

COUNTY OF LARIMER, COLORADO
AMENDMENTS
TO THE
2018
INTERNATIONAL RESIDENTIAL CODE



EFFECTIVE DATE: JANUARY 1, 2019

Amendments to the 2018 International Residential Code

WHEREAS, the Chief Building Official of Larimer County, the Board of Appeals, and the Larimer County Planning Commission have recommended that the Board of County Commissioners adopt the 2018 International Residential Code named above with certain amendments, concurrent with the repealing of those portions of the currently adopted 2015 International Residential Code that is to be superseded by the 2018 International Residential Codes; and

WHEREAS, the said Board has found that said adoption would be in the best interest of the people of Larimer County, after a duly publicized public hearing on this matter;

NOW, THEREFORE, BE IT RESOLVED, that the 2018 International Residential Code is hereby adopted and shall be part of the Larimer County Building Code effective January 1, 2019. The 2015 International Residential Code and its amendments are hereby repealed.

IT IS FURTHER RESOLVED that the Deputy Clerk of this Board shall forthwith cause a certified copy of this resolution with revised amendments to be filed with the Clerk and Recorder for the County of Larimer.

Dated this ?th day of ???, 2018

BOARD OF COMMISSIONERS OF
LARIMER COUNTY COLORADO

By: _____
Chairman

Date: _____

(SEAL)
ATTEST:

Deputy Clerk
APPROVED AS TO FORM

County Attorney

2018 International Residential Code (IRC)

CHAPTER 1 SCOPE AND ADMINISTRATION

The following section is hereby amended to read as follows:

R101.1 Title. These provisions shall be known as the Residential Code for One- and Two-Family Dwellings of Larimer County, and shall be cited as such and will be referred to herein as {this code}.

The following section is hereby amended by modifying exceptions # 2, 3, 4 and 5 and adding exceptions to read as follows:
R101.2 Scope.

Exceptions: The following shall be permitted to be constructed in accordance with this code where provided with a residential fire sprinkler system in accordance with Section P2904 **or NFPA standards.**

2. *Bed & Breakfast facilities* providing accommodations for 6 guests or less that are also occupied as the single family residence of the proprietor are permitted to comply with the International Residential Code.
3. A care facility with five or fewer persons receiving custodial **or medical care** within a dwelling unit.
- ~~4. A care facility with five or fewer persons receiving medical care within a dwelling unit.~~
- ~~5. A care facility for five or fewer persons receiving care that are within a single-family dwelling.~~
4. *Resort lodge cottages* are permitted to comply with the International Residential Code. {Resort lodge cottages may be subject to the State of Colorado Accessibility Standards}
5. Within the Estes Valley Planning Area, *Vacation Homes* shall be permitted to be regulated in accordance with the International Residential Code for One-and Two-Family Dwellings, where the dwellings legally existed prior to the effective date of this provision and where compliant with Section R328.
6. Within the Estes Valley Planning Area, *Large Vacation Homes* shall be permitted to be regulated in accordance with the International Residential Code for One-and Two-Family Dwellings, where a 2017 *Vacation Home* or *Large Vacation Home* registration was applied for prior to April 1, 2017 and where compliant with Section R328. The occupant load for *Large Vacation Homes* regulated by the International Residential Code shall be determined based on the number of bedrooms approved in conjunction with the 2017 registration application received prior to April 1, 2017.
7. Within the Estes Valley Planning Area, *Vacation Homes* constructed under permits applied for on or after the effective date of this provision shall be permitted to be regulated in accordance with the International Residential Code for One-and Two-Family Dwellings, where new *Large Vacation Homes* are prohibited by land use regulations and where compliant with Section R328.
8. Within the Estes Valley Planning Area, *Vacation Homes* constructed under permits applied for on or after the effective date of this provision shall be permitted to be regulated in accordance with the International Residential Code for One-and Two-Family Dwellings; where new *Large Vacation Homes* are allowed; where they have less than 2200 square feet of enclosed floor area, excluding attached garages, an occupant load of less than nine and not more than three bedrooms; and where compliant with Section R328.
9. Within the Estes Valley Planning Area, *Vacation Homes* constructed under permits applied for on or after the effective date of this provision shall be permitted to be regulated in accordance with the International Residential Code for One-and Two-Family Dwellings, where constructed under a Development Plan approved prior to the effective date of this provision and no floor area or additional rooms used for sleeping purposes are added beyond the approved Development plan and where compliant with Section R328.

The following section is hereby amended to read as follows:

R103.1 Creation of enforcement agency. The Building **Division** is hereby created and the official in charge thereof shall be known as the Chief Building Official.

The following section is hereby amended to read as follows:

R103.2 Appointment. The Chief Building Official, herein known as the building official, shall be appointed by the Director of the Community Development **Department.**

The following section is hereby amended to read as follows:

R104.10.1 Flood Hazard areas. The County Engineer shall not grant modifications to any provision related to areas prone to flooding as established by Table R301.2 (1) without the granting of a variance to such provisions by the Floodplain Review Board.

The following section is hereby amended to read as follows:

R105.1 Required. Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, including bridges and culverts, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*.

