ORDINANCE NO. 18-50

AN ORDINANCE REPEALING AND REORDAINING PART 1 (FIRE PREVENTION CODE) OF ARTICLE 4 (FIRE PREVENTION) OF CHAPTER 8 (PUBLIC SAFETY) OF THE CODE OF THE CITY OF COLORADO SPRINGS 2001, AS AMENDED, ADOPTING THE 2015 EDITION OF THE INTERNATIONAL FIRE CODE WITH AMENDMENTS AND PROVIDING PENALITIES FOR THE VIOLATION THEREOF

WHEREAS, the City Council is committed to providing for the protection of the public health and safety; regulating the storage, use and handling of dangerous and hazardous materials, substances and devices; the operation, installation, construction, location, safeguarding and maintenance of adequate means of egress not provided for by other codes in the City of Colorado Springs, Colorado, and

WHEREAS, the Division of the Fire Prevention has been established providing officers therefore for the purpose of providing for the prevention and control of fires; the purpose of providing an International Fire Code describing regulations governing conditions hazardous to life and property from fire or explosion; and their powers and duties defined and providing for an International Fire Code, International Fire Code Appendices; adopting by reference the 2015 Edition of the International Fire Code, International Fire Code appendices, as amended; repealing all ordinances in conflict thereof.

NOW BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF COLORADO SPRINGS:

Section 1. Part 1 (Fire Prevention Code) of Article 4 (Fire Prevention) of Chapter 8 (Public Safety) of the Code of the City of Colorado Springs 2001, as amended, is repealed and reordained to read as follows:

8.4.101: SHORT TITLE:

This part may be known and cited as the *Fire Prevention Code and Standards.*

8.4.102: ADOPTION OF THE FIRE CODE, PREFACE AND APPENDICES AND FIRE CODE STANDARDS TO THE 2015 EDITION OF THE INTERNATIONAL FIRE CODE AND INTERNATIONAL FIRE CODE STANDARDS:

Pursuant to Part 2 of Article 16 of Title 31, Colorado Revised Statutes and pursuant to the Charter of the City there is hereby adopted by reference the International Fire Code, 2015 Edition of the International Code Council, 4051 West Flossmoor Road, Country Club

Hills, IL, 60478-5795, including all Appendices A, B, C, D, E, F, G, K, L, and N as set forth therein. These appendices are deemed included as a part of any reference to the International Fire Code or this Chapter. One copy of the 2015 International Fire Code, and one copy of all Amendments to these codes, are on file in the Office of the City Clerk, and may be inspected during regular business hours. The above code is adopted as if set out at length, subject to modifications, additions or deletions as set forth in Section 8.4.105 of this part.

8.4.103: APPLICATION AND INTERPRETATION OF PROVISIONS:

A. Application: The International Fire Code and the International Fire Code Standards hereby adopted shall apply to every building, structure or asset, either within or outside the corporate limits of the City, the use of which the City has jurisdiction and authority to regulate.

B. Interpretation: This part shall be so interpreted and construed as to effectuate its general purpose to make uniform the local fire regulations contained herein. Article and section headings of this part and of the adopted International Fire Code shall not be deemed to govern, limit, modify, or in any manner affect the scope, meaning or extent of the provisions of any article or section thereof.

8.4.104: DEFINITIONS:

A. Wherever the word jurisdiction is used in the International Fire Code, it shall be held to mean the City of Colorado Springs.

B. Wherever the term corporation counsel is used in the International Fire Code, it shall be held to mean the City Attorney/Chief Legal Officer.

C. Wherever the term Department of Fire Prevention is used in the International Fire Code, it shall be held to mean Division of the Fire Marshal.

8.4.105: AMENDMENTS TO THE INTERNATIONAL FIRE CODE:

The International Fire Code and Appendices herein adopted, are adopted subject to the following modifications, additions or deletions as set forth:

Table of Contents. Amend the Table of Contents to add the following:

Chapter 38 Alcohol Beverage Production Facilities
3801 General
3802 Definitions
3803 General Requirements
3804 Equipment
3805 Existing Facilities

Chapter 39 Extraction and Grow Operations
3901 General

3902 Definitions
3903 Extraction Operations
3904 Growing Operations

Table of Contents. Amend the Table of Contents Appendix K and N to read as follows:
Appendix K Wildland Fuels Management Requirements

K101 General
K102 Fuels Management Requirements
K103 Roof Coverings
K104 Hardened Structure
K105 Review Requirements
K201 Fire Protection Systems

Appendix N Indoor Flora Grow Operations in Residential Occupancies
N101 General
N102 Definitions
N103 Hazards to Enforcement Officials
N104 Rooms used for Flora Grow and Production Operations
N105 Electrical and Lighting
N106 Hazardous Materials
N107 Ventilation
N108 Structural

Section 101.1. Amend Section 101.1 to read as follows: **101.1 Title.** These regulations shall be known as the Fire Code of the City of Colorado Springs, hereinafter referred to as this code.

Section 103.1. Delete Section 103.1 and replace with the following: **103.1 General.** The Division of the Fire Marshal, established within the Fire Department under the direction of the chief, shall consist of Fire Department personnel assigned thereto by the chief. The function of office shall be to assist the fire code official in the administration and enforcement of the provisions of this code and the Code of the City of Colorado Springs 8.2.203.

Section 103.2.1. Add a new Section 103.2.1 to read as follows: **103.2.1 Fire Marshal.** There is hereby created the position of fire marshal, who shall be appointed by the fire chief and shall be responsible for fire prevention, plan reviews and inspections, hazard assessment and mitigation, fire investigations, community education, wildfire mitigation and any other duties assigned by the chief. When this code requires or authorizes the fire marshal to act, the act may be taken by the fire marshal's authorized employees, assistants or designees. Wherever the term fire code official is used in the International Fire Code, it shall be held to mean the fire marshal. Wherever the term CSFD is used in these amendments, it shall be held to mean the Colorado Springs Fire Department. See Code of the City of Colorado Springs, Section 8.2.203.

Section 103.4. Delete Section 103.4 and replace with the following: **103.4 Liability.** See Code of the City of Colorado Springs, Chapter 1, Article 4, Part 3.

Section 103.4.1. Delete Section 103.4.1 and replace with the following: **103.4.1 Legal defense.** See Code of the City of Colorado Springs, Chapter 1, Article 4, Part 3.

Section 104.3.1. Amend Section 104.3.1 to read as follows: **104.3.1 Warrant.** Where the fire code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent or occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided to permit entry therein by the fire code official for the purpose of inspection and examination pursuant to this code. See Code of the City of Colorado Springs, Chapter 11, Article 3.

Section 104.10. Amend Section 104.10 to read as follows: **104.10 Fire investigations.** The fire code official or his or her designee shall have the authority to investigate the cause, origin and circumstances of any fire, explosion or other hazardous condition. Information that could be related to trade secrets or processes shall not be made part of the public record, except as directed by a court of law.

Section 104.10.1. Delete Section 104.10.1 and replace with the following: **104.10.1 The Division of the Fire Marshal personnel and police.** The fire code official and members of the Division of the Fire Marshal shall have the power of a police officer in performing their duties under this code. When requested to do so by the fire code official, the chief of police is authorized to assign such available police officers necessary to assist the fire department in enforcing the provisions of this code.

Section 104.11. Delete Section 104.11 and replace with the following: **104.11 Authority at fires and other emergencies.** See Code of the City of Colorado Springs, Chapter 8, Article 2, Part 3.

Section 104.11.1. Delete Section 104.11.1 and replace with the following: **104.11.1 Barricades.** See Code of the City of Colorado Springs, Chapter 8, Article 2, Part 3.

Section 104.11.2. Delete Section 104.11.2 and replace with the following: **104.11.2 Obstructing operations.** See Code of the City of Colorado Springs, Chapter 8, Article 2, Part 3.

Section 105.1. Amend Section 105.1 to read as follows: **105.1 General.** Permits shall be in accordance with Sections 105.1.1 through 105.7.23.

Section 105.1.6. Amend Section 105.1.6 to read as follows: **105.1.6 Annual facilities permit.** Instead of an individual construction permit for each alteration to an already approved system or equipment installation, the fire code official is authorized to issue an annual facilities permit upon application therefor to any person, firm or corporation regularly employing one or more approved tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit. The annual permit process shall comply with the guidance documents provided by the Division of the Fire Marshal.

Section 105.1.6.1. Amend Section 105.1.6.1 to read as follows: **105.1.6.1 Annual facility permit records.** The person to whom an annual facilities permit is issued shall keep a detailed record of alterations made under such annual facilities permit. The fire code official shall have access to such records at all times or such records shall be filed with the fire code official as specified in the guidance documents provided by the Division of the Fire Marshal.

Section 105.2.2. Amend Section 105.2.2 to read as follows: **105.2.2 Inspection authorized.** Before a new operational permit is approved, the fire code official is authorized to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces, areas, activities, processes, procedures, and all other relevant items of fire and life safety to be used to determine compliance with this code or any operational constraints required.

Section 105.3.1. Amend Section 105.3.1 and add Table 105.3.1 to read as follows: **Section 105.3.1 Expiration.** An operational permit shall remain in effect until reissued, renewed, or revoked or for such a period of time as specified in the permit, not to exceed 365 days. Construction permits shall automatically become invalid unless the work authorized by such permit is 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 time the work is commenced. Before such work recommences, a new permit shall be first obtained and the fee to recommence work, if any, shall be as determined by the fire code official and per the adopted fee schedule. Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new inspection be conducted and a new permit be issued.

Table 105.3.1 Permit Expiration Fees

Time of Renewal	Status/Condition	New Plans/Permit	Fee Determination	Fees
Before Grace Period Expires	No changes to design/contractor AND Inspections conducted within last 13 months	Not Required	Search/Retrieval Fee	*
	Change in Contractor regardless of inspection status	Required	Change in Design/Adopted Code: Plan Review/Permit Fees	*
			No Change in Design/Adopted Codes: Administrative Review Plus Search/Retrieval Fee	*
	Abandonment†	Required	No inspections conducted within 13 months: Plan Review/Permit	*

			Inspections Conducted: Administrative Review Plus Search/Retrieval Fee	*
After Grace Period Expires	No changes to design/contractor/ adopted codes AND Inspections conducted within last 13 months	Not Required	1/2 Original Plan Review/Permit Plus Search/Retrieval Fee	*
	Change in Contractor regardless of inspection status	Required	Change in Design/Adopted Codes: Plan Review/Permit Fees	*
			No Change in Design/Adopted Codes: Administrative Review Plus Search/Retrieval Fee	*
	Abandonment†	Required	No inspections conducted within 13 months: Plan Review/Permit	*
			Inspections Conducted: Administrative Review Plus Search/Retrieval Fee	*
Lost Permit Card			Duplicate Card	*

† As defined by Section 105.3.1.

* Approved and adopted fees shall be assessed.

Section 105.3.3. Amend section 105.3.3 to read as follows: **105.3.3 Occupancy prohibited before approval.** The building or structure shall not be occupied prior to the fire code official conducting and approving associated inspections and/or issuing the required permits where applicable indicating the applicable provisions of this code have been met.

Section 105.3.4. Amend section 105.3.4 to read as follows: **105.3.4 Conditional permits.** Where permits are required and upon the request of a permit applicant, the fire code official is authorized to issue a conditional permit to occupy the premises or portion thereof, or to commence work or hazardous activities that require operational permits before the entire work or operations on the premises is completed, provided that such portion or portions will be occupied safely prior to full completion or installation of equipment and operations without endangering life or public welfare. The fire code

official shall notify the permit applicant in writing of any limitations or restrictions necessary to keep the permit area safe. The holder of a conditional permit shall proceed only to the point for which approval has been given, at the permit holder's own risk and without assurance that approval for the occupancy or the utilization of the entire premises, equipment or operations will be granted. A conditional permit fee shall be assessed as set forth by the adopted fee schedule.

Section 105.3.4.1. Add a new section 105.3.4.1 to read as follows: **105.3.4.1 Work at risk.** Where a permit is required, and upon the request of a permit applicant, the fire code official may issue a work at risk permit to begin work prior to the issuance of a permit. The work at risk permit will allow the applicant to begin installation, modification or commencement of a system, process or activity for which the permit is required prior to approved plans or a construction permit. The holder of the work at risk permit shall be authorized to proceed at their own risk with the installation or modification of the system, or other work requiring a permit, but shall not entitle them to any required inspections of the system or work until construction documents or permit applications are approved and the required permits are posted on site. Any work performed on the system will be done at the risk of the installing contractor. Any required changes or modifications based upon approved plan review or inspection activities will be the responsibility of the contractor, and shall be made prior to final approval of the system and Certificate of Occupancy. A work at risk permit fee shall be assessed as set forth by the adopted fee schedule.

Section 105.3.4.2. Add a new section 105.3.4.2 to read as follows: **105.3.4.2 Temporary use permit.** A temporary use permit may be issued upon request to allow an activity or temporary use to occur within a given occupancy where the occupancy classification may not meet the intended temporary use. A request for temporary use must be submitted in writing to the fire code official and include a permit application, code study with details on the occupant loads, means of egress, fire protection systems and specific hazards or activities present. Inspections shall be performed in accordance with Section 106 prior to the issuance of the temporary use permit. A temporary use permit may be issued for a maximum of 180 days, and may only be extended upon approval by the fire code official. A temporary permit fee shall be assessed as set forth by the adopted fee schedule.

Section 105.3.6. Amend Section 105.3.6 to read as follows: **105.3.6 Compliance with code.** The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the fire code official from requiring the correction of errors in the construction documents and other data. Any addition to or alteration of approved construction documents shall be approved by the fire code official.

Section 105.4.1. Amend Section 105.4.1 to read as follows: **105.4.1 Submittals.** Construction documents and supporting data shall be submitted in two or more hard-copy sets or as required electronically with each application for a permit and in such

form and detail as required by the fire code official. The construction documents shall be prepared by an approved design professional where required by the jurisdiction in which the project is to be constructed.

Section 105.4.5. Delete Section 105.4.5 and replace with the following: **105.4.5 Corrected documents.** Where field conditions necessitate any substantial change from the approved construction documents, the fire code official shall have the authority to require the corrected construction documents to be submitted for approval. Fees may be assessed for time spent on the review of corrected documents in accordance with Section 113 and the adopted fee schedule.

Section 105.6. Amend Section 105.6 to read as follows: **105.6 Required operational permits.** The fire code official is authorized to issue operational permits for the operations set forth in Sections 105.6.1 through 105.6.51.

Section 105.6.4. Amend Section 105.6.4 to read as follows: **105.6.4 Carbon dioxide and inert gas systems.** An operational permit is required for carbon dioxide and inert gas systems used for equipment operation, beverage carbonation, atmosphere enrichment, or other systems, when the systems meets or exceeds 100 pounds.

Section 105.6.4.1. Add a new Section 105.6.4.1 to read as follows: **105.6.4.1 Carbon Dioxide Gas Enrichment Systems Using Natural Gas Burners in Plant Growing Applications.** An operational permit is required for natural gas burners that are utilized to generate carbon dioxide in plant growing applications.

Table 105.6.9. Amend Table 105.6.9 footnote 'a' to read as follows: a. For carbon dioxide and inert gas systems, see Section 105.6.4.

Section 105.6.28. Amend Section 105.6.28 to read as follows: **105.6.28 LP-gas.** An operational permit is required for:

1. Storage and use of LP-gas where a single container, cylinder or tank is more than 125-gallons water capacity; or the aggregate capacity of containers is more than 125-gallons water capacity.

   Exception: A permit is not required for individual containers with a 500-gallon (1893 L) water capacity or less or multiple container systems having an aggregate quantity not exceeding 500 gallons (1893 L), serving occupancies in Group R-3.

2. Operation of cargo tankers that transport LP-gas.
3. One or more LP-gas cabinets associated with a cylinder exchange program.

Section 105.6.34. Amend Section 105.6.34 to read as follows: **105.6.34 Open flames, flame effects, and candles.** An operational permit is required:

1. To use open flames or candles in connection with assembly areas, dining areas of a restaurant or drinking establishments.

2. To use flame effects before an audience.

Section 105.6.45. Amend Section 105.6.45, and delete exception number 2 to read as follows: **105.6.45 Temporary membrane structures and tents.** An operational permit is required to operate an air-supported temporary membrane structure, a temporary stage canopy, or a tent having an individual or contiguous area in excess of 2400 square feet (223 m^2).

Exception: Tents used exclusively for recreational camping purposes.

Section 105.6.49. Add a new Section 105.6.49 to read as follows: **105.6.49 Prescribed burning.** An operational permit is required for all planned ignition of prescription burns.

Section 105.6.50. Add a new Section 105.6.50 to read as follows: **105.6.50 Alcoholic Beverage Production Facilities.** An operational permit is required for an alcoholic beverage production facility to produce, bottle, rectify, store, or process a beverage spirit with ethanol mixtures considered flammable in amounts greater than 25 gallons, or creates combustible dust in any of their processes.

Section 105.6.51. Add a new Section 105.6.51 to read as follows: **105.6.51 Other permits not otherwise listed.** An operational permit may be required for hazardous activities or operations not otherwise specifically listed in this code that the fire code official determines creates a substantial risk or hazard.

Section 105.7. Amend Section 105.7 to read as follows: **105.7 Required construction permits.** The fire code official is authorized to issue construction permits for work as set forth in Sections 105.7.1 through 105.7.23.

Section 105.7.9. Delete Section 105.7.9 in its entirety.

Section 105.7.12. Delete Section 105.7.12 and replace with the following: **105.7.12 LP-gas.** A construction permit is required for:

1. Installation of or modification to an LP-gas system where a single container, cylinder or tank is more than 125-gallons water capacity; or the aggregate capacity of containers is more than 125-gallons water capacity.

   Exception: A permit is not required for individual containers with a 500-gallon (1893 L) water capacity or less or multiple container systems having an aggregate quantity not exceeding 500 gallons (1893 L), serving occupancies in Group R-3.

2. One or more LP-gas cabinets associated with a cylinder exchange program.

Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

Section 105.7.13. Delete Section 105.7.13 in its entirety.

Section 105.7.15. Delete Section 105.7.15 in its entirety.

Section 105.7.18. Amend Section 105.7.18 to read as follows: **105.7.18 Temporary membrane structures, tents.** A construction permit is required to erect an air-supported temporary membrane structure, temporary stage canopy, or tent having an individual or contiguous area in excess of 2400 square feet (223 m^2).

Section 105.7.19. Add a new Section 105.7.19 to read as follows: **105.7.19 Alternative Fire Lanes.** A construction permit is required for the installation of a fire lane constructed of any material other than approved concrete, asphalt or gravel.

Section 105.7.20. Add a new Section 105.7.20 to read as follows: **105.7.20 High piled storage.** A construction permit is required for new high pile storage areas exceeding 500 square feet.

Section 105.7.21. Add a new Section 105.7.21 to read as follows: **105.7.21 Fire protection system demolition permit.** When a fire protection system, or portion thereof is no longer needed, desired, or required by code, a licensed fire protection contractor shall obtain a permit prior to any demolition or removal of any portion of the system. The request for a demolition permit must include a complete code study showing the system is no longer required and justification for the permanent removal of the system.

Section 105.7.22. Add a new Section 105.7.22 to read as follows: **105.7.22 Carbon dioxide and inert gas systems.** A construction permit is required for installation of or modification to carbon dioxide and inert gas systems used for equipment operation, beverage carbonation, atmosphere enrichment, or other systems, when the system capacity exceeds 100 pounds.

Section 105.7.22.1. Add a new Section 105.7.22.1 to read as follows: **105.7.22.1 Carbon Dioxide Gas Enrichment Systems Using Natural Gas Burners in Plant Growing Applications.** A construction permit is required for natural gas burners that are utilized to generate carbon dioxide in plant growing applications.

Section 105.7.23. Add a new Section 105.7.23 to read as follows: **105.7.23 Other permits not otherwise listed.** A construction permit is required for activities, installations, or operations not otherwise specifically listed in code that the fire code official determines creates a substantial risk or hazard.

Section 107.3.1. Add a new Section 107.3.1 to read as follows: **107.3.1 Inspection, Test and Maintenance Records.** All inspection, test, and maintenance reports related to the requirements of this code shall be filed within 7 days of the system inspection, test, or maintenance. The reports shall be filed with an approved third party agency designated by the fire code official, using the format and electronic filing system specified by the third party filing service. Any and all filing and reporting costs will be the responsibility of the licensed submitting contractor. Failure to utilize the designated reporting system will result in the revocation of licensure of the fire protection contractor.

Section 108.1. Delete Section 108.1 and replace with the following: **108.1 Board of appeals established.** See Code of the City of Colorado Springs, Chapter 8, Article 3 and Appendix A.

Section 108.2. Delete Section 108.2 in its entirety.

Section 108.3. Delete Section 108.3 in its entirety.

Section 109.1. Amend Section 109.1 to read as follows: **109.1 Unlawful acts.** It shall be unlawful for a person, firm or corporation to erect, construct, alter, repair, remove, and/or conduct activities, demolish or utilize a building, occupancy, premises or system regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

Section 109.3.1. Amend Section 109.3.1 to read as follows: **109.3.1. Service.** A notice of violation issued pursuant to this code shall be served upon the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation, either by personal service, mail or by delivering the same to, and leaving it with, some person of responsibility upon the premises. The fire code official is authorized to affix a stop use or cease and desist tag prohibiting the use thereof, until such repairs or alterations are made. 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 or a certificate of mailing, to the last known address of the owner, the owner's authorized agent or occupant.

Section 109.3.2.1. Add a new Section 109.3.2.1 to read as follows: **109.3.2.1 Failure to comply.** Persons operating or maintaining an occupancy, premises or vehicle subject to this code who allow a hazard to exist or fail to take immediate action to abate a hazard on such occupancy, premises or vehicle when ordered or notified to do so by the fire code official, shall be punished in accordance with the general penalty of the Code of the City of Colorado Springs, Chapter 1, Article 1, Part 2.

Section 109.3.3. Amend Section 109.3.3 to read as follows: **109.3.3 Prosecution of violations.** If the notice of violation is not complied with promptly, the fire code official is authorized to issue a cease and desist order and/or request the City Attorney/Chief Legal Officer or his or her designee to institute the appropriate legal proceedings at law or in equity to restrain, correct or abate such violation or to require removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code, the Code of the City of Colorado Springs, Chapter 8, Article 2, Part 3 or, of the order or direction made pursuant hereto.

Section 109.4. Delete Section 109.4 and replace with the following: **109.4 Re-inspection fees.** A re-inspection fee per the adopted fee schedule may be assessed for each inspection or re-inspection when any portion of work for which inspection is called, is not complete, or when required corrections have not been completed. This subsection is not to be interpreted as requiring re-inspection fees upon initial rejection of work for

failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before work is ready for the inspection or re-inspections or if hazards are not abated in the required timeframe. The re-inspection fees may be assessed:

1. When the permit is not properly posted and/or the approved plans are not available on the work site; or
2. For failure to provide access on the date for which inspection is requested; or
3. For failure to maintain all work in an exposed condition until inspected and approved for installation; or
4. For deviating from plans requiring the approval of the fire code official; or
5. For lack of sufficient documentation, equipment or personnel needed to complete the inspection; or
6. The work that an inspection has been called for has not been pretested or is not ready for inspection.
7. When identified violations or hazards are not corrected or abated within the specified timeframe.

Section 111.4. Amend Section 111.4 to read as follows: **111.4 Failure to comply.** Persons operating or maintaining an occupancy, premises or vehicle subject to this code who allow a hazard to exist or fail to take immediate action to abate a hazard on such occupancy, premises or vehicle when ordered or notified to do so by the code official shall be punished in accord with the general penalty of the Code of the City of Colorado Springs, Chapter 1, Article 1, Part 2.

Section 111.5. Add a new Section 111.5 to read as follows: **111.5 Penalties.** It is unlawful for any person to violate any of the provisions of this part including any provisions of the International Fire Code, International Fire Code Appendices, and International Fire Code Amendments, as adopted. Any person convicted of a violation of any provision set forth in this part shall be punished in accord with the general penalty of the Code of the City of Colorado Springs, as amended Chapter 1, Article 1, Part 2.

Section 113.4. Amend Section 113.4 to read as follows: **113.4 Related fees.** The payment of the fee for the construction, alteration, removal, demolition or activity of work done in connection to or concurrently with the work or activity authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law. The adopted fee schedule shall be utilized as the list of fees that may be assessed by the Colorado Springs Fire Department.

Section 113.6. Add a new Section 113.6 to read as follows: **113.6. Re-inspection fees.** A re-inspection fee as set forth in the approved/adopted fee schedule may be assessed for each inspection or re-inspection when any portion of work for which inspection is called is not complete or when required corrections have not been completed. This subsection is not to be interpreted as requiring re-inspection fees upon initial rejection of work for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before work is ready for the inspection or re-

inspections, or if hazards are not abated in the required timeframe. The re-inspection fees may be assessed:

1. When the permit is not properly posted and/or the approved plans are not available on the work site; or
2. For failure to provide access on the date for which inspection is requested; or
3. For failure to maintain all work in an exposed condition until inspected and approved for installation; or
4. For deviating from plans requiring the approval of the fire code official; or
5. For lack of sufficient documentation, equipment or personnel needed to complete the inspection; or
6. The work that an inspection has been called for has not been pretested or is not ready for inspection.
7. When identified violations or hazards are not corrected or abated within the specified timeframe.

