

AMENDMENT 1 TO INTERNATIONAL FIRE CODE 2012 EDITION

The International Fire Code 2012 Edition as adopted by the Mayor and Council of the City of Goodyear is hereby amended as follows:

(1) CHAPTER 1 "ADMINISTRATION" is hereby amended as follows:

Section 101.1 Title is hereby amended as follows:

Insert the words "City of Goodyear" as the name of the jurisdiction.

Section 102.5 is hereby deleted in its entirety and replaced with the following:

102.5 Application of residential code. Where structures are designed and constructed in accordance with the *International Residential Code for One and Two-Family Dwellings* as adopted and amended by the governing authority, the provisions of this code shall apply as follows:

1. Construction and design provisions: Provisions of this code pertaining to the structure shall apply including, but not limited to, premises identification, fire apparatus access, water supplies, fire suppression systems and fire alarm systems. Where interior or exterior systems or devices are installed, construction permits required by Section 105.7 and all subsections therein shall also apply.
2. Administrative, operational and maintenance provision: All such provisions of this code shall apply.

Section 102.7 is hereby deleted in its entirety and replaced with the following:

102.7 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 80, the City of Goodyear Engineering Design Standards and Policies Manual as adopted and amended by the governing authority, the City of Goodyear Zoning Code, as adopted and amended by the governing authority, the 2010 ADA Standards of Accessible Design as adopted and amended by the governing authority; and all other applicable local, state, and federal laws and regulations; and such codes and standards shall be considered part of the requirements of this code to the extent of each such reference or as otherwise applicable and as further regulated in Sections 102.7.1.

1. Any reference to the NFPA 70 National Electric Code shall mean NFPA 70 National Electric Code as adopted and amended by the governing authority.
2. Any reference to the International Fuel Gas Code shall mean the International Fuel Gas Code as adopted and amended by the governing authority.
3. Any reference to the International Plumbing Code shall mean the International Plumbing Code as adopted and amended by the governing authority.

4. Any reference to the International Building Code shall mean the International Building Code as adopted and amended by the governing authority.
5. Any reference to the International Residential Code shall mean the International Residential Code for One and Two-Family Dwellings as adopted and amended by the governing authority.
6. Any reference to the International Mechanical Code shall mean the International Mechanical Code as adopted and amended by the governing authority.
7. Any reference to the International Property Maintenance Code shall mean the International Property Maintenance Code as adopted and amended by the governing authority.
8. Any reference to the ICC A117.09 shall mean ICC A117.09 Accessible and Usable Buildings and Facilities as adopted and amended by the governing authority.

Section 102.7.1 is hereby deleted in its entirety and replaced with the following:

102.7.1 Conflicts. Where conflicts occur between provisions of this code and standards referenced in this code or between the provision of this code and any state, local and/or federal laws, rules, and regulations, including by way of example, the City of Goodyear Engineering Design Standards and Policies as adopted and amended by the governing authority and technical codes as adopted and amended by the governing authority, the most restrictive requirements apply.

Exceptions:

1. Where enforcement of a code provision would violate the conditions of the listing of equipment or appliances as approved by the City of Goodyear, the conditions of the listing and manufacturer's instructions shall apply.
2. Where there is a provision contained in another technical code as adopted and amended by the governing authority that is not addressed in this code then the provision of the technical code shall apply.

Section 102.7.2 Provisions in referenced codes and standards is hereby deleted in its entirety.

Section 104.6 Official Records is hereby deleted in its entirety and replaced with the following:

104.6 Official Records. The fire code official shall keep official records as required by Sections 104.6.1 through 104.6.4 and all other records required to be retained by law. Such

official records shall be retained in the official records for the period required for retention of public records.

Section 105.1.1 Permits required is hereby amended as follows:

The following sentence is added to the end of this section: Permits are non-transferable and any change in occupancy, operation, tenancy or ownership shall require a new permit

Section 105.2 Application is hereby deleted in its entirety and replaced with the following:

105.2 Application. To obtain a *permit*, the applicant shall submit a written application, all required supporting documentation and all applicable fees in accordance with the applicable requirements set forth in the City of Goodyear Administrative Process Manual as adopted and amended by the governing authority and as supplemented herein. If the applicable permit application requires the disclosure of occupancy classifications, the application shall indicate the proposed occupancy classifications for all parts of the building and of that portion of the site or lot, if any not covered by the building or structure.

Section 105.2.1 Refusal to issue permit is hereby amended as follows:

The last sentence in this section shall read: Such refusal shall be in writing and shall contain the reasons for refusal.

Section 105.2.3 Time limitation of application is hereby deleted in its entirety and replaced with the following:

105.2.3 Time limitation of application. In the event a permit has not been issued or an application for a permit has not been denied, an application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, except that the fire code official is authorized to grant one or more extensions of time for additional periods not exceed 90 days each. The extension shall be requested in writing and justifiable cause demonstrated before any extension is granted.

Section 105.2.4 Action on application is hereby deleted in its entirety and replaced with the following:

105.2.4 Action on application. The fire code official shall examine or cause to be examined applications for permits and amendments thereto in accordance with the requirements set forth in the City of Goodyear Administrative Process Manual as adopted and amended by the governing authority as supplemented herein. If the application and/or supporting documentation does not conform to the requirements of applicable laws, the fire code official shall reject such application in writing stating the reasons therefor. If the fire code official is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto and all applicable fees have been paid, the fire code official shall issue a permit therefor as soon as practicable.

Section 105.3.1 Expiration is hereby deleted in its entirety and replaced with the following:

105.3.1 Expiration. Every permit issued shall expire by limitation and become null and void if the work authorized by such permit is not commenced within 180 days after its issuance or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the work is commenced. Notwithstanding the foregoing, a permittee holding an unexpired permit shall have the right to apply in writing to extend the expiration deadlines set forth herein. The fire code official is authorized to grant, in writing, one extension of time for a period of not more than 180 days provided that the permittee has demonstrated in writing that no changes have been made or will be made in the original construction documents for the permitted work and that justifiable cause exists for the failure to commence the work within 180 days or for the suspension or abandonment of the work after it was commenced. The fee for the extension shall be the cost of reviewing the application at a rate of \$100.00 per hour with a minimum charge of one hour. In order to renew action on a permit after expiration, a new full permit fee shall be paid based on the current fee schedule adopted by the City.

Section 105.3.2 Extensions is hereby deleted in its entirety.

Section 105.4.1 Submittals is hereby deleted in its entirety and replaced with the following:

105.4.1 Submittals. Construction documents and supporting data shall be submitted in accordance with the applicable requirements set forth in the City of Goodyear Administrative Process Manual as adopted and amended by the governing authority and in accordance with the requirements set forth in Sections 105.4.2 through 105.4.3 and all subsections therein, and in Section 107.3.4 and all subsections therein of the International Building Code as adopted and amended by the governing authority, as applicable and as otherwise supplemented herein. In the event of a conflict, the most restrictive provisions shall apply. All construction documents and supporting data shall be prepared by a professional registrant with the Arizona Board of Technical registration, or in lieu of being designed by a professional registrant with the Arizona Board of Technical registration, fire sprinkler installation drawings shall bear a review certification of a minimum Level III National Institute for the Certification of Engineering Technologies (NICET) in Fire Sprinkler Systems, and fire alarm installation drawings shall bear a review certification of a minimum Level III National Institute for the Certification of Engineering Technologies (NICET) in Fire Alarm Systems.