The following section is hereby amended by amending items 1, 2, 3, 8 & 10 and adding items 11-17 to read as follows:

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

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 120 square feet (11.15m²) nor 12 feet 3658 mm) in average roof height.
2. Fences not over 6 feet (1829 mm) high.
3. Retaining walls that are not over 4 feet (1219 mm) in height measured from a point eight feet horizontally downslope from the low side finish grade to the high side finish grade behind the wall, provided that the horizontal distance to the next uphill retaining wall is at least equal to twice the height of the upper wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids. [See Figure 105.2.3]
8. Swings and other playground equipment, including one elevated playhouse per lot designed and used exclusively for play, not exceeding 64 square feet (5.9 m²) of floor area or 8 feet (1.82 m) in height as measured from the floor to the highest point of such structure.
10. Decks not more than 30 inches (762 m) above *grade* at any point and not serving the exit door required by Section R311.2.
11. Roofing repair or replacement work not exceeding one hundred square feet (9.29m²) of covering per building.
12. Window replacement requiring no structural alterations. Replacement windows must meet Appendix J code requirements.
13. Replacement of non-structural siding when the removal of siding is performed in accordance with State laws regarding asbestos and lead paint.
14. Shade cloth and maximum 6 mil **single layer** poly-roofed structures, constructed for nursery or agricultural purposes, **with no entry by the general public**, not including service systems.
15. Solar thermal and photovoltaic systems installed on structures otherwise exempt from permit requirements.
16. Bridges or culverts constructed under another county permit (including but not limited to a Right-of-Way Work Permit, Access Permit, Development Construction Permit, or Private Road Construction Permit), culverts and private pedestrian bridges that serve only one residence and are not in a regulatory floodplain or county-designated major drainage way, which can be found at <https://www.larimer.org/sites/default/files/uploads/2017/majordrainageareaofinterestmap.pdf>
17. Pergolas, arbors or trellises whose roof area is at least 67% open.

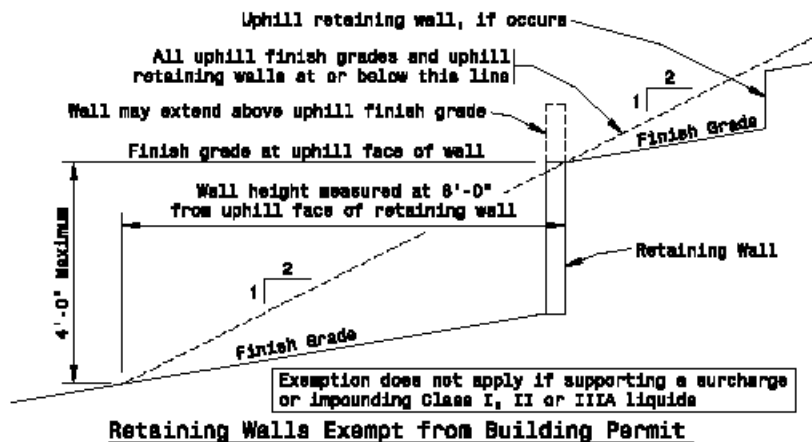


Figure 105.2.3

The following section is hereby amended by amending Item # 2 under Plumbing: to read as follows:

R105.2. Work exempt from permit.

Plumbing:

2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, the removal and replacement of fixtures, including the same size or smaller water heater by Colorado state-licensed plumbers, provided such repairs or replacements do not involve or require the replacement or rearrangement of valves, pipes, or vents.

The following section is hereby amended to read as follows:

R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas. For applications for reconstruction, rehabilitation, addition, or other improvement of existing buildings or structures located in an area prone to flooding as established by Table R301.2(1), the county engineer shall examine or cause to be examined the construction documents and shall prepare a finding with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its pre-damage condition. If the county engineer finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the finding shall be provided to the Floodplain Review Board for a determination of substantial improvement or substantial damage. Applications determined by the Floodplain Review Board to constitute substantial improvement or substantial damage shall meet the requirements of Section R322.

The following section is hereby amended to read as follows:

R105.5 Expiration. Every permit issued by the building official under the provisions of this code shall expire 18 months after the date of issue. The building official is authorized to grant a one-time written extension of 18 months at no charge, making the original permit valid for three years. Additional 18 month extensions will cost one-half the amount of the original building permit fee or a minimum of \$50, whichever is more. Every permit shall become null and void if the building or work authorized by such permit is not commenced within 180 days from the date of issue of such permit, if the person or entity to whom the permit is issued fails to request a first inspection within 180 days of the date of such permit, or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days or more. Before such work can be recommenced, a

new permit shall be first obtained to do so. The fee for such new permit shall be one-half of the amount required for a new permit for such work, provided no changes have been made or will be made in the original plans and specifications for such work and provided further that the suspension or abandonment has not exceeded one year. Changes in the plans and specifications or abandonment exceeding one year shall require an additional permit fee and plan review fee as described in Section R108. Permits for "as-built" construction must have final inspection approval within 180 days of permit issuance. The Building Official is authorized to grant a one-time extension of twelve months for "as-built" permits, at no charge, provided evidence of progress towards final inspection or good cause is shown.

The following section is hereby amended to read as follows:

R106.1.4 Information for construction in flood hazard areas. For buildings and structures located in whole or in part in flood hazard areas as established by Table R301.2(1), construction documents shall include:

1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood elevation, as appropriate;
2. The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO zones), the height of the proposed lowest floor, including basement, above the highest adjacent grade; and
3. If design flood elevations are not included on the county's Flood Insurance Rate Map (FIRM), the county engineer and the applicant shall obtain and reasonably utilize any design flood elevation and floodway data available from other sources.

The following section is hereby amended to read as follows:

R107.1 General. The building official is authorized to issue a permit for temporary structures and temporary uses. Such permits shall be limited as to time of service, but shall not be permitted for more than 18 months. The building official is authorized to grant extensions for demonstrated cause.

The following section is hereby amended to read as follows:

R107.3 Temporary power. The Colorado State Electrical Board is authorized to give permission to temporarily supply and use power in part of an electrical installation before such installation has been fully completed and the final certificate of completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in the most recently adopted National Electrical Code.

The following section is hereby added to read as follows:

R108.7 Expiration of Plan Review. Applications for which no permit is issued within one hundred and eighty (180) days following the date of application shall expire by limitation, and plans submitted for review may thereafter be returned to the applicant or destroyed by the building official. The building official may extend the time for action by the applicant for a period not exceeding ninety (90) days upon written request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee.