Section 113.7. Add a new Section 113.7 to read as follows: **113.7 Subsequent review fees.** When additional reviews of construction documents or permit applications are required, either caused by field changes or revisions, or when multiple reviews are needed in order to approve construction drawings or permit applications, a subsequent review fee may be assessed as set forth in the approved/adopted fee schedule.

Section 202. Add a new descriptor to I-2 Occupancies to read as follows: Foster care facilities, Detoxification facilities, Hospitals, Memory care facilities, Nursing homes, Psychiatric hospitals.

(BG) Occupancy Conditions. Buildings of Group I-2 shall be classified as one of the following occupancy conditions:

(BG) Condition 1. This occupancy condition shall include facilities that provide nursing and medical care but do not provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to, nursing homes, memory care facilities, and foster care facilities.

Section 202. Add to Section 202 new definitions as follows:

ALCOHOL BEVERAGE (also, Alcoholic Beverage). A drinkable ethanol mixture intended for human consumption including wine, beer, and beverage spirits.

ALCOHOL BEVERAGE PRODUCTION FACILITY (ABPF). Any building or portion thereof where ethanol mixtures are produced, stored, handled, blended, dispensed, or bottled in the production of alcohol beverages including areas for grain storage and handling.

ALCOHOL BY VOLUME (ABV). Volume percentage of ethanol in an ethanol mixture.

BEVERAGE SPIRIT (TTB). A drinkable spirit intended for human consumption including neutral spirits or alcohol (i.e. vodka or grain spirits), whiskey, gin, brandy, blended applejack, rum, tequila, cordials and liqueurs.

BONFIRE. An outdoor fire, greater than 3 feet in diameter and 2 feet in height, utilized for any religious, celebratory or similar purpose.

BREWERY. An ABPF or portion thereof, including accessory uses, in which beer or other malt liquors are produced. For spirit production, beer and wash are synonymous as precursors to distillation.

CASK. A closed vessel of 185 gallons (700 L) or less capacity, used primarily for storing Class 1 liquids, constructed of wooden staves and heads, held together by metal hoops, not equipped with provisions for emergency venting, and not intended for fixed installation.

CHEMICAL FUME HOOD. A ventilated enclosure designed to contain and exhaust fumes, gases, vapors, mists, and particulate matter generated within the hood.

DISTILLATION. The separation and concentration of the constituents of an ethanol mixture by slowly raising the temperature of the mixture through the boiling points of its constituents then collecting and condensing the constituent vapors separately from the mixture.

DISTILLERY (also Distilled Spirits Plant – Beverage). An ABPF licensed by the TTB to produce, bottle, rectify, process or store beverage spirits including areas for fermentation, distillation, storage, blending, packaging, and accessory uses. Other types of distilleries licensed by the TTB include:

> **Distilled Spirits Plant – Industrial.** A distilled spirits plant established to manufacture articles, or produce, bottle or package, denature or warehouse spirits for industrial use. These spirits are not intended for beverage use.
>
> **Distilled Spirits – Vinegar Plants.** See Distilled Spirits Plant – Industrial.
>
> **Distilled Spirits Plant – Industrial / Beverage.** A distilled spirits plant that manufactures beverage and industrial spirits on the same premises.
>
> **Distilled Spirits Plant – Experimental.** An experimental distilled spirits plant established for specific and limited periods of time solely for experimentation in, or development of, industrial spirits or sources of materials used to produce spirits, or processes for producing or refining spirits.

ETHANOL (also, Ethyl Alcohol or Grain Alcohol). A volatile, flammable, colorless, neurotoxic liquid fit for human consumption with structural formula CH-3CH-2OH (abbreviated as C2H5OH or C2H6O).

ETHANOL MIXTURE. Liquid mixture comprised of ethanol and materials with hazards not regulated by the Colorado Springs Fire Code, namely water.

EXTRACTION. The process of removing essential oils or other botanic material from a given plant material.

FERMENTATION. An enzymatically controlled, anaerobic breakdown of energy-rich compounds such as simple carbohydrates by microorganisms such as yeast, to yield carbon dioxide and ethanol.

FLAME EFFECTS. The combustion of flammable solids, liquids or gases to produce thermal, physical, visual or audible phenomena before an audience.

HAZMAT INVENTORY STATEMENT (HMIS). A portion of an HMR containing a list of all the HazMat in a facility including information related to the materials such as product names, locations, quantities, regulated hazards, and Chemical Abstract Service (CAS) numbers.

HAZMAT MANAGEMENT PLAN (HMMP). A portion of an HazMat Permit Application containing site maps and facility floor plans identifying HazMat locations and site and building features relevant to the management of HazMat inventories, systems and operations.

HAZMAT REPORT (HMR). A consolidated description of a facility and the HazMat therein including a contact list, code-based description of the building and adjacent outdoor areas, and a HazMat Inventory Statement (HMIS).

INTERMEDIATE BULK CONTAINER. Any closed vessel defined in Title 49, Code of Federal Regulations, Parts 100 through 199 or in Part 6 of the United Nations' Recommendations on the Transport of Dangerous Goods having a liquid capacity of 793 gallons (3000 L) or less, used for transporting or storing Class 1 liquids, not equipped with provisions for emergency venting, not intended for fixed installation, and not constructed of wood.

MASH. Typically the mixture of ground or cracked grains, mashed fruit, or other crushed edible organic material steeped in hot water to release carbohydrates and reduce them to sugars. The term is used inconsistently (often overlapping with wort) for the various solutions in process up to the point where fermentation is complete.

MINIMUM EXPLOSIVE CONCENTRATION (MEC). The lowest mass to volume concentration of combustible dust that will propagate a flame (sometimes referred to as LFL). The MEC for grain dust is 0.055 oz. /ft^3 (55 g/m^3).

NORMALLY CLOSED. A system or vessel in an ABPF used in the storage, production, dispensing, blending, bottling, or handling of Class 1 liquids that, for up to 50% of the time it is in operation, its contents are not exposed to atmosphere and vulnerable to evaporation. Processes involving vessels such as casks opened only for filling, draining or sampling, distillation where all vapors are condensed below their flash point prior to collection, uncovered vessels of 5.3 gallon (20 L) capacity or less used to collect

distillate below its flash point, and covered blending or maceration vessels are typically considered normally closed.

NORMALLY OPEN. A system or vessel in an ABPF used in the storage, production, dispensing, blending, bottling, or handling of Class 1 liquids that, for 50% or more of the time it is in operation, its contents are continuously exposed to atmosphere and vulnerable to evaporation, or where a Class 1 liquid at or above its flash point is exposed to atmosphere at any time during transfer, dispensing, or release. Continuous blending or maceration in uncovered vessels, open draining of Class 1 liquids above their flash points, and the act of bleeding heads (the initial vapors generated during distillation) or tails (the last vapors generated during distillation) to atmosphere are typically considered normally open.

PILE. Independently stacked commodities possibly organized by separate spacers, dunnage, or pallets in which the demise of any storage container on a lower tier compromises the structural stability of the storage system.

PORTABLE TANK. A tank that is readily capable of being relocated within the facility, not permanently attached to immovable structure or ground, and not constructed of wood.

POST OIL PROCESSING. The process of refining essential oils after extraction from the plant material, including, but not limited to dewaxing, and winterization processes.

PROCESS DESCRIPTION FOR DISTILLING. An operational description such as a flow chart of the sequence of events required to convert raw materials from the state in which they enter the APBF through each development point until the finished products are derived. The process description identifies all input and output materials and includes quantities, concentrations, temperatures, pressures, types of equipment, systems, etc. at each development point using code-based terminology; e.g., 37 gallons of 55% ABV at standard temperature and pressure (STP) vs. all the high wines collected. All systems and processes utilized to produce all intermediate and finished products are required to be included in the description.

PROCESSING VESSEL. An open or closed vessel other than stills used in the manufacture of ethanol mixtures. Processing vessels include fermentation tanks, mash tuns, blending tanks, etc., but do not include long-term storage vessels such as vats or casks.

RACK. Shelves or similar structural frame-supported system of tiers in which the demise of any storage container on a lower tier does not affect the structural stability of the storage system.

SPECIAL NEEDS OCCUPANT. A patron, employee, student, resident or tenant (to be used respectively for each occupancy classification: A, B, E, I, R) that has unique or unusual needs regarding their mobility capacity. These special needs can include, but are not limited to, the physically disabled, hearing impaired, visually impaired or mentally impaired.

SPIRIT. An ethanol mixture produced by the distillation of wine, wash, or a previously distilled spirit.

STILL. Any appliance is which distillation of an ethanol mixture is performed. For the purposes of this chapter, still includes pots, columns and condensing coils.

STORAGE AREA. ABPF or portion thereof where ethanol mixtures or materials incorporated or utilized in the manufacture of ethanol mixtures are held for maturation, awaiting transport, or subsequent handling (c.f., use area).

TANK. Any normally open or normally closed vessel having a capacity greater than 60 gallons (230 L) intended for storing or processing (but not transporting outside the facility) Class 1 liquids, and equipped with provisions for emergency venting.

TEMPORARY FIRE ACCESS ROAD. Temporary access roads shall be an all-weather surface comprised of either the first lift of asphalt or concrete/compacted gravel to a thickness capable of supporting the imposed loads of fire department apparatus. A 20-ft minimum width shall be maintained unless the permanent road is designed less than 20-ft, in which case the temporary road shall be the intended width of the permanent road. Adequate street signs and fire lane signs shall be installed where applicable. Temporary access roads must be maintained in accord with this section. Temporary access roads serving as fire lanes shall not be in place more than 6 months without special approval from the fire code official.

USE AREA. ABPF or portion thereof where ethanol mixtures or materials incorporated or utilized in the manufacture of ethanol mixtures are actively handled in processes such as fermentation, distillation, rectification, transportation, remixing, dispensing, bottling, blending, etc. (c.f., storage area).

VAT (also Foudre). A stationary tank constructed primarily of wood.

WASH (also Beer, Malt Liquor). The ethanol mixture intended for distillation produced by the fermentation of mash or wort. For spirit production, wash and wine are analogous as precursors to distillation.

WINE. An ethanol mixture produced by the fermentation of organic products, namely fruits, including agave. For spirit production, wine and wash are analogous as precursors to distillation.

WINERY. An ABPF or portion thereof, including accessory uses, in which wine is produced.

WORT. The sugar solution strained from mash for fermentation.

Section 302.1. Amend Section 302.1 by adding the following term in alphabetical order: **FLAME EFFECTS.**

Section 304.1.2. Amend Section 304.1.2 to read as follows: **304.1.2 Vegetation.** Weeds, grass, vines or other growth that is capable of being ignited and endangering property, shall be cut down and removed by the owner or occupant of the premises. Vegetation clearance requirements in urban-wildland interface areas shall be in accordance with Appendix K.

Section 307.1.2. Add a new Section 307.1.2 to read as follows: **307.1.2 Burn restrictions and burn bans.** The fire code official is authorized to issue a burn restriction or burn ban as deemed necessary when local conditions make recreational fires, open burning, other open flame or similar activities, hazardous or objectionable. Persons failing to comply with issued burn restrictions or burn bans shall be punished in accordance with the general penalty of the Code of the City of Colorado Springs, Chapter 1, Article 1 Part 2.

Section 307.2. Amend Section 307.2 to read as follows: **307.2 Permit required.** A permit shall be obtained from the fire code official in accordance with Section 105.6.49 prior to kindling a fire for recognized silvicultural or range or wildlife management practices, prevention, or control of disease or pests, or a bonfire or a prescribed burn for fuels management or wildfire risk reduction. Application for such approval shall only be presented by and permits issued to the owner of the land upon which the fire is to be kindled.

Section 307.2.2. Add a new Section 307.2.2 to read as follows: **307.2.2 Prescribed burn plan required.** The applicant must attach a Prescribed Burn Plan to the application for a CSFD Open Burning Permit when requested by the fire code official. Prescribed burn plans shall be included for any understory burns, broadcast burns, multiple pile burns or slash burns conducted within city limits or on any area determined as a city asset. Prescribed burn plans shall comply with the guidance documents provided by the Division of the Fire Marshal.

Section 307.4.1.1. Add a new Section 307.4.1.1 to read as follows: **307.4.1.1 Materials.** Bonfires shall be constructed of solid wood products as approved by the fire code official and void of any trash, debris or rubbish. Bonfires shall not use a flammable liquid as an ignition source.

Section 307.4.1.2. Add a new section 307.4.1.2 to read as follows: **307.4.1.2 Large bonfires.** Bonfires greater than 8 feet in any direction shall require plan submittal for review and approval prior to the issuance of a fire inspection. Such bonfires shall also require fire department apparatus standby to be paid by the permit holder at the rate(s) per the approved/adopted fee schedule. Fees shall be paid prior to issuance of fire inspection.

Section 307.5. Amend Section 307.5 to read as follows: **307.5 Attendance.** Open burning, bonfires, recreational fires and use of portable outdoor fireplaces shall be constantly attended by a minimum of one alert, ambulatory unimpaired, responsible adult until the fire is extinguished. A minimum of one portable fire extinguisher complying with Section 906 with a minimum 4-A rating or other approved on-site fire-

extinguishing equipment; such as dirt, sand, water barrel, garden hose or water truck shall be available for immediate utilization by the responsible attendant.

Section 308.1.4. Amend Section 308.1.4 to read as follows: **308.1.4 Open-flame cooking devices.** Charcoal and solid-fuel burners and other open-flame cooking devices shall not be operated on combustible balconies or within 10 feet (3048 mm) of combustible construction.

Exceptions:

1. One- and two-family dwellings.
2. Where buildings, balconies and decks are protected by an automatic sprinkler system.
3. LP-gas cooking devices having LP-gas container with a water capacity not greater than 47 pounds (nominal 20 pound (9kg) LP-gas capacity). Spare LP-gas cylinders shall not be stored on combustible balconies or within structures.

Section 308.1.4.1. Add a new Section 308.1.4.1 to read as follows: **308.1.4.1 Valves.** All valves shall be turned off when propane cylinders are not in use.

Section 308.1.4.2. Add a new Section 308.1.4.2 to read as follows: **308.1.4.2 Egress from buildings.** Barbecues shall never be used or stored in or near stairwells, corridors or other areas that are intended to be used as a means of egress or considered an interior living space.

Section 308.1.7. Amend Section 308.1.7 to read as follows: **308.1.7 Religious ceremonies.** When, in the opinion of the fire code official, adequate safeguards have been taken, participants in religious ceremonies are allowed to carry hand-held candles.

Section 308.2. Amend Section 308.2 by adding item 4 to read as follows: 4. Use of flame effects before a proximate audience.

Section 311.5.2. Delete Section 311.5.2 and replace with the following: **311.5.2 Placard size and color.** Placard shall be designed and printed as specified and approved by the fire code official.

Section 315.3.1. Add a new exception to Section 315.3.1 to read as follows: **Exception:** Where storage on shelving is against the walls and does not extend over 30 inches into the room or is within 18 inches (457 mm) of the fire sprinkler head in any direction, the storage may extend to the ceiling in sprinklered or non-sprinklered buildings. If sidewall style fire sprinkler heads are present, the 18 inch (456 m) rule must apply throughout the storage area.

Section 316.5. Add a new exception to Section 316.5 to read as follows: **Exception:** Where approved by the fire code official.

Section 401.1. Amend Section 401.1 by deleting the exception.

Section 402.1. Amend Section 402.1 by adding the following: **SPECIAL NEEDS OCCUPANT.**

Section 403.5.3. Amend Section 403.5.3 to read as follows: **403.5.3 Assembly points.** Outdoor assembly areas shall be accessible by all occupants. Outdoor assembly areas shall be designated and shall be located at a safe distance from the building being evacuated so as to avoid interference with fire department operations. The assembly areas shall be arranged to keep each class separate to provide accountability of all individuals.

Section 403.8.1.2. Amend Section 403.8.1.2 to read as follows: **403.8.1.2 Employee training.** Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Employees are to be specifically trained on the emergency procedures for any special needs occupants. A copy of the plan shall be readily available at all times within the facility.

Section 403.9. Delete Section 403.9 in its entirety.

Section 403.10.1. Amend Section 403.10.1 to read as follows: **403.10.1 Group R-1 occupancies.** Group R-1 occupancies shall comply with Sections 403.10.1.1 through 403.10.1.3.

Section 404.2.1. Amend section 404.2.1 by adding number 11 to read as follows: **404.2.1 11.** Outdoor assembly areas shall be accessible by all occupants. Outdoor assembly areas shall be designated and shall be located a safe distance from the building being evacuated so as to avoid interference with fire department operations.

Section 404.2.2. Amend Section 404.2.2 by changing number 4, (4.8) to read as follows:

4. Floor plans identifying the locations of the following:
   - 4.1. Exits.
   - 4.2. Primary evacuation routes.
   - 4.3. Secondary evacuation routes.
   - 4.4. Accessible egress routes.
     - 4.4.1. Areas of refuge.
     - 4.4.2. Exterior areas for assisted rescue.
   - 4.5. Refuge areas associated with smoke barriers and horizontal exits.
   - 4.6. Manual fire alarm boxes.
   - 4.7. Portable fire extinguishers.
   - 4.8. Hose valve/standpipe stations.
   - 4.9. Fire alarm annunciators and controls.

Section 404.2.3.1. Amend Section 404.2.3.1 to read as follows: **404.2.3.1 Lockdown plan contents.** Lockdown plans may be approved by the fire code official and shall include the following:

1. Initiation. The plan shall include instructions for reporting an emergency that requires a lockdown.
2. Accountability. The plan shall include accountability procedures for staff to report the presence or absence of occupants.
3. Recall. The plan shall include a prearranged signal for returning to normal activity.
4. Communication and Coordination. The plan shall include a means of two-way communication between a central location and each secured area.

Section 407.2. Amend Section 407.2 to read as follows: **407.2 Material Safety Data Sheets.** Material safety data sheets (MSDS) shall be readily available on the premises for hazardous materials regulated by all chapters in this code. This may be in the form of hard copies, online websites, by phone or any other method approved by the authority having jurisdiction for use by emergency responders. Where a hazardous substance is developed in a laboratory, available information shall be documented.

Section 408. Create a new Section 408:

SECTION 408
FIRE WATCH

408.1 Scope. When required for building demolition and/or when there are situations that compromise the community's safety, the fire code official may require on-site personnel designated solely for fire watch purposes. The level of coverage shall be based upon the following guidelines; however, circumstances may warrant modifications at the discretion of the fire code official:

Group A (Assemblies) Occupancies:

1. Loss of a required fire alarm and/or fire sprinkler system prohibiting the use of the affected structure for large events - Level II or III.
2. Special circumstances such as occupant load increase, nature of performance, exhibition, display, contest or activity - Level III.

Group B (Business/Office) Occupancies: Loss of a required fire alarm and/or fire sprinkler system - Level I as determined by the fire code official - Note: All building occupants must be notified that the system/systems are out of service.

Group E (Educational) Occupancies: Loss of a required fire alarm and/or fire sprinkler system - Level II while the building is occupied - Note: All staff must be notified of the failure.

Group F (Factory) Occupancies: Loss of any required fire alarm, fire sprinkler, and/or special system - Discretion of the fire code official based upon nature of hazard.

Group H (Hazardous) Occupancies: Loss of any required fire alarm, fire sprinkler, or special system - Level III depending on the nature of hazard as determined by the fire code official.

Group I (Institutional/Healthcare) Occupancies: Loss of any required fire alarm, fire sprinkler, and/or special system - Discretion of the fire code official based upon the nature of hazard.

Group M (Mercantile/Retail Sales) Occupancies: Loss of required fire alarm and/or fire sprinkler system - Level I.

Group R (Residential) Occupancies: Loss of any required fire alarm, sire sprinkler, and/or special system - Discretion of the fire code official based upon the nature of hazard.

Group S-1 and S-2 (Storage) Occupancies: Loss of required fire alarm and/or fire sprinkler system - Stocked but no occupants: Level I; During operations: Level II; Hazardous Materials Permit required: Level III.

Table 408.1 Add a new **Table 408.1** as follows:

Table 408.1 Levels of Coverage

LEVEL I:	CONTINUOUS MONITORING OF AFFECTED AREA FOR SIGNS OF SMOKE OR FIRE FOR THE SOLE PURPOSE OF NOTIFYING EMERGENCY SERVICES (DIALING 9-1-1)		ONE OR MORE APPROVED EMPLOYEES OF THE BUILDING OWNER; SECURITY GUARDS; OR QUALIFIED CSFD PERSONNEL
LEVEL II:	CONTINUOUS MONITORING OF AFFECTED AREA FOR SIGNS OF SMOKE OR FIRE FOR THE PURPOSE OF NOTIFYING EMERGENCY SERVICES AND ASSISTING WITH EVACUATION		ONE OR MORE APPROVED REPRESENTATIVES OR EMPLOYEES OF THE BUILDING OWNER; SECURITY GUARDS; OR QUALIFIED CSFD PERSONNEL – THESE INDIVIDUALS MUST BE FAMILIAR WITH THE EXITING SYSTEMS, FIRE PROTECTION SYSTEMS, AND EVACUATION PLANS RELATIVE TO THE EFFECTED AREA.
LEVEL III:	CONTINUOUS MONITORING OF EFFECTED AREA FOR SIGNS OF SMOKE OR FIRE FOR THE PURPOSES OF NOTIFYING EMERGENCY SERVICES, ASSISTING WITH EVACUATION, AND FIRE EXTINGUISHMENT / HAZARD MITIGATION		ONE OR MORE QUALIFIED CSFD PERSONNEL NOTE: AN EMERGENCY ACTION PLAN MAY BE REQUIRED.

Section 408.2. Add a new Section 408.2, to read as follows: **408.2 Fees for fire watch.** For all fire watch activities that involved CSFD personnel, fees shall be assessed as set forth in the approved/adopted fee schedule.

Section 503.1. Amend Section 503.1 to read as follows: **503.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Section 503.1.1 through 503.1.3 and Appendix D.

Section 503.2. Amend Section 503.2 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 503.2.5. Amend Section 503.2.5 to read as follows: **503.2.5 Dead ends.** Dead end fire apparatus access roads in excess of 200 feet (61 m) in length shall be provided with an approved area for turning around fire apparatus.

Section 505.1. Amend Section 505.1 to read as follows: **505.1 Address identification.** New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall visibly contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters of an approved font. Each character shall be not less than 5 inches (127.5 mm) high with a minimum stroke width of ½ inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building and/or address identification cannot be viewed from the public way, a monument, pole other sign or means shall be used to identify the structure. Address identification shall be maintained.

Section 505.1.1. Add a new section 505.1.1 to read as follows: **505.1.1 Suite numbers.** Any area occupied by tenants of a mall or shopping center, or any area used for other than single-unit or multi-unit residential occupancy that abuts a public courtyard or other public space shall be identified by numbers that are a minimum of 4 inches (101.6 mm) in height with a minimum stroke of ½ inch (12.7mm) so as to be plainly visible and legible from a distance of at least fifty (50) feet (15240 mm) from the main entrance to the area.

Section 505.1.2. Add a new Section 505.1.2 to read as follows: **505.1.2 Addressing of rear doors.** The rear door entrance of access doors of all malls, strip centers, commercial center buildings and other areas with multi-tenant spaces shall be identified with the appropriate address number and business name. The address numbers and/or letters shall be at least 3 inches (76.2 mm) in height and no less than three eighths (3/8) inch (9.5 mm) stroke. The Colorado Springs Fire Department may require the installation of address numbers/letters on other locations to prevent confusion in the event of an emergency.

Section 506.1. Amend Section 506.1 to read as follows: **506.1 Where required.** Where access to or within a structure or an area is restricted because of secured openings or

where immediate access is necessary for life-saving or fire-fighting purposes, or where monitored fire protection systems or elevators exist in the building, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type listed in accordance with UL 1037, and shall contain keys to gain necessary access as required by the fire code official.

Section 507.3. Amend Section 507.3 to read as follows: **507.3 Fire Flow.** Fire flow requirements for buildings or portion of buildings and facilities shall be determined as outlined in Appendix B of this code.

Section 507.5. Amend Section 507.5 to read as follows: **507.5 Fire hydrant systems.** Fire hydrant systems shall comply with Sections 507.5.1 through 507.5.6, NFPA 24 and Appendix C.

Section 507.5.1. Delete Section 507.5.1 in its entirety.

Section 507.5.1.1. Amend Section 507.5.1.1 to read as follows: **507.5.1.1 Hydrant for standpipe and fire sprinkler systems.** Buildings equipped with a standpipe and/or fire sprinkler system installed in accordance with Chapter 9 shall have a fire hydrant within 100 feet (30 480 mm) of the fire department connection.

Section 510.4. Amend Section 510.4 to read as follows: **510.4 Technical requirements.** Systems, components and equipment required to provide the emergency responder radio coverage system shall comply with the published technical and performance rules and regulations published by the City of Colorado Springs Fire Department and the Pikes Peak Radio Communications Network.

Section 510.4.1. Delete Section 510.4 and all subsections.

Section 511. Add a new Section 511 to read as follows: **Section 511 Firefighter Air Replenishment Systems. 511.1 General.** Where required by the fire code official, a firefighter air replenishment system shall be provided in accordance with Appendix L.

Section 901.1.1. Add a new Section 901.1.1 to read as follows: **901.1.1 Approved Contractors.** All fire protection systems and appliances referenced by this code shall be designed, installed, repaired, inspected, tagged and maintained by an approved licensed contractor. Private fire hydrants shall be inspected and maintained by an approved licensed contractor.