Exception: The building official shall have the authority to waive the submission of construction documents, calculations or other data if the nature of the work applied for is such that the reviewing of construction documents is not necessary to determine compliance with this code and the authority to waive the requirement that construction documents, calculations and or other data be prepared and designed by a professional registrant if compliance with the requirements of this code can be determined by the building official.

Section 105.4.1.1 Examination of documents is hereby renumbered 105.4.1.2 Examination of documents and the following is hereby added as 105.4.1.1 Record Electronic Files as follows:

105.4.4.1 Record Electronic Files. CAD files (.dwg) shall be provided in the latest commercially available release of AutoCAD. Drawings are to be purged of all extraneous information, shall be “bound” to **insert** all reference files, shall be accompanied by any non-native fonts, and shall be free of complex file pathing which complicates file opening when transferred from the CDROM. Binding of reference files shall be done using AutoCAD’s SREF “**insert**” option so as to avoid layer and block name corruption. Other formats may be submitted with approval from the Fire Code Official.

Section 105.6 is deleted in its entirety and replaced with the following:

105.6 Required Operational Permits. Operational permits are required for the operations set forth in section 105.6.1 through 105.6.47. Operational permits are in addition to required construction permits. The Fire Chief is authorized to issue the operational permits required herein.

Section 105.6.3 Aviation facilities is hereby amended by adding the following to the end of this section:

In addition, an annual operation permit is required by the Fire Department to use Group H or Group S occupancy for aircraft servicing or repair and aircraft fuel-servicing vehicles.

Section 105.6.15 Fire hydrants and valves is hereby deleted in its entirety and replaced with the following:

105.6.15 Fire hydrants and valves. Except for authorized employees of the City of Goodyear Fire Department or any fire department that is subject to an automatic aid or mutual aid agreement with the City of Goodyear for the assistance in responding to fires and other types of emergency incidents, an operational permit is required to use or operate fire hydrants or valves intended for fire suppression purposes that are installed on the City of Goodyear’s water system and accessible to a fire apparatus access road that is open to or generally used by the public. Approval to use or operate fire hydrants or valves that are part of private water company’s water system is regulated by the private water company.

Section 105.6.16, Flammable and Combustible Liquids is hereby amended by adding the following to the end of this section:

12. In addition, an annual operation permit is required by the Fire Department for any of the uses described in 1-11 above.

Section 105.6.20 Hazardous Materials is hereby amended by adding the following to the end of this section:

An annual operational permit is required by the Fire Department to store, transport on site, dispense, use or handle hazardous materials in excess of the amounts listed in Table 105.6.20. A Hazardous Materials Assessment Fee shall be required for the annual inventory assessment, administrative process and code research activities.

Section 105.6.27 LP-gas is hereby amended as follows:

Item 2 requiring an operation permit for the operation of cargo tankers that transport LP-gas is hereby deleted.

Section 105.6.43 is hereby deleted in its entirety and replaced with the following:

105.6.43 Temporary membrane structures, tents and canopies. An operational permit is required to operate an air-supported temporary membrane structure having an area in excess of 400 square feet, a tent having an area in excess of 400 square feet, or a canopy in excess of 700 square feet. No temporary membrane structure, tent or canopy as noted herein shall be erected, operated or maintained for any purpose without first obtaining a permit and approval from the *fire code official*. Membrane structures, tents and canopies grouped together shall be considered as one unit unless separated by at least 12 feet.

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents open on all sides, which comply with all of the following:
 - 2.1. Individual tents having a maximum size of 700 square feet (65m²); and
 - 2.2. The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m²) total; and
 - 2.3. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be provided.

Section 105.6.47 Carbon dioxide systems used in beverage dispensing applications is hereby added as follows:

105.6.47 Carbon dioxide systems used in beverage dispensing applications. An operational permit is required for carbon dioxide systems used in beverage dispensing applications having more than 100 pounds of carbon dioxide.

Section 105.7 Required construction permits is hereby deleted in its entirety and replaced with the following:

105.7 Required construction permits. The building official is authorized to issue construction permits for work as set forth in sections 105.7.1 through 105.7.11 and 105.7.13 through 105.7.17. The City Engineer is authorized to issue construction permits for work set forth in section 105.7.12.

Section 105.7.16 Temporary membrane structures, tents and canopies is hereby deleted in its entirety and replaced with the following:

105.7.16 Temporary membrane structures, tents and canopies. A construction permit is required to operate an air-supported temporary membrane structure having an area in excess of 400 square feet, a tent having an area in excess of 400 square feet, or a canopy in excess of 700 square feet. No membrane structure, tent or canopy shall be erected, operated or maintained for any purpose without first obtaining a permit and approval from the Fire Code Official. Membrane structures, tents and canopies grouped together shall be considered as one unit unless separated by 12 feet.

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Funeral tents and curtains, or extension attached thereto, when used for funeral services.
3. Tents open on all sides, which comply with all of the following:
 - 3.1. Individual tents having a maximum size of 700 square feet (65m²)
 - 3.2. The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m²) total.
 - 3.3. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be provided/

Section 105.7.17 Gate access automatic control device is hereby added as follows:

105.7.17 Gate access automatic control device. A construction permit is required for the installation of automatic gates across fire department access roads.

Section 108 Board of Appeals including sections 108.1 through 108.3 and all subsections therein is deleted in its entirety and replaced with the following:

**SECTION 108
BOARD OF APPEALS**

108.1 Appeal. Any person shall have the right to appeal a decision of the fire code official to the

Board of Appeals as provided in Section 113 Board of Appeals, Sections 113.1 through 113.5 and all subsections therein of the International Building Code as adopted and amended by the governing authority.

Section 109.1 Unlawful acts is hereby deleted in its entirety and replaced with the following:

109.1 Unlawful acts. It shall be unlawful for:

1. Any person to erect, construct, install, alter, extend, repair, move, remove, demolish any building, structure, premises, system or equipment regulated by this code in violation of any of the provision of this code; or to cause or allow same to be done;
2. Any person to erect, construct, install, alter, extend, repair, move, remove, or demolish any building, structure, premises, system or equipment in violation of approved construction plans or any direction of the fire code official or of a permit or certificate issued under the provisions of this code or to cause or allow same to be done;
3. Any person to occupy or use any building, structure, premises, system, or equipment regulated by this code in violation of any provisions of this code or any direction of the fire code official or of a permit or certificate issued under the provisions of this code, or to cause or allow same to be done;
4. Any Owner to fail to take actions necessary to correct conditions in any building, structure, or equipment regulated by this code that is in violation of any provisions to bring such building, structure or equipment in compliance with the provisions of this code;
5. Any person to violate or fail to comply with notices and orders issued pursuant to the enforcement of this code, including by way of example, but not limitation, provisions of notices of violations, notices of unsafe conditions, and stop work orders.

