the building code official or fire code official finds any work regulated by this Code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the building code official or fire code official, with the concurrence of the other code official, is authorized to issue a stop work order.

Section 111.4 Failure to comply is amended as follows:

111.4 Failure to comply. Upon notice from the fire code official, work that is being done contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's agent, or to the person doing the work, or visibly posted at the work site. The notice shall state the conditions under which the work is authorized to resume. Where an emergency exists, the fire code official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure after having been served with a stop work order, except such work that person is directed

to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than 60 dollars or not more than 1000 dollars.

Chapter 2

Amend: Institutional Group I-1 to read as follows: Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1 shall be classified as a Condition 2 unless approved by the building and fire code official as a Condition 1. This group shall include, but not be limited to the following:

Amend Residential Group R-4 to read as follows: Residential Group R-4 shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and received custodial care. Buildings of Group R-4 shall be classified as a Condition 2 unless approved by the building and fire code official as a Condition 1. This group shall include, but not be limited to the following:

Section 315 General Storage is amended by adding the following subsection:

315.3.5 Marking maximum permitted storage height. Identification of the maximum approved storage height shall be provided in areas where stacked or shelved storage of materials occurs. The maximum approved height will be based upon the requirements of Chapter 32. Maximum storage height identification shall consist of a minimum of a four (4) inch (101.6 mm) stripe on a contrasting background shall be placed at the maximum storage height as determined by Chapter 32 above the finished floor and clearly labeled with the designation: “*No Storage Above This Line.*”

Section 503.2 Specifications is amended to read 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.

Section 503.2.1 Dimensions is amended to read as follows:

503.2.1 Dimensions-Public and Private Streets. Public and private streets that are used for fire apparatus access shall have an unobstructed width that meets the dimensions and parking restrictions as set forth by the *Street Standards* adopted by the City of Wheat Ridge; and an unobstructed vertical clearance of not less than thirteen (13) feet six (6) inches (4115 mm).

Section 503.2.1 Dimensions is amended by adding the following subsection:

503.2.1.1 Dimensions-Private Drives. Fire apparatus access that is designated as a private drive shall have an unobstructed width of not less than twenty-four (24) feet (7315 mm)

and an unobstructed vertical clearance of not less than thirteen (13) feet six (6) inches (4115 mm).

Section 503.2.3 Surface is amended to read as follows:

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be paved so as to provide all-weather driving capabilities.

Section 503.2.4 Turning Radius shall be amended to read as follows:

503.2.4 Turning Radius. The required turning radius of a fire apparatus access road shall be an inside radius of 27 feet and an outside radius of 50 feet or as determined by the fire code official. Computer modeling may be required to establish that each fire district's apparatus can adequately maneuver the proposed access roads.

Section 503.2.8 Angles of approach and departure shall be amended to read as follows:

503.2.8 Angles of approach and departure. The angles of approach and departure for fire apparatus access roads shall be no greater than 10% or within the limits established by the fire code official based on the fire district's apparatus.

Section 507.5.1.1 Hydrant for automatic sprinkler systems and standpipe systems is amended to read as follows:

507.5.1.1 Hydrant for automatic sprinkler systems and standpipe systems. Buildings equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and/or standpipe system installed in accordance with Section 905 shall have a fire hydrant a minimum of 50 feet and a maximum of 100 feet of the fire department connection.

Exception: The distance shall be permitted to exceed 100 feet where approved by the fire code official.

Section 510.4.1.1 Minimum signal strength into the building shall be amended to read as follows:

Section 510.4.1.1 Minimum signal strength into the building. The minimum inbound signal strength into the building shall be -85dBm to provide usable voice communications throughout the coverage area. The inbound signal level shall be sufficient to provide not less than a Delivered Audio Quality (DAQ) of 3.0 or an equivalent Signal-to-Interference-Plus-Noise Ratio (SINR) applicable to the technology for either analog or digital signals.

Section 510.4.1.2 Minimum signal strength out of the building shall be amended to read as follows:

Section 510.4.1.2 Minimum signal strength out of the building. The minimum outbound signal strength out of the building shall be -90 dBm to provide usable voice communications throughout the coverage area to the fire district's radio system when transmitted from within the building. The outbound signal level shall be sufficient to provide not less than a DAQ of 3.0 or an equivalent SINR applicable to the technology for either analog or digital signals.