Exceptions:

1. Non-rechargeable portable fire extinguishers are allowed to be inspected by a property owner or management company representative. These individuals are not required to maintain a FSC-D license or Service Technician D. Companies conducting inspections on fire extinguishers shall maintain a current copy of NFPA 10 as reference of inspection requirements and shall maintain records of annual inspections as required by NFPA 10.

2. New portable fire extinguishers may be installed and tagged by a general contractor, or a business owner/manager without requiring a fire suppression contractor license.
3. The monthly inspection of portable fire extinguishers required by NFPA 10 Standard for Portable Fire Extinguishers, does not have to be performed by a licensed fire suppression contractor.

Section 901.3.1. Add a new Section 901.3.1 to read as follows: **901.3.1 Relocations and additions to fire sprinkler and fire alarm systems in existing facilities.** Any additions or remodeling to existing commercial sprinkler systems that involve 20 sprinkler heads or less, or fire alarm systems that involve 5 devices or less, will not require a permit through the Division of the Fire Marshal, when approved by the fire code official via an approved letter review process. The review letter process shall comply with the guidance documents provided by the Division of the Fire Marshal.

Section 901.7.7. Add a new Section 901.7.7 to read as follows: **901.7.7 Permanent removal from service.** When a fire protection system is permanently removed from service it shall be completely removed from the structure, to include all valves, panels, devices, appliances, wiring, piping, appurtenances, fire department connections, etc. The only portion of the system permitted to remain includes portions concealed in walls or ceilings. The water riser stub coming out of the ground and associated fire line shall be abandoned in accordance with Colorado Springs Utility requirements. A demolition permit per 105.7.22 is required prior to any system removal.

Section 903.2.7. Amend Section 903.2.7 by deleting subsection 4.

Section 903.3.1.1.1. Amend Section 903.3.1.1.1 to read as follows: **903.3.1.1.1 Exempt locations.** Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with NFPA 72 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. A room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. A room or space where sprinklers are considered undesirable because of the nature of the contents, where approved by the fire code official.
3. Safe deposit or other vaults of fire resistive construction when used for the storage of records, files and other documents, when stored in metal cabinets.
4. Elevator machine rooms, provided all of the following are met:

    4-1 The elevator equipment is to be installed within an enclosure having the fire resistive rating no less than that specified by the International Building Code.
    4-2 No combustible storage is permitted to be stored in the room.
    4-3 An automatic smoke detection system installed in accordance with NFPA 72 is provided in the room and is supervised by an approved supervising station in accord with section 907 of this code.

4-4 A portable fire extinguisher rated not less than 2A:20BC is provided at the door giving access into the room.

Section 903.3.1.1.3. Add a new section 903.3.1.1.3 to read as follows: **903.3.1.1.3 Shell building design.** Fire sprinkler systems in shell buildings, other than specified office buildings, shall be designed according to the requirements set forth for Ordinary Hazard Group II criteria.

Section 903.3.5.2. Amend Section 903.3.5.2 to read as follows: **903.3.5.2 Residential Combination Services.** A single combination water supply shall be allowed only on NFPA 13D systems.

Section 903.3.5.3. Add a new Section 903.3.5.3 to read as follows: **903.3.5.3 Dead-end fire service mains.** Unless approved by the fire code official, dead-end fire service mains shall not be used when there is not a reliable secondary or redundant means of water supply within 500 feet (140 m) of a structure along an approved route.

Section 903.3.5.4. Add a new Section 903.3.5.4 to read as follows: **903.3.5.4 Safety factor in hydraulic information.** A safety factor of 10% shall be incorporated into the fire flow information when designing water-based fire suppression systems.

Section 903.4. Amend Section 903.4 by deleting exception # 3 and renumber remaining exceptions: **903.4 Sprinkler supervision and alarms.** All valves controlling the water supply for automatic sprinkler systems, pump, tanks, water levels, and temperatures, critical air pressures and waterflow switches on all sprinkler system shall be electrically supervised by a listed fire alarm control unit.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area sprinkler systems in accordance with Section 903.3.8.
3. Jockey pump control valves that are sealed or locked in the open position.
4. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
5. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
6. Trim valves to pressure switched in dry, pre-action and deluge sprinkler systems that are sealed or locked in the open position.

Section 903.4.2. Amend Section 903.4.2 to read as follows: **903.4.2 Alarms.** An approved audible and visual device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow 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.

Section 903.4.2.1. Add a new Section 903.4.2.1 to read as follows: **903.4.2.1 Interior alarms.** A minimum of one interior audible and visual appliance shall be provided in a normally occupied space.

Exception: Buildings intended to serve more than one tenant without common interior access need not be equipped with an interior audible and visual appliance.

Section 904.12.2. Amend Section 904.12.2 to read as follows: **904.12.2 System interconnection.** The actuation of the fire extinguishing system shall automatically shut down the fuel and/or electrical power supply to the cooking equipment; any electrical receptacles under the hood and any receptacle that could be used to power equipment located under the hood shall also be shut down. The fuel and electrical power supply reset shall be manual.

Section 904.12.2.1. Add a new Section 904.12.2.1 to read as follows: **904.12.2.1 Ventilation system interconnection.** Upon activation of the fire suppression systems, the exhaust for the hood shall remain on.

Section 905.3.1. Amend Section 905.3.1 to read as follows and delete the first exception and renumber remaining exceptions: **905.3.1 Height.** Class I standpipe system shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9.1 m) above the lowest level of the Fire Department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9.1 m) below the highest level of Fire Department vehicle access.

Exceptions:

1. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet above the lowest level of fire department vehicle access
2. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.
3. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.
4. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:

    4.1 Recessed loading docks for four vehicles or less
    4.2 Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

Section 905.3.4. Amend Section 905.3.4 and delete the exception to read as follows: **905.3.4 Stages.** Stages greater than 1,000 square feet in area shall be equipped with a Class I wet standpipe system with 2 ½ inch hose connections on each side of the stage.

Section 905.3.4.1. Delete Section 905.3.4.1 in its entirety.

Section 905.3.6. Amend Section 905.3.6 to read as follows: **905.3.6 Helistops and heliports.** Buildings with a rooftop helistop or heliport shall be equipped with a Class I standpipe system extended to the roof level on which the helistop or heliport is located in accordance with Section 2007.5.

Section 905.3.8. Amend Section 905.3.8 to read as follows: **905.3.8 Rooftop gardens and landscaped roofs.** Buildings or structures that have rooftop gardens or landscaped roofs and that are equipped with a standpipe system shall have the standpipe system extended to the roof level on which the rooftop garden or landscaped roof is located. Rooftop valves shall be protected from tampering.

Section 905.4. Amend Section 905.4 by adding an exception to subsection number 1, to read as follows: **905.4 Location of Class I standpipe hose connections.** Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior exit stairway, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at an intermediate landing between stories, unless otherwise approved by the fire code official.

   Exception: When stairways are constructed with a vestibule in accordance with the International Building Code, the hose connection may be installed inside the floor level vestibule.

Section 906.1. Amend Section 906.1 to include new Items 7 and 8 as follows: **Section 906.1 Where required.**

7. Main electrical rooms not provided with fire sprinklers.
8. Public utility communications equipment areas.

Section 907.2.6.2.1. Add a new Section 907.2.6.2.1 to read as follows: **907.2.6.2.1 Alternative design.** As an alternative design, addressable system smoke detectors may be used in sleeping units. In such case, a visual notification in the corridor shall not be required and the sleeping unit detector shall initiate building alarm. An approved remote annunciator shall be located at the respective care provider station.

Section 907.2.24. Add a new Section 907.2.24 to read as follows: **907.2.24 Main electrical rooms.** Main electrical rooms permitted to be nonsprinklered under NFPA 13 shall be provided with an automatic smoke detection system installed in accordance with NFPA 72 and electronically supervised by an approved supervising station in accordance with this code.

Section 907.2.25. Add a new Section 907.2.25 to read as follows: **907.2.25 One- and two-family dwellings in wildland urban interface.** Where specifically required on the approved development plan, one- and two-family dwellings (R3) occupancies located in wildland urban interface overlay, shall comply with Appendix K, in addition to other requirements of this code, or as identified on the approved development plans.

Section 907.2.25.1. Add a new Section 907.2.25.1 to read as follows: **907.2.25.1 Fire alarm system requirements.** Where required, fire alarm systems for one-and two-family dwellings (R3 occupancies) in the wildland urban interface overlay shall be provided with the following:

1. Smoke detectors on all levels, in bedrooms and in hallways near/outside bedrooms
2. Combination Rate of rise and 195°F fixed temperature detectors in kitchen and garage areas.
3. An outside strobe unit with clear lens, to be visible from roadway.
4. A listed or approved low-voltage residential fire alarm control panel.
5. Wiring which meets National Electrical Code Article 760 requirements.
6. Horn circuits interconnected with all smoke detectors in the interior of the residence.
7. Monitoring of the system by a CSFD approved monitoring station.

Section 907.5.2.2. Amend Section 907.5.2.2 to read as follows: **907.5.2.2 Emergency voice/alarm communication systems.** Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions on a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404. In high-rise buildings, the system shall operate on at least the alarming floor, the floor above, the floor below, the main ground level and the highest occupied floor. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Exit stairways.
3. Each floor.
4. Areas of refuge as defined in Chapter 2.

Section 910.3.2.1. Add a new Section 910.3.2.1 to read as follows: **910.3.2.1 Sprinklered buildings.** Where installed in buildings equipped with an approved automatic sprinkler system, smoke and heat vents shall be designed to operate automatically by activation of a heat-responsive device rated at least 100° above the operating temperature of the fire sprinkler heads in the immediate vicinity of the vent. Vents shall also be manually operable from the exterior by an approved means.

Section 912.2.3. Add a new Section 912.1.3 to read as follows: **912.2.3 Multiple fire department connections (FDC's).** When demand of sprinkler system exceeds 1500 gallons per minute (gpm) (5678.1 L/min), additional fire department connections (FDC's) shall be provided and located as specified by the fire code official. Multiple FDC's shall be of equal capacity.

Section 914.12. Add new Section 914.12 to read as follows: **914.12. Extraction Operations.** Extraction rooms, booths, or hoods, including ductwork where required for

hazardous exhaust systems, shall be protected by an approved automatic fire-extinguishing system complying with Chapter 9 where any of the following exist:

1. Extraction processes utilizing flammable and/or combustible materials, or off gassing flammable vapors from spent plant material or oil.
2. Vapors are released exceeding 25% of the lower flammable limit from flammable liquid extraction processes or flammable liquid post oil processing.

Section 1009.8. Amend Section 1009.8 to read as follows: **1009.8 Two-way communication.** A two-way communication system complying with Section 1009.8.1, 1009.8.2 and NFPA 72 shall be provided at the landing serving each elevator or bank of elevators on each accessible floor that is one or more stories above or below the level of exit discharge.

Section 1030.4. Amend Section 1030.4 to read as follows: **1030.4 Operational Constraints.** Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with Section 1030.2 and such devices shall be releasable or removable from the inside without the use of a key, tool, or force greater than that which is required for normal operation of the emergency escape and rescue opening. The force required for normal operation of any device shall not exceed 30 pounds. Where such bars, grilles, grates or similar devices are installed in existing buildings, smoke alarms shall be installed in accordance with Section 907.2.11 regardless of the valuation of the alteration.

Section 1030.6. Add a new Section 1030.6 to read as follows: **1030.6 Emergency escape openings below horizontal projections.** Emergency escape openings may be located below decks, porches, cantilevers and similar horizontal projections provided one of the following:

1. The location of the projection allows the emergency escape opening to be fully opened and provides a path not less than 36 inches in height and width to a yard or court.
2. The minimum horizontal area of 9 square feet (8,361 cm^2) is provided clear of the projection and the horizontal projection of the operable portion of the egress window and ladder, if required, remain clear of the projection.

Section 1103.1. Amend Section 1103.1 to read as follows: **1103.1 Required construction.** Existing buildings shall comply with not less than the minimum provisions specified as enumerated in Sections 1103.7 through 1103.10.

The provisions of this chapter shall not be construed to allow the elimination of fire protection systems or a reduction in the level of fire safety provided in buildings constructed in accordance with previously adopted codes.

Exceptions:

1. Group U occupancies.

Table 1103.1. Delete Table 1103.1 in its entirety.

Section 1103.2. Delete Section 1103.2 in its entirety.

Section 1103.3. Amend Section 1103.3 to read as follows: **1103.3 Existing elevators.** Existing elevators, escalators and moving walks shall comply with the requirements of Section 1103.3.2.

Section 1103.3.1. Delete Section 1103.3.1in its entirety.

Section 1103.3.2. Amend Section 1103.3.2 to read as follows: **1103.3.2 Elevator emergency operation.** Elimination of previously installed Phase I emergency recall or Phase II emergency in-car systems shall not be permitted.

Section 1103.4. Delete Sections 1103.4 and all subsections in its entirety.

Section 1103.5. Amend Section 1103.5 to read as follows: **1103.5 Sprinkler systems.** An automatic sprinkler system shall be provided in existing buildings in accordance with Sections 1103.5.1 through 1103.5.3.

Section 1103.5.1. Delete Section 1103.5.1 and replace with the following: **1103.5.1 Group I-1.** In Group I-1, an automatic sprinkler system shall be provided in accordance with Section 903.3.1.1.

Section 1103.5.4. Delete Section 1103.5.4 and replace with the following: **1103.5.4 Group R-2, R-3, or R-4.** An automatic sprinkler system in accordance with section 903.3.1.1, 903.3.1.2, or 903.1.3 shall be provided throughout existing buildings of R-2, R-3, or R-4 occupancies that are being utilized as a group home.

Section 1103.6. Delete Sections 1103.6 and all subsections in its entirety.

Section 1103.7.5. Delete Sections 1103.7.5 and all subsections in its entirety.

Section 1103.7.6. Amend Section 1103.7.6 to delete all exceptions and read as follows: **1103.7.6 Group R-2.** A manual *fire alarm system* that activates the occupant notification system in accordance with Section 907.2.9 shall be installed in existing Group R-2 occupancies that are being utilized as a *group home*. In addition to 907.2.9, heat detectors shall be provided in accessible attic and crawl spaces.

Section 1103.7.7. Amend Section 1103.7.7 by deleting the exception and to read as follows: **1103.7.7 Group R-4.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-4 residential care/assisted living facilities in accordance with Section 907.2.10.1. In addition to the requirements of 907.5 and 907.2.10.1, heat detectors shall be provided in accessible attics and crawlspaces.

Section 1103.7.8. Add a new section 1103.7.8 to read as follows: **1103.7.8 Group R-3.** A residential fire alarm system shall be provided in R-3 occupancies being utilized as group homes. This fire alarm system shall provide the following:

1. Smoke detectors on all levels, in bedrooms and in hallways near/outside bedrooms
2. Combination rate of rise and 195°F fixed temperature heat detectors in kitchen and garage areas.
3. An outside horn/strobe unit with a clear lens, visible from the roadway.
4. A listed or approved low-voltage residential fire alarm control panel.
5. Wiring which meets National Electrical Code Article 760 requirements.
6. Horn circuits interconnected with all smoke detectors in the interior of the residence.
7. Monitoring of the system by a CSFD approved monitoring station.
8. Heat detectors in accessible attics and crawlspaces.

Section 1105.3.3.2.1. Delete Section 1105.3.3.2.1 in its entirety.

Section 1105.4. Delete Section 1105.4 and all subsections in its entirety.

Section 1105.6. Delete Section 1105.6 and all subsections in its entirety.

Section 1107. Create a new section 1107 to read as follows:

SECTION 1107
EXISTING HIGH PILED STORAGE FACILITIES

1107.1 Scope. Existing buildings utilizing high pile storage, defined by Chapter 32, in which no official records, such as certificate of occupancy, fire department records or similar, verifying high pile use of the building shall comply with this section.

1107.2 General. Based on storage arrangement and commodity class, existing buildings shall comply with Table 3206.2.

1107.3 Performance requirements. Where structural limitations, as determined by an engineering analysis by a Colorado registered structural engineer, prohibits compliance with Chapter 32, storage arrangement and commodity class shall be in compliance with 104.9 of this code. Such performance alternatives shall be submitted for review and approved by the fire code official

Section 2006.4.1.1. Add a new section 2006.4.1.1 to read as follows: **2006.4.1.1 Documentation.** A vehicle maintenance checklist for aircraft-fueling vehicles shall be documented on a daily basis by the apparatus operator, in accordance with Air Transport Association (ATA) Specification form 103.04A.

Section 2007.1. Amend Section 2007.1 to read as follows: **2007.1 General.** Helistops and heliports shall be maintained in accordance with Sections 2007.2 through 2007.8.

Helistops and heliports on buildings shall be constructed in accordance with the International Building Code, and NFPA 418.

Section 2007.5. Amend Section 2007.5 to read as follows: **2007.5 Standpipe systems.** A building with a rooftop helistop or heliport shall be provided with a Class I standpipe system extended to the roof level on which the helistop or heliport is located. All portions of the helistop and heliport area shall be within 150 feet (45,720 mm) of a 2½-inch (63.5 mm) outlet on the standpipe system.

Section 2303.2. Delete Section 2303.2 and replace with the following: **2303.2 Emergency disconnect switches.** Approved, clearly identified, and readily accessible emergency disconnect switches shall be provided at approved locations to stop the transfer of fuel to the fuel dispensers in the event of a fuel spill or other emergency.

Two emergency disconnect switches for exterior fuel dispensers shall be required as follows:

1. Exterior: Shall be located within 100 feet (30480 mm) of, but not less than 20 feet (6096 mm) from, the fuel dispensers. The switch shall be a mushroom style switch/ that is readily accessible and must cut off power to all dispensers and pumps.
2. Interior: Shall be located at the attendant duty location. The switch shall be a palm-type switch/button which will shut off the flow of fuel and cut off power to all dispensers and pumps.
3. Emergency disconnect switches shall shut-off the power in conformance NFPA 70 and NFPA 30A.
4. Emergency controls shall be of a type which is only manually resettable.

For interior fuel-dispensing operations, the emergency disconnect switch shall be installed at an approved location.

Section 2303.2.1. Add a new Section 2303.2.1 to read as follows: **2303.2.1 Emergency disconnect switch signage.** Signs shall be provided in approved locations and of the legible size as follows:

1. Interior: At least 1 inch (25.2 mm) in height and ⅛ inch (3.175 mm) stroke red on white background.
2. Exterior: At least 2 inches (51 mm) in height and ¼ inch (6.35 mm) stroke red on white background.

Section 3201.2. Amend Section 3201.2 to read as follows: **3201.2 Permits.** Permits shall be required as set forth in Sections 105.6 and 105.7.

Section 3201.5. Add a new Section 3201.5 to read as follows: **3201.5 Facility closure.** Facilities containing annual high-piled storage area, wishing to remove such areas shall comply with sections 3201.5.1 through 3201.5.2.

Section 3201.5.1. Add a new Section 3201.5.1 to read as follows: **3201.5.1 Temporarily out-of-service facilities.** Facilities with a high-piled combustible storage operational

permit, that is not kept current; containing fire protection systems not being monitored or inspected on a regular basis shall be deemed permanently out of service and shall be closed in an approved manner complying with section 3201.5.2. High-piled combustible storage facilities that do not meet this section are considered temporarily out of service and shall continue to maintain a permit, monitoring and inspections.

Section 3201.5.2. Add a new Section 3201.5.2 to read as follows: **3201.5.2 Facility closure plan.** When a high-piled combustible storage facility is considered for permanent closure as defined in Section 3201.5.1, the permit holder for the facility shall apply for closure approval by submitting an application to the fire code official a minimum of 30 days prior to facility closure. The application/closure shall be finalized by an owner/operator scheduled inspection to verify compliance with the application and close out the operational permit.

Section 3205.1. Amend Section 3205.1 to read as follows: **3205.1 Rack structures.** The structural integrity of racks shall be maintained. Racks shall be of substantial construction, and shall be braced and anchored in accordance with the seismic design requirements of the International Building Code for the seismic zone in which the material is located. Shelving shall be treated, coated or construction of materials that are compatible with the materials stored. Shelves shall be provided with a lip or guard where used for the storage of individual containers.

Section 3205.6. Amend Section 3205.6 to read as follows: **3205.6 Designation of storage heights.** Where required by the fire code official, an approved visual method of indicating the maximum allowable storage height shall be provided.

Section 3206.6.1.3. Amend Section 3206.6.1.3 to read as follows: **3206.6.1.3 Locking devices.** Only approved locking devices shall be used. All doors required by Section 3206.1 shall be keyed the same and master keys to doors shall be provided in the required on-site Knox™ box.

Section 3211. Add a new Section 3211 to read as follows:

SECTION 3211
BUILDINGS CONTAINING AREAS CAPABLE OF ACCOMODATING HIGH PILE COMBUSTIBLE STORAGE

3211.1 General. Any building containing an area capable of high piled storage, but otherwise not meeting definitions and/or requirements of this chapter, shall be maintained in accordance with sections 3211.2 and 3211.3.

3211.2 High piled combustible storage waiver. The owner or the owners designated representative shall sign a waiver declaring that the facility will not accommodate the high piled storage of combustible materials. By signing this waiver, the owner acknowledges responsibility to comply with all applicable provisions of Chapter 32 should the facility begin the high piled storage of combustible materials.

3211.3 Designation of storage heights. Areas capable of high piled combustible storage but not currently being utilized as such will have storage heights displayed in accordance with Section 3205.6.

Section 3212. Add a new Section 3212 to read as follows:

SECTION 3212
EXISTING BUILDINGS

3212.1 General. Existing facilities containing high piled combustible storage areas shall be in accordance with Section 1107.

Section 3310.1.1. Add a new Section 3310.1.1 to read as follows: **3310.1.1 Minimum specifications for temporary roads.** Temporary access roads shall be an all-weather surface comprised of either the first lift of asphalt or concrete/compacted gravel to a thickness capable of supporting the imposed loads of fire department apparatus. A 20-ft minimum width shall be maintained unless the permanent road is designed less than 20-ft, in which case the temporary road shall be the intended width of the permanent road. Adequate street signs and fire lane signs shall be installed where applicable. Temporary access roads must be maintained in accord with this section. Temporary access roads must be approved and inspected by the fire code official and maintained in accord with this section.

Section 3503.7. Add a new Section 3503.7 to read as follows: **3503.7 Location.** Portable or manifolded cylinders located inside of a building shall be stored in a well- ventilated, dry location at least 20 feet (6.1m) from combustible material and at least 10 feet (3m) from elevators, stairways, corridors, exits or in areas normally used, or intended to be used, as a means of egress.

Section 38. Add new Chapter 38 Alcoholic Beverage Production Facilities as follows:

CHAPTER 38 ALCOHOL BEVERAGE PRODUCTION FACILITIES

SECTION 3801
GENERAL

3801.1 Scope. Buildings and portions thereof where ethanol mixtures are produced, stored, handled or dispensed in the production of alcoholic beverages shall be regulated in accordance with this Chapter and the Pikes Peak Regional Building Code and Colorado Springs Fire Code.

3801.2 Referenced standards. The fire code official is authorized to enforce applicable provisions of the standards listed in Chapter 80, as amended to ensure the safe operation of ABPFs.

3801.3 Recommended practices. The fire code official shall have the authority to utilize the recommended practices listed in Table 3801.3 to render interpretations and develop policies and procedures in the application of the provisions of the Colorado

Springs Fire Code and referenced standards. Such interpretations, policies, and procedures shall be in compliance with the intent and objective of this chapter.

Table 3801.3 Recommended Practices

NFPA 77	Recommended Practice on Static Electricity
NFPA 497	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
NFPA 499	Recommended Practice for the Classification of Combustible Dusts and of Hazardous Locations for Electrical Installations in Chemical Process Areas
The Distilled Spirits Council of the United States, Inc.	Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities

3801.4 Construction Documents. Construction documents shall be submitted for review and approval for permit prior to the installation, construction, or modification of ABPFs or the operational equipment therein.

3801.5 Permits. Permits shall be required as set forth in Section 105.

SECTION 3802
DEFINITIONS, ACRONYMS AND ABBREVIATIONS

3802.1 Definitions. The following terms are defined in Chapter 2.

ALCOHOL BEVERAGE (ALSO, ALCOHOLIC BEVERAGE).

ALCOHOL BEVERAGE PRODUCTION FACILITY (ABPF).

ALCOHOL BY VOLUME (ABV).

BEVERAGE SPIRIT.

BREWERY.

BULK STORAGE.

CASK.

CONTAINER.

DISTILLATION.

DISTILLERY (ALSO DISTILLED SPIRITS PLANT – BEVERAGE).

DISTILLED SPIRITS PLANT – INDUSTRIAL.

DISTILLED SPIRITS – VINEGAR PLANTS.

DISTILLED SPIRITS PLANT – INDUSTRIAL / BEVERAGE.

DISTILLED SPIRITS PLANT – EXPERIMENTAL.

ETHANOL (ALSO, ETHYL ALCOHOL OR GRAIN ALCOHOL).

ETHANOL MIXTURE.

FERMENTATION.

HAZARDOUS MATERIALS.

HAZARDOUS MATERIALS INVENTORY STATEMENT (HMIS).

HAZARDOUS MATERIALS MANAGEMENT PLAN (HMMP).

HAZARDOUS MATERIALS REPORT (HMR).

INTERMEDIATE BULK CONTAINER.

LOWER FLAMMABILITY LIMIT (LFL; ALSO LOWER EXPLOSIVE LIMIT, LEL).

MASH.

MINIMUM EXPLOSIVE CONCENTRATION (MEC).

NORMALLY CLOSED.

NORMALLY OPEN.

PILE.

PORTABLE TANK.

PRESSURE VESSEL.