Section 109.3 Notice of violation is hereby deleted in its entirety and replaced with the following:

109.3 Notice of violation. Whenever the fire code official determines that there has been a violation of this code or has grounds to believe that a violation has occurred, the fire code official may provide a written warning by attaching the warning in a conspicuous place in or about the structure affected by such notice. Such warnings shall include at least the following, a description of the real estate sufficient for identification, description of the violation(s) and why the notice is being issued and the corrective actions that need to be taken. Whenever the fire code official determines that there has been a violation of this code or has grounds to believe that a violation has occurred and the fire code official wants to prosecute such violation, a notice of the violation shall be given to the person(s) responsible for the violation as prescribed in section 109.3.1 below and the notice of violation shall be in accordance with all of the following:

1. Be in writing.
2. Include a description of the real estate sufficient for identification.
3. Include a statement of the violation or violations and why the notice is being issued.

4. Correction orders shall be included in the notice which shall provide a reasonable time to make the repairs and improvements required or to take other such actions needed for compliance with the provisions of this code.
5. Include information on the right to appeal the notice of violation.
6. Include a statement of the right to file a lien in accordance with the provisions of Section 109.3.3 Prosecution of violation.

Section 109.3.1 Service is hereby added as follows:

109.3.1 Service. A notice of violation or order prescribed in Section 109.3 shall be deemed to be served if a copy of the notice or order is:

1. Delivered personally; or
2. Sent by certified or first class mail with return receipt requested addressed to the last known address; or
3. If the notice or order is returned showing that the notice or order was not delivered, a copy thereof shall be posted in a conspicuous place in or about the structure affected by such notice or order.
4. For unattended or abandoned locations, a copy of such notice of violation shall be posted on the premises in a conspicuous place at or near the entrance to such premises and the notice of violation shall be mailed by certified mail with return receipt requested to the last known address.

If more than one person owns a building or structure that is the subject of a notice or order service to just one of the owners satisfies the requirement of providing the owner notice.

Service of a notice or order in the foregoing manner upon an owner's agent, or upon the person responsible for the structure shall constitute service of notice upon the owner.

Section 109.3.3 Prosecution of violations is hereby deleted in its entirety and replaced with the following:

109.3.3 Prosecution of violation. Any person failing to comply with a notice of violation or order prepared and served in accordance with Sections 109.3 and 109.3.1 shall be deemed guilty of a misdemeanor and shall be subject to the penalties as prescribed by law. Such violations shall be deemed a strict liability offense. If the notice of violation is not complied with the fire code official is authorized to request legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity (or both) to restrain, correct or abate such violation, or to require the removal or termination of the unlawful occupancy of the structure in violation of the provision of this code or of the order or direction made pursuant thereto. Any action taken by the authority having jurisdiction on such premises shall be charged against the real estate upon which the structure is located and shall be a lien upon such real estate.

Section 109.3.5 Transfer of ownership is hereby added as follows:

Section 109.3.5 Transfer of ownership. It shall be unlawful for the owner of any building or structure who has received a notice of violation or order or upon whom a notice of violation or order has been served to sell, transfer, mortgage, lease or otherwise dispose of such building or structure to another until the provisions of the notice of violation or order have been complied with or until such owner shall first furnish the grantee, transferee, mortgagee or lessee a true copy of any notice of violation or order issued by the building official and shall furnish to the building official a signed and notarized statement that the grantee, transferee, mortgagee or lessee, acknowledging the receipt of such notice of violation or order and fully accepting responsibility without condition for making the correction of repairs required by such notice of violation or order.

Section 109.4 is hereby deleted in its entirety and replaced with the following:

109.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof; erects, constructs, alters, or repairs a building or structure 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; or who fails to comply with a notice of violation or order prepared and served in accordance with Sections 109.3 and 109.3.1 shall be deemed guilty of a misdemeanor and shall be subject to the penalties as prescribed by law. Violations shall be deemed a strict liability offense. Each day that a violation continues after due notice has been served shall be deemed a separate offense

Section 113.1 Imminent danger is hereby added as follows:

113.1 Imminent danger. Where an imminent danger exists, the fire code official shall not be required to give a written notice prior to stopping work.

Section 111.4 Failure to comply is hereby deleted in its entirety and replaced with the following:

111.4 Unlawful continuances. Upon issuance of a stop work order, the cited work shall immediately cease. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to the penalties as prescribed by law.

Section 113.1 Fees is hereby deleted in its entirety and replaced with the following:

113.1 Fees. A permit shall not be issued and shall not be valid until all fees prescribed by law have been paid, nor shall an amendment to a permit be released until all additional fees, if any, have been paid. All permit fees and plan review fees shall be paid at the time of application supplemental. If the fees paid at the time of application are based on estimates, final fee adjustments will be made and any additional fees owed shall be made prior to the issuance of the applicable permits.

Section 113.2 Schedule of permit fees is hereby deleted in its entirety and replaced with the following:

113.2 Schedule of permit fees. The fees for each permit shall be paid in accordance with the schedule as established by the applicable governing authority, including the fees set forth in the International Building Code as adopted and amended by the governing authority.

Section 113.3 Work commencing before permit issuance is hereby deleted in its entirety and replaced with the following:

113.3 Work commencing before permit issuance. Any person who commences any work, activity, or operation regulated by this code before obtaining the necessary permits shall be subject to an additional fee equal to 100% of the amount of the permit fee(s) required for the permit(s) necessary for the work performed, which will result in double the amount of the adopted permit fees being paid when work is commenced before the appropriate permits have been obtained. The payment of such fee shall not exempt an applicant from complying with the provisions of either this code or other applicable requirements nor does it exempt an applicant from any other penalties prescribed by law.

Section 113.5 Refunds is hereby deleted in its entirety and replaced with the following:

113.5 Refunds. The fire code official shall be permitted to authorize the refunding of fees as follows:

1. The full amount of any fee paid hereunder that was erroneously paid or collected.
2. Not more than 65 percent (65%) of the permit fee paid when no work has been done under a permit issued in accordance with this code.
3. Not more than 65 percent (65%) of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any examination time has been expended.

The fire code official shall not authorize refunding of any fee paid except upon written application filed by the original permittee no later than 90 days after the date of fee payment.

(2) CHAPTER 2 “DEFINITIONS” is hereby amended as follows:

Section 201.1 Scope is hereby deleted in its entirety and replaced with the following:

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meaning shown in this chapter regardless of whether the words are italicized, capitalized, or otherwise designated in the text as being a defined term.

Section 201.3 Terms defined in other codes is hereby deleted in its entirety and replaced with the following:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the International Energy Conservation Code, International Fuel Gas Code, International Fire Code, International Mechanical Code, International Plumbing Code, International Residential Code for One and Two Family Dwellings, International Property Maintenance Code, or International Swimming Pool and Spa Code as adopted and amended by the governing authority, such terms shall have the meanings ascribed to them in those codes.

Section 202 General Definitions is hereby amended as follows:

Section 202 is amended to add the following definitions:

CONFLICT: A situation in which it is impossible to comply with provisions applicable to the same subject; a conflict does not exist when different provisions address the same subject and can be complied with without violating either provision.

EASEMENT. That portion of land or property reserved for present or future use by a person or agency other than the legal fee owner(s) of the property. The easement shall be permitted to be for use under, on or above said lots.