The following section is hereby added to read as follows:

R108.8 Re-inspections. A re-inspection fee as set forth in an adopted fee schedule may be assessed for each inspection or re-inspection when such portion of work for which inspection is called for is not complete or when corrections called for are not made. This section is not to be interpreted as requiring re-inspection fees the first time a job is rejected for failure to comply with the requirements of this Code, but as controlling the practice of calling inspections before the job is ready for such inspection or re-inspection. Re-inspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, for deviating from plans requiring the approval of the building official, or for failure to post a readily visible address as required by section R319. To obtain a re-inspection, the applicant shall pay the re-inspection fee in accordance with the fee schedule. In instances where re-inspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

The following section is hereby amended to read as follows:

R110.1 Use and occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the building official has issued a certificate of occupancy therefore as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other county ordinances. Certificates presuming to give authority to violate or cancel the provisions of this code or other county ordinances shall not be valid.

Exceptions:

1. Certificates of occupancy are not required for work exempt from permits under Section R105.2.
2. Cabins, agricultural and accessory buildings, and miscellaneous permits shall not receive certificates of occupancy; a letter of completion will be given upon request.

The second sentence in the following section is hereby amended, and a third sentence added to read as follows:

R104. Temporary occupancy. A Temporary Certificate of Occupancy (TCO) shall be valid for 180 days. **The fee for a TCO shall be in accordance with the fee schedule as established by Larimer County.**

The following section is hereby added to read as follows:

R112.2.1 Determination of substantial improvement in areas in flood hazard areas. When the county engineer provides a finding required in Section R105.3.1.1, the Floodplain Review Board shall determine whether the value of the proposed work constitutes a substantial improvement.

The following section is hereby amended to read as follows:

R112.3 Qualifications The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the Community Development **Department**.

The following section is hereby amended to read as follows:

R112.4 Administration. To appeal a written **determination** of the building official to the Board of Appeals, a written appeal must be received by the Larimer County Building **Division** within thirty (30) days of the date of the **determination** being appealed. The appellant shall, at the time of making such appeal, pay to the Larimer County Building **Division** a docket fee as specified in the Larimer County fee schedule. The Larimer County Building **Division** shall send written notice of hearing to all parties concerned at least fourteen (14) days prior to the hearing by mailing the same to such parties' last known address by regular mail. The Board of Appeals shall, from time to time, adopt such additional rules and regulations as it deems necessary and advisable for the conduct of its hearings and for carrying out the provisions hereof. The building official shall take immediate action in accordance with the decision of the Board of Appeals. All meetings or hearings shall be open to the public.

CHAPTER 2 DEFINITIONS

The following section is hereby amended by adding or amending these terms to read as follows:

R202 DEFINITIONS

BED & BREAKFAST FACILITY. A facility providing accommodations for 6 or fewer guests that is also occupied as a single-family residence by the proprietor.

CABIN. A structure that contains at least one habitable room for living, sleeping, eating or cooking that is designed, arranged and intended to be occupied by one occupant or living unit. (Living unit is as defined in the Larimer County Land Use Code.) A structure will be considered a cabin only when one of the following is not present: an approved electrical system, an approved sanitation system, a potable water system, a water heater or a primary heat source. Cabins require a permanent foundation and a sanitary sewage system approved by the Larimer County Environmental Health Department.

ESTES VALLEY PLANNING AREA. The unincorporated portion of the Estes Valley as depicted on Exhibit A of the Intergovernmental Agreement between the Town of Estes Park and Larimer County, dated February 1, 2000, also known as the Estes Valley Development Code Boundary Map.

FAMILY. An individual or group of people living together who are related by blood, marriage or adoption.

FIRE CONTAINMENT AREA. A portion of a story or basement which is totally enclosed by a smoke and draft barrier of not less than 1-hour, fire-resistive construction. All door openings penetrating such fire-containment areas shall be protected by a tight-fitting, smoke and draft control assembly as specified in International Building Code Section **716.1.2 and 716.2**. Openings other than doors and ducts shall be protected as specified in Sections **716.3** and shall be limited to a maximum of 25 percent of any one wall, in compliance with section **707.6**. All duct penetrations shall be protected by dampers as specified in **section 717, Table 717.3.2.1, and section 717.3.3.2** (smoke dampers), except that such dampers shall be automatic closing by actuation of a smoke detector. Self-closing devices may be used in lieu of automatic closing devices on doors unlikely to be fixed open during normal conditions, such as doors at toilet rooms, stairways, closets, small storage rooms and similar areas.

FIREPLACE INSERT. A wood burning device designed to be installed in an existing fireplace.

GUEST – An adult over 12 years of age. For example, a family consisting of a mother, father and a 12-year old child would be considered two guests.

LOCKING-TYPE TAMPER-RESISTANT CAP. A cap designed to be unlocked by a specially designed tool or key to prevent removal of the cap. **by means of hand loosening or by commonly available tools.**

NON-RESTRICTED AREA. That part of unincorporated Larimer County located west of Range 71 or north of the north half of Township 10, and east of Range 72 as shown on the Larimer County Fireplace Area Map.

PRIMARY HEAT SOURCE. A heating system capable of maintaining room temperatures at 68 degrees Fahrenheit at a point three feet above the floor and two feet from exterior walls in all habitable rooms during cold, inclement weather at all times, even when the structure is not occupied.

RESORT LODGE COTTAGES – A building or group of buildings, under single management and ownership, containing rooms and/or dwelling units available for temporary rental to guests where the primary attraction is generally recreational features or activities. (Resort lodge cottages may be subject to the State of Colorado Accessibility Standards.)

RESTRICTED AREA. That part of unincorporated Larimer County located outside the Non-restricted Area as shown on the Larimer County Fireplace Area Map.

SOLIDLY SHEATHED DECK. A roof deck with gaps between planks or sheathing not exceeding 1/8 inch.

WOOD STOVE. An appliance designed for or capable of burning wood and capable of and intended for domestic space heating or domestic water heating.