Section 510.4.1.3 System performance shall be amended to read as follows:

Section 510.4.1.3 System performance. If the field signal strength outside the building where received antenna system for the in-building system is located is less than the -85dBm, then the minimum required in-building field of strength shall equal the field of strength being delivered to the receiving antenna of the building.

Section 901.4.6 Pump and riser rooms size shall be amended to read as follows:

Section 901.4.6 Pump and riser room size. Where provided, fire pump rooms and *automatic sprinkler system* riser rooms shall be designed with adequate space for all equipment necessary for the installation, as defined by the manufacturer, with sufficient working space around the stationary equipment. Clearances around equipment to elements of permanent construction, including other installed equipment and appliances, shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly. Fire pump and *automatic sprinkler system* riser rooms shall be provided with doors and unobstructed passageways large enough to allow removal of the largest piece of equipment. The room shall provide a minimum of 36 square feet working space around a fire pump or *automatic sprinkler system* riser.

Section 901.6 Inspection, testing and maintenance shall be amended to read as follows:

Section 901.6 Inspection, testing and maintenance. Fire detection and alarm systems, emergency alarm systems, gas detection systems, fire-extinguishing systems, mechanical smoke exhaust systems and smoke and heat vents shall be maintained in an operative condition at all times and shall be replaced or repaired where defective. Nonrequired *fire protection systems* and equipment shall be inspected, tested and maintained or removed. The removal of any non-required fire protection system or equipment shall be *approved* by the fire district.

Section 903.1 General is amended by adding the following subsection:

903.1.2 Location of sprinkler control valves. When automatic sprinkler systems are required within a building and the system serves more than one tenant space, the main control valves shall be located within an approved room that is accessible directly from the building exterior. The door to said room shall be not less than three (3) feet (914 mm) in width by six (6) feet eight (8) inches (203.2 mm) in height. The door to said room shall be

identified as required in section 509.1. The size of the room shall meet the size requirements per Section 901.4.6.

903.1.2 Multi-tenant buildings. In buildings that have warehouse space(s) that have the ability to allow high-piled combustible storage per Chapter 32 shall have a fire line installed with a main that runs the length of the building for future addition of fire sprinkler systems.

Section 903.4.2 Alarms shall be amended to read as follows:

903.4.2 Alarms. An approved audible/visual appliance, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler water-flow alarm appliances shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

Section 903.4.2 Alarms is amended by adding the following subsection:

903.4.2.1 Audible and visual signals. Audible and visual fire alarm notification devices shall be connected to every automatic sprinkler system. Such audible and visual devices shall be activated throughout the building upon water flow. When buildings have multiple tenant spaces, notification devices shall be installed in accordance with Section 907.5 in each tenant space.

Section 904 Alternative Automatic Fire-Extinguishing Systems is amended by adding the following subsection:

904.13 Domestic cooking systems. Cooktops and ranges installed in the following occupancies shall be protected in accordance with Section 904.13.1.

1. Unchanged
2. Unchanged
3. Unchanged
4. In Group R-4 occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6 of the International Building Code.

Section 906.1 Where required shall be amended to read as follows:

Section 906.1 Where required. Portable fire extinguishers shall be installed in all of the following locations:

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies.
Exceptions:
 - 1-6. Unchanged
7. In Group A, and B occupancies equipped throughout with an approved automatic fire sprinkler system with quick response sprinklers, portable fire

extinguishers shall be required only in locations specified in Items 2 through 6.

Section 907.6 Installation and monitoring is amended by adding the following subsection:

Section 907.11 Security systems. Fire alarm panels and security alarm panels shall be separate and not combined.

912.3.1 Locking fire department connection caps is amended to read as follows:

912.3.1 Locking fire department connection caps. Approved locking fire department connection caps shall be installed on fire department connections on all new water-based fire protection systems. Installation of approved locking fire department connection caps shall be required on existing water-based fire protection systems where there is a history of missing caps or interior obstructions of the fire department connection.

Section 3310.1 Required access shall be amended to read as follows and subsection added:

Section 3310.1 Required access. Approved fire apparatus access for firefighting and emergency medical services is required to all construction or demolition sites. Access shall be provided to within 150 feet of all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building. When approved by the fire code official, temporary fire apparatus access can be installed during construction of sites not consisting of one- and two-family dwellings and where practical difficulty exists with providing permanent access during construction. Permanent fire apparatus access shall be provided prior to occupancy. Approved temporary access shall be installed as set forth in Section 3310.1.1 through 3310.1.3.