GOVERNING AUTHORITY. The Mayor and Council of the City of Goodyear.

IMMINENT DANGER: A condition which could cause serious or life-threatening injury or death at any time.

OPERATOR. Any person who has charge, care or control of a structure or premises which is let or offered for occupancy.

PREMISES. A lot, plot or parcel of land, easement or public way including any structures thereon.

STRICT LIABILITY OFFENSE. An offense in which the prosecution in a legal proceeding is not required to prove criminal intent as a part of its case. It is enough to prove that the defendant either did an act which was prohibited or failed to do an act which the defendant was legally required to do.

The definition of FIRE CODE OFFICIAL in Section 202 General Definitions is hereby deleted in its entirety and replaced with the following:

FIRE CODE OFFICIAL. The person(s) charged with the administration and enforcement of this code or their duly authorized representatives. For purposes of administering and enforcing the provisions of this code related to the erection, installation, alteration, extension, repair, removal or demolition of any building, structure, premises, system or equipment regulated by this code, the fire code official is the Building Official as defined in the International Building Code as adopted and amended by the governing authority or such

other official as expressly designated in writing by the chief appointing authority for the jurisdiction and filed with the City Clerk. For purposes of administering and enforcing the provisions of this code related to all other matters, including fire investigations and operational permits, the fire code official is the Fire Chief.

The definition of Institutional Group I-1 under Occupancy Classification in Section 202 General Definitions is hereby deleted in its entirety and replaced with the following:

Institutional Group I-1. This occupancy shall include buildings, structures or parts thereof for more than 16 persons who reside on a 24-hour basis in a supervised environment and receive custodial care. The persons receiving care are capable of self preservation. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Convalescent facilities

Group homes

Half-way houses

Residential board and custodial care facilities

Social rehabilitation

EXCEPTIONS:

Five or fewer persons receiving care. A facility such as above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 as amended or Section P2904 of the *International Residential Code*. Automatic sprinkler systems are not required in one- and two-family (Group R-3) structures complying with the exceptions noted under Section 903.2.8 of this code as amended by this ordinance.

Six to sixteen persons receiving care. A facility such as above, housing at least six and not more than 16 persons receiving such care shall be classified as Group R-4.

Arizona State Department of Health Facilities. All facilities as licensed by the State of Arizona Department of Health, further known, but not limited to, as direct care, personal care, supervisory care and behavioral residential agency, housing at least six and not more than 10 persons shall be considered a Group R-4.

The definition of Residential Group R-3 under Occupancy Classification in Section 202 General Definitions is hereby deleted in its entirety and replaced with the following:

Residential Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Boarding houses (nontransient) with 16 or fewer occupants

Boarding houses (transient) with 10 or fewer occupants

Buildings that do not contain more than two *dwelling units*

Care facilities that provide accommodations for five or fewer persons receiving care

Congregate living facilities (nontransient) with 16 or fewer occupants

Congregate living facilities (transient) with 10 or fewer occupants

Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 with amendments or Section P2904 of the *International Residential Code*. Automatic sprinkler systems are not required in one- and two- family (Group R-3) structures complying with the exceptions noted under Section 903.2.8 of this code as amended by this ordinance.

The definition of Residential Group R-4 under Occupancy Classification in Section 202 General Definitions is hereby deleted in its entirety and replaced with the following:

Residential Group R-4. This occupancy 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 receive custodial care. The persons receiving care are capable of self-preservation. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Convalescent facilities

Group homes

Halfway houses

Residential board and custodial care facilities

Social rehabilitation facilities

Arizona State Department of Health Facilities, which includes all facilities as licensed by the State of Arizona Department of Health, further known, but not limited to, as direct care, personal care, supervisory care and behavioral residential agency, housing at least six and not more than 10 persons shall be considered a Group R-4 occupancy.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in the International Building Code as adopted and amended by the governing authority.

The definition of OWNER in Section 202 General Definitions is hereby deleted in its entirety and replaced with the following:

OWNER. Any person, agent, operator, firm or corporation having a legal or equitable interest in the property in the property; or recorded in the official records of the state, county or municipality as holding title to the property; or otherwise having control of the property, including the guardian of the estate of any such person and the executor or administrator of the estate of such person if ordered to take possession of real property by a court.

The definition of PERSON in Section 202 General Definitions is hereby deleted in its entirety and replaced with the following:

PERSON. An individual, corporation, partnership or any other group acting as a unit.

(3) CHAPTER 3 “GENERAL REQUIREMENTS is amended as follows:

Section 316.6 Structures and outdoor storage underneath high-voltage transmission lines is hereby deleted in its entirety and replaced with the following:

316.6 Structures and outdoor storage underneath or abutting high voltage transmission lines. Structures and outdoor storage underneath or abutting high-voltage transmission lines shall comply with Sections 316.6.1 through 316.6.3, respectively.

Section 316.6.3 Required fire lanes and open yard space is hereby added as follows:

316.6.3 Required fire lanes and open yard space. There shall be fire lanes and/or open yard spaces (“open space”) of not less than 60 feet (18, 288 mm) in width between structures and transmission lines, which shall be measured from the easement provided for the transmission lines abutting the proposed structure to the structure. No reduction in the amount of open space required herein shall be permitted regardless of whether the structure

would be eligible for a reduction pursuant to section 507.5 of the International Building Code as adopted and amended by the governing authority.

(4) CHAPTER 5 “FIRE SERVICE FEATURES” is amended as follows:

Section 503.1.1 Buildings and Facilities is hereby amended as follows:

Exceptions one (1) and three (3) are deleted.

Section 503.3 Marking is hereby deleted in its entirety and replaced with the following:

503.3 Marking. Where required by the *fire code official*, *approved* signs or other *approved* notices or markings that include the words “NO PARKING – FIRE LANE” shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Signage shall be in accordance with the City of Goodyear Engineering Design Standards and Policies Manual as adopted and amended from time to time. Signs shall be installed perpendicular and double sided when placed on one side of a fire apparatus access roads. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and replaced or repaired when necessary to provide adequate visibility.

In addition to or in lieu of the required fire lane signage the Fire Code Official may approve curb, street or driveway painted red to indicate fire lane and labeled “FIRE LANE NO PARKING” in white block letters 3 inches (76.2mm) in height, ¾ inch (19.5mm) stroke, on the vertical face of the curb to indicate fire lane. Lettering shall not be greater than 50’0” (15.24m) apart and shall be posted at the beginning and end of the fire lane.

Section 503.7 Key switch and sensor preemption location and type is hereby added as follows:

503.7 Key switch and sensor preemption location and type. A key switch and preemption sensor shall be required on all electric entry control gates. Key switch shall be installed in a location on the gate control panel that is readily visible and accessible. In the event that there is a power failure, the gate shall default to the open position.