PROCESS DESCRIPTION.

PROCESSING VESSEL.

RACK.

SPIRIT.

TANK.

TANK, STATIONARY.

STILL.

STORAGE AREA.

USE AREA.

VAT (ALSO FOUDRE).

VESSEL.

WASH (ALSO BEER, MALT LIQUOR).

WINE.

WINERY.

WORT.

SECTION 3803
GENERAL REQUIREMENTS

3803.1 Applicability. New and existing facilities shall comply with the requirements of this chapter. Alternatively, facilities in existence at the adoption of this chapter may comply with Section 3805.

3803.2 Material classification. Hazard classifications and analyses of ethanol mixtures shall account for altitude-dependent properties based on an elevation of 6,035 feet (1,839 m) above sea level.

Ethanol mixtures that have no fire point when tested in accordance with ASTM D 92, Standard Test Method for Flash and Fire Points, by Cleveland Open Cup Tester, and ethanol mixtures with 16% or less ABV with the remainder comprised of materials with hazards not regulated by the Colorado Springs Fire Code shall not be regulated as flammable or combustible liquids.

Ethanol mixtures with greater than 16% ABV and less than or equal to 34% ABV, and the remainder comprised of water and other materials with hazards not regulated by the Colorado Springs Fire Code, shall be classified as a Class IC flammable liquid.

Ethanol mixtures with greater than 34% ABV, and the remainder comprised of water and other materials with hazards not regulated by the Colorado Springs Fire Code shall be classified as Class IB flammable liquid.

3803.3 Occupancy classification. The occupancy classification of use areas and storage areas including grain-handling and bottling/packaging systems and processes shall be classified in accordance with Sections 3803.3.1 through 3803.3.3.

3803.3.1 H-2 occupancy classification. An H-2 occupancy classification shall be assigned to buildings or portions thereof in accordance with Sections 3803.3.1.1 and 3803.3.1.2.

3803.3.1.1 Combustible dust producing operations. ABPFs or portions thereof containing equipment, systems and processes where grains are stored, transferred or milled in such a manner that the confinement conditions and dust concentrations create a fire or explosion hazard shall be in accordance with Chapter 22 and Chapter 50, as amended. The fire code official is authorized to require technical assistance in accordance with Section 104 to establish whether the building or portion thereof is required to be assigned an H-2 occupancy classification and to determine explosion and deflagration hazard reduction criteria.

3803.3.1.2 Flammable liquids. ABPFs and portions thereof with quantities of Class 1 liquids in excess of the maximum allowable quantities (MAQs), that are stored or processed in normally open vessels or systems, or vessels or systems that are pressurized at more than 15 pounds per square inch gauge (psig; 103.4 kPa), or where a Class 1 liquid is released to atmosphere at or above its flash point temperature as part of normal operations shall be assigned an H-2 occupancy classification.

3803.3.2 H-3 occupancy classification. ABPFs and portions thereof with quantities of Class 1 liquids in excess of the MAQs, that are stored or processed in normally closed vessels or systems pressurized to 15 pounds per square inch gauge (psig; 103.4 kPa) or less, shall be classified as H-3 occupancies.

Exception: Quantities of ethanol mixture beverages exceeding the MAQs but packaged in individual containers not exceeding 1.3 gallons (5 L) in volume shall not cause the ABPF or portion thereof to be assigned an H-3 occupancy classification.

3803.3.3 Non-high hazard occupancy classification. Control areas with Class 1 liquids, combustible dust production, or other regulated hazards shall be assigned an occupancy classification in accordance with the Pikes Peak Regional Building Code and Colorado Springs Fire Code according to the fire safety and relative hazard involved.

3803.4 Hazardous materials permit application (HMPA). An HMPA in an approved format is required for all ABPFs requiring an operational permit. It shall contain at a minimum, an HMR, HMMP, process description, fire-safety and evacuation plans, and a storage plan.

3803.4.1 Hazardous materials report (HMR). An HMR in an approved format is required for all facilities using or storing hazardous materials. It shall contain at a minimum, critical personnel contact information, pertinent building construction and occupancy information, and an HMIS.

3803.4.2 Hazardous materials management plan (HMMP). An HMMP shall be submitted through the Colorado Springs Hazardous Materials Management and Emergency Reporting System (HAMMERS).

3803.4.3 Process description. A process description shall be provided in an approved format.

3803.4.4 Emergency Planning. Fire safety and evacuation plans in accordance with Section 404, as amended, shall be prepared and maintained.

3803.4.5 Storage plan. Aisle and storage plans shall be submitted in accordance with Chapter 50, as amended.

3803.4.6 Material Safety data sheets. MSDS shall be readily available on the premises for hazardous materials therein.

3803.4.7 Unauthorized Discharges Preparation. Plans and provisions shall be made for controlling and mitigating unauthorized discharges.

3803.4.8 Personnel training and written procedures. Persons responsible for the operations in Class 1 liquid storage or use areas shall be familiar with the chemical nature of the materials and the appropriate mitigating actions necessary in the event of fire, leak, or spill.

3803.5 Unauthorized discharges. When Class 1 liquids are released in quantities reportable under state, federal or local regulations, the fire code official shall be notified and action shall be taken in accordance with Chapter 50.

3803.6 Construction. The construction of ABPFs shall be in accordance with Sections 3803.6.1 and 3803.6.2.

3803.6.1 General. Special detailed requirements, building heights, allowable areas, construction types, control areas, rated assemblies, finishes, means of egress, accessibility, interior environment, energy efficiency, exterior walls, roofing, structural design, fire service features, building services and systems, and fire and smoke protection shall be in accordance with the Pikes Peak Regional Building Code and Colorado Springs Fire Code for the assigned occupancy classifications and this Chapter.

3803.6.2 Floors. Floors of use areas and storage areas for Class 1 liquids shall be of noncombustible construction. Floor surfacing shall not be reactive with ethanol.

3803.7 Systems, features and components. Systems, features and components shall be provided in accordance with Sections 3803.7.1 through 3803.7.13.

3803.7.1 Deflagration prevention by combustible concentration reduction. Atmospheric concentration of flammable vapors shall be maintained at or below 25% of the LFL, and combustible dusts at or below 25% of the MEC, in all areas of the ABPF or portion thereof where they could collect or migrate. Good housekeeping shall be exercised to prevent accumulation of combustible dust on all exposed surfaces at all levels throughout the building.

Indoor storage and use areas are permitted to be provided with natural ventilation where it can be shown to maintain the atmospheric concentrations at or below 25% of the LFL and MEC for the materials under consideration.

Where natural ventilation is not adequate, Class 1 liquid use areas, storage areas and equipment, machinery, and operations which produce or emit combustible dust, shall be provided with an approved mechanical collection and exhaust system in accordance with Sections 501, 502.1, 502.8, 502.9.5 and 503 of the International Mechanical Code.

Use and storage areas where Class 1 liquid vapor concentrations cannot be maintained at or below 25% of the LFL, or confined enclosures where the concentration of combustible dust cannot be maintained at or below 25% of the MEC, shall be provided hazardous exhaust in accordance with Sections 510 and 511 of the International Mechanical Code.

3803.7.1.1 System requirements. Exhaust ventilation systems shall comply with all of the following:

1. Installation shall be in accordance with the International Mechanical Code.
2. Mechanical ventilation over the storage area or use area shall be at a rate of not less than 1 cubic foot per minute per square foot (cfm/ft^2; 0.00508 cms/m^2)) of floor area.

   Exception: Areas where Class 1 liquids are stored in casks are permitted to be provided with an engineered ventilation system in accordance with International Mechanical Code Chapter 4. The air flow rate shall not be less than the greater of (1) that required to maintain the flammable vapor concentration in the storage area at or below 25% of the LFL, or (2) 0.06 cubic feet per minute per square foot (cfm/ft^2; 0.000305 cms/m^2).

3. Systems shall operate continuously unless alternative designs are approved.
4. A manual shutoff control shall be provided outside of the room in a position adjacent to the access door to the room, or in an approved location. The switch shall be a break-glass or other approved type and shall be labeled, VENTILATION SYSTEM EMERGENCY SHUTOFF.

5. Exhaust ventilation shall be designed to consider the density of the material released. For ethanol vapor, inlet air shall be introduced, and exhaust shall be taken, from a point within 12 inches (305mm) of the floor. For dust, inlet air shall be introduced at a point within 12 inches (305 mm) of the floor and exhaust shall be taken as close to the dust generation source as possible.
6. The location and configuration of both the inlet and exhaust air openings shall be designed to provide air movement across all portions of the floor or room to prevent the accumulation of flammable vapors and suspended dust.
7. Exhaust air shall not be recirculated to occupied areas.

3803.7.2 Spill control and secondary containment. Spill control and secondary containment shall be provided in accordance with Sections 3803.7.2.1 through 3803.7.2.2.

3803.7.2.1 Indoor. Spill control and secondary containment shall be provided for H-2 and H-3 occupancies where:

1. The capacity of any single normally closed process vessel, tank, or system with Class 1 liquids exceeds 55 gallons (208 L);
2. The aggregate capacity of multiple normally closed process vessels, tanks, or systems with Class 1 liquids exceeds 1,000 gallons (3,785 L); or
3. Class 1 liquids are dispensed into or from a normally open process vessel, tank, or system exceeding a 5.3-gallon (20 L) capacity.

3803.7.2.1.1 Design. The drainage system shall be in accordance with the International Plumbing Code and the following:

1. All portions of the drainage system including floors shall be liquid-tight and constructed of noncombustible materials compatible with ethanol.

   Exception: Where approved by the fire code official, and in compliance with federal, state, and local government agencies' regulations and permits, floors of buildings or portions thereof used for the storage of Class 1 liquids in containers exceeding 1.3 gallons (5L) are permitted to be exposed earth. Combustible materials such as tilled organic matter are permitted to be mixed with the dirt provided the mixture is non-combustible

2. The drains and drainage system capacity shall be sized to carry the volumetric flow of water discharged from the automatic sprinkler system without backing up at the drains or pooling to a depth greater than ¼ (6.5mm). The sprinkler coverage area used to calculate the required volumetric flow is permitted to be based on the smaller of (1) the remote area in accordance with NFPA 13 – provided it is located

in the area served by the drains – or (2) the area of the building or portion thereof served by the drains.

Exception: When released onto the ground within a fire area, the volumetric flow of water is permitted to be reduced to account for the percolation into the soil. An engineering analysis shall be provided to establish the reduction.

3. Floors shall slope to drains. Impermeable curbs and floor slope shall be designed to prevent spilled Class 1 liquids and water discharged from the automatic sprinkler system from flowing to adjoining areas. Floor slope shall not be less than 2%.

   Exceptions:

   1. Floors in existing buildings with less than 2% slope are permitted to be used provided they are made liquid-tight and floor sinks are installed as necessary to preclude water discharged from the automatic sprinkler system from pooling in low spots. These sinks shall be installed in addition to the drains required in Item 2 of this section.
   2. Where trench drains or a combination of impermeable curbs and trench drains surround the sprinkler coverage area, the floors shall slope to the drains at a rate of not less than 1%. Where a combination of impermeable curbs and trench drains is used, no less than 50% of the perimeter shall be protected by trench drains.

3803.7.2.2 Outdoor. Secondary containment for outdoor storage areas shall be in accordance with Chapter 50, as amended.

3803.7.3 Occupant and property protection. Occupant and property protection shall be provided in accordance with Sections 3803.7.3.1 through 3803.7.3.4.

3803.7.3.1 Automatic sprinklers. An automatic sprinkler system shall be installed throughout ABPF H-2 and H-3 fire areas in accordance with Sections 3803.7.3.1.1 through 3803.7.3.1.3.

3803.7.3.1.1 Flammable liquids. Sprinkler discharge criteria for Class 1 liquid use areas and storage areas in ABPFs or portions thereof shall be in accordance with NFPA 30 but shall not be less than that required in accordance with NFPA 13 for Ordinary Hazard Group 2 with a minimum design area of 3,000 square feet (279 m^2).

Exception: H-2 and H-3 occupancies with storage of Class 1 liquids in casks shall be protected by a sprinkler system designed for Extra Hazard 2 in accordance with NFPA 13, or by an approved engineered design.

3803.7.3.1.2 Combustible dust producing operations. Automatic sprinkler protection criteria for H-2/combustible dust producing operations shall be determined in accordance with Section 3803.2.1.1.

3803.7.3.1.3 Non-high hazard occupancies. Sprinkler discharge criteria for ABPFs or portions thereof not classified as a division of the high-hazard occupancy classification and where Class 1 liquids are not present in quantities or conditions required to be regulated by NFPA 30 or this chapter, shall be in accordance with NFPA 13.

3803.7.3.2 Sprinkler system supervision and alarms. Automatic sprinkler systems shall be electrically supervised in accordance with Section 903.4, as amended. Audible and visible occupant notification upon activation of water flow shall be provided in accordance with Section 907.5, as amended, throughout all areas with automatic sprinkler protection.

3803.7.3.3 Emergency alarm. In addition to automatic sprinkler system flow detection and all fire safety functions required by other sections of this code, an approved emergency alarm system in accordance with Section 5009.4 shall be provided in H-2 and H-3 occupancies.

3803.7.3.4 Portable fire extinguishers. Portable fire extinguishers shall be provided in accordance with Section 906 and NFPA 10 for the hazard present.

3803.7.4 Electrical. Electrical wiring, equipment and systems shall be installed and maintained in accordance with NFPA 70 and Section 605 and Sections 3803.7.4.1 through 3803.7.4.4.

3803.7.4.1 Classified electrical equipment. Classified electrical equipment per NFPA 70 (NEC) shall be installed in accordance with Section 5703.1.1 in areas where it cannot be justified to the fire code official during design review, and subsequently demonstrated on annual inspections, that an atmospheric concentration at or below 25% of the LFL or MEC can be maintained.

A classified area shall not be required to extend beyond an unpierced floor, roof or other solid partition that prevents the migration of liquids, vapors and dust.

3803.7.4.1.1 Stills. Electrical equipment attached to or part of stills in H-2 or H-3 occupancies shall be Class 1, Division 1 in accordance with NFPA 70.

3803.7.4.1.2 Electric motors. Electric motors located 8 feet (2438 mm) or less from any edge of equipment where Class 1 liquid vapor/air mixtures could exist under normal operations and 3 feet (914 mm) or less above the floor or grade level within 25 feet (7620 mm) horizontally from any equipment with Class 1 liquids shall be considered Class 1, Division 2 in accordance with NFPA 70.

3803.7.4.1.3 Other applications. The fire code official is authorized to determine the extent of the Class 1 electrical equipment and wiring location when a condition is not specifically covered by this chapter, Section 5703.1.1 or NFPA 70.

3803.7.4.1.4 Industrial trucks. Power industrial trucks used in areas designated as classified electrical locations in accordance with Section 3803.6.4.1 shall be listed and labeled for use in the intended environment in accordance with NFPA 505.

3803.7.4.2 Grounding. Equipment used for grain or Class 1 liquids shall be electrically connected in accordance with NFPA 70 and NFPA 77, and Sections 3803.7.4.2.1 and 3803.7.4.2.2 to prevent the accumulation of static electricity and sparking.

3803.7.4.2.1 Conveyance equipment. All conveyance equipment including that used for grain or Class 1 liquid transfer shall be electrically connected by bond wires, ground cables, piping or similar means to a static grounding system. Conveyor belts shall be electrically conductive and equipped with static eliminators.

Nozzles and vessels used for the transfer of Class 1 liquids shall be electrically interconnected by:

1. Metallic floor plates on which vessels stand while filling, when such floor plates are electrically connected to the fill stem; or
2. Where the fill stem is bonded to the container during filling by means of a bond wire.

Exceptions:

1. Vats or casks without internal metal or plastic components that could hold a potential difference.
2. Equipment used in post bottling operations such as packaging and box storage shall be grounded in accordance with standards applicable to that equipment and industry practice.

3803.7.4.2.2 Storage equipment. Plastic and metal grain storage bins or silos and Class 1 liquid stationary tanks that are drawn down and refilled on a regular basis or are otherwise subjected to processes that could create an electric potential difference and sparking, shall be grounded.

3803.7.4.3 Lightning protection. Lightning protection in accordance with NFPA 780 shall be provided on an H-2 occupancy; on miscellaneous structures with a combustible dust production hazard due to the storage, handling, or processing of grains; and on H-2 occupancies with a still having a 750 gallon (2839L) or larger capacity, or aggregate storage of Class 1 flammable liquids, in containers exceeding 1.3 gallons, (5L), of 7,800 gallons (29,526L) or greater.

3803.7.4.4 Standby or emergency power. Where mechanical ventilation, treatment systems, limit controls, alarm, detection or other electrically operated systems are required, such systems shall be provided with an emergency or standby power system in accordance with NFPA 70 and Section 604.1, as amended.

Exception: Standby power for mechanical ventilation and limit control systems shall not be required where an approved fail-safe engineered system is installed.

3803.7.5 Location of stills and vessels. Stills and vessels in Class 1 liquid use areas shall be located with respect to the lot lines of adjoining property which can be built on, in accordance with Tables 5703.4(1) and 5703.4(2).

Exceptions:

1. Where the explosive facing the adjoining lot line is without openings, has a fire-resistance rating of not less than 2 hours, and the ABPF is protected throughout with an automatic sprinkler system in accordance with Section 3803.7.3.1, the fire code official is authorized to reduce the minimum separation distances to not less than 1 foot (305 mm), or the minimum separation distances required by other provisions of the Pikes Peak Regional Building Code and Colorado Springs Fire Code, whichever is greater.
2. Where the capacity of the largest still or vessel within the minimum separation distance is 250 gallons (946 L) or less, the aggregate volume of all stills and vessels within the minimum separation distance is 750 gallons (2839 L) or less, the normal operating pressure of all vessels within the minimum separation distance is 2.5 psig (17.2 kPa) or less, and the ABPF is protected throughout with an automatic sprinkler system in accordance with Section 3803.7.3.1, the minimum separation distance to lot lines is permitted to be 1 foot (305 mm), or the minimum separation distances required by other provisions of the Pikes Peak Regional Building Code and Colorado Springs Fire Code, whichever is greater.

3803.7.6 Security. Class 1 liquid use and storage areas shall be secured against unauthorized entry and safeguarded in an approved manner.

3803.7.7 Protection from vehicles. Bollards in accordance with Section 312 or other approved means shall be provided to protect all vessels, stills, and piping which handle Class 1 liquids and are subject to vehicular and/or industrial truck damage.

3803.7.8 Labeling and signage. When a permit is required in accordance with Section 105, visible hazard identification markings, labels, signs and placards shall be placed on vessels and process piping used for Class 1 liquids, and in Class 1 liquid storage areas, use areas and combustible dust production areas, and at the

entrances thereto in accordance with applicable federal, state, and standards regulations, Sections 3803.7.8.1 through 3803.7.8.6, Chapters 50 and 57, as amended, and NFPA 704, or as approved. Content shall be in English, symbols permitted by this code and referenced standards, or both. Placards shall be in accordance with NFPA 704. The fire code official is authorized to require additional signs and placards at specific entrances and locations. Markings, labels, signs, and placards shall not be obscured or removed.

Exception: Casks are not required to be labeled.

3803.7.8.1 Warning signs. Warning signs shall be of a durable material, have a yellow background with black text or symbols, and shall convey the danger being identified. Warning sign text shall not be less than 3 inches (76 mm) in height with a 5/8 inch (15 mm) stroke.

3803.7.8.2 Information signs. Information signs shall be of a durable material, have a blue background with white text or symbols, or a white background with blue text, and shall convey the information required. Information sign text shall not be less than 3 inches (76 mm) in height with a 5/8 inch (15 mm) stroke.

Exception: Where otherwise specified by applicable regulations or standards.

3803.7.8.3 Location. Placards shall be located in accordance with NFPA 704 and shall be provided on the outside of each interior exit or exit access door in the fire barrier walls separating the H-2 or H-3 occupancies, and in the exterior walls surrounding the H-2 or H-3 occupancies.

3803.7.8.4 Piping. Piping and tubing conveying flammable or combustible liquids between vessels including heat transfer fluids shall be identified in accordance with ASME A13.1 to indicate the material conveyed.

3803.7.8.5 Individual containers, packages and cartons. Individual containers, intermediate bulk containers, packages and cartons shall be conspicuously identified in accordance with federal regulations and applicable state laws.

3803.7.8.6 Tank marking. Every tank shall bear a permanent nameplate or marking indicating the standard used as the basis of design. Stationary tanks more than 100 gallons (379 L) in capacity used for the storage of Class 1 liquids shall bear a warning sign and placard in accordance with Section 3803.7.8 corresponding to the material therein.

Exception: Vats.

3803.7.9 Sources of ignition. Control of sources of ignition shall be in accordance with Sections 3803.7.9.1 and 3803.7.9.2.

3803.7.9.1 Smoking. Smoking areas shall be in accordance with Section 310 and shall be prohibited in Class 1 liquid storage or use areas and in combustible dust

production areas. No Smoking warning signs in accordance with Section 310.3 shall be provided in such areas and at all entrances to them.

Exception: Where permitted, designated smoking areas shall be separated from Class 1 liquid storage and use areas and combustible dust production areas by a minimum of 25 feet (7620 mm) and shall be clearly identified with information signs in accordance with Section 3803.7.8.

3803.7.9.2 Open flames. Open flames including barrel charring operations, and devices operating at temperatures above 680°F (360°C) are prohibited throughout fire areas containing Class 1 liquid storage or use areas or combustible dust production areas.

Exceptions:

1. Designated smoking areas.
2. Areas where hot work permits have been issued in accordance with this Section 105.
3. Listed and labeled gas fired or electric unit heaters installed in accordance with the International Mechanical Code, International Fuel Gas Code and NFPA 70, located more than eight feet (2438 mm) from any edge of equipment where Class 1 liquid vapor/air mixtures could exist under normal operations and more than three feet (914 mm) above the floor or grade level within 25 feet (7620 mm) horizontally from any equipment with Class 1 liquids.

3803.7.10 Separation of incompatible materials. Incompatible materials shall be separated in accordance with Section 5003.9.8.

3803.7.12 Protection from corrosion. Machinery, piping, tanks, process vessels, and containers storing, using or conveying Class 1 liquids shall be protected in accordance with Sections 3803.7.12.1 and 3803.7.12.2.

3803.7.12.1 Protection from external corrosion and galvanic action. Where subject to external corrosion or galvanic action, machinery, piping, tank, process vessel, and container holding or conveying Class 1 liquids shall be fabricated from noncorrosive materials or provided with corrosion protection. Dissimilar metallic parts subject to galvanic action shall not be joined.

3803.7.12.2 Chemical protection. Machinery, piping, tank, process vessel, and container materials used for Class 1 liquids shall be protected from all chemicals to which they are exposed including ethanol. Clean-in-place (CIPs) fittings shall be compatible with the cleaning agents used on the vessels and piping to which they are attached. Tank lining shall be in accordance with Section 3804.1.2.6.

3803.7.13 Limit controls. Limit controls shall be provided in accordance with Sections 3803.7.13.1 through 3803.7.13.3.

3803.7.13.1 Pressure control. Machinery, piping, tanks, vessels, and stills containing or conveying Class 1 liquids shall be designed for the pressures they will be subjected to in accordance with applicable standards. Machinery, piping, tanks, containers, processing vessels, and stills containing or conveying Class 1 liquids that can generate pressures exceeding design limits because of exposure fires or internal reaction shall have an approved means to relieve excessive positive and negative internal pressure. Vents provided to relieve excessive positive pressure shall discharge to an approved location.

3803.7.13.2 High-liquid-level control. Stationary tanks and process vessels with Class 1 liquids having a capacity greater than 500 gallons (1893 L) shall be equipped with a device or other means to prevent overflow into the building including, but not limited to a float valve, preset meter on the fill line, valve actuated by the weight of the tank's contents, low-head pump incapable of producing overflow, or a liquid-tight overflow pipe at least one pipe size larger than the fill pipe and discharging by gravity back to an approved location.

Exception: Liquid-level sight gauges or other approved manual means to determine fill level are permitted where the use area or storage area is small enough that the stationary tank or process vessel is effectively under constant observation during filling operations.

3803.7.13.3 Low-liquid-level control. Approved safeguards shall be provided to prevent a low-liquid level in stationary tanks, processing vessels and stills from creating a hazardous condition, including but not limited to overheating.

3803.7.14 Handling and transportation. Containers, portable tanks, and casks holding more than 5 gallons (19 L) of Class 1 liquids being transported in a corridor or enclosed exit shall be on a cart or truck in accordance with Sections 5003.10.2 and 5003.10.3.

SECTION 3804
EQUIPMENT

3804.1 General. Equipment utilized for the production, storage, dispensing, blending or handling of Class 1 liquids shall be listed or approved and shall be in accordance with Sections 3804.1.1 through 3804.1.4.4.2.

3804.1.1 Piping systems. Piping systems for conveying Class 1 liquids including piping, tubing, valves, pumps, and fittings shall be designed, installed, and maintained in accordance with Sections 3804.1.1.1 through 3804.1.1.7, Section 5703.6, as amended, and ASME B31. The use of other standards is permitted when approved.

3804.1.1.1 Component design and construction. Piping, tubing, hoses, valves, fittings and related components conveying Class 1 liquids shall be in accordance with the following:

1. Piping, tubing, hoses, valves, pumps, fittings and related components shall be designed and fabricated from materials of adequate strength and durability to withstand the structural and environmental conditions to which they are subjected.
2. Piping, tubing, hoses, valves, pumps, fittings and related components used in liquid transfer operations shall be approved or listed for the intended use.
3. Where provided, in-line flame arresters in piping systems shall be installed and maintained in accordance with their listing or API 2028.
4. Where Class 1 liquids are carried in piping pressurized above 15 pounds per square inch gauge (psig; 103 kPa), an approved means of leak detection shall be provided.