The following section is hereby added to read as follows:

R202.1 The following definitions apply solely within the Estes Valley Planning Area.

APPROVED DEVELOPMENT PLAN. Approved Development Plans are those projects which have been formally submitted, reviewed and approved pursuant to the residential and accommodations provisions of Table 3-3 of the Estes Valley Development Code.

HOTEL. A building or a portion of a building which contains dwelling units and/or sleeping units where accommodations are provided for nine or more occupants transient in nature and where units may be individually rented.

LARGE VACATION HOME. A one-family dwelling constructed in compliance with the scoping provisions of the International Residential Code, where accommodations are provided for a single group of nine or more occupants transient in nature and where rooms may not be individually rented to guests which are not part of the group.

LARGE VACATION HOME OCCUPANT LOAD. For the purposes of using a dwelling as a large vacation home, the approved maximum number of occupants shall be determined by allowing two occupants per approved bedroom plus two additional occupants. In large vacation homes, all occupants shall sleep only in rooms designated and approved for sleeping purposes. Large vacation homes regulated by the International Building Code shall comply with minimum design occupant load requirements of the International Building Code.

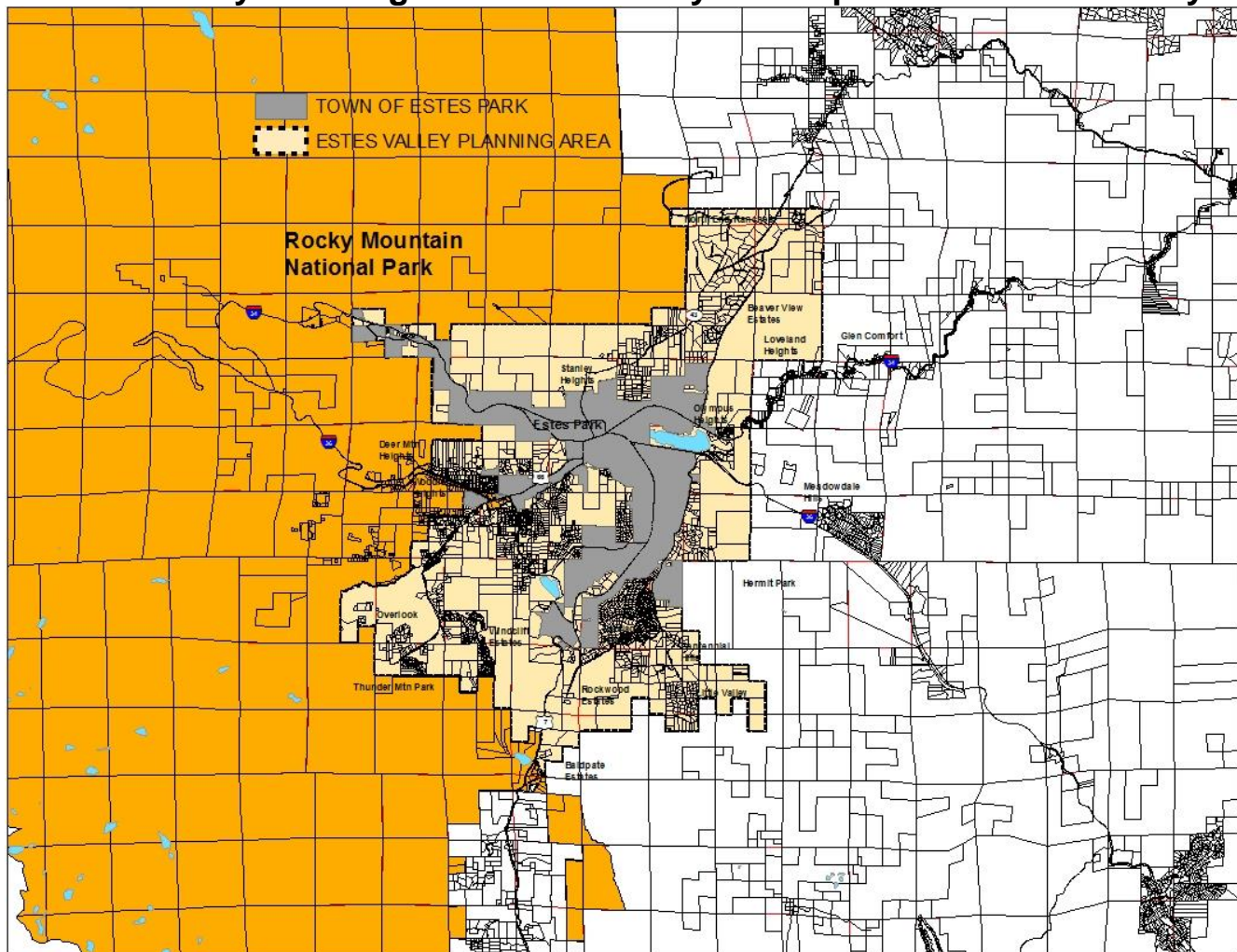
SMALL HOTEL. A building or a portion of a building which contains dwelling units and/or sleeping units where accommodations are provided for less than nine occupants, transient in nature and where units may be individually rented.

TRANSIENT. Occupancy of a dwelling unit or sleeping unit for not more than 30 days.

VACATION HOME. A one-family dwelling constructed in compliance with the scoping provisions of the International Residential Code, where accommodations are provided for a single group of less than nine occupants transient in nature and where rooms may not be individually rented to guests which are not part of the group.

VACATION HOME OCCUPANT LOAD. For the purposes of using a dwelling as a vacation home, the approved maximum number of occupants shall be determined by allowing two occupants per approved bedroom plus two additional occupants. In vacation homes, all occupants shall sleep only in rooms designated and approved for sleeping purposes.