Section 505.1 Address Identification is hereby deleted in its entirety and replaced with the following:

505.1, Address Identification

New and existing buildings shall have *approved* address numbers, building numbers or *approved* building identification placed in a position that is plainly legible and visible from the street or road fronting the property. Landscaping or structures cannot obscure addresses or required signage. These numbers shall contrast with their background and shall be weather resistant. Where required by the *fire code official*, address numbers shall be provided in additional *approved* locations to facilitate emergency response. Address numbers shall be Arabic numbers or alphabetical letters. Unless otherwise provided herein,

numbers shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm). Where access is by means of a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure. Address numbers shall be maintained and sized in accordance with the following:

1. One and two-family dwellings and commercial businesses being conducted in a one or two-family dwelling shall require minimum 4" high numbers or letters with a minimum 5/8 inch stroke width.
2. Triplexes, multifamily dwellings and commercial buildings located less than 75 feet from a public right-of-way (the street on which the property is addressed) shall post minimum 12 inch numbers or letters having a minimum 2 inch stroke width.
3. Triplexes, multifamily dwellings and commercial buildings located 75 feet to 200 feet from a public right-of-way (the street on which the property is addressed) shall post minimum 16 inch numbers or letters having a minimum 3 inch stroke width.
4. Triplexes, multifamily dwellings and commercial buildings located more than 200 feet from a public right-of-way (the street on which the property is addressed) shall post 24 inch numbers or letters having a 4 inch stroke width.
5. Unit or suite numerals and/or letters shall be required on or adjacent to the front door and on the rear door of multi-tenant buildings to be immediately visible. Letters or numerals shall be a minimum 4 inch in height with a minimum 5/8 inch stroke width in a color contrasting to the door and shall be weather-resistant.
6. Exceptions to these requirements shall be approved by the Fire Code Official.

Section 507.5 Fire hydrant systems is hereby deleted in its entirety and replaced with the following:

507.5 Fire hydrant systems. Fire hydrant systems shall comply with Sections 507.5.1 through 507.5.6, and on-site fire hydrants spacing and mains shall be provided where required by the City of Goodyear Engineering Design Standards and Policies Manual and the *fire code official*.

Section 507.5.1 is hereby amended as follows:

Exceptions #1 and #2 are deleted in their entirety.

(5) CHAPTER 9 "FIRE PROTECTION SYSTEMS" is amended as follows:

Section 903.2 Where required is hereby deleted in its entirety and replaced with the following:

903.2 Where required. *Approved automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12 as amended herein, except for telecommunication buildings, existing structures, special amusement buildings and exempt locations as follows:

Exceptions:

Telecommunications building: Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 of the International Building Code or not less than 2-hour *horizontal assemblies* constructed in accordance with Section 711 of the International Building Code, or both.

Existing Structures: An automatic sprinkler system shall not be required to be retrofitted in existing buildings where the occupancy is changed provided the new or proposed use is less hazardous, based on life safety and fire risk, than the existing use and the existing structure is not increased more than an aggregate total of all additions of 500 square feet. The determination of whether the new or proposed use is less hazardous shall be made by the fire code official in his/her discretion.

Special Amusement Buildings: Automatic sprinkler systems shall not be required for temporary special amusement buildings pursuant to the Exception in Section 411.4 of the International Building Code.

Section 903.2.1.1 Group A-1 is hereby deleted in its entirety and replaced with the following:

903.2.1.1 Group A-1. *An automatic sprinkler system* shall be provided for Group A-1 occupancies.

Section 903.2.1.2 Group A-2 is hereby deleted in its entirety and replaced with the following:

903.2.1.2 Group A-2. *An automatic sprinkler system* shall be provided for Group A-2 occupancies.

Section 903.2.1.3 Group A-3 is hereby deleted in its entirety and replaced with the following:

903.2.1.3 Group A-3. *An automatic sprinkler system* shall be provided for Group A-3 occupancies.

Section 903.2.1.4 Group A-4 is hereby deleted in its entirety and replaced with the following:

903.2.1.4 Group A-4. An *automatic sprinkler system* shall be provided for Group A-4 occupancies.

Section 903.2.1.5 Group A-5 is hereby deleted in its entirety and replaced with the following:

903.2.1.5 Group A-5. An *automatic sprinkler system* shall be provided for Group A-5 occupancies, including all accessory use areas, which includes, but is not limited to: concession stands, retail areas, and press boxes.

Section 903.2.2 Ambulatory care facilities is hereby deleted in its entirety and replaced with the following:

903.2.2 Ambulatory care facilities. An *automatic sprinkler system* shall be provided for in ambulatory care facilities.

Section 903.2.3 Group E is hereby deleted in its entirety and replaced with the following:

903.2.3 Group E. An *automatic sprinkler system* shall be provided for Group E occupancies.

Section 903.2.4 Group F-1 is hereby deleted in its entirety and replaced with the following:

903.2.4 Groups B, F-1, F-2 and U. An *automatic sprinkler system* shall be provided for Groups B, F-1, F-2 and U occupancies.

Section 903.2.4.1 Woodworking operations is hereby deleted in its entirety.

Section 903.2.7 Group M is hereby deleted in its entirety and replaced with the following:

903.2.7 Group M. An *automatic sprinkler system* shall be provided throughout buildings containing a Group M occupancy.

Section 903.2.7.1 High-piled storage is hereby deleted in its entirety.

Section 903.2.8 Group R is hereby deleted in its entirety and replaced with the following:

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

Exception:

Automatic sprinkler systems shall not be required in one- and two-family dwellings and R-3 occupancies that are less than 5,000 square feet when there is adequate water supply and an approved fire apparatus access road. When there is inadequate water supply or limited fire department access, automatic sprinkler systems shall not be required in one- and two-family dwellings and R-3 occupancies that are less than 3,600 square feet. The square footage shall be determined based on the total floor area, which includes the living area, attached garages and areas under roof or horizontal projections, including but not limited to, porches, sunrooms, courts, etc. Detached structures not satisfying the required fire separation distance shall be considered as part of the total square footage of the main structure. (This exemption does not apply to town houses consisting of 3 or more units; nor does it apply to occupancies and/or care facilities located in one- or two-family dwellings where the occupants are incapable of self-preservation.)

Section 903.2.8.3 Special Requirements for Arizona State Department of Health Facilities is hereby added as follows:

903.2.8.3 Special Requirements for Arizona State Department of Health Facilities. All facilities as licensed by the State of Arizona Department of Health, further known, but not limited to, as direct care, personal care, supervisory care and behavioral residential agency, housing at least six and not more than 10 persons shall be considered a Group R-4. An automatic sprinkler system in accordance with 903.3.1.1 or 903.3.1.2 as applicable shall be provided in these type of facilities except that sprinklers shall be installed in bathrooms, kitchens, closets in excess of 24 square feet, rooms containing electrical and/or mechanical equipment, foyers, attached garages, accessible areas under interior stairs and/or landings, and attics.

Section 903.2.8.4 Special Requirements for Groups R-1 and R-2 Occupancies is hereby added as follows:

903.2.8.4 Special Requirements for Groups R-1 and R-2 Occupancies. In Group R-1 and R-2 occupancies, sprinklers shall be installed in bathrooms, kitchens, closets in excess of 24 square feet, rooms containing electrical and/or mechanical equipment, foyers, attached garages, and accessible areas under interior stairs and/or landings.