   Exception: Piping for overpressure relief devices.

3804.1.1.2 Piping supports. Piping systems shall be substantially supported and protected against physical damage and excessive stresses arising from seismic activity, settlement, vibration, expansion and contraction. Piping supports shall be protected against exposure to fire by:

1. Draining spilled liquid away from the piping support system at a minimum slope of not less than 2%;
2. Providing protection with a fire-resistance rating of not less than 2 hours; or
3. Other approved methods.

3804.1.1.3 Pipe joints. Pipe joints shall be in accordance with Sections 5703.6.9 and 5703.6.10.

Exception: Where located in concealed spaces within buildings, joints in piping systems used to convey Class 1 liquids shall be welded.

3804.1.1.4 Valves. Piping systems with and without pumps shall contain a sufficient number of manual-control, auto-control, and check valves to properly control the flow of Class 1 liquids; in normal operation, in the event of physical damage, or the condition of fire exposure, and shall be in accordance with the following:

1. Readily accessible manual valves, automatic remotely-activated fail-safe emergency shutoff valves, or excess flow control shall be installed on gravity-fed supply piping and tubing and in systems pressurized above 15 pounds per square inch gauge (psig; 103 kPa) as close to the source as practical.
2. Manual emergency shutoff valves and controls for remotely activated emergency shutoff valves shall be clearly visible and readily accessible. Information signage in accordance with Section 3803.7.8 shall be provided identifying the emergency shutoff valves and controls.

3. Backflow prevention or check valves shall be provided when backflow could create a hazardous condition or cause an unauthorized discharge.

3804.1.1.5 Pumps. Solid or liquid fueled pumps are not permitted in Class 1 liquid use areas or storage areas.

Exception: Fire pumps shall be separated from Class 1 liquid use areas and storage areas by 2-hour fire-resistance rated fire barriers in accordance with International Building Code Section 707.

Positive-displacement pumps shall be provided with pressure relief discharging back to the vessel, pump suction or other approved location, or shall be provided with interlocks to prevent over-pressure.

3804.1.1.6 Pressurized transfer systems. Gases introduced to provide for transfer of Class 1 liquids shall be inert. Controls, including pressure relief devices, shall be provided to limit the pressure so the maximum working pressure of vessels cannot be exceeded. Where devices operating through pressure within a tank, intermediate bulk container, or container are utilized, the tank, intermediate bulk container, or container shall be a pressure vessel approved for the intended use.

3804.1.1.7 Maintenance. Piping and appurtenances shall be maintained in a safe operating condition and in accordance with their applicable listings and standards. Damage to piping or appurtenances shall be repaired using materials having equal or greater strength and fire resistance or the equipment shall be replaced, taken out of service, repaired or disposed of in an approved manner. The repair, alteration or reconstruction, including welding, cutting and hot tapping of piping that has been placed in service, shall be in accordance with NFPA 30.

3804.1.2 Vessels. The design and construction of vessels for Class 1 liquids shall comply with the applicable Sections 3804.1.2.1 through 3804.1.2.13.4 and NFPA 30, or shall be of an approved type. Pressure vessels shall comply with the ASME Boiler and Pressure Vessel Code.

3804.1.2.1 Underground storage of Class 1 liquids. Underground storage of Class 1 liquids in tanks shall comply with Chapters 50 and 57, as amended. Vaults shall be in accordance with Chapter 57, as amended. Underground storage of Class I liquids in other vessels is prohibited.

3804.1.2.2 Outdoor storage of Class 1 liquids. Outdoor storage shall be in accordance with Chapters 50 and 57, as amended.

3804.1.2.3 Tank vehicles and tank cars. Tank vehicles and tank cars shall not be used as storage or processing vessels.

3804.1.2.4 Design of supports. The supporting structure for stationary tanks and portable tanks with capacity greater than 660 gallon (2498 L) shall be designed in accordance with the International Building Code and NFPA 30.

3804.1.2.5 Locations subject to flooding. Where a portable tank or intermediate bulk container with capacity in excess of 660 gallons (2498 L), or a stationary tank is located in an area where it is subject to a rise in the water table, flooding or accumulation of water from fire suppression operations, uplift protection shall be provided in accordance with NFPA 30.

3804.1.2.6 Tank lining. Steel stationary tanks and steel portable tanks with capacity greater than 660 gallon (2498 L) are permitted to be lined only for the purpose of protecting the interior from corrosion or providing compatibility with a material to be stored. Only those liquids tested for compatibility with the lining material are permitted to be stored in lined tanks.

3804.1.2.7 Manual drainage. Manual drainage control valves shall be provided on stationary tanks and portable tanks with capacity greater than 660 gallon (2498 L). Manual drainage control valves on stationary tanks shall be located at approved locations remote from the tanks to ensure their operation in a fire condition.

3804.1.2.8 Connections. Filling and emptying connections to vessels shall be provided with liquid-tight caps, covers, plugs, or valves which shall be closed when not in use.

Connections located below normal Class 1 liquid levels in stationary tanks with capacity of 500 gallons (1893 L) or more shall be provided with internal or external isolation valves located as close as practical to the shell of the tank.

3804.1.2.9 Materials used in tank construction. The materials used in tank construction shall be in accordance with NFPA 30.

3804.1.2.10 Separation between adjacent tanks. The separation between stationary tanks containing Class 1 liquids shall be in accordance with NFPA 30.

Exceptions:

1. Where a group of no more than 4 stationary tanks are aligned in a single row, the minimum separation distance between tanks is permitted to be reduced to 18 (457 mm) provided no single tank is over 960 gallons (3634 L) and clear access of 3 feet (914 mm) is provided around the group.
2. Where stationary tanks are in the drainage path of Class 1 liquids, and are compacted in three or more rows or in an irregular pattern, the fire code official is authorized to require greater separation than specified in NFPA 30 or other means to make tanks in the interior of the pattern accessible for emergency response including firefighting purposes.

3804.1.2.11 Maintenance. Vessels and their appurtenances shall be maintained in a safe operating condition in accordance with their listings, applicable standards, and industry practice. Damage and malfunctions shall be repaired using materials having equal or greater strength and fire protection system. Vessels leaking Class 1 liquids shall be promptly emptied, repaired and returned to service. Stationary tanks not returned to service shall be abandoned in accordance with Section 5704.2.13, or removed in accordance with Section 5704.2.14.

3804.1.2.12 Vent lines. Portable tanks with a storage capacity of 660 gallons (2498 L) or more and stationary tanks shall be provided with normal and emergency vents in accordance with Sections 3804.1.2.12.1 through 3804.1.2.12.5 to relieve positive and negative pressures such as those created from filling and draining.

Vent lines shall not be used for purposes other than venting unless approved.

3804.1.2.12.1 Installation of vent piping. Vent pipes shall be designed, sized, constructed and installed in accordance with Sections 5703.6, as amended, 5704.2.7.3 and 5704.2.7.4. Vent pipes shall be installed to drain toward the tank without sags or traps in which liquid can collect. Vent pipes shall be protected from physical damage and vibration.

3804.1.2.12.2 Vent-line flame arresters and pressure-vacuum vents. Normal vents shall be equipped with vent-line flame arresters and pressure-vacuum vents in accordance with Section 5704.2.7.3.2.

3804.1.2.12.3 Vent pipe outlets. To facilitate atmospheric dispersion, vent outlets shall be located so vapors are released at a safe point outside of buildings, directed upward or horizontally away from adjacent walls so vapors will not be trapped by eaves or other obstructions. Vent outlets shall not be less than 12 feet (3658 mm) above the finished ground level and shall not be less than 5 feet (1524 mm) from building openings or lot lines of properties that can be built upon.

3804.1.2.12.4 Manifolding. Subject to approval, vent pipes are permitted to be manifolded only for special purposes such as vapor recovery, vapor conservation or air pollution control. Manifolded vent pipes shall be adequately sized to prevent system pressure limits from being exceeded when manifolded tanks are subject to the same fire exposure.

3804.1.2.12.5 Emergency venting. Tanks shall be equipped with additional venting that will relieve rapid overpressure due to fire. Emergency vents shall not discharge inside buildings. The venting shall be installed and maintained in accordance with NFPA 30.

3804.1.2.13 Vessel openings other than vents. Vessel openings other than vents shall comply with Sections 3804.1.2.13.1 through 3804.1.2.13.4

3804.1.2.13.1 Filling and emptying connections. Filling and emptying connections to stationary tanks shall be properly identified in accordance with Section 3803.7.8.

3804.1.2.13.2 Fill pipes and discharge lines. For top-loaded stationary tanks and portable tanks with capacity greater than 660 gallons (2498 L), a metallic fill pipe shall be designed and installed to minimize the generation of static electricity by terminating the pipe within 6 inches (152 mm) of the bottom of the tank. It shall be installed in a manner which avoids excessive vibration.

3804.1.2.13.3 Manual gauging. Vessel openings for manual gauging, if independent of the fill pipe, shall be provided with a liquid-tight cap, cover, or plug. Covers shall be kept closed when not gauging. Such openings shall be protected against liquid overflow and possible vapor release by means of a spring-loaded check valve or other approved device.

3804.1.2.13.4 Protection against vapor release. Tank openings provided for purposes of vapor recovery shall be protected against possible vapor release by means of a spring-loaded check valve or dry-break connection, or other approved vapor-tight device. Openings designed for combined fill and vapor recovery shall be protected against vapor release.

Exceptions:

1. Where the opening is a pipe connected to a vapor processing system.
2. Where connection of the liquid delivery line to the fill pipe simultaneously connects the vapor recovery line.

3804.1.3 Stairs, platforms and walkways. Stairs, platforms and walkways installed to facilitate access to vessels, storage, pipes, and process equipment utilizing, conveying, or storing Class 1 liquids shall be noncombustible and designed and constructed in accordance with NFPA 30 and the International Building Code.

3804.1.4 Testing. Equipment, devices and systems utilizing, conveying, or storing Class 1 liquids shall be tested in accordance with Sections 3804.1.4.1 through 3804.1.4.4.2.

3804.1.4.1 Piping systems. Before being covered, enclosed or placed in use, piping shall be hydrostatically tested to 150% of the maximum anticipated pressure of the system, or pneumatically tested to 110% of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch gauge (psig; 34.5 kPa) at the highest point of the system. This test shall be maintained for a sufficient time period to complete visual inspection of joints and connections. For a minimum of 10 minutes, there shall be no leakage or

permanent distortion. Storage tanks shall be tested independently from the piping.

Exception: Piping tested in accordance with the applicable section of ASME B31.9.

3804.1.4.1.1 Existing piping. Existing piping shall be tested in accordance with this section when the fire code official has reasonable cause to believe a leak exists. Piping used for Class 1 liquids shall not be tested pneumatically.

Exception: Vapor-recovery piping is permitted to be tested using an inert gas.

3804.1.4.2 Tanks. Prior to being placed into service, tanks shall be tested in accordance with NFPA 30.

3804.1.4.3 Safety systems. Automatic sprinkler systems, automatic sprinkler system monitoring, fire alarm systems, all limit controls, and all other fire- and life-safety systems shall pass the commissioning or acceptance tests in accordance with their respective design, installation, and testing standards prior to occupancy and use of the facility. Emergency alarms and limit-control monitoring shall be tested in accordance with NFPA 72.

3804.1.4.4 Periodic testing. Equipment and safety systems shall be periodically tested in accordance with Sections 3804.1.4.4.1 and 3804.1.4.4.2. Written records of the tests conducted or maintenance performed shall be maintained in accordance with the provisions of Section 107.

Exceptions:

1. Periodic testing shall not be required when approved written documentation is provided substantiating testing will damage the equipment, device or system and the equipment, device or system is maintained as specified by the respective manufacturer.
2. Periodic testing shall not be required when the equipment and systems are utilized routinely as part of normal operations and maintained in good operating condition.
3. Periodic testing shall not be required for equipment, devices and systems that fail in a fail-safe manner.
4. Periodic testing shall not be required for equipment, devices and systems that self- diagnose and report trouble. Records of the self-diagnosis and trouble reporting shall be made available to the fire code official upon request.
5. Periodic testing shall not be required if system activation occurs during the required test cycle for the components activated during the test cycle.
6. Approved maintenance in accordance with Section 5003.2.9 that is performed not less than annually or in accordance with an approved

schedule shall be permitted to meet the testing requirements set forth in Sections 5003.2.9.1 and 5003.2.9.2.

3804.1.4.4.1 Equipment. The following equipment shall be tested periodically:

1. Piping
2. Limit controls required by Section 3803.7.13

3804.1.4.4.1.1 Testing frequency. The equipment listed in Section 3804.1.4.4.1 shall be tested at one of the frequencies listed below:

1. Not less than annually;
2. In accordance with the approved manufacturer's requirements;
3. In accordance with approved recognized industry standards; or
4. In accordance with an approved schedule.

3804.1.4.4.2 Safety systems. Safety systems listed in Section 3804.1.4.3 shall be periodically tested in accordance with their design, installation and testing standards.

3804.2 Storage and use areas. Storage and process operations shall be in accordance with the Pikes Peak Regional Building Code and Colorado Springs Fire Code and Sections 3804.2.1 through 3804.2.3.3.

3804.2.1 Storage areas. Storage of Class 1 liquids shall be in accordance with Sections 3804.2.1.1.through 3804.2.1.4, Chapter 32, as amended, and NFPA 30.

3804.2.1.1 General. Storage of vessels in closely packed piles, on pallets, in racks, or on shelves shall be in accordance with Sections 3804.2.1.1.1 through 3804.2.1.1.3.

3804.2.1.1.1 Basement storage. Storage in excess of the MAQs is prohibited in basements.

3804.2.1.1.2 Limited combustible storage. Limited quantities of Class I through IV commodities are permitted to be stored in the same non-separated area, room, or building as Class 1 liquids provided the combustibles, other than those used for packaging the Class 1 liquids, are separated from the Class 1 liquids in storage by a minimum of 8 feet (2438mm) horizontally either by open aisles, open racks, or racks filled with noncombustible commodities.

3804.2.1.1.3 Shelf storage. Shelving shall be of substantial construction, and shall be braced and anchored in accordance with the seismic design requirements of the International Building Code. Shelving, chocks, scuff boards, floor overlay and similar installations shall be of noncombustible construction or of wood not less than a 1-inch (25 mm) nominal thickness; treatments, coatings and construction materials shall be compatible with

ethanol. Shelves shall be provided with a lip or guard when used for the storage of individual containers or casks.

Exception: Storage in flammable liquid storage cabinets specifically designed for such use.

3804.2.1.1.4 Separation and aisles. Aisles shall be provided in storage areas such that all storage vessels are located no more than 20 feet (6096 mm) horizontally from a main aisle or access aisle. Main aisles shall be a minimum of 8 feet (2438 mm) wide in high piled combustible storage areas and a minimum of 4 feet wide in non-high piled combustible storage areas. Access aisles shall be a minimum of 4 feet (1219 mm) wide in high piled combustible storage areas and a minimum of 44 inches (1118 mm) wide in non-high piled combustible storage areas. Aisles utilized for manual stocking, separation between piles, separation between adjacent rows of racks, and separation between racks and adjacent pile storage shall be main aisles or access aisles.

Aisles utilized for mechanical stocking shall be main aisles. All piles including palletized storage shall border a main aisle on a minimum of one side or end. Additional aisles shall be provided for access to doors, required windows and ventilation openings, standpipe connections, fire extinguishers, mechanical equipment and switches. Such aisles shall be at least a minimum of 3 feet (914 mm) in width.

A single aisle is permitted to serve multiple functions provided its minimum width is the largest of the widths required for the functions served.

3804.2.1.1.5 Material handling equipment. Material handling equipment shall be suitable to manipulate vessels at the highest tier level.

3804.2.1.1.6 Housekeeping. Storage shall be maintained in an orderly manner.

3804.2.1.1.7 Dunnage, scuff boards, floor overlay. Dunnage, scuff boards, floor overlay and similar installations shall be of noncombustible construction or of wood not less than a 1-inch (25 mm) nominal thickness.

3804.2.1.1.8 High piled combustible storage. Storage of vessels in closely packed piles, on pallets, in racks, or on shelves, where the top of storage is greater than 6 feet (1829mm) in height, shall be considered high piled combustible storage. Where applicable requirements in Chapter 32, as amended, are in conflict with those in Section 3804.2.1, the more restrictive shall govern.

3804.2.1.3 Pile storage. Pile storage including palletized storage shall be in accordance with Sections 3804.2.1.3.1 through 3804.2.1.3.2.2.

3804.2.1.3.1 Stabilizing and supports. Intermediate bulk containers, containers, and portable tanks storing flammable and combustible liquids shall be stored in accordance with NFPA 30. Horizontally oriented casks stored in piles shall be supported by stackable racks or cradles of substantial construction designed for that purpose. Lateral bracing shall be provided for horizontally oriented casks stored in piles where the height of the pile exceeds three times the least dimension of the base rack or cradle. Storage height of horizontally oriented casks in this configuration shall not exceed the lesser of the rack manufacturer's recommendations or industry standards.

Exceptions:

1. Where the collapse strength of the casks on the lowest tier is not exceeded, palletized storage of vertically oriented casks are permitted to be stacked to a height of four tiers where the casks are bound together in a square pattern groups of no less than four, by a steel band or other approved binding.
2. Where the collapse strength of the casks on the lowest tier is not exceeded, palletized storage of vertically oriented casks are permitted to be stacked to a height of six tiers where the casks are bound together in a square pattern in groups of no less than nine, by a steel band or other approved binding.
3. Where the collapse strength of the casks on the lowest tier is not exceeded, an engineered overturning analysis shall be provided demonstrating stability in accordance with the International Building Code for storage configurations other than permitted in Exceptions 1 and 2.

3804.2.1.3.2.2 Idle combustible pallets. Storage of idle wood pallets shall be limited to a maximum pile size of 2,500 square feet (232 m^2) and to a maximum storage height of 6 feet (1829 mm). Storage of idle plastic pallets shall be in accordance with Section 3206.4.1.1 and as limited by the capacity of the automatic sprinkler system in accordance with NFPA 13. Pallet storage shall be separated from liquid storage by aisles that are a minimum of 8 feet (2438 mm) wide.

3804.2.1.4 Portable tank, intermediate bulk container, and container storage. Portable tanks and intermediate bulk containers containing flammable and combustible liquids stored over one tier in height shall be designed to nest securely without dunnage. Stacked containers shall be separated by pallets or dunnage to provide stability and to prevent excessive stress to container walls. The storage height and configuration shall be in accordance with NFPA 30.

3804.2.2 Grain storage. Grain storage shall be in accordance with Section 3803.3.1.1.

3804.2.3 Use areas. Use areas for Class 1 liquids in amounts exceeding the MAQ shall be in accordance with Sections 3804.2.3.1 through 3804.2.3.3.

3804.2.3.1 General. Systems shall be suitable for the use intended and shall be designed by persons competent in such design. Controls shall be designed to prevent materials from entering or leaving the process or reaction system at other than the intended time, rate or path. Where failure of an automatic control could result in a dangerous condition or reaction, the automatic control shall be fail-safe. Use areas with Class 1 liquids in excess of the MAQs are prohibited in basements.

3804.2.3.2 Non-listed appliances. Stills where internal operating vapor pressures normally exceed 2.5 psig (103.4 kPa) or could potentially exceed 2.5 psig (103.4 kPa) due to failures in operating methods such as clogged head packing or other materials held on column plates shall be provided with a listed pressure relief valve piped to discharge to the exterior in an approved location.

Exception: Stills listed for operation above 2.5 psig (103.4 kPa) and, where approved, stills constructed in accordance with the ASME Boiler and Pressure Vessel Code.

3804.2.3.3 Class 1 Liquid transfer. Class 1 liquids shall be transferred by one of the following methods:

1. From safety cans in accordance with NFPA 30.
2. Through an approved closed piping system.
3. From vessels by an approved pump taking suction through an opening in the top of the vessel.
4. By gravity from a tank, intermediate bulk container, or container provided with one of the following:
   a. An approved self-closing or automatic-closing valve.
   b. Spill control and secondary containment of the receiving vessel, designed to contain 110% of the capacity of the dispensing tank.
5. Approved engineered liquid transfer systems.

Exception: Liquids transferred from containers not exceeding a 5.3-gallon (20 L) capacity.

SECTION 3805
EXISTING FACILITIES

3805.1 Applicability. In lieu of meeting requirements to Sections 3804 through 3805, existing facilities in operation at the adoption of this chapter may not be made to comply with Sections 3805 until Jan 1, 2023.

3805.2 Material classification. Hazard classifications of ethanol mixtures shall be in accordance with 3803.2.

3805.3 Occupancy classification. The occupancy classification of use and storage areas including grain-handling and bottling/packaging systems and processes shall be

allowed to maintain their existing occupancy classifications, unless otherwise specified by the fire code official and/or the Pikes Peak Regional Building Department.

3805.4 Hazardous materials permit application (HMPA). An HMPA shall be provided per 3803.4.

3805.5 Unauthorized discharges. Unauthorized discharges shall be regulated by 3803.5.

3805.6 Spill control. Provisions shall be made to drain any Class I flammable liquids away from underneath barrel storage racks.

3805.7 Separation of ignition sources. Provisions shall be made to separate any sources of ignition away from the stills and/or barrel storage per Chapter 50.

Section 39. Add new Chapter 39 Extraction Operations as follows:

CHAPTER 39 EXTRACTION AND GROW OPERATIONS

SECTION 3901
GENERAL

3901.1 Scope. This section shall apply to all existing and new buildings, occupancies, spaces, and areas engaging in plant-based extraction activities. These occupancies shall comply with this chapter and other applicable provisions of this Code.

3901.2 Permits. Permits shall be required as set forth in Section 105.

3901.3 Existing Operations. The provisions found in this chapter shall apply to all existing occupancies containing extraction operations.

SECTION 3902
DEFINITIONS

3902.1 Definitions. The following terms are defined in Chapter 2.

CHEMICAL FUME HOOD

EXTRACTION

POST OIL PROCESSING

SECTION 3903
EXTRACTION OPERATIONS

3903.1 Construction requirements.

3903.1.1 Location. Extraction processes shall be performed in a room dedicated to the extraction process. Such rooms shall meet all building occupancy requirements of an F-1 per the Pikes Peak Regional Building Code and the Colorado Springs Fire Code.

3903.1.2 Egress. All exit access doorways leading from the extraction room shall swing in the direction of egress and be provided with panic hardware where hazardous materials are used in the extraction process.

3903.1.3 Extraction rooms. Extraction rooms shall be fully enclosed. The floor, ceiling, and walls of extraction rooms shall be constructed with a minimum of 1-hour rated construction in accordance with the Pikes Peak Regional Building Code.

Exception: Enclosed booths constructed in accordance with Section 2404.

3903.1.4 Penetrations. Openings and penetrations into extraction rooms shall only be provided for egress, mechanical, electrical, or plumbing systems serving the extraction room. Penetrations shall be sealed in accordance with applicable provisions of the Pikes Peak Regional Building Code.

3903.1.5 Extraction room lighting. Lighting inside the extraction room shall comply with Section 3903.2.2 and be installed in accordance with the NFPA 70 as Class 1, Division1 location.

3903.1.6 Fire protection. Extraction rooms, booths, or hoods, including ductwork where required for hazardous exhaust systems, shall be protected by an approved automatic fire-extinguishing system complying with Chapter 9 where any of the following exist:

1. Extraction processes utilizing flammable and/or combustible materials, or off gassing flammable vapors from spent plant material or oil.
2. Vapors are released exceeding 25% of the lower flammable limit from flammable liquid extraction processes or flammable liquid post oil processing.

3903.2 Sources of ignition. Extraction or post oil processing operations which use flammable and/or combustible materials shall comply with Sections 3903.2.1 through 3903.2.3.

3903.2.1 Open flame and sparks. Smoking, open flames, direct fired heating devices, etc. shall be prohibited in areas where flammable vapors exist.

3903.2.2 Electrical equipment. Electrical equipment installed in rooms designed in accordance with Section 3903.4.1.1, hoods, or booths containing flammable and/or combustible material extraction processes shall be in accordance with NFPA 70 as a Class 1 Division 1 location. Areas adjacent to classified locations shall be in accordance with NFPA 70 (NEC). Electrical equipment installed in areas of flammable liquid extractions or post oil processing shall be in accordance with Chapter 50, as amended, and NFPA 70.

3903.2.3 Grounding and bonding. Precautions shall be taken within flammable and/or combustible material extraction rooms to minimize the possibility of ignition by static electrical sparks through static bonding and grounding of extraction equipment, ducts, and piping etc. installed in accordance with NFPA 70.

3903.3 Equipment. Extraction process equipment utilizing hazardous materials shall be listed or approved.

3903.3.1 Approved equipment. Extraction process equipment that is certified by a third party agency shall be re-certified on a biannual basis, unless otherwise allowed by the fire code official. A copy of this recertification acceptance shall be forwarded to the fore code official within 30 days of recertification.

3903.3.2 Modification or alteration. Extraction equipment shall not be modified or altered in any manner that is not consistent with its certification or listing. Any extraction equipment that has been modified or altered inconsistently with its certification or listing shall be taken out of service immediately until such a time the equipment is re-certified or listed.