Estes Valley Planning Area/Estes Valley Development Code Boundary Map



CHAPTER 3 BUILDING PLANNING

The following section is hereby amended to read as follows:

TABLE 301.2 (1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Ground Snow Load ^o (P _g)	Wind Design				Seismic Design Category ^f	Subject to Damage from			Winter Design Temperature ^e
	Speed ^d (mph)	Topographic effects ^k	Special Wind Region ^l	Wind-borne debris zone ^m		Weathering ^a	Frost Line Depth ^b	Termite ^c	
35psf ≤ 5000' 45psf ≤ 6000' 50psf ≤ 6500' 60psf ≤ 7000' 70psf ≤ 8000' 100psf ≤ 9000' 140psf ≤ 10000' Engineered design required over 10,000'	115-225 mph Ultimate Design Wind Speed V _{ult}	YES	YES	NO	B	Severe	30 inches	Slight to Moderate	+4° F

Ice Barrier Underlayment Required ^h	Flood Hazards ^g	Air Freezing Index ⁱ	Mean Annual Temperature ^j
YES	(a) 1973 (b) Feb. 6, 2013 (c) Panels 08069C0025 through 08069C1420	906 in the Class C roofing area (Front Range) 920 in the Class B roofing area (foothills & mountains)	48.4° F

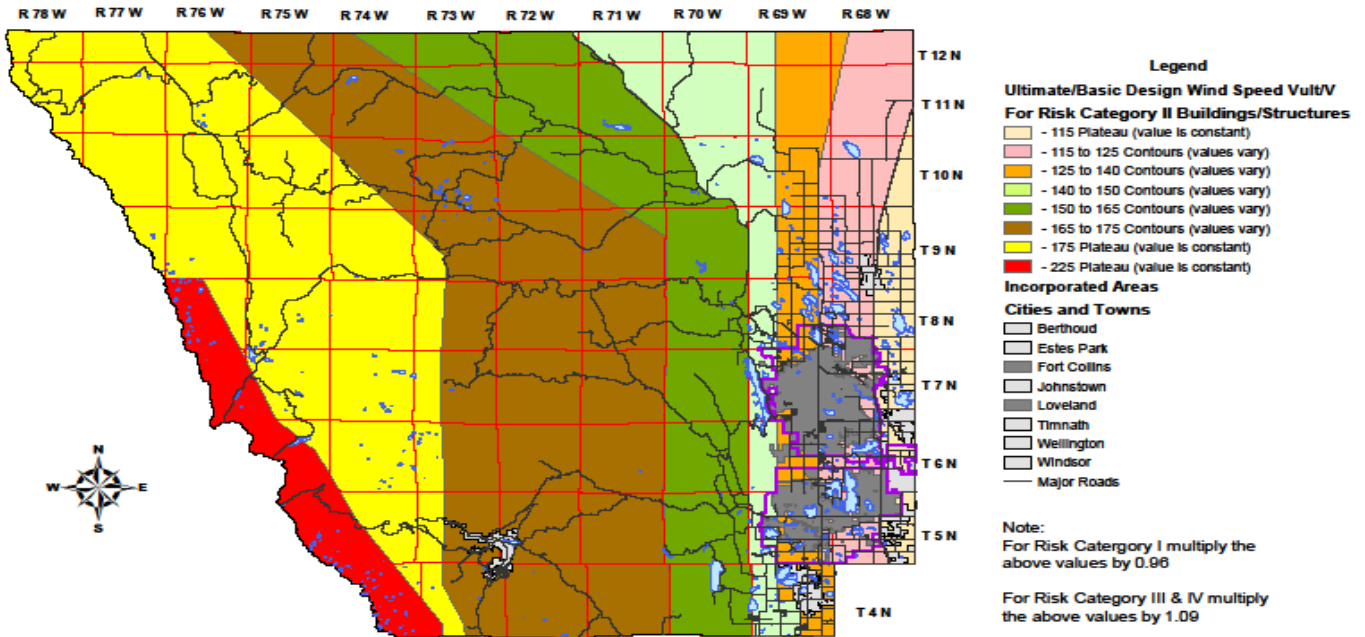
For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447m/s.

Elevation	Latitude	Winter Heating Outdoor Design Dry-bulb	Summer Cooling Outdoor Design Dry-bulb	Altitude Correction Factor	Design Temp. Heating Wet-bulb	Design Temp. Cooling Dry-bulb	Heating Temp. Difference
4,935	40° North	4° F	91° F	.85	72° F	75° F	68° F
Cooling Temp Difference	Wind Velocity Heating	Wind Velocity Cooling	Coincident Wet Bulb	Daily Range	Winter Humidity	Summer Humidity	
16° F	15 mph	7.5 mph	62° F	High (H)	50%	50%	

Footnotes to Table 301.2 (1)