In R-1 occupancies, sprinklers shall be installed in attics and concealed spaces containing combustible materials

Section 903.2.8.5 Special Requirements for Groups R-3 and R-4 Occupancies is hereby added as follows:

903.2.8.5 Special Requirements for Groups R-3 and R-4 Occupancies. In Group R-3 and R-4 occupancies, sprinklers shall be installed in bathrooms, kitchens, closets in excess of 24 square feet, rooms containing electrical and/or mechanical equipment, foyers, attached garages, and accessible areas under interior stairs and/or landings.

In R-4 occupancies, sprinklers shall be installed in attics and concealed spaces containing combustible materials.

Section 903.2.9 Group S-1 is hereby deleted in its entirety and replaced with the following:

903.2.9 Group S-1. An *automatic sprinkler system* shall be provided throughout all buildings containing a Group S-1 occupancy.

Section 903.2.9.1 Repair garages is hereby deleted in its entirety.

Section 903.2.10 Group S-2 is hereby deleted in its entirety and replaced with the following:

903.2.10 Group S-2. An *automatic sprinkler system* shall be provided for Group S-2 occupancies.

Section 903.2.10.1 Commercial parking garages is hereby deleted in its entirety.

Section 903.2.11 Specific buildings areas and hazards is hereby deleted in its entirety and replaced with the following:

903.2.11 Specific buildings areas and hazards. In all occupancies requiring automatic sprinkler systems, an *automatic sprinkler system* shall be installed for building design or hazards in locations set forth in Sections 903.2.11.1 through 903.2.11.6 as amended herein:

Section 903.2.11.1 Stories without openings is hereby deleted in its entirety and replaced with the following:

903.2.11.1 Stories without openings. An *automatic sprinkler system* shall be provided throughout all stories, including basements.

Section 903.2.11.3, Buildings 55 feet or more in height is hereby deleted in its entirety and replaced with the following:

903.2.11.3, Buildings height. An *automatic sprinkler system* shall be installed throughout all buildings regardless of the occupant load and the use.

Section 903.3.1.1.2 Accessory exempt locations is hereby added as follows:

903.3.1.1.2 Accessory exempt locations. An *automatic sprinkler system* shall not be required in the following buildings, rooms or areas:

1. Detached storage sheds, detached private garages, detached gazebos and ramadas for private, residential and non-commercial uses not exceeding 1,500 square feet.
2. Detached restroom buildings at parks, golf courses and similar locations not exceeding 1,500 square feet with storage areas not exceeding 100 square feet.

3. Non-combustible detached gazebos, ramadas and greenhouses for public use not exceeding 1,500 square feet.
4. Non-combustible detached fuel dispensing canopies, detached wash racks, non-combustible canopies with flame retardant sunscreen.
5. Agricultural buildings, animal shelters, greenhouses, grain silos and barn accessories to a residential occupancy not exceeding 1,500 square feet with no habitable space.
6. Detached hay barns with no accessory storage or uses and no habitation areas.
7. Open shade horse stalls of non-combustible construction for private, residential non-commercial use not exceeding 5,000 square feet with no storage of combustible products, vehicles, or agricultural equipment.
8. Detached non-combustible carports for residential and commercial developments with covered parking. Each non-combustible carport shall not exceed 2,000 square feet and shall be separated a minimum of ten (10) feet from the main building. Where there are a group of carports and each one does not exceed 2,000 square feet, the minimum separation required between carports shall be ten (10) feet.
9. Temporary tents and membrane structures for approved special events.
10. Detached temporary modular sales offices.
11. Special use structures as approved by the *fire code official*.

Section 903.3.1.3 NFPA 13 sprinkler systems is hereby deleted in its entirety and replaced with the following:

903.3.1.3 NFPA 13 sprinkler systems. *Automatic sprinkler systems* installed in required one- and two-family dwellings and use groups R-3, R-4 congregate living and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D. Automatic sprinkler systems for required one- and two-family dwellings designed in accordance to the International Residential Code shall be permitted to be designed in accordance to P2904 of the International Residential Code. Automatic sprinkler systems designed in accordance with NFPA 13D or Section P2904 of the International Residential Code shall provide protection in attached garages, attached carports, enclosed attached entry ways, enclosed attached porches, attached storage areas and similar areas.

Section 903.3.7, Fire department connections, is hereby deleted in its entirety and replaced with the following:

903.3.7 Fire department connections. Unless waived by the *fire code official* or exempted by the NFPA 13 or 13R standards, *approved* fire department connections are required on

automatic sprinkler systems designed in accordance to NFPA 13 and 13R in locations approved by the *fire code official* and in accordance to the City of Goodyear Engineering Design Standards and Policies Manual. Automatic sprinkler systems designed in accordance to NFPA 13D and Section P2904 of the *International Residential Code* are not required to have a fire department connection.

Section 903.4.2 Alarms is hereby deleted in its entirety and replaced with the following:

903.4.2 Alarms. An approved audible device, located on the exterior of the building in an *approved* location, shall be connected to each *automatic sprinkler system*. Such sprinkler water-flow alarm devices 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.

Where a fire alarm system is not required and the *automatic sprinkler system* is being supervised, at least one manual fire alarm box shall be provided at an *approved* location to initiate the fire alarm signal.

Section 907.2.10.1 Group R-4 Manual Fire Alarm System, is amended to add Exception 4 as follows:

4. A manual fire alarm system is not required in a Group R4 occupancy when the occupant load does not exceed 10 residents and is located in a one- or two-family dwelling.

Section 912.5 Backflow protection is hereby deleted in its entirety and replaced with the following:

912.5 Backflow protection. The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the International Plumbing Code and the City of Goodyear Engineering Design Standards and Policies Manual.

(6) Chapter 23 “MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES” is amended as follows:

Section 2308.3.2, Vehicle impact protection, is hereby added as follows:

2308.3.2, Vehicle impact protection. Vehicle impact protection for CNG gas storage containers, pumps and dispensers shall be provided in accordance with section 312 of the *International Fire Code*.

(7) Chapter 53 “COMPRESSED GASES” is amended as follows:

Section 5308 Carbon dioxide (CO₂) systems used in beverage dispensing applications is hereby added as follow:

5308 Carbon dioxide (CO₂) systems used in beverage dispensing applications. New and existing carbon dioxide systems with more than 100 pounds (45.4 kg) of carbon dioxide used in beverage dispensing applications shall comply with Sections 5307.2 through 5307.5.2.

Section 5308.1 Permits is hereby added as follows:

5308.1 Permits. Permits for carbon dioxide systems shall be required as set forth in Section 105.6.47.

Section 5308.2 Equipment is hereby added as follows:

5308.2 Equipment. The storage, use, and handling of liquid carbon dioxide shall be in accordance with Chapter 53 and the applicable requirements of NFPA 55, Chapter 13. Insulated liquid carbon dioxide systems shall have pressure relief devices vented in accordance with NFPA 55.

Section 5308.3 Protection from damage is hereby added as follows:

5308.3 Protection from damage. Carbon dioxide systems shall be installed so the storage tanks, cylinders, piping and fittings are protected from damage by occupants or equipment during normal facility operations.

Section 5308.4 Required protection is hereby added as follows:

5308.4 Required protection. Where carbon dioxide storage tanks, cylinders, piping and equipment are located indoors, rooms or areas containing carbon dioxide storage tanks, cylinders, piping and fittings and other areas where a leak of carbon dioxide can collect shall be provided with either ventilation in accordance with Section 5308.4.1 or an emergency alarm system in accordance with Section 5308.4.2.