3903.3.2.1 Inspection. Extraction equipment that has been recertified shall be inspected by the fire code official prior to placing the equipment into service.

3903.4 Exhaust required. Extraction and post oil processing, utilizing flammable and/or combustible materials shall be provided with an exhaust system in accordance with Section 3903.4.1 or 3903.4.2. The exhaust system shall be in operation at all times when extractions or post oil processing is being performed and until the flammable and/or combustible materials is off gassed from oil and/or plant material removed from extraction equipment. Fans shall be of the type approved for use when flammable or explosive vapors are present in accordance with the International Mechanical Code.

3903.4.1 Exhaust for flammable and/or combustible extraction processes. A hazardous exhaust system engineered in accordance with the Pikes Peak Regional Building Code and Colorado Springs Fire Code shall be provided for flammable and/or combustible material extraction processes including flammable and/or combustible material degassing from processed plant material or oil removed from extraction equipment.

3903.4.1.1 Exhausted enclosure. Where the extraction room is used as the exhausted enclosure, the exhaust system shall be designed in accordance with Section 2404.3.1.

3903.4.1.2 Electrical interlocks. The exhaust system shall be interlocked with the room power, such that when the exhaust system is not operating, power and lighting will be disabled.

3903.4.2 Exhaust for flammable liquid extraction processes. A hazardous exhaust system in accordance with the Pikes Peak Regional Building and Colorado Springs

Fire Code shall be provided for flammable and/or combustible material extraction processes.

Exceptions:

1. Distillation process with less than ½ gallons of flammable and/or combustible materials performed under a listed and labeled chemical fume hood installed in accordance with the Pikes Peak Regional Building Code and-Colorado Springs Fire Code unless a hazardous exhaust system is required by the Pikes Peak Regional Building Code and Colorado Springs Fire Code.
2. Solvent distillation units in compliance with Section 5705.4.

3903.5 Gas detection. A continuous gas detection system shall be provided within rooms containing CO2 or flammable and/or combustible material extraction processes. Actuation of the gas detection shall initiate a local alarm within the room. CO2 gas detection systems shall be in compliance with Section 5307.9. Flammable and/or combustible material gas detection systems shall alarm at 10% of the LFL. Portable flammable and/or combustible materials gas detection shall be utilized by the extraction system operator to verify local hydrocarbon levels, including system leaks.

3903.6 CO2 extraction equipment process discharge. CO2 discharges shall be permanently piped to the exterior where the discharge will not impinge on the structure, personnel, or means of egress and will not create a hazardous concentration of carbon dioxide.

3903.7 Refrigeration and cooling equipment. Refrigerators, freezers, and other cooling equipment used to store or process flammable and/or combustible materials shall be in accordance with NFPA 45 and applicable provisions of the Pikes Peak Regional Building Code and Colorado Springs Fire Code.

3903.8 Transfer of LPG Inside Structures. The transfer of LPG between containers inside of structures shall comply with the requirements of NFPA 58, Chapter 10.

SECTION 3904
GROWING OPERATIONS

3904.1 CO2 Enrichment Systems. CO2 enrichment systems shall comply with Sections 5307 or 5309.

Section 5001.2.2. Amend Section 5001.2.2 to read as follows: **5001.2.2 Hazard Categories.** Hazardous materials shall be classified according to hazard categories. The categories include materials regulated by this chapter and materials regulated elsewhere in this code, including Appendix E for Hazard Categories.

Section 5001.3.3.8. Amend Section 5001.3.3.8 to read as follows: **5001.3.3.8 Mitigation of a gas or vapor release.** Where a release of hazardous materials gas or vapor would

cause immediate harm to persons or property, means of mitigating the dangerous effects of a release shall be provided.

Section 5001.3.3.19. Add a new Section 5001.3.3.19 to read as follows: **5001.3.3.19 Detection of a gas or vapor.** Detection and alarm is required where a release of a hazardous material gas or vapor could cause immediate harm to any person by exceeding the permissible exposure level (PEL) of the gas, by decreasing the oxygen level to below 19.5% or by exceeding 25% of the lower flammable limit (LFL) of a flammable gas. A detection and alarm system may initiate a means of mitigation of the dangerous effects of a release as well as notification to occupants.

Section 5003.4. Amend Section 5003.4 to read as follows: **5003.4. Material Safety data sheets.** Material safety data sheets shall be readily available on the premises for hazardous materials regulated by this code. This may be in the form of hard copies, online websites, by phone or any other method approved by the authority having jurisdiction. Where a hazardous substance is developed in a laboratory, available information shall be documented.

Section 5004.2.1. Amend Section 5004.2.1 to read as follows: **5004.2.1 Spill control for hazardous material liquids.** Rooms, buildings or areas used for storage of hazardous materials liquids in individual vessels having a capacity of more than 30_gallons, or in which the aggregate capacity of multiple vessels exceeds 55 gallons, shall be provided with spill control to prevent the flow of liquids to adjoining areas. Floors in indoor locations and similar surfaces in outdoor locations shall be constructed to contain a spill from the largest single vessel by one of the following methods:

1. Liquid-tight sloped or recessed floors in indoor locations or similar areas in outdoor locations.
2. Liquid-tight floors in indoor locations or similar areas in outdoor locations provided with liquid-tight raised or recessed sills or dikes.
3. Sumps and collection systems.
4. Other approved engineered systems.

Except for surfacing, the floors, sills, dikes, sumps and collection systems shall be constructed of noncombustible material, and the liquid-tight seal shall be compatible with the material stored. When liquid-tight sills or dikes are provided, they are not required at perimeter openings having an open-grate trench across the opening that connects to an approved collection system.

Section 5004.2.2. Amend Section 5004.2.2 to read as follows: **5004.2.2 Secondary containment for hazardous material liquids and solids.** Where required by Table 2704.2.2 buildings, rooms or areas used for the storage of hazardous materials liquids or solids shall be provided with secondary containment in accordance with this section when the capacity of an individual vessel or the aggregate capacity of multiple vessels exceeds the following:

1. Liquids: Capacity of an individual vessel exceeds 30 gallons (114 L) or the aggregate capacity of multiple vessels exceeds 55 gallons (208 L); and

2. Solids: Capacity of an individual vessel exceeds 300 pounds (136.1 kg) or the aggregate capacity of multiple vessels exceeds 550 pounds (249.5 kg).

Section 5303.7.12. Add a new Section 5303.7.12 to read as follows: **5303.7.12 Separation from exits, exit access and exit discharge.** Compressed gas cylinders shall be stored–at least 10 feet (3m) from elevators, stairways, corridors, exits or in areas normally used, or intended to be used, as a means of egress, or where approved by the fire code official.

Section 5306.2.1. Amend Section 5306.2.1 to read as follows: **5306.2.1 One-hour exterior rooms.** A 1-hour exterior room shall be a separated from the remainder of the building by fire barriers constructed in accordance with Section 707 of the International Building Code or horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both, with a fire-resistance rating of not less than 1 hour. Openings between the room or enclosure and interior spaces shall be self-closing smoke- and draft-control assemblies having a fire protection rating of not less than 1 hour. Rooms shall have not less than one exterior wall that is provided with not less than two nonclosable louvered vents. Each vent shall have a minimum free opening area of 24 square inches (155 cm^2) for each 1,000 cubic feet (28 m^3) at normal temperature and pressure (NTP) of gas stored in the room and shall be not less than 72 square inches (465 cm^2) in aggregate free opening area. One vent shall be within 6 inches (152 mm) of the floor and one shall be within 6 inches (152 mm) of the ceiling. Rooms shall be provided with not less than one automatic sprinkler to provide container cooling in case of fire. When the building is not normally provided with a fire sprinkler system, and the room does not exceed 24 square feet; a single ordinary temperature, quick response sprinkler head from the domestic water supply after the buildings backflow preventer is allowed. The feed to the sprinkler shall be minimum 1-inch pipe size and have a quarter turn isolation valve to facilitate changing the sprinkler. This valve must be chained and locked in the open position and be labeled indicating the valve function. For this sprinkler head configuration, no design area calculations or sprinkler reviews are required. A minimum temperature of 40°F must be maintained in this room and anywhere the water supply piping is run.

Section 5306.2.2. Add a new exception to Section 5306.2.2 to read as follows: **Exception:** When the building is not provided with a fire sprinkler system, and the room does not exceed 24 square feet; a single ordinary temperature, quick response sprinkler head from the domestic water supply after the building's backflow preventer is allowed. The feed to the sprinkler shall have a quarter turn isolation valve to facilitate changing the sprinkler. This valve must be chained and locked in the open position and be labeled indicating the valve function. For this sprinkler head configuration, no design area calculations or sprinkler reviews are required. A minimum temperature of 40°F must be maintained in this room and anywhere the water supply piping is run.

Section 5306.5.1. Add a new Section 5306.5.1 to read as follows: **5306.5.1 Medical gas systems in veterinary clinics.** Where containers of medical gases are limited to oxygen supply, and in quantities greater or less than the permit amounts located inside or outside buildings, veterinary clinics shall comply with and design to a minimum Level 3 – Medical Gas Supply, Piped Medical Gas and Vacuum System as required by the

current edition of NFPA 99. A higher level design may be required if the system includes additional medical gases. Medical gas systems shall be designed by a registered design professional and comply with the fire code, current edition of NFPA 99, and all appropriate industry standard, codes, regulations and practices. Medical gas systems shall be installed, inspected, verified and maintained by personnel in compliance with Section 5306.6.

Section 5306.6. Add a new Section 5306.6 to read as follows: **5306.6 Certification.** Medical gas system installers, inspectors and verifiers shall be certified in accordance with American Society of Sanitary Engineers (ASSE) 6000 Professional Qualification Standards.

Section 5307. Delete Section 5307 and replace with the following:

SECTION 5307
INERT GAS AND CARBON DIOXIDE SYSTEMS

5307.1 General. Carbon dioxide and inert gas systems used for beverage carbonation, atmosphere enrichment, equipment operation or other system functions shall comply with this Section, Chapter 53, Chapter 55, or NFPA 55 Chapter 13 as appropriate. The system may be compressed gas containers, insulated containers for refrigerated liquids, manifolded cylinders and other carbon dioxide or inert gas systems having a capacity of 100 pounds (874 standard cubic feet {scf}) or greater. This section shall apply to all applications in new and existing buildings.

5307.2 Permits. Permits shall be required if the quantity meets or exceeds the permit threshold as shown in Section 105.6.4.

5307.3 Location. Portable or manifolded cylinders and containers for use with carbon dioxide and inert gas systems inside of a building shall be located at least 10 feet (3 m) from elevators, stairways, corridors and exits unless otherwise approved by the fire code official.

5307.3.1 Electrical locations. Cylinders, containers and systems shall be protected from energized electrical sources.

5307.4 Security. Compressed gas containers, cylinders, tanks, portable containers and systems shall be secured against accidental dislodgement, shifting or upset and against access by unauthorized personnel in accordance with Sections 5303.5.1 through 5303.5.3. Stationary containers shall be secured to foundations in accordance with the International Building Code. Nesting shall be an acceptable means of securing containers.

5307.5 Secure area. Containers, piping, valves, pressure relief devices, regulating equipment and other appurtenances shall be protected against unauthorized entry or tampering.

5307.6 Compressed gas containers, cylinders and tanks. Compressed gas containers, cylinders and tanks for use with carbon dioxide and inert gas systems shall comply with the general requirements of Section 5303 and this Section.

5307.6.1 Storage of Compressed Gases. Storage of compressed gas systems for use with carbon dioxide and inert gas systems shall comply with the requirements in Section 5304.

5307.6.2 Use and handling of compressed gas systems. Compressed gas systems for carbon dioxide and inert gases shall comply with Section 5305 and this section.

5307.7 Insulated Containers. Insulated containers used for liquid carbon dioxide shall comply with the requirements of this Section, Sections 5503 through 5505 and NFPA 55 Chapter 13.

5307.7.1 Storage. Storage of containers used in carbon dioxide and inert gas systems shall comply with Section 5504.

5307.7.2 Use and Handling. The use and handling of containers used in carbon dioxide and inert gas systems shall comply with the requirements of Section 5505.

5307.7.3 Pressure Relief Devices. Insulated containers shall be required to be equipped with pressure relief devices as required by Section 5503.2 in this code.

5307.7.3.1 Relief Venting. Pressure relief devices and vent valves on all cryogenic containers and site-filled containers located in the building shall be piped outdoors where the discharge will not impinge on the structure, personnel, or means of egress and will not create a hazardous concentration of carbon dioxide.

5307.7.3.2 Location. Pressure relief devices shall be located to minimize tampering, damage, and obstruction to flow.

5307.8 Detection of a gas or vapor. Detection shall be installed for all carbon dioxide and inert gas systems that meet the thresholds shown in 5307.1.

5307.8.1 Detectors. Any detection device used for carbon dioxide and inert gas systems shall be suitable for the use intended and shall be listed or approved.

5307.8.2 Location of detection sensor. Sensors for gas detection systems shall be located in the same room or area, as close as possible to the system supply and at the height indicated in Table 5307.8.2

5307.8.2.1 Point of use detection. Where the point of use is remote from the supply a detection and alarm system is required for each point of use.

Table 5307.8.2 LOCATION OF DETECTION SENSORS FOR INERT GASES AND CARBON DIOXIDE SYSTEMS

GAS NAME	SPECIFIC GRAVITY (AIR = 1.00)	DISTANCE FROM FLOOR	DISTANCE FROM CEILING
Helium	0.138	---	12 to 18 inches
Neon	0.697	---	12 to 24 inches
Nitrogen	0.9737	48 to 75 inches	---
Argon	1.38	12 to 18 inches	---
Carbon Dioxide	1.53	12 to 18 inches	---
Krypton	2.89	12 to 18 inches	---
Xenon	4.53	12 to 18 inches	---

5307.9 Detection alarms. Rooms or areas where container systems are used indoors or in enclosed outdoor locations shall be provided with a gas detection and alarm system.

5307.9.1 Carbon dioxide detection. For carbon dioxide, the detection system shall be capable of notifying personnel in the immediate area of a leak at 5,000 parts per million. Upon reaching 30,000 parts per million this system must notify all building occupants of a mandatory evacuation.

Exception: Systems with a fail-safe feature that complies with 5307.10 exception are not required to notify building occupants at 30,000 parts per million.

5307.9.2 Other Gas detection. For other gases an oxygen deficiency detection system shall be provided and shall be capable of notifying all occupants in the building when the oxygen level drops below 19.5%.

5307.9.3 Detector testing. The equipment, systems and devices listed in 5003.2.9.1 shall be tested at one of the frequencies listed below:

1 Not less than annual.
2. In accordance with the approved manufacturer's requirements.
3. In accordance with approved recognized industry standards.
4. In accordance with an approved schedule.

5307.10 Ventilation. Mechanical ventilation shall be installed in addition to a detection and alarm system as required in Section 5307.8 and 5307.9. All compressed gas systems shall have ventilation installed as required by Sections 5001.3.3.10, 5004.3 through 5004.3.1 and the International Mechanical Code. Construction plan data and/or a technical report by a registered design professional shall be submitted to the fire code official demonstrating compliance with the requirements. Approved plans/permits for ventilation from the governing mechanical authority shall be prima facie evidence for compliance.

Exceptions:

1. Carbon Dioxide systems with a fail-safe feature that shuts off flow from the source tank upon reaching 5,000 parts per million and/or loss of power.
2. Inert Gas systems with a fail-safe feature that shuts off flow from the source tank upon reaching an oxygen deficient atmosphere of 19.5% and/or loss of power.

5307.10.1 Non-continuous ventilation. Ventilation may be allowed to be non-continuous in nature if the gas detection system activates the ventilation system upon reaching alarm thresholds as set forth in Section 5307.9.

5307.11 Piping. Piping for all carbon dioxide and inert gas systems shall be located and supported to protect against damage from strain on piping and fittings, the effects of expansion, contraction and vibration, mechanical damage, and heat sources.

5307.11.1 Piping requirements. Piping, tubing, and hoses and fittings shall be designed to a bursting pressure of at least four times the system design pressure.

5307.11.2 Pipe labeling. All piping associated with carbon dioxide and inert gas systems shall be labeled in accordance with ASME A13.1 to indicate the material conveyed and the direction of flow.

5307.11.3 Couplings. Where CO2 and inert gas piping is run through areas not protected with gas detection and ventilation as required by this code, there shall be no couplings, unions or other joints that may pose a threat due to failure, as determined by the fire code official.

5307.12 Signage. A warning sign shall be posted at the entrance to the building, room, enclosure, or confined area where the system is located. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high. The lettering of such signs shall be of a bold type at least 1 inch (25 mm) in height and shall be properly spaced to provide good legibility. The lettering shall be black and the background shall be yellow.

5307.12.1 Inert gas systems. Inert gas systems shall have a sign stating:

CAUTION – INERT GAS
If alarm is sounding
Ventilate the area before entering
A high inert gas concentration in this
Area can cause suffocation

5307.12.2 Carbon dioxide systems. Carbon dioxide systems shall have a sign stating:

CAUTION – CARBON DIOXIDE GAS
If alarm is sounding

Ventilate the area before entering
A high inert gas concentration in this
Area can cause suffocation

5307.13 System Signage. Signage for insulated containers shall be placed on the head of the container indicating inlet, outlet, pressure relief and emergency shut off.

Section 5309. Add a new Section 5309 to read as follows:

SECTION 5309
CARBON DIOXIDE (CO2) GAS ENRICHMENT SYSTEMS USING A NATURAL GAS BURNER IN PLANT GROWING (HUSBANDRY) APPLICATIONS

5309.1 General. Natural gas burners that are utilized to generate carbon dioxide (CO2) in plant growing (husbandry) applications shall comply with Sections 5309.2 through 5309.6. A mechanical exhaust system shall be provided as required by 5309.6 and the International Mechanical Code. This code section shall apply to all applications in new and existing buildings.

5309.2 Permits. Permits shall be required in accordance with Sections 105.6 and 105.7.

5309.3 Equipment. Natural gas burners shall be listed, labeled and installed in accordance with the manufacturer's installation instructions. Piping systems, combustion and ventilation air and venting for natural gas appliances shall be designed and installed in accordance with approved standards, the International Fuel Gas Code and manufacturer's recommendations.

5309.4 Required protection. A carbon dioxide (CO2) gas detection system shall be provided in accordance with Section 5309.4.1 and a carbon monoxide (CO) gas detection system shall be provided in accordance with Section 5309.4.2.

5309.4.1 Carbon dioxide (CO2) detection. Rooms or areas where carbon dioxide is used indoors or in enclosed outdoor locations shall be provided with a carbon dioxide gas detection and alarm system.

5309.4.1.1. Detectors. Detectors shall comply with all of the following:

1. Suitable for the use intended and shall be listed or approved.
2. Permanently mounted.
3. Installed at a height of no more than 18 inches above the floor.
4. Directly connected to building electrical or fire alarm systems and protected from accidental disconnection or damage.
5. Auto calibrating and self zeroing devices are not permitted unless they can be zeroed and spanned.
6. Where the point of use is remote from the supply a detection and alarm system is required for each point of use.

5309.4.1.2 Notification. The detection system shall be capable of notifying personnel in the immediate area of a leak at 5,000 parts per million. Upon reaching 30,000 parts per million this system must notify all building occupants of a mandatory evacuation.

Exception: Systems with a fail-safe feature that shuts off carbon dioxide flow from the source upon reaching 5,000 parts per million or loss of power are not required to notify building occupants at 30,000 parts per million.

5309.4.1.3 Warning sign. A warning sign shall be posted at the entrance to the building, room, enclosure, or confined area where the system is located. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high. The lettering of such signs shall be of a bold type at least 1 inch (25 mm) in height and shall be properly spaced to provide good legibility. The lettering shall be black and the background shall be yellow.

CAUTION – CARBON DIOXIDE GAS
If alarm is sounding
Ventilate the area before entering
A high inert gas concentration in this
Area can cause suffocation

NFPA 704 placards for simple asphyxiants shall also be provided at the exterior main entrance.

5309.4.1.4 Shut down. All carbon dioxide (CO2) burner systems shall shut down in the event of a loss of electrical power to the carbon dioxide (CO2) detectors.

5309.4.2 Carbon monoxide (CO) detection. Rooms or areas where carbon dioxide burners are used indoors or in enclosed outdoor locations shall be provided with a carbon monoxide gas detection and alarm system.

5309.4.2.1 Detectors. Detectors shall comply with all of the following:

1. Suitable for the use intended and shall be listed or approved.
2. Permanently mounted.
3. Installed per manufacturer's recommendations and directions.
4. Directly connected to building electrical and protected from accidental disconnection or damage.

5309.4.2.2 Notification. The CO detection system shall be capable of notifying personnel in the immediate area of a leak at 35 PPM and upon activation shall initiate the following:

1. Close the valve to each burner.
2. Activate the mechanical exhaust system.

5309.4.2.3 Reserved.

5309.4.2.4 Shut down. All carbon dioxide (CO2) burner systems shall shut down in the event of a loss of electrical power to the carbon monoxide (CO) detectors.

5309.5 Detector testing. The equipment, systems and devices listed in 5309.4 shall be tested at one of the frequencies listed below:

1. Not less than annual.
2. In accordance with the approved manufacturer's requirements.
3. In accordance with approved recognized industry standards.
4. In accordance with an approved schedule.

5309.6 Ventilation. Mechanical ventilation shall be installed in addition to a detection and alarm system as required in Section 5309.4. All gas systems shall have ventilation installed as required by Sections 5001.3.3.10, 5004.3 through 5004.3.1 and the International Mechanical Code. Construction plan data and/or a technical report by a registered design professional shall be submitted to the fire code official demonstrating compliance with the requirements. Approved plans/permits for ventilation from the governing mechanical authority shall be prima facie evidence for compliance.

Exception: No ventilation is required for those systems equipped with a gas detection fail-safe feature, as described in the exception for 5309.4.1# 2.

Section 5501.3. Add a new Section 5501.3 to read as follows: **Section 5501.3 Conversion.** Table G101.2 shall be used to determine the equivalent amounts of cryogenic fluids in either the liquid or gas phase.

Section 5506. Add a new Section 5506 to read as follows:

SECTION 5506
CRYOGENIC INERT GAS SYSTEMS

5506.1 General. Cryogenic inert gas systems for beverage carbonation, equipment operation or other system functions shall comply with all sections of Chapter 55 including this section, NFPA 55 and CGA P-18. These systems shall include any insulated container with an individual capacity of 100 pounds (874 standard cubic feet {scf}) or greater. This shall apply to all applications in new and existing building.

5506.2 Permits. Permits shall be required if the quantity meets or exceeds the permit threshold as shown in Section 105.6.4

5506.3 Vessel construction. Insulated containers used in inert gas systems shall be constructed in accordance with Section 5503.

5506.4 Security. Cryogenic containers and systems shall be secured against accidental dislodgement and against access by unauthorized personnel.

5506.4.1 Securing of containers. Stationary containers shall be secured to foundations as required by the building code. Portable containers that are subject to shifting or upset shall be secured. Nesting shall be an acceptable means of securing containers.

5506.4.2 Secure Area. Containers, piping, valves, pressure relief devices, regulating equipment and other appurtenances shall be protected against physical damage, unauthorized entry and/or tampering.

5506.4.3 Pressure Relief valve protection. The pressure relief device vent lines shall be installed in such a manner to exclude or remove moisture and condensation and prevent malfunction of the pressure relief device because of freezing or ice and snow accumulation.

5506.4.3.1 Relief Venting. Pressure relief devices on all cryogenic containers and site-filled containers located in the building shall be piped outdoors where the discharge will not impinge on the structure, personnel or means of egress and will not create a hazardous concentration of gas.

5506.4.4 Location. Cylinders, containers and systems shall not be located where they could become part of an electrical circuit.

5506.5 Storage. Storage of containers used in cryogenic inert gas systems shall be in accordance with Section 5504.

5506.6 Use and Handling. The use and handling of cryogenic inert gas systems shall comply with Section 5505.

5506.7 Ventilation. All cryogenic inert gas systems shall have continuous mechanical ventilation as required by Sections 5001.3.3.10, 5004.3, 5004.3.1 and the International Mechanical Code. Mechanical ventilation must be installed in addition to a gas detection and alarm system as required in Section 5506.8. Construction plan data and/or a technical report by a qualified design professional shall be submitted to the fire code official demonstrating compliance with the requirements. Approved plans/permits for ventilation from the governing mechanical authority shall be prima facie evidence for compliance.

Exception: Systems with a fail-safe feature that shuts off flow from the source tank upon reaching an oxygen deficient atmosphere of 19.5% or loss of power are not required to provide this ventilation.

5506.7.1 Non-continuous ventilation. Ventilation may be allowed to be non-continuous in nature if the gas detection system activates the ventilation system upon reaching alarm thresholds as set forth in Section 5506.8.3.

5506.8 Detection of a gas or vapor. Detection shall be installed for all cryogenic inert gas systems that meet the thresholds shown in 5506.1.

5506.8.1 Detectors. Any detection device used for cryogenic inert gas systems shall be suitable for the use intended and shall be listed or approved.

5506.8.2 Location of detection sensor. Sensors for gas detection systems shall be located at the height indicated in Table 5506.8.2

5506.8.3 Detection alarms. Rooms or areas where container and systems are site-filled and used indoors or in enclosed outdoor locations shall be provided with a gas detection and alarm system that is capable of detecting and notifying the building occupants of a gas release when it reaches one half of the Immediate Danger to Life and Health (IDLH) concentration of the gas or when an oxygen sensor reaches 19.5% oxygen level.