- a. Where weathering requires a higher strength concrete or *grade* of masonry than necessary to satisfy the structural requirements of this code, the frost line depth strength required for weathering shall govern. The weathering column shall be filled in with the weathering index, "negligible," "moderate" or "severe" for concrete as determined from Figure R301.2(4). The *grade* of masonry units shall be determined from ASTM C34, C55, C62, C73, C90, C129, C145, C216 or C652.
- b. Where the frost line depth requires deeper footings than indicated in Figure R403.1(1), the frost line depth strength required for weathering shall govern. The *jurisdiction* shall fill in the frost line depth column with the minimum depth of footing below finish *grade*.
- c. The *jurisdiction* shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
- d. The Ultimate Design Wind Speed for a site shall comply with the Colorado Front Range Gust Map – ASCE 7-10 Compatible, published by the Structural Engineers Association of Colorado (dated November 8, 2013) or the Larimer County Ultimate/Basic Design Wind Speed Map. Wind Load design values shall be determined from Section 1609 of the IBC. **Wind exposure category shall be Exposure C unless designated otherwise by the design professional based on site-specific conditions and approved by the building official.**
- e. The outdoor design dry-bulb temperature shall be selected from the columns of 97 ½ -percent values for winter from Appendix D of the *International Plumbing Code*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the *building official*. [Also see Figure R301.2(1).]
- f. The *jurisdiction* shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.
- g. The *jurisdiction* shall fill in this part of the table with (a) the date of the *jurisdiction's* entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of the currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having *jurisdiction*, as amended.
- h. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the *jurisdiction* shall fill in this part of the table with "YES."
- i. The *jurisdiction* shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."
- j. The *jurisdiction* shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."
- k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the *jurisdiction* shall fill in this part of the table with "YES." Otherwise, the *jurisdiction* shall indicate "NO" in this part of the table.
- l. In accordance with Figure R301.2(5)A, where there is local historical data documenting unusual wind conditions, the *jurisdiction* shall fill in this part of the table with "YES" and identify any specific requirements. Otherwise, the *jurisdiction* shall indicate "NO" in this part of the table.
- m. In accordance with Section R301.2.1.2, the *jurisdiction* shall indicate the wind-borne debris wind zone(s). Otherwise, the *jurisdiction* shall indicate "NO" in this part of the table.
- n. The *jurisdiction* shall fill in these sections of the table to establish the design criteria using Table 1a or 1b from ACCA Manual J or established criteria determined by the jurisdiction.
- o. The design ground snow load P_g shall comply with the column below or the Colorado Design Snow Loads Report and Map, published by the Structural Engineers Association of Colorado (dated May 6, 2015). The design roof snow load values shall be determined from IBC Section 1608, including all applicable factors, and loading and drifting considerations of ASCE 7, Chapter 7. In no case shall the final design roof snow load be less than a uniformly distributed load of 30 psf, **except greenhouses may take full load reductions allowed per ASCE 7**. Loafing sheds and pole barns may be constructed per Larimer County Prescriptive Design Standards.

Larimer County Ultimate/Basic Design Wind Speed Map



Ultimate Design Wind Speed and Vult are unchanged in the 2018 IRC, but were changed to Basic Design Wind Speed/V in the 2018 IBC.

The following section is hereby amended by adding items #6 and #7 to read as follows, and by amending the first sentence immediately following item 7 to read as follows:

R301.2.1.1 Wind limitations and wind design required.

- 6. Pole barns built per Larimer County Prescriptive Design for Pole Barn in High Wind Areas.
- 7. Loafing sheds built per Larimer County prescriptive design standards.

The elements of design not addressed by the methods in items 1 through 7 shall be in accordance with the provisions of this code.

The following section is hereby amended as follows:

TABLE R301.5 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (in pounds per square foot)

USE	LIVE LOAD
Balconies (exterior) and decks ^o	40

Footnote 'e' – Live load for exterior balconies supported by the structure without additional independent supports shall be 60 psf or the ground snow load with no reductions, whichever is greater. See Section R507.1 for decks attached to exterior walls.

The following section is hereby amended to read as follows:

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1 (1); or dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section R313 shall comply with Table R302.1 (2). Accessory structures exceeding 5,000 sq. ft. in floor area within the fire separation distance shall be separated from the dwelling by a Fire Containment Assembly as described in the definition of Fire Containment Area.

Exceptions:

- 1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.
- 2. Walls of individual dwelling units and their accessory structures located more than six feet apart on the same lot.
- 3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
- 4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
- 5- 4. Foundation vents installed in compliance with this code are permitted.

The following Table is hereby amended to read as follows:

Table R302.1 (1) Exterior Walls

TABLE R302.1 (1) EXTERIOR WALLS			
EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
WALLS	FIRE-RESISTANCE RATED	1 HOUR-TESTED IN ACCORDANCE WITH ASTM E 119 OR UL 263 WITH EXPOSURE FROM BOTH SIDES	0 FEET
	NOT FIRE RESISTANCE RATED	0 HOURS	3 FEET OR MORE
PROJECTIONS	NOT ALLOWED	N/A	LESS THAN 2 FEET
	FIRE-RESISTANCE RATED	1 HOUR ON THE UNDERSIDE	2 FEET TO LESS THAN 3 FEET
	NOT FIRE RESISTANCE RATED	0 HOURS	3 FEET OR MORE
OPENINGS IN WALLS	NOT ALLOWED	N/A	LESS THAN 3 FEET
	UNLIMITED	0 HOURS	3 FEET OR MORE
PENETRATIONS	ALL	COMPLY WITH SECTION R302.4	LESS THAN 3 FEET
		NONE REQUIRED	3 FEET OR MORE

The following Table is hereby amended by deleting footnote 'c' to read as follows:

Table R302.1 (2) Exterior Walls – Dwellings with Fire Sprinklers

~~c. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.~~

The following section is hereby amended to read as follows:

R302.2.2 Common walls. Common walls separating townhouses shall be assigned a fire-resistance rating in accordance with Item 1 or 2.

1. Where a fire sprinkler system in accordance with Section P2904 R313 is provided, the common wall shall be not less than a 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code.
2. Where a fire sprinkler system in accordance with Section P2904 R313 is not provided, the common wall shall be not less than a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code.

The following section is hereby amended to read as follows:

R302.3 Two-family dwellings. Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a two-hour fire-resistance rating, or by two one-hour rated walls, where tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code. When a fire suppression sprinkler system is installed in accordance with NFPA 13 or 13R, the fire resistance-rating of the dwelling unit separation may be reduced to one-hour. Fire resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.

Exceptions:

1. A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.
2. Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8-inch (15.9 mm) Type X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the dwellings and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.

The following section is hereby amended to read as follows:

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 13/8 inches (35 mm) thick, or 20-minute fire-rated doors, equipped with a self-closing ~~or automatic-closing~~ device.