Section 5308.4.1 Ventilation is hereby added as follows:

5308.4.1 Ventilation. Mechanical ventilation of carbon dioxide systems shall be in provided accordance with the *International Mechanical Code* and shall comply with all of the following:

1. Mechanical ventilation in the room or area shall be at a rate of not less than 1 cubic foot per minute per square foot [0.00508 m³/(s • m²)].
2. Exhaust shall be taken from a point within 12 inches (305 mm) of the floor.
3. The ventilation system shall be designed to operate at a negative pressure in relation to the surrounding area.

Section 5308.4.2 Emergency alarm system is hereby added as follows:

5308.4.2 Emergency alarm system. An emergency alarm system for carbon dioxide systems shall be installed in accordance with all of the following:

1. Continuous gas detection shall be provided to monitor areas where carbon dioxide can accumulate.
2. The threshold for activation of an alarm shall not exceed 5,000 parts per million (9,000 mg/m³).
3. Activation of the emergency alarm system shall initiate a local alarm within the room or area in which the system is installed and if the area in which the local alarm is located is not continuously monitored, the emergency alarm system must be monitored by a monitoring company.

(8) Appendix D: FIRE APPARATUS ACCESS ROAD is hereby amended as follows:

Section D101.1 is hereby deleted in its entirety and replaced with the following:

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix, all other applicable requirements of the *International Fire Code*, and the City of Goodyear Engineering Design Standards and Policies Manual.

Section D103.1, Access road width with a hydrant is hereby deleted in its entirety and replaced with the following:

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum width shall be as required by the City of Goodyear Engineering Design Standards and Policies Manual.

Figure D103.1 Dead-end Fire Apparatus Access Road Turnaround, is deleted in its entirety and replaced with the following:

Figure D103.1 Dead End Fire Apparatus Access Road Turnaround

Dead ends and fire apparatus access road turnarounds shall comply with the requirements for dead ends and fire apparatus access road turnarounds in the City of Goodyear Engineering Design Standards and Policies Manual.

Section D103.2 Grade is hereby deleted in its entirety and replaced with the following:

D103.2 Grade. Fire apparatus access road shall not exceed the grade of 8% as required in the City of Goodyear Engineering Design Standards and Policies Manual.

Exception: Grades steeper than 8% as *approved* by the fire chief.

Section D103.3 Turning radius is hereby deleted in its entirety and replaced with the following:

D103.3 Turning radius. The minimum turning radius shall be in accordance with the requirements in the City of Goodyear Engineering Design Standards and Policies Manual.

Section D103.4 Dead ends and Table D103.4 are hereby deleted in its entirety and replaced with the following:

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45720 mm) shall be provided with width and turnaround provisions in accordance with the requirements of the City of Goodyear Engineering Design Standards and Policies Manual.

Section D103.6, Signs is hereby deleted in its entirety and replaced with the following:

D103.6 Signs. Where required by the *fire code official*, fire apparatus access roads shall be marked with permanent signs complying with the City of Goodyear Engineering Design Standards and Policies Manual and/or provide curb markings in accordance with Section 503.3 of the *International Fire Code* as amended herein.

Section D104.2 Buildings exceeding 62,000 square feet in area is hereby amended as follows:

The exception allowing projects having a gross building area of up to 124,000 square feet to have a single approved fire apparatus road when all buildings are equipped throughout with approved automatic sprinkler systems is deleted in its entirety.

Section D106.1 Projects having more than 100 dwelling units is hereby amended as follows:

The exception is hereby deleted.

Section D106.2 is hereby deleted in its entirety.

(9) Appendix K REQUIREMENTS FOR FIREFIGHTER AIR REPLENISHMENT SYSTEMS is hereby added and adopted as follows:

APPENDIX K REQUIREMENTS FOR FIREFIGHTER AIR REPLENISHMENT SYSTEMS

K101.1 Scope. Firefighter air replenishment systems (FARS) shall be provided in accordance with this appendix.

K101.2 When required. A Fire Fighter Air Replenishment System (FARS) shall be required in all new buildings or structures that meet any of the following:

1. The building or structure has five (5) or more floors above grade; or
2. The building or structure is a high rise building as defined by the International Building Code as adopted and amended by the governing authority; or
3. The building, structure or components thereof are underground and the square footage of the underground building, structure, or component thereof is ten thousand (10,000) feet or more and is located either more than two (2) floors below grade or more than thirty (30) feet below grade.

SECTION K102 DEFINITIONS

K102.1 Definitions. For the purposes of this Appendix K, the following terms are defined as follows:

FIRE FIGHTER AIR REPLENISHMENT SYSTEM (FARS). A permanently installed arrangement of piping, valves, fittings and equipment to facilitate the replenishment of breathing air in self-contained breathing apparatus (SCBA) for fire fighters engaged in emergency operations.

SECTION L103 PERMITS

K103.1 Permits. Permits shall be required to install and maintain a FARS. Permits shall be in accordance with Sections K103.2 and K103.3.

K103.2 Construction permit. A construction permit is required for installation of or modification to a FARS. The construction permit application shall include documentation of an acceptance and testing plan as specified in Section K105.

K103.3 Operational permit. An operational permit is required to maintain a FARS.

SECTION L104 DESIGN AND INSTALLATION

K104.1 Design and installation. A FARS shall be designed and installed in accordance with Sections K104.2 through K104.15.

K104.2 Standards. Fire fighter air replenishment systems shall be in accordance with Sections K104.2.1 and K104.2.2.

K104.2.1 Pressurized system components. Pressurized system components shall be designed and installed in accordance with ASME B31.3.

K104.2.2 Air quality. The system shall be designed to convey breathing air complying with NFPA 1989.

K104.3 Design and operating pressure. The minimum design pressure shall be 110 percent of the fire department's normal SCBA fill pressure. The system design pressure shall be marked in an approved manner at the supply connections, and adjacent to pressure gauges on any fixed air supply components. Pressure shall be maintained in the system within 5 percent of the design pressure.

K104.4 Cylinder refill rate. The FARS shall be capable of refilling breathing air cylinders of a size and pressure used by the fire department at a rate of not less than two empty cylinders in 2 minutes.

K104.5 Breathing air supply. Where a fire department mobile air unit is available, the FARS shall be supplied by an external mobile air connection in accordance with Section K104.14. Where a fire department mobile air unit is not available, a stored pressure air supply shall be provided in accordance with Section K104.5.1. A stored pressure air supply shall be permitted to be added to a system supplied by an external mobile air connection provided that a means to bypass the stored pressure air supply is located at the external mobile air connection.

K104.5.1. Stored pressure air supply. A stored pressure air supply shall be designed based on Chapter 24 of NFPA 1901 except that provisions applicable only to mobile apparatus or not applicable to system design shall not apply. A stored pressure air supply shall be capable of refilling not less than 50 empty breathing air cylinders of a size and pressure used by the fire department.