5506.8.4 Detector Testing. The equipment, systems and devices listed in 5003.2.9.1 shall be tested at one of the frequencies listed below:

1. Not less than annual.
2. In accordance with the approved Manufacturer's requirements.
3. In accordance with approved recognized industry standards.
4. In accordance with an approved schedule.

Table 5506.8.2 LOCATION OF DETECTION SENSORS FOR CRYOGENIC INTERT GAS SYSTEMS

GAS NAME	SPECIFIC GRAVITY (AIR = 1.00)	DISTANCE FROM FLOOR	DISTANCE FROM CEILING
Helium	0.138	---	12 to 18 inches
Neon	0.697	---	12 to 24 inches
Nitrogen	0.9737	48 to 75 inches	---
Argon	1.38	12 to 18 inches	---
Krypton	2.89	12 to 18 inches	---
Xenon	4.53	12 to 18 inches	---

5506.9. Piping. Piping for all cryogenic inert gas systems shall be located and supported to protect against damage from strain on piping and fittings, the effects of expansion, contraction and vibration, mechanical damage and heat sources.

5506.9.1 Piping requirements. Piping, tubing, and hoses and fittings shall be designed to a bursting pressure of at least four times the system design pressure.

5506.9.2 Pipe labeling. All piping associated with cryogenic inert gas systems shall be identified in accordance with ASME A13.1 to indicate the material conveyed and the direction of flow.

5506.9.3 Couplings. Where cryogenic inert gas piping is run through areas not protected with gas detection and ventilation as required by fire code, there shall be no couplings, unions or other joints that may pose a threat due to failure, as determined by the fire code official.

5506.10 Signage. A warning sign shall be posted at the entrance to the building, room, enclosure, or confined area where the system is located. Signs shall have a minimum dimension of 12 inches wide by 18 inches high, the lettering of such signs shall be of bold type at least 1 inch in height and shall be properly spaced to provide good legibility. The lettering shall be black and the background shall be yellow.

5506.10.1 Cryogenic Inert gas systems. These gas systems shall have a sign stating:

CAUTION – CRYOGENIC INERT GAS
If alarm is sounding
Ventilate the area before entering
A high inert gas concentration in this
Area can cause suffocation

Section 5601.1.3. Amend Section 5601.1.3 to read as follows, no change to numbered items: **5601.1.3 Fireworks.** It is unlawful for any person to possess, store, offer for sale, expose for sale, sell at retail, use or explode any fireworks except as allowed in the City Code of Colorado Springs Chapter 9, Article 7, Part 3.

Section 5607.1.1. Add a new section 5607.1.1 to read as follows: **Section 5607.1.1 Plan Review and Permit.** The Colorado Springs Fire Department shall review the blasting plan. A permit application shall be submitted in accordance with 105.6.15 to the fire code official at least 3 business days prior to the shoot date. The fire code official shall have the authority to disapprove any shot plan which is incomplete or which indicates the likelihood that public safety will be jeopardized.

Section 5607.5. Delete and replace with the following: **5607.5 Notification.** Before blasting, a minimum of 48 hours (2 business days) advance notice shall be given to the fire code official. Advance notice shall be given to residents within a distance of the blasting activity as determined by the fire code official.

Exception: In an emergency situation, the time limit shall not apply where approved.

Section 5607.5.1. Add a new section 5607.5.1 to read as follows: **Section 5607.5.1 Utility notification.** Where blasting is being conducted in the vicinity of utility lines or rights-of-way, the blaster shall notify the appropriate representatives of the utilities not less than 24 hours in advance of blasting, specifying the location and intended time of such blasting. Verbal notices shall be confirmed with written notice.

Exception: In an emergency situation, the time limit shall not apply where approved.

Section 5608.1. Delete Section 5608.1 and replace with the following: **Section 5608.1 General.** The display of fireworks and pyrotechnics, including proximate audience displays and pyrotechnic special effects shall comply with this Section, NFPA 1123, NFPA 1126 and NFPA 160.

Section 5608.6.1. Add a new section 5608.6.1 to read as follows: **5608.6.1 Mortar rack reinforcement.** Aboveground mortar racks shall be constructed and secured to withstand a catastrophic malfunction in a mortar. Added sandbag reinforcement to the mortar rack(s) shall be required. Sandbags shall be used to secure mortar racks and to prevent tip over or movement. Placement of sandbags at the mortar rack(s) shall be on spectator sides of the rack(s) and on each end of a rack or group of racks. The sandbags shall be stacked to a height of three-fourths (¾) of the rack(s) frame height.

Section 5704.2.13.1.4. Amend Section 5704.2.13.1.4 by adding item 7 as follows: **5704.2.13.1.4 Tanks abandoned in place.** Tanks abandoned in place shall be as follows:

1. Flammable and combustible liquids shall be removed from the tank and connected piping.
2. The suction, inlet, gauge, vapor return and vapor lines shall be disconnected.
3. The tank shall be filled completely with an approved inert solid material.
4. Remaining underground piping shall be capped or plugged.
5. A record of tank size, location and date of abandonment shall be retained.
6. All exterior above-grade fill piping shall be permanently removed when tanks are abandoned or removed.
7. A permit in accordance with Section 105 shall be obtained.

Section 5803.1.7. Add a new Section 5803.1.7 to read as follows: **5803.1.7. Location.** Flammable gas cylinders located inside of a building shall be stored in a well-ventilated, dry location at least 20 (6.1m) feet from combustible materials and at least 10 (1m) feet from elevators, stairways, corridors, exits or in areas normally used, or intended to be used, as a means of egress.

Section 6101.3. Amend Section 6101.3 and to read as follows: **6101.3 Construction documents.** Where a single container is more than 1,000 gallons (3785 L) in water capacity or the aggregate capacity of containers is more than 1,000 gallons (3785 L) water capacity, the installer shall submit construction documents to the fire code official for such installation.

Section 6107.4. Amend Section 6107.4 to read as follows: **6107.4 Protecting containers from vehicles.** Where exposed to vehicular damage due to the proximity to alleys, driveways or parking areas, LP-gas containers, regulators and piping shall be protected in accordance with Section 312.

Section 6109.13. Amend Section 6109.13 and delete the exception to read as follows: **6109.13 Protection of containers.** LP-gas containers shall be stored within a suitable enclosure or otherwise protected against tampering. Vehicle impact protection shall be provided as required by Section 6107.4.

Section 8001.1. Add a new Section 8001.1 to read as follows: **8001.1 Adoption of standards.** In every case where this code references NFPA standards, the most current edition of said standards is hereby adopted. The current edition shall become effective on January 1 of the year following the NFPA's effective date for said standard.

Add the following referenced standards:

DISCUS - Distilled Spirits Council of U.S. 1250 Eye Street, NW Suite 400, Washington D.C. 20005 Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities

NFPA 77 - Recommended Practice on Static Electricity

NFPA 497 - Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas

NFPA 499 - Recommended Practice for the Classification of Combustible Dusts and of Hazardous Locations for Electrical Installations in Chemical Process Areas

NFPA 780 - Standard for the Installation of Lightning Protection Systems.

Appendix A. Delete Appendix A in its entirety.

Table B105.1 (1) Amend Table B105.1(1) to read as follows:

TABLE B105.1(1)			
REQUIRED FIRE-FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, GROUP R3 AND R4 BUILDINGS AND TOWNHOUSES			
FIRE-FLOW CALCULATION AREA (square feet)	**AUTOMATIC SPRINKLER SYSTEM (Design Standard)**	**MINIMUM FIRE-FLOW (gallons per minute)[a]**	**FLOW DURATION (hours)**
0-3,600	No automatic sprinkler system	1,500	1
3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2) at the required flow rate
0-3,600	Section 903.3.1.3 of International Fire Code	1,500	1/2
3,601 and greater	Section 903.3.1.3 of International Fire Code	½ value in Table B105.1(2)	1
For SI: 1 square foot = 0.0929 m², 1 gallon per minutes = 3.785 L/m a. Reduced fire-flow shall not be less than 1,500 gallons per minute.			

Table B105.2. Amend Table B105.2 to read as follows:

TABLE B105.2 REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE-AND TWO-FAMILY DWELLINGS, GROUP R3 AND R4 BUILDINGS AND TOWNHOUSES		
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 903.3.1.1 of the International Fire Code	Down to 50% of the value in Table B105.1(2)[a]	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the International Fire Code	Down to 50% of the value in Table B105.1(2)[a]	Duration in Table B105.1(2) at the reduced flow rate
For SI: 1 gallon per minute = 3.785 L/m		
a. The reduced fire flow shall not be less than 1,500 gallons per minute		

Section B105.4. Add a new Section B105.4 to read as follows: **B105.4 Simultaneous flows.** Any hydrant must produce a minimum flow of 1,500 gallons per minute at 20 psi of residual pressure when flowing individually, or a minimum of 750 gallons per minute at 20 psi of residual pressure when flowing simultaneously to be considered by Table C102.1 or by Table C102.1's footnotes as one of the minimum hydrants required to protect any structure, hazard or potential hazard.

Table C102.1. Number and distribution of fire hydrants. Amend the footnotes of Table C102.1 to read as follows:

a. Where streets are provided with median dividers that cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 1000 feet on each side of the street and be arranged on an alternating basis.

b. Where new water mains are extended along streets where hydrants are not needed for protection of structure or similar fire problems, the hydrants shall be provided at a spacing not to exceed 1,000 feet to provide for transportation hazards.

c. Regardless of hydrant spacing, no hydrant distributed for a structure shall be located more than 500 feet from a prospective engine stopping point on a drivable surface.

d. All distances measured as fire apparatus would drive on an approved drivable surface.

e. One hydrant for each 1,000 gallons per minute or fraction thereof.

Section C103.4. Add a new Section C103.4 to read as follows: **C103.4 Color-coding of fire hydrants.** Fire hydrants shall be color-coded based on the specific colors/paint and areas to be painted per Table C103.4.

Table C103.4. Add a new Table C103.4 as follows:

TABLE C103.4. COLOR CODING OF FIRE HYDRANTS

Flows	Colors	Manufacturer/Spec	Area Painted
3,000+ gpm	Ford Blue	Aervoe / #560	Bonnet and steamer cap
1,500 - 2,999 gpm	Ford Blue	Aervoe / #560	Bonnet only
1,000 - 1,499 gpm	John Deere Green	Rustoleum / #7424830	Bonnet only
500 - 999 gpm	Bright Orange	Aervoe / #560	Bonnet only
Less than 500 gpm	Red	Rustoleum / #2163	Bonnet only
Hydrant Barrel	Yellow	Rustoleum / #2148	All areas not painted above
Non-potable hydrants shall remain white with PURPLE caps and bonnets as currently identified.			

Section D102.1. Amend Section D102.1 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 75,000 pounds (34,050 kg) with a minimum single axle weight of 27,000 pounds (12,247.2 kg).

Section D103.1. Delete Section D103.1 in its entirety.

Figure D103.1. Delete Figure D103.1 in its entirety.

Section D103.2. Amend Section D103.2 to read as follows: **D103.2 Grade.** Fire apparatus access roads shall not exceed 10% in grade.

> **Exception:** Grades steeper than 10% as permitted by the hillside ordinance or as approved by the fire code official.

Section D103.4. Amend Section D103.4 to read as follows: **D103.4 Dead ends.** Dead-end fire apparatus access roads in excess of 200 feet (61 m) shall be provided with width and turnaround provisions in accordance with Table D103.4.

Figure D103.4. Add new Figure D103.4 as follows: **Figure D103.4 Dead-end fire apparatus access road turnaround.**

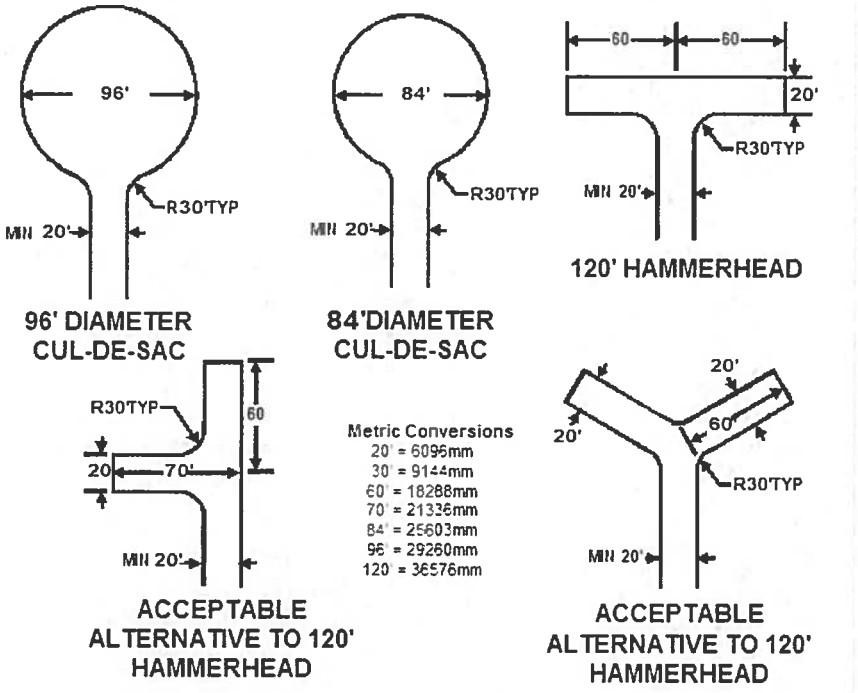

Table 103.4. Amend **Table D103.4** to read as follows:

TABLE D103.4 REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (ft)	WIDTH (ft)	TURNAROUNDS REQUIRED
0- 200	20	None Required
201-500	20	120' hammerhead, 60' Y, 96' or 84' cul-de-sac in accord with Figure D103.4
501-750	26	120' hammerhead, 60' Y, or 96' diameter cul-de-sac in accord with Figure D103.4. Additional intermediate turnarounds may be required.
Over 750		Special fire department approval required

Section D103.5. Amend Section D103.5 to read as follows: **D103.5 Fire apparatus access road gates.** Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. Where a single gate is provided, the gate width shall be not less than 16 feet or as wide as necessary to accommodate fire apparatus turning radius needs. Where a fire apparatus access road consists of a divided roadway, the gate width shall be not less than 16 feet or as wide as necessary to accommodate fire apparatus turning radius needs.
2. Gates shall be of the swinging or sliding type unless otherwise specifically approved.
3. Construction of gates shall be of materials that allow manual operation by one person.

4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Methods of locking shall be submitted for approval by the fire code official.
7. Electric gate operators, where provided, shall be listed in accordance with UL 325.
8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

Section D103.6. Amend Section D103.6 to read as follows: **D103.6 Fire apparatus access road markings.** Where required by the fire code official, fire apparatus access roads shall be marked in an approved manner. Approved markings shall be provided as required by Sections D103.6.1 through D103.6.3.

Figure D103.6. Delete Figure D103.6 in its entirety.

Section D103.6.1. Amend Section D103.6.1 and add exceptions to read as follows: **D103.6.1 Roads less than 28 feet in width.** Fire lane signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are less than 28 feet wide.

Exceptions:

1. For fire apparatus access roads located in hillside overlay, fire lane signs shall be posted on both sides when access roads are less than 20 feet wide.
2. For fire apparatus access roads located within a traditional neighborhood development, fire lane signs shall be posted on both sides when access roads are less than 22 feet wide.

Section D103.6.2. Amend Section D103.6.2 to read as follows: **D103.6.2 Roads 28 to less than 34 feet in width.** Fire lane signs as specified in Section D103.6 shall be posted on one side of fire apparatus access roads 28 feet wide to less than 34 feet wide.

Exceptions:

1. For fire apparatus access roads located in hillside overlay, fire lane signs shall be posted on one side when access roads are 24 to less than 34 feet wide.
2. For fire apparatus access roads located within a traditional neighborhood development, fire lane signs shall be posted on one side when access roads are 22 to less than 28 feet wide.

Section D103.6.3. Add a new Section D103.6.3 to read as follows: **D103.6.3 Roads 34 feet in width and greater.** Fire lane signs are not required along either side of fire apparatus access roads 34 feet wide or more.

Section D104.1. Add a new exception to Section D104.1 to read as follows: **D104.1 Buildings exceeding three stories or 30 feet in height.** Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.

> **Exception:** A single fire apparatus access road is acceptable when all buildings serviced by the single access road are provided with an approved fire sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 of the International Fire Code.

Section D104.3. Add a new exception to Section D104.3 to read as follows: **D104.3 Remoteness.** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

> **Exception:** The fire code official is authorized to modify this requirement when the required remoteness is not possible due to location on property, topography, water ways, non-negotiable grades or similar.

Section D105. Delete **Section D105** in its entirety, to include D105.1, D105.2, D105.3 and D105.4.

Section D106.3. Add a new exception to Section D106.3 to read as follows: **D106.3 Remoteness.** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

> **Exception:** The fire code official is authorized to modify this requirement when the required remoteness is not possible due to location on property, topography, water ways, non-negotiable grades or similar.

Section D107.1. Add a new exception #3 to Section D107.1 to read as follows: **D107.1 One or two family dwelling residential developments.** Developments of one or two family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads.

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic fire sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3 of the International Fire Code, access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official.

3. The fire code official is authorized to modify the requirement of two separate and approved fire apparatus access roads, when they are not possible due to location on property, topography, water ways, non-negotiable grades or similar.

Appendix E. Delete the subtitle of **Appendix E**.

Appendix F. Delete the subtitle of **Appendix F**.

Appendix G. Delete the subtitle of **Appendix G**.

Appendix K. Delete Appendix K and replace with the following:

APPENDIX K
WILDLAND FUELS MANAGEMENT REQUIREMENTS

SECTION K101
GENERAL

K101.1 Scope. Wildfire Risk Mitigation: Wildfire risk reduction techniques shall include monitored smoke alarm systems, sprinkler systems, fire resistant roofing materials which are class A (excluding solid wood roofing products) for all residential occupancies, a minimum class B on all other occupancies, fire resistive construction materials, and fuels management measures. Within the wildland urban interface, fuels management measures shall be utilized within the safety zone of applicable new building construction. Fuels management is defined as the modification of the natural vegetation within the safety zone. Fuels management requirements, as set forth below, are intended to protect structures from wildfire as well as to reduce fire from spreading to the wildland. The safety zone is defined as the area within thirty feet (30') of the main structure or significant accessory structures, not to extend beyond the property line. As it is the City's desire to provide an environment safe from wildfire while maintaining the aesthetic qualities of the native hillside, the following wildfire risk reduction standards shall be required for all new building construction or reconstruction in the wildland urban interface, regardless of development plan approval date or initial construction plan approval, and in accordance with Section 7.3.504 of the Code of the City of Colorado Springs.

K101.2 Development plans and subdivision plats. All development plans and subdivision plats within the wildland urban interface approved on or after April 1, 1993, and wildland urban interface site plan/lot grading plans shall contain the following disclosure statements:

> Residing in or near wildland urban interface or intermix areas involves increased wildfire risks that may not apply in urban or more urbanized types of developed communities.

All development plans and subdivision plats within the wildland urban interface approved on or after April 1, 1993, and wildland urban interface site plan/lot grading plans shall contain the following statement:

> All lots within this development are subject to fuels management requirements. It is the responsibility of the builder to implement the fuels management procedures as defined in Chapter 8 of the City Code for each lot. Approval inspection must be obtained from the Fire Department prior to Final inspection by the Building Department and/or allowing occupancy of the residence. The initial fuels management inspection must be requested from the Fire Department prior to framing inspection with subsequent approval obtained prior to building final.

SECTION K102
FUELS MANAGEMENT REQUIREMENTS

K102.1 Fuels Management. All lots with homes constructed or reconstructed after the adoption of the ordinance, within the wildland urban interface, regardless of development plan approval date, shall be subject to the following fuels management requirements:

K102.1.1Safety zone. Brush patches or clusters may be left in the safety zone, but shall be separated by clear areas of at least ten feet (10') or more of noncombustible materials and/or grass mowed to not more than four inches (4) in height.

K102.1.2 Clearance to main structure. No hazardous brush or trees (i.e. junipers and conifers) shall be allowed within fifteen feet (15') of the main structure or significant accessory structure. Conifers or other similarly combustible plants shall not be planted under soffit vents.

> **Exception:** When approved by the fire code official, small brush patches or trees, not exceeding one hundred (100) square feet in size and no more than fifteen (15) linear feet in any direction, may be allowed to encroach into this zone. Vegetation must be maintained in accordance with the applicable Colorado Springs Community Wildfire Protection Plan. Plants with fire resistant characteristics found on the Colorado State Forest Service list of Firewise Plants are allowed within 15' of the main structure or significant accessory structure.

K102.1.3 Pruning of dead limbs. Large trees shall not be allowed to have limbs overlap another tree and shall be pruned of dead limbs to a height of up to ten feet (10') above the ground. Tree clusters may be allowed if sufficient clear area is provided and approved.

K102.1.4 Clearance of tree branches to structures or appurtenances. Tree branches shall not extend over or under the roof or eaves, and shall not be within fifteen feet (15') of a deck or similar combustible projection, wood burning appliance or chimney.

SECTION K103
ROOF COVERINGS

K103.1 Fire Resistive Roofing Materials. After January 1, 2003, a class A roof covering (excluding solid wood roofing products) shall be installed on all residential occupancies and a minimum class B roof covering shall be installed on all remaining occupancies (not to replace Class A where already required by the Building Code) at the time a permitted roofing or reroofing application is done within the limits of the City of Colorado Springs, Colorado, unless specifically approved by the fire code official.

SECTION K104
HARDENED STRUCTURE

Section K104.1 Structure Protection. The following requirements shall be enforced for all homes constructed or reconstructed, after the adoption of this ordinance, within the wildland urban interface for ignition-resistant construction and fuels management:

1. A Class A roof covering (excluding solid wood materials) shall be installed on all Residential Occupancies and a minimum Class B roof covering shall be installed on remaining occupancies, unless otherwise permitted.

2. Exterior cladding, eaves and soffits shall be constructed of ignition-resistant materials approved by the fire code official. Approved materials include, but are not limited to: fiber-cement board, stucco, masonry/brick, manufactured stone, and similar materials. Natural wood/cedar siding, hardboard, vinyl, and similar combustible materials are not allowed.

   Exception: Natural wood or plastic products used for fascia, trim board materials and trim accents, such as corbels, false rafter tails, faux trusses, shutters and decorative vents material are allowed when painted or as approved.

3. For any portion of the attached structure with projections or overhangs, the area below the structure shall have all horizontal under-floor areas enclosed with ignition resistive materials such as those allowed in item 2 above.

   Exception: Heavy timber or dimensional log construction is allowed.

4. Exterior doors shall be noncombustible or solid core not less than 1 3/4-inches thick. Windows within doors and glazed doors shall be tempered safety glass or multi-layered glazed panels.

   Exception: Decorative single pane glazing in front entry doors is allowed.

5. Exterior windows shall be a minimum double pane. Tempered panes are preferable but not required.

6. All attic vents shall be screened with wire mesh or hardware cloth having openings no larger than 1/8-inch unless an alternative design or product is

allowed by the fire code official. Soffit vents are allowed. Gable vents may be allowed but only as approved by the fire code official.

7. Gutters and downspouts that are of non-combustible construction shall be installed such that the leading edge of the roof is finished with a metal drip edge so that no wood sheathing is exposed. The drip edge shall extend into the gutter. Vinyl gutters may be allowed, but must have a non-combustible landing area below the roof line, that is a minimum 5 foot distance from the side of the structure or foundation. NOTE: gutter caps are highly encouraged as a home-owner maintenance item to prevent combustible debris from collecting in the trough.

8. Decks and other habitable spaces shall be of ignition resistant or non-combustible decking materials, such as composite or metal decking. Wood is not permitted to be used for the decking surface, but can be used for all large structural components and railings.

9. The base of exterior walls, posts or columns shall be protected on the bottom side with provisions such as fire resistant foam or wire mesh having openings no larger than 1/8-inch to protect them from ember intrusion and still allow for weeping and moisture control.

10. Chimneys serving fireplaces, as well as other heating appliances in which solid or liquid fuels are used, shall have an approved spark arrestor or cap.

Section K104.2 Alternative Materials. Alternative materials or construction methods not specifically addressed in section K104.1 may be considered on a case-by-case basis if found to have comparable ignition-resistant properties and as approved by the fire code official.

SECTION K105
REVIEW REQUIREMENTS

Section K105.1 Construction Permit Review Requirements. All requirements must be reviewed and approved by the fire code official prior to permit issuance and prior to final inspection. As part of the permit review process, the Colorado Springs Wildfire Mitigation Section will attach an assessment of wildfire hazard potential including a fire behavior index for the project as well as specific recommended wildfire mitigation measures. A final fire department inspection to verify compliance will be required prior to issuance of the Certificate of Occupancy.

SECTION K201
FIRE PROTECTION SYSTEMS

K201.1 Scope. Fire protection system requirements for wildland urban interface homes shall only apply to the conditions listed below as specifically addressed within Section 7.3.504.E.4 of the Code of the City of Colorado Springs.

K201.2 Fire Protection Systems. Homes upon lots within the wildland urban interface illustrated on development plans approved on or after April 1, 1993, shall be required to install a monitored fire alarm system or a fire sprinkler system when the lot lies beyond one thousand feet (1,000') along a cul-de-sac or lies beyond roadways with grades in excess of ten percent (10%) if roadways are the primary vehicular points of access to the home. Additionally, development plans which contain streets or lots which meet this criteria shall contain the following statement:

> A monitored fire alarm system or a fire sprinkler system is required for residences built upon the following lot(s): The fire code official shall review all building plans, determine system requirements, and issue appropriate permits. A visual piping inspection must be secured through the fire code official prior to requesting the framing inspection. Final inspection and approval of the system must be secured through the fire code official prior to final inspection by the Building Department and/or occupancy of the residence.