Section 3310.1.1 Installation timing. The required access shall be installed prior to above ground construction and/or the storage of combustible materials on-site, all access and water supplies for fire fighting vehicles shall be provided to construction or demolition sites as shown on the approved site plan in their entirety.

Section 3310.1.2 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 24 feet and vertical clearance of not less than 13 feet 6 inches.

Section 3310.1.3 Surface. Fire apparatus access roads shall have an all-weather surface consisting of the first lift of asphalt, concrete, or Class 6 road base. The surface shall be capable of supporting an 85,000-pound imposed load. Documentation from a licensed geotechnical engineer attesting that the surface will support the required imposed load and all-weather capability shall be provided.

Section 5307.1 General shall be amended to read as follows:

Section 5307.1 General. Compressed gases in storage or use not regulated by the material-specific provisions of Chapters 6, 54, 55 and 60 through 67, including asphyxiant, irritant and radioactive gasses, shall comply with this section in addition to

other requirements of this chapter. The provisions of this chapter shall apply to new or existing systems.

Section 5307.3 Insulated liquid carbon dioxide systems used in beverage dispensing applications this section shall be amended to read as follows:

Section 5307.3 Liquid carbon dioxide systems used in beverage dispensing applications.

Section 6109.13 Protection of containers shall delete the exception from this section.

5704.2.9.6.1 Locations where above-ground tanks are prohibited is amended to read as follows:

5704.2.9.6.1 Locations where above-ground tanks are prohibited. The storage of Class I and II liquids in above-ground tanks shall conform to the geographic limits established by (Section XX of the Wheat Ridge Municipal Code or Zoning Regulations- Need the City Attorney's Direction here).

5706.2.4.4 Locations where above-ground tanks are prohibited is 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 tanks shall conform to the geographic limits established by (Section XX of the Wheat Ridge Municipal Code or Zoning Regulations- Need the City Attorney's Direction here).

5806.2 Limitations is amended to read as follows:

5806.2 Limitations. Storage of flammable cryogenic fluids in stationary containers outside of buildings shall conform to the geographic limits established by (Section XX of the Wheat Ridge Municipal Code or Zoning Regulations- Need the City Attorney's Direction here).

6104.2 Maximum capacity within established limits is amended to read as follows:

6104.2 Maximum capacity within 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 2,000 gallons within the City of Wheat Ridge.

Chapter 80 Referenced standards

Section 8001 Adoption of standards and subsection shall be added as follows:

Section 8001 Adoption of standards.

Section 8001.1 NFPA standards. In every case where this code references a standard published by the National Fire Protection Association (NFPA), the most current edition

of the referenced standard is hereby adopted. The most current edition of the references NFPA standard shall become effective on January 1st following publication and release of the standard.

Table B105.1(1) shall be amended to reflect the following table:

TABLE B105.1(1)
REQUIRED FIRE-FLOW FOR ONE-
AND TWO-FAMILY DWELLINGS, Group R-3 and R-4 BUILDINGS AND
TOWNHOUSES

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1 (2) at the reduced flow rate
0-3,600	Section 903.3.1.3 of the <i>International Fire Code</i> or Section P2904 of the <i>International Residential Code</i>	1,000	½
3,601 and greater	Section 903.3.1.3 of the <i>International Fire Code</i> or Section P2904 of the <i>International Residential Code</i>	½ value in Table B105.1(2) ^a	1

For SI: 1 gallon per minute = 3.785 L/min.

- a. The reduced fire-flow shall not be less than 1,000 gallons per minute.

Table B105.2) shall be amended to reflect the following table:

TABLE B105.2
REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE-
AND TWO-FAMILY DWELLINGS, Group R-3 and R-4 BUILDINGS AND
TOWNHOMES

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1 (2)
Section 903.1.1 of the <i>International Fire Code</i>	50% of the value in Table B105.1 (2) ^a	Duration in Table B105.1 (2) at the reduced flow rate

Section 903.1.2 of the <i>International Fire Code</i>	50% of the value in Table B105.1 (2) ^b	Duration in Table B105.1 (2) at the reduced flow rate
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For SI: 1 gallon per minute = 3.785 L/min.