The following section is hereby amended to read as follows:

R302.6 Dwelling/garage/utility area fire separation. The utility area (garage, shop, barn and similar uses) shall be separated as required by Table R302.6. Openings in such walls shall comply with Section R302.5. Attachment of gypsum board shall comply with Table R702.3.5. This provision does not apply to walls of utility areas that are perpendicular to the adjacent *dwelling unit* wall.

The following section is hereby amended to read as follows:

TABLE R302.6 DWELLING/UTILITY AREA FIRE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the utility side
From all habitable rooms above the utility area	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent
Garages/utility structures located less than six (6) feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls or in roof assemblies that are within this area

The following section is hereby amended in its entirety to read as follows:

R302.13 Fire protection of floors above fuel-burning appliances. In new construction, where fuel-fired heating and water-heating appliances are installed below a combustible floor, floor assemblies that are not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.

Exceptions:

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA 13D, or other approved equivalent sprinkler system.
2. Floor assemblies located ~~directly over a crawl space not intended for storage or for the installation of fuel-fired or electric-powered heating appliances.~~ above direct vent appliances with both intake and exhaust pipes installed continuous to the outside.
3. Floor assemblies shall be permitted to be unprotected where complying with the following:
 - 3.1. The appliances are enclosed in a framed mechanical room with no less than 1/2" gypsum wallboard or the equivalent installed on the ceiling and walls. Clearances to combustible materials and for appliance access and service, as specified in this code and the manufacturer's installation instructions, shall be maintained.
 - 3.2. The aggregate area of the room does not exceed 80 square feet (7.4 m2) per story.
 - 3.3. Fireblocking in accordance with Section R302.11.1 is installed along the perimeter of the walls of the mechanical room.
 - 3.4. All penetrations of the walls or fireblocking shall be protected by an *approved membrane penetration* firestop system installed as tested in accordance with ASTM E814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, with an F and T rating of not less than one-half hour *fire-resistance rating*, installed in accordance with their listing.
 - 3.5. The door to the mechanical room shall be a minimum 1 3/8" thick solid or 20-minute fire-rated, weather-stripped door equipped with an approved self-closing device.
4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.

The following section is hereby amended to read as follows:

R303.10 Required heating. Every dwelling unit shall be provided with a primary heat source capable of maintaining a minimum room temperature of 68°F (20°C) at a point three feet (914 mm) above the floor and two feet (610 mm) from exterior walls in all habitable rooms at the design temperature. The installation of one or more portable space heaters shall not be used to achieve compliance with this section.

The following section is hereby amended to read as follows:

R309.5 Fire sprinklers. Private garages shall be protected by fire sprinklers where the garage wall has been designed based on Table R302.1(2), Note a. Sprinklers in garages shall be connected to an automatic sprinkler system that complies with Section ~~P2904~~ **R313**.

The following section is hereby amended by deleting Exception #2 to read as follows:

R310.1 Emergency escape and rescue opening required. Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

~~1. Storm shelters and basements used only to house mechanical equipment not exceeding a total floor area of 200 square feet (18.58 m²).~~

~~2. Where the dwelling or townhouse is equipped with an automatic sprinkler system ...~~

The following section is hereby amended by numbering the existing exception as #1 and adding exception #2 to read as follows:

R310.2.1 Minimum opening area.

Exceptions:

2. With the window in the fully open position, the bottom window well step may encroach a maximum of 12 inches (304 mm) into the minimum required horizontal projection, provided the well meets the following criteria:
 - 2.1 The bottom of the well is not less than 36 inches wide (912 mm), centered horizontally on the openable portion of the emergency escape and rescue door or window, and
 - 2.2 An unobstructed clear horizontal projection of 36 inches (912 mm) is maintained at the centerline of the openable portion of the emergency escape and rescue door or window.

The first sentence in the following section is hereby amended to read as follows:

R311.7.5.1 Risers. The maximum riser height shall be 7 ¾ inches (196 mm), and the minimum riser height shall be 4 inches (102 mm).

The following section is hereby added to read as follows:

R312.1.1.1 Area wells, bulkheads and similar enclosures. Where any area well wall, bulkhead enclosure wall or similar retaining wall or barrier is located less than 36 inches (914 mm) from the nearest intended walking surface, parking surface, or driveway, and the surface elevation difference between the higher and lower side of the well wall, bulkhead enclosure wall or retaining wall is greater than 36 inches, such wall shall be protected with guards or be provided with an equivalent barrier.

EXCEPTIONS:

1. The access side of stairways need not be barricaded.
2. Area wells provided for emergency escape and rescue windows may be protected with approved grates or covers that comply with Section 310.4.
3. Covers and grates may be used over stairways and other openings used exclusively for service access or for admitting light or ventilation.
4. Area well walls, bulkhead enclosure walls, or retaining walls adjacent to a building that are located 24 inches (610 mm) or less measured perpendicular from the building.
5. Location where the slope of the embankment or the side of the enclosure or the opening adjacent to such wall does not exceed one unit vertical to two horizontal.

The following section is hereby amended in its entirety to read as follows:

SECTION R313

Automatic Fire-Sprinkler Systems

R313.1 Townhouse automatic fire sprinkler design. If installed, an automatic residential fire sprinkler system installed in townhouses shall be designed and installed in accordance with **Section P2904, NFPA 13, NFPA 13R or NFPA 13D**. If installed within the Estes Valley Planning Area, townhouse automatic residential fire sprinkler systems shall be designed and installed in accordance with NFPA standards.

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

R313.1.1

R313.2 One- and two-family dwellings automatic fire sprinkler design. If installed, an automatic residential fire sprinkler system installed in one and two-family dwellings shall be designed and installed in accordance with **Section P2904, NFPA 13, NFPA 13R or NFPA 13D**. If installed within the Estes Valley Planning Area, one- and two-family dwellings automatic residential fire sprinkler systems shall be designed and installed in accordance with NFPA standards.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

R313.2.1

The following section is hereby amended to read as follows:

R314.2.2 Alterations, repairs and additions. Where alterations, repairs or additions requiring a permit occur, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of a porch or deck.
2. Installation, alteration or repairs of plumbing or mechanical systems.