K104.5.2. Retrofit of external mobile air connection. A FARS not initially provided with an external mobile air connection due to the lack of a mobile air unit shall be retrofitted with an external mobile air connection where a mobile air unit becomes available. Where an external mobile air connection is provided, a means to bypass the stored pressure air supply shall be located at the external mobile air connection. The retrofit shall be completed not more than 12 months after notification by the *fire code official*.

K104.6 Isolation valves. System isolation valves that are accessible to the fire department shall be installed on the system riser to allow piping beyond any air cylinder refill panel to be blocked.

K104.7 Pressure relief valve. Pressure relief valves shall be installed at each point of supply and at the top or end of every riser. The relief valve shall meet the requirements of CGA S-1.3 and shall not be field adjustable. Pressure relief valves shall discharge in a manner that does not endanger personnel who are in the area. Valves, plugs or caps shall not be installed in the discharge of a pressure relief valve. Where discharge piping is used the end shall not be threaded.

K104.8 Materials and equipment. Pressurized system components shall be *listed* or *approved* for their intended use and rated for the maximum allowable design pressure in the system. Piping and fittings shall be stainless steel.

K104.9 Welded connections. Piping connections that are concealed shall be welded.

K104.10 Protection of piping. System piping shall be protected from physical damage in an *approved* manner.

K104.11 Compatibility. Fittings and connections intended to be used by the fire department shall be compatible with the fire department's equipment.

K104.12 Security. Connections to a FARS shall be safeguarded from unauthorized access in an *approved* manner.

K104.13 Fill stations. Fire fighter air replenishment fill stations shall comply with Section K104.13.1 through K104.13.3.

K104.13.1 Location. Fill stations for refilling breathing air cylinders shall be located as follows:

1. Fill stations shall be provided at the fifth floor above and below the ground level floor and every third floor level thereafter.
2. On floor levels requiring fill stations, one fill station shall be provided adjacent to a required exit stair at a location designated by the *fire code official*. In buildings required to have three or more exit stairs, additional fill stations shall be provided at a ratio of one fill station for every three stairways.

K104.13.2 Design. Fill stations for breathing air cylinders shall be designed to meet the following requirements:

1. A pressure gauge and pressure-regulating devices and controls shall be provided to allow the operator to control the fill pressure and fill rate on each cylinder fill hose.
2. Valves controlling cylinder fill hoses shall be slow operating valves.
3. A separate flow restriction device shall be provided on each fill hose.
4. A method shall be provided to bleed each cylinder fill hose.
5. The fill station shall be designed to provide a containment area that fully encloses any cylinder being filled and flexible cylinder fill hoses, and directs the energy from a failure away from personnel. Fill stations shall be designed to prohibit filling of cylinders that are not enclosed within the containment area.

Exception: Where required or *approved* by the fire chief, fill stations providing for the direct refilling of the fire fighters' breathing air cylinders using Rapid Intervention Crew/Company Universal Air Connection (RIC/UAC) fittings shall be used in lieu of cylinder fill stations that utilize containment areas.

K104.13.3 Cylinder refill rate. Fill stations shall be capable of simultaneously filling two or more empty breathing air cylinders equivalent to those used by the fire department to the cylinders' design pressure within 2 minutes.

K104.14 External mobile air connection. An external mobile air connection shall be provided for fire department mobile air apparatus where required by Section K104.5 to supply the system with breathing air.

K104.14.1 Location. The location of the external mobile air connection shall be accessible to mobile air apparatus and *approved* by the fire chief.

K104.14.2 Protection from vehicles. A means of vehicle impact protection in accordance with Section 312 shall be provided to protect mobile air connections that are subject to vehicular impact.

K104.14.3 Clear space around connections. A working space of not less than 36 inches (914 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of external mobile air connections.

K104.15 Air monitoring system. An *approved* air monitoring system shall be provided. The system shall automatically monitor air quality, moisture and pressure on a continual basis. The air monitoring system shall be equipped with not less than two content analyzers capable of detecting carbon monoxide, carbon dioxide, nitrogen, oxygen, moisture and hydrocarbons.

K104.15.1 Alarm conditions. The air monitoring system shall transmit a supervisory signal when any of the following levels are detected:

1. Carbon monoxide exceeds 5 ppm.
2. Carbon dioxide exceeds 1,000 ppm.
3. An oxygen level below 19.5 percent or above 23.5 percent.
4. A nitrogen level below 75 percent or above 81 percent.
5. Hydrocarbon (condensed) content exceeds 5 milligrams per cubic meter of air.
6. The moisture concentration exceeds 24 ppm by volume.
7. The pressure falls below 90 percent of the maintenance pressure specified in Section K104.3.

K104.15.2 Alarm supervision, monitoring and notification. The air monitoring system shall be electrically supervised and monitored by an *approved* supervising station, or where

approved, shall initiate audible and visual supervisory signals at a constantly attended location.

K104.15.3 Air quality status display. Air quality status shall be visually displayed at the external mobile air connection required by Section K104.14.

SECTION K105 ACCEPTANCE TESTS

K105.1 Acceptance tests. Upon completion of the installation, a FARS shall be acceptance tested to verify compliance with equipment manufacturers' instructions and design documents. Oversight of the acceptance tests shall be provided by a registered design professional. Acceptance testing shall include all of the following:

1. A pneumatic test in accordance with ASME B31.3 of the complete system at a minimum test pressure of 110 percent of the system design pressure using oil free dry air, nitrogen or argon shall be conducted. Test pressure shall be maintained for not less than 24 hours. During this test, all fittings, joints and system components shall be inspected for leaks. Defects in the system or leaks detected shall be documented and repaired.
2. A cylinder-filling performance test shall be conducted to verify compliance with the required breathing air cylinder refill rate from the exterior mobile air connection and, where provided, a stored air pressure supply system.
3. The air quality monitoring system shall be tested to verify both of the following conditions:
 - 3.1. Visual indicators required by Section K104.15.1 function properly.
 - 3.2. Supervisory signals are transmitted as required by Section K104.15.2 for each sensor based on a sensor function test.
4. Connections intended for fire department use shall be confirmed as compatible with the fire department's mobile air unit, SCBA cylinders and, where provided, RIC/UAC connections.
5. Air samples shall be taken from not less than two fill stations and submitted to an *approved* gas analysis laboratory to verify compliance with NFPA 1989. The FARS shall not be placed into service until a written report verifying compliance with NFPA 1989 has been provided to the *fire code official*.

SECTION K106 INSPECTION, TESTING AND MAINTENANCE

K106.1 Periodic inspection, testing and maintenance. A FARS shall be continuously maintained in an operative condition and shall be inspected not less than annually. Not less

than quarterly, an air sample shall be taken from the system and tested to verify compliance with NFPA 1989. The laboratory test results shall be maintained on site and readily available for review by the *fire code official*.

SECTION KL107

REFERENCED STANDARDS

ASME B31.3—2012 Process Piping L104.2.1, L105.1

CGA S-1.3—2008 Pressure Relief Device Standards – Part 3 Stationary Storage Containers for Compressed Gases L104.7

NFPA 1901—09 Standard for Automotive Fire Apparatus L104.5.1,

NFPA 1989—13 Breathing Air Quality for Fire Emergency Services Respiratory Protection L104.2.2, L105.1, L106.1