- b. The reduced fire-flow shall not be less than 1,500 gallons per minute.
- c. The reduced fire-flow shall not be less than 1,500 gallons per minute.

Appendix D Section D102.1 Access and loading is amended to read as follows:

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 85,000 pounds (38636 kg).

Appendix D Section D102.2 Underground systems is added to read as follows:

D102.2 Underground systems. Underground water detention systems are not allowed underneath fire apparatus access drives unless the following can be met:

1. The structure can support 85,000 pound fire apparatus on three axels
2. The engineer must provide calculations showing that the point load of extended and loaded outriggers can be supported based on manufacturer specifications.
3. The point load calculations must show the expected point load increases resulting from the nozzle reaction, boom extensions and rotations, icing, and other predictable load variables.
4. The engineer must describe how the detainment structure will react to 2,000 gallons per minute of water flow for two hours including the stability of the assembly and where the water will flow taking into account the fire apparatus will be operating on the surface above.
5. The life expectancy of the detainments structure's load carrying capacity as determined above must be stated and must be consistent with the expected life span of the building.
6. Any additional factors the engineer or fire code official feels are relevant to the site or the performance of the detention system impacting safe fire operations.
7. The engineer's attestation must be succinct and affirmative. Qualifying statements and/or disclaimers will likely result in disapproval.

- *2018 International Mechanical Code*

No Proposed Changes

- *2018 International Plumbing Code*

No Proposed Changes

- *2018 International Fuel and Gas Code*

No Proposed Changes

- *2017 National Electrical Code*

Adoption. The National Electrical Code, (NFPA_70) 2017 Edition, copyrighted by the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts, 01269-7471, is hereby adopted by reference and incorporated into this article as though fully set forth herein as the electrical code of the City of Wheat Ridge. Any modifications to or newer versions of the National Electrical Code (NFPA-70) that are adopted by the Colorado State Electrical Board pursuant to its authority under C.R.S. §12-23-104(2)(a) shall be automatically incorporated herein and deemed to modify this code.

- *2018 International Energy Conservation Code*

The following appendices are adopted:

- *Appendix CA: Solar-Ready Zone -- Commercial.* **Appendix CA** is adopted in its entirety.
- *Appendix RA: Solar-Ready Provisions – Detached one and two-family dwellings and townhouses.* **Appendix RA** is adopted in its entirety.

- *2018 International Property Maintenance Code*

No proposed changes

- ***2018 International Existing Building Code***

(a) Adoption. The International Existing Building Code, 2018 Edition, is hereby adopted by reference and incorporated into this article as though fully set forth herein as the existing building code of the City of Wheat Ridge. One (1) copy of said International Existing Building Code shall be filed in the office of the city clerk and may be inspected during regular business hours. Except as otherwise provided hereafter, such code is adopted in full, including the outline of contents and index contained herein. The 2018 International Existing Building Code shall be known as the "I.E.B.C." or the "Existing Building Code" and may be cited and referred to as such.

- ***2018 International Swimming Pool and Spa Code***

(a) Adoption. The International Swimming Pool and Spa Code, 2018 Edition, is hereby adopted by reference and incorporated into this article as though fully set forth herein as the Pool and Spa Code of the City of Wheat Ridge. One (1) copy of said International Pool and Spa Code shall be filed in the office of the city clerk and may be inspected during regular business hours. Except as otherwise provided hereafter, such code is adopted in full, including the outline of contents and index contained herein. The 2018 International Swimming Pool and Spa Code shall be known as the "I.S.P.S.C." or the "Pool and Spa code" and may be cited and referred to as such.

- *Section 305.2 (1), Item 1. Barrier height clearances.* Amend to read in its entirety:

- **305.2.1, Item 1. Barrier height and clearances.** The top of the barrier shall be at least 60 inches above grade measured on the side of the barrier that faces away from the swimming pool. Such height shall exist around the entire perimeter of the barrier and for a distance of 3 feet measured horizontally from the outside of the required barrier.

- ***1997 Uniform Code for Abatement of Dangerous Buildings***

No proposed changes

- ***National Fire Protection Association (NFPA) 99 Standard for Health Care Facilities – 2018 Edition***

No proposed changes