Appendix L. Delete Appendix L in its entirety and replace with the following:

SECTION L101
GENERAL

L101.1 Scope. The design, installation and maintenance of fire fighter air replenishment systems (FARS) shall be in accordance with this section.

L101.2 Required installations. A fire fighter air replenishment system shall be installed in the following buildings:

1. Buildings classified as high-rise in accordance with the International Building Code.
2. Underground structures that are two or more floors below grade with an area greater than 10,000 square feet (929 m^2).

SECTION L102
DEFINITIONS

L102.1 Definitions. For the purpose of this appendix, certain 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

L103.1 Permits. Permits shall be required to install and maintain a FARS. Permits shall be in accordance with Section L103.2 and L103.3.

L103.2 Construction permit. A construction permit in accordance with 105.7.24 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 L105.

L103.3 Operational permit. An operational permit in accordance with 105.6.50 is required to maintain a FARS.

L103.4 Plans. Prior to the installation of a FARS, a minimum of two sets of plans and specifications shall be submitted to the fire code official for review and approval. Plans shall demonstrate compliance with the requirements of this section and shall include calculations prepared by a registered design professional demonstrating that the design criteria for all pressure containing components is satisfied plus a minimum safety factor of 25%. Plans and specifications shall conform to guidance documents provided by the Division of the Fire Marshal.

SECTION L104
DESIGN AND INSTALLATION

L104.1 Design and installation. A FARS shall be designed and installed in accordance with Sections L104.2 through L104.15.

L104.1.1 Contractor qualification. The FARS shall be installed by an ASSE 6010 certified installer.

L104.1.2 Prevention of contamination. The installing contractor shall ensure that, at all times, the system components are not exposed to contaminants, including, but not limited to, oils, solvents, dirt and construction materials. When contamination of the system components has occurred, the effected component shall not be installed in the system.

L104.2 Standards. Fire fighter air replenishment systems shall be in accordance with Sections L104.2 and L104.2.2.

L104.2.1 Pressurized system components. Pressurized system components shall be designed and installed in accordance with ASME B31.3.

L104.2.2 Air quality. The system shall be designed to convey breathing air complying with NFPA 1989.

L104.3 Design and operating pressure. The minimum design pressure shall be 110% of the fire department's normal SCBA fill pressure. The systems design pressure shall be marked in an approved manner at the supply connections, and adjacent to the pressure gauges on any fixed air supply components. Pressure shall be maintained in the system within 5% of the design pressure.

L104.4 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 at the most remote cylinder filling panel.

L104.5 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 L104.14.

L104.6 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.

L104.7 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 CGFA 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 treated.

L104.8 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 meeting the requirements of ASTM A269, Grade 316 or equivalent.

L1404.8.1 Marking. System piping, gauges, valves and air outlets shall be clearly marked by means of permanent signage indicating their function. Markings used for piping systems shall consist of the following:

1. Content's name
2. Direction of flow arrow.

Markings shall be located as follows:

1. At each valve
2. At wall, floor or ceiling penetrations
3. At each change of direction
4. At a minimum of every 20 feet of fraction thereof throughout the piping system.

L104.8.2 Prohibited materials. The use of carbon steel, iron pipe, malleable iron, high-strength gray iron or alloy steel is prohibited.

L104.9 Welded connections. Piping connections that are concealed shall be welded. Prior to and during the welding of sections of tubing, a continuous, regulated dry nitrogen or argon purge at 3 psig (20.68 kPa) shall be maintained to eliminate contamination with products of the oxidation or welding flux. The purge shall commence a minimum of 2 minutes prior to welding operations and continue until the welded joint is at an ambient temperature between 60°F and 80°F (15.5°C to 26.6°C).

L104.10 Protection of piping. System piping shall be protected from physical damage in an approved manner.

L104.11 Compatibility. Fittings and connections intended to be used by the fire department shall be compatible with the fire department's equipment.

L104.12 Security. Connections to a FARS shall be safeguarded from unauthorized access or tampering in an approved manner.

L104.13 Interior Fill stations. Fire fighter air replenishment fill stations shall comply with Section L104.13.1 through L104.13.3.

L104.13.1 Location. Fill stations for refilling breathing air cylinders shall be located as follows:

1. **Aboveground structures.** An interior fill station shall be installed on floor landings in all stairwells, commencing on the second floor landing above grade, below grade and every other floor thereafter.
2. **Underground structures.** An interior fill station shall be installed on floor landings in all stairwells, commencing on the third floor below grade and every other below-grade level thereafter.
3. The fill station panel shall be located a minimum of 36 inches (914 mm) but not more than 60 inches (1524 mm) above the finished floor or stairway landing.

L104.13.2 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 stations 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 approved by the fire chief, fill stations providing for the direct refilling of the fire fighter's 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.

L104.13.3 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.

L104.13.4 Cabinet requirements. Each interior fill station shall be installed in a cabinet constructed of minimum 18-gauge carbon steel. The depth of the cabinet shall not create an exit obstruction when installed in building stairways. All components with the exception of the shutoff valve, pressure gauges, fill hoses and ancillary components shall be contained behind a minimum 18-gauge interior panel.

L104.13.4.1 Door. Hinges for the cabinet door shall be located inside of the cabinet. The door shall be arranged such that when the door is open, it does not reduce the required exit width or create an obstruction in the path of egress. A minimum of 80% of the door surface area shall be constructed of tempered glass. The thickness of the glass shall not be greater than 1/8 inch (3.17 mm).

L104.3.4.2 Marking. The front of each interior fill station panel shall be marked FIRE FIGHTER AIR REPLENISHMENT SYSTEM. The lettering shall be in a color that contrasts with the background and a minimum 2 inches high with a 3/8 inch stroke.

L104.13.5 Components. The cabinet shall be of sufficient size to allow for the installation of the following components:

1. One isolation valve located between the air discharge line to the next fill station and the downstream line to the air base station supply or the air fill station immediately below to the next fill station above the air base station.
2. The fill hoses and isolation valves shall be installed between the air bottle connection line and the fresh air supply.
3. Excess bleed valves shall be located between the air bottle fill hose and the next fill station.
4. Four SCBA fill hoses are required at a single fill station, the air supply lines shall be identified as 5500 psig pressure and shall be controlled by a single valve between the air supply and air bottle. The SCBA fill hoses shall be designed with RIC UAC fittings. A protective cap shall be provided for each hose.
5. Mechanical supports for piping, hoses, gauges and pressure components shall be designed and built to provide a solid rigid structure.

L104.13.6 Cylinder filling hose. The design of the cabinet shall provide a means for storing the hose to prevent kinking. When the hose is coiled, the brackets shall be installed so that the hose bend radius is maintained at 4 inches (102 mm) or greater.

The discharge outlet of each cylinder filling hose shall have a female RIC UAC. The female fitting shall be designed to connect to a male RIC UAC. The assembled RIC UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services.

L104.13.7 Security. To prevent unauthorized access to or tampering with the system, each panel cover shall remain locked by an approved means.

L104.14. External mobile air connection. An external mobile air connection, or base station, shall be provided for fire department mobile air apparatus where required by Section L104.5 to supply the system with breathing air.

L104.14.1 Location. The location of the external mobile air connection shall be within 40 feet of approved fire department vehicle access and approved by the fire chief.

L104.14.2 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.

L104.14.2.1 Protection from weather. The external mobile air connection shall be secured inside of a weather-resistant enclosure visible from the roadway on approach.

L104.14.3 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.

L104.14.4 Construction. The external mobile air connection panel shall be installed in a cabinet constructed of minimum 18-gauge carbon steel, provided with corrosion preventive coating or equivalent.

L104.14.5 External mobile air connection marking. The front of the enclosure shall be marked FIRE FIGHTER AIR REPLISHMENT SYSTEM on a highly visible permanently attached weather-proof sign. The lettering shall be in a color that contrasts with the background and a minimum 2 inches high with 3/8 inch stroke.

L104.14.6 External mobile air connection enclosure components. The components in the external mobile air connection panel shall consist of the necessary components to provide air to the air fill stations located on the upper or lower buildings levels, or both. The external mobile air connection shall be designed to allow connection from the mobile air unit. The following components shall be installed in the external mobile air connection enclosure:

1. One male rapid intervention crew (RIC) universal air connection (UAC) filling. When connected to a female fitting, the assembled UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services.
2. One downstream shutoff valve.
3. One pressure gauge to check pressure of the piping distribution to air filling stations located on upper and lower building levels.
4. One pressure relief valve designed for 1.25 times the design discharge of the fire department air supply or air supply trucks. All fittings, hoses, and hard piping in the external mobile air connection panel and distribution piping to

air filling station supply panels, shall be designed for an air pressure of 1.5 times the pressure of the fire department air delivery system.

5. External mobile air connections can be designed for an air pressure supply piping system for supply of air to air filling stations. The air supply lines will require an intermediate regulator to provide air pressure for a 5,000 psi (34,473 kPa) for a 4.5 air pack system. The air supply lines will be fitted with separate pressure relief valves set at 1.25 times the working pressure of the air supply line and the operating pressure of the pressurized lines.
6. The relief valve, fittings and connection hose shall meet the requirement of the ASME Boiler and Pressure Vessel Code, 7 Section VIII, Unified Pressure Vessel Code. The installation of the piping system, as a minimum, will be based on ASME B31.3-2012.
7. Mechanical supports for piping, hoses, gauges and pressure components, shall be designed and built to provide a solid rigid structure.

L104.14.7 Security. To prevent unauthorized access to or tampering with the system, the external mobile air connection panel enclosure shall remain locked by an approved means.

L104.14.7.1 Fire department key box. A fire department key box shall be provided adjacent to the enclosure. A key for the enclosure shall be provided in the key box.

L104.15 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.

L104.15.1 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% or above 23.5%.
4. A nitrogen level below 75% or above 81%.
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% of the maintenance pressure specified in Section L104.3

L104.15.2 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 and the fire command center.

L104.15.3 Air quality status display. Air quality status shall be visually displayed at the external mobile air connection required by Section L104.14 and the fire command center.

L104.15.4 Pressure monitoring switch. An electric low-pressure monitoring switch shall be installed in the piping system to monitor the air pressure. The pressure switch shall be connected to the building's fire alarm system. The pressure switch shall initiate a supervisory signal when the pressure of the breathing-air system is less than 3,000 psig (20,685 kPa) at 70°F (21°C) + 100 psig (690 kPa).

SECTION L105
ACCEPTANCE TESTS

L105.1 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% 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. Any defects in the system or leaks detected shall be documented on an inspection report and repaired or replaced.
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 testing to verify both of the following conditions:

    3.1. Visual indicators required by Section L104.15.1 function properly.
    3.2. Supervisory signals are transmitted as required by Section L104.15.2 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.

    5.1 During the period of air quality analysis, the air fill panel inlet shall be secured so that no air can be introduced into the system and each air fill panel shall be provided with a sign stating AIR QUALITY ANALYSIS IN

PROGRESS, DO NOT FILL OR USE ANY AIR FROM THIS SYSTEM. This sign shall be a minimum of 8-1/2 by 11 inches with a minimum of 1-inch lettering.

L105.2 System acceptance and certification. Prior to the final acceptance of the FARS, the building owner shall provide for the testing and certification of the system. As a minimum, this shall include verifying the system's compatibility with the fire department's SCBA apparatus; the system's ability to maintain 5500 psig working pressure; the operability of the low-pressure monitoring switch and that the system's air quality complies with the requirements of NFPA 1989. Prior to final acceptance, the building owner shall provide the fire code official with written verification of a testing and certification contract. Upon satisfactory completion of all tests and verification of air quality, the system shall be considered complete.

SECTION L106
INSPECTION, TESTING AND MAINTENANCE

L106.1 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 L107
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, L16.

Appendix N. Add new Appendix N to read as follows:

APPENDIX N INDOOR FLORA GROW OPERATIONS IN RESIDENTIAL OCCUPANCIES

SECTION N101
GENERAL

N101.1 Scope. The provisions of this appendix shall apply to all 1- and 2- single family dwellings and townhomes, as defined by the International Residential Code, where the indoor growing for propagation, production, consumption, and/or selling of flora exists and shall constitute minimum requirements and standards to provide a reasonable level of safety from fire and other hazards.

Flora grow operations shall not be permitted in R1 and R2 occupancies as defined by the International Building Code.

N101.2 Intent. This appendix shall be construed to secure its expressed intent, which is to ensure public health, safety and welfare insofar as they are affected by the continued occupancy and maintenance of structures and premises.

N101.3 Authority to inspect. The fire code official is authorized to enter and examine any building, structure, vehicle or premises in accordance with Section 104.3 of the International Fire Code for the purpose of enforcing this code.

N101.4 Inspections. The fire code official is authorized to conduct inspections as are deemed necessary to determine the extent of compliance with the provisions of this code and to approve reports of inspection by approved agencies or individuals. All reports of such inspections shall be prepared and submitted in writing for review and approval. Inspection reports shall be certified by a responsible officer of an approved agency or by the responsible individual. The fire code official is authorized to engage expert opinion as deemed necessary to report upon unusual, detailed or complex technical issues subject to the approval of the governing body.

N101.4.1 Inspection requests. It shall be the duty of the property owner or their designee to notify the fire code official when work is ready for inspection. It shall be the duty of the property owner or their designee to provide access to and means for inspections of such work that are required by this code.

SECTION N102
DEFINITIONS

N102.1 Terms defined in other codes. Where terms are not defined in this code and are defined in the International Building Code, International Existing Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Residential Code, International Zoning Code or NFPA 70, such terms shall have the meanings ascribed to them as stated in those codes.

N102.2 Parts. Whenever the words dwelling unit, dwelling, premises, building, rooming house, rooming unit, housekeeping unit or story are stated in this appendix, they shall be construed as though they were followed by the words or any part thereof.

N102.3 Definitions not listed. For definitions not listed in Section N102.4, see Chapter 2 of the International Fire Code.

N102.4 Definitions.

ACCESSORY STRUCTURE. A structure that is accessory to and incidental to that of the dwelling and that is located on the same lot or premises. For example a residential structure may have a detached garage or storage shed for garden tools as accessory

structures. Other examples of accessory structures include, but are not limited to, gazebos, picnic pavilions, greenhouses, pole barns, storage sheds, and similar buildings.

BEDROOM/SLEEPING ROOM. A habitable space used primarily for sleeping purposes and containing a closet 16 inches or greater in depth.

DETERIORATION. To weaken, disintegrate, corrode, rust or decay and lose effectiveness.

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 a said lot or lots.

ENCLOSURE. An area that is sealed off with an artificial or natural barrier.

FLORA. The plant life occurring in a particular region or time, generally the naturally occurring or indigenous. For the purposes of this code, flora shall include non-indigenous as well.

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

NEGLECT. The lack of proper maintenance for a building or structure.

OCCUPANCY. The purpose for which a building or portion thereof is utilized or occupied.

OCCUPANT. Any individual living or sleeping in a building, or having possession of a space within a building.

OPENABLE AREA. That part of a window, skylight or door which is available for unobstructed ventilation and which opens directly to the outdoors.

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

RELOCATEABLE POWER TAPS. Multi-outlet power strip used to extend power from an approved receptacle.

STRUCTURE. That which is built or constructed or a portion thereof.

TENANT. A person, corporation, partnership or group, whether or not the legal owner of record, occupying a building or portion thereof as a unit.

SECTION N103
HAZARDS TO ENFORCEMENT OFFICIALS

N103.1 Pitfalls. The intentional design or alteration of buildings to disable, injure, trap, immobilize, engulf maim or kill persons is prohibited. No person shall install and use

firearms, trapdoors sharp or pointed objects, razor wire, explosives, flammable or combustible liquid containers, or dispensers containing highly toxic, toxic, irritant or other hazardous materials in a manner which may passively or actively disable, injure, maim or kill a fire fighter, emergency medical personnel, peace officer, person or other enforcement official who enters a building for the purpose of controlling or extinguishing a fire, rescuing trapped occupants or rendering other emergency assistance.

SECTION N104
ROOMS USED FOR FLORA GROW AND PRODUCTION OPERATIONS

N104.1 Permitted locations. Flora growing operations utilizing grow lighting shall be limited to areas of the residence other than kitchens, bathrooms and/or bedrooms/sleeping rooms.

Exception: A bedroom/sleeping room may be used as long as the dwelling unit maintains at least one code compliant bedroom/sleeping room.

N104.2 Room size. A room or an enclosure with grow lighting used for flora grow, propagation, consumption, or selling shall be limited to 150 square feet aggregate in size per premises.

N104.3 Occupancy classification. Flora grow, propagation, consumption or selling operations in a room or an enclosure exceeding 150 square feet aggregate shall be considered an F-occupancy under the International Building Code, and a change of use and occupancy for the single family dwelling. Permitting for a change of use/occupancy shall be required through the Pikes Peak Regional Building Department and Colorado Springs Land Use Review. Applicable building and fire code requirements for the F-occupancy shall apply.

N104.4 Land use. The use/occupancy of the structure shall meet all applicable zoning code requirements or otherwise obtain zoning approval for desired use, through City Planning/Land Use Review.

SECTION N105
ELECTRICAL AND LIGHTING

N105.1 Service. The wattage and usage of appliances and equipment shall serve as a basis for determining the need for additional facilities in accordance with NFPA 70.

N105.2 Installation. All electrical equipment, wiring and appliances shall be properly permitted, installed, and inspected in accordance with the requirements of the currently adopted Pikes Peaks Regional Building Code.

N105.2.1 Permits. All required permits shall be obtained, and electrical equipment shall be maintained in a safe and approved manner at all times.

N105.3 Lighting. Lighting used for the indoor growing, or propagation of flora shall be limited to light emitting diodes (LED), compact florescent lamps (CFL), fluorescent lighting or other lighting that may be approved by the fire code official.

N105.3.1 Listed and labeled. All lighting used for the indoor growing and propagation of flora shall be listed and labeled.

N105.4 Electrical hazards. Where it is found that the electrical system in a structure constitutes a hazard to the occupants or the structure by reason of inadequate service, improper overcurrent protection, insufficient receptacle and lighting outlets, improper wiring or installation, deterioration or damage, or for similar reasons, the fire code official shall require the defects to be corrected or removed, to eliminate the hazard.

N105.4.1 Relocatable power taps. Multi-plug adapters, such as cube adapters, unfused plug strips or any other device not complying with NFPA 70 shall be prohibited.

N105.4.2 Relocatable power tap design. Relocatable power taps shall be of the polarized or grounded type, equipped with overcurrent protection, and shall be listed in accordance with UL 1363.

N105.4.3 Power supply. Relocatable power taps shall be directly connected to a permanently installed and approved receptacle.

N105.4.4 Installation. Relocatable power tap cords shall not extend through walls, ceilings, floors, under doors or floor coverings, or be subject to environmental or physical damage.

N105.5 Extension cords. Extension cords and flexible cords shall not be a substitute for permanent wiring. Extension cords and flexible cords shall not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor coverings, nor shall such cords be subject to environmental damage or physical impact. Extension cords shall be used only with portable appliances.

N105.5.1 Power supply. Extension cords shall be plugged directly into an approved receptacle, power tap or multiplug adapter and, except for approved multiplug extension cords, shall serve only one portable appliance.

N105.5.2 Ampacity. The ampacity of the extension cords shall not be less than the rated capacity of the portable appliance supplied by the cord.

N105.5.3 Maintenance. Extension cords shall be maintained in good condition without splices, deterioration or damage.

N105.5.4 Grounding. Extension cords shall be grounded when serving grounded portable appliances.

N105.6 Unapproved conditions. Open junction boxes and open-wiring splices shall be prohibited. Approved covers shall be provided for all switch and electrical outlet boxes.

N105.7 Appliances. Electrical appliances and fixtures shall be tested and listed in published reports of inspected electrical equipment by an approved agency and installed and maintained in accordance with all instructions included as part of such listing.

N105.8 Electrical motors. Electrical motors shall be maintained free from excessive accumulations of oil, dirt, waste and debris.

N105.9 Portable, electric space heaters. Where not prohibited by other sections of this code, portable, electric space heaters shall be permitted to be used in all occupancies and in accordance with Sections 605.10 through 605.10.4.

N105.9.1 Listed and labeled. Only listed and labeled portable, electric space heaters shall be used.

N105.9.2 Power supply. Portable, electric space heaters shall be plugged directly into an approved receptacle.

N105.9.3 Extension cords. Portable, electric space heaters shall not be plugged into extension cords.

N105.9.4 Prohibited areas. Portable, electric space heaters shall not be operated within 3 feet (914 mm) of any combustible materials. Portable, electric space heaters shall be operated only in locations for which they are listed.

SECTION N106
HAZARDOUS MATERIALS

N106.1 Compressed flammable/combustible gases. The manufacture of flora concentrates, oils or other derivatives involving the use of compressed flammable gas, flammable gas, flammable liquid, or combustible liquid as a solvent in a residential setting is prohibited.

N106.2 Carbon dioxide. The storage, use, and/or handling of carbon dioxide, and/or carbon dioxide systems shall be prohibited.

N106.3 Chemicals. Chemicals used in the growing or propagation of flora shall not be stored within the habitable areas of the residence. Chemicals stored on the premises shall meet all applicable sections of Chapter 50, along with any other associated Chapter(s), given the chemical stored.

SECTION N107
VENTILATION

N107.1 General. Where injurious, toxic, irritating or noxious fumes, gases, dusts, molds, mildew or mists are generated as a result of flora grows or propagation, a local exhaust ventilation system shall be provided to remove the contaminating agent at the source. Air shall be exhausted to the exterior and not be recirculated to any space. Such systems shall be designed to meet the following:

1. Ensure odors from the grow or propagation are not detectable beyond the structure.
2. Prevent mold, moisture, to otherwise protect the health and safety of persons residing in the residence.
3. Meet any/all applicable requirements of the International Mechanical Code.

N107.2 Installation. All mechanical/ventilation equipment, wiring and appliances shall be properly installed by a Pikes Peak Regional Building Department licensed contractor.

N107.2.1 Permits. All required permits shall be obtained, and mechanical/ventilation equipment shall be maintained in a safe and approved manner at all times.

N107.3 Exhaust vents. Pipes, ducts, conductors, fans or blowers shall not discharge gases, steam, vapor, hot air, grease, smoke, odors or other gaseous or particulate wastes directly upon abutting or adjacent public or private property or that of another tenant.

SECTION N108
STRUCTURAL

N108.1 Structural members. All structural members shall be maintained structurally sound, and be capable of supporting the imposed loads. Construction, alterations, removal, and/or modification of any structural members, floors, walls, ceilings, door and windows shall be in compliance with the International Residential Code, International Building Code and require a permit from the Pikes Peak Regional Building Department.

Section 2. Any person convicted of violations of Section 105 (Amendments to the International Fire Code) of Part 1 (Fire Prevention) of Article 4 (Fire Prevention) of Chapter 8 (Public Safety) of the Code of the City of Colorado Springs 2001, as amended, shall be punished as provided in Sections 201 (General Penalty) and 202 (Minor Offenders) of Part 2 (General Penalty) of Article 1 (Administration) of Chapter 1 (Administration, Personnel, and Finance) of the Code of the City of Colorado Springs, 2001, as amended.

Section 3. This ordinance shall be in full force and effect from and after its final passage and publication as provided by Charter.

Section 4. Council deems it appropriate that this ordinance be published in full as required by Part 2, Article 16, and Title 31 of the Colorado Revised Statutes prepared by the City Clerk and that this ordinance be available for inspection and acquisition in the office of the City Clerk.

Introduced, read, passed on first reading and ordered published this 8th day of May, 2018.

Finally passed: May 22nd, 2018

Council President

Mayor's Action:

☒ Approved on May 24, 2018.

☐ Disapproved on _____, based on the following objections:

_____

_____

_____

_____

Mayor

Council Action After Disapproval:

☐ Council did not act to override the Mayor's veto.

☐ Finally adopted on a vote of _____, on _____.

☐ Council action on _____ failed to override the Mayor's veto.

_____
Council President

ATTEST:

Sarah B. Johnson, City Clerk

I HEREBY CERTIFY, that the foregoing ordinance entitled **"AN ORDINANCE REPEALING AND REORDAINING PART 1 (FIRE PREVENTION CODE) OF ARTICLE 4 (FIRE PREVENTION) OF CHAPTER 8 (PUBLIC SAFETY) OF THE CODE OF THE CITY OF COLORADO SPRINGS 2001, AS AMENDED, ADOPTING THE 2015 EDITION OF THE INTERNATIONAL FIRE CODE WITH AMENDMENTS AND PROVIDING PENALITIES FOR THE VIOLATION THEREOF"** was introduced and read at a regular meeting of the City Council of the City of Colorado Springs, held on May 8th, 2018; that said ordinance was finally passed at a regular meeting of the City Council of said City, held on the 22nd day of May, 2018, and that the same was published by title and summary, in accordance with Section 3-80 of Article III of the Charter, in the Transcript, a newspaper published and in general circulation in said City, at least ten days before its passage.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the City, this 24th day of May, 2018.

Sarah B. Johnson, City Clerk

COLORADO SPRINGS CORPORATE SEAL SEPTEMBER 3, 1872 COLORADO

1st Publication Date: May 11th, 2018
2nd Publication Date: May 30th, 2018

Effective Date: June 4th, 2018

Initial: _____
City Clerk