The following section is hereby amended by adding Exception #2 and renumbering the existing Exception as #1 to read as follows:

R314.4 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

Exceptions:

1. Interconnection of smoke alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.
2. **Smoke alarms required for installation, alteration or repairs of mechanical systems need not be interconnected.**

The following section is hereby amended to read as follows:

R315.2.2 Alterations, repairs and additions. Where alterations, repairs or additions requiring a permit occur, the individual dwelling unit shall be equipped with carbon monoxide alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of a porch or deck.
2. Installation, alteration or repairs of plumbing or mechanical systems.

The following section is hereby amended to read as follows:

R315.3 Location. Carbon monoxide alarms in dwelling units shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms within fifteen feet of each bedroom. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

The following section is hereby amended by adding Exception #2 and renumbering the existing Exception as #1 to read as follows:

R315.5 Interconnectivity. Where more than one carbon monoxide alarm is required to be installed within an individual dwelling unit in accordance with Section R315.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of carbon monoxide alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

Exceptions:

1. Interconnection of carbon monoxide alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.
2. **Carbon monoxide alarms required for installation, alteration or repairs of mechanical systems need not be interconnected.**

The following section is hereby amended to read as follows:

Section R320.1 Scope. Where four or more dwelling units or sleeping units are constructed in a single structure or constructed as part of a planned development containing a total of seven or more dwellings units, regardless of whether such units are separated by fire-resistance-rated assemblies, the applicable provisions of the Colorado Revised Statutes, federal regulations, and the provisions of Chapter 11 of the adopted International Building Code for Group R-2 shall apply.

The following section is hereby deleted in its entirety:

~~Section R320.1.1 Guestrooms.~~

The following section is hereby amended to read as follows:

R322.1 General. Buildings and structures constructed in flood hazard areas as established in Table R301.2 (1) shall be designed and constructed in accordance with the provisions contained in Floodplain Overlay Zone Districts established in the Larimer County Land Use Code.

The following section is hereby amended to read as follows:

R324.4.2 Fire classification. Rooftop-mounted photovoltaic panel systems shall have the same fire classification as the roof assembly required in Section R902 **shall have a minimum Class C fire rating.**

The following section is hereby amended to read as follows:

R326.1 General. The design and construction of pools and spas shall comply with 2018 International Building Code Section 3109 as amended.

The following section is hereby added in its entirety to read as follows:
R327 WILDFIRE HAZARD MITIGATION REQUIREMENTS FOR NEW CONSTRUCTION

R327.1 General Purpose. The purpose of this entire section is to establish minimum standards for design and construction of new buildings or portions thereof for the protection of life and property from wildfire.

R327.2 Scope. Within the wildfire hazard area, as defined in Table R327 (Larimer County Wildfire Mitigation Area Map), all new building construction and all additions equal to or greater than 50% of the total square footage of the original structure shall comply with the provisions of this section. New building construction shall include all new structures.

EXCEPTIONS: Sheds, greenhouses and similar detached accessory structures not exceeding 600 sq. ft. in area. Loafing sheds and similar unenclosed accessory structures may be unlimited in area.

R327.3 Alternate Materials and Methods of Compliance. The provisions of this section are not intended to prevent the use of any material or method of compliance not specifically prescribed by this section, provided any alternate has been approved and its use authorized by the building official. The building official may approve any such alternate, provided it is found that the proposed design is satisfactory and complies with the provisions of this section and this code and that the material method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this section in suitability, effectiveness, fire resistance, durability and safety. The building official shall require that sufficient evidence or proof be submitted to substantiate any claims that may be used regarding use of the alternate. The details of any action granting approval of an alternate shall be recorded and entered in the files of the Building Department.

R327.4 Definitions. For the purpose of this section, certain terms are defined as follows:

COMBUSTIBLE - a material that fails to meet the acceptance criteria of Standard Method of Test for Determination of Non-combustibility in Building Materials (ASTM E 136).

COMBUSTIBLE CONSTRUCTION - a type of construction that does not meet the requirement for noncombustible construction.

DEFENSIBLE SPACE - a natural or man-made area, where woody vegetation capable of allowing a fire to spread unchecked has been treated or modified to slow the spread and reduce the intensity of an advancing wildfire, and to create an area for fire suppression operations to occur.

FIRE-RESISTIVE CONSTRUCTION - construction designed to resist the spread of fire.

FIRE-RESISTIVE RATING - the time that the material or construction will withstand the standard fire exposure as determined by a fire test made in conformity with the standard methods of fire tests of buildings construction and materials.

FIRE-RETARDANT-TREATED WOOD - any wood product impregnated with chemicals by a pressure process or other means during manufacture, and which shall have a flame-spread index of not over 25.

FIRE SEPARATION - a construction assembly that acts as a barrier against the spread of fire.

FIREWALL ASSEMBLY- a type of fire separation of noncombustible construction which subdivides a building or separates adjoining buildings to resist the spread of fire and which has a fire-resistance rating and structural ability to remain intact under conditions for the required fire-rated time.

FLAME-RESISTANT MATERIAL - material that has been modified in its chemical composition by impregnation, coating or has inherent composition that makes the material resistant to ignition and combustion when exposed to a small ignition source.

FLAME RETARDANT - an approved chemical compound or mixture which, when applied in an approved manner to any fabric or other material, will render such fabric or material incapable of supporting combustion.

FLAME-SPREAD INDEX (FSI) - a relative index describing the surface-burning characteristics of building materials. The test used to establish FSI evaluates the flame spread over the building material surface when exposed to a test fire. The rate at which flame spreads across the specimen is compared on a scale of 0 for inorganic reinforced cement board, to 100 for red oak. The following table identifies the Flame Spread Classification and Flame Spread Index:

Flame Spread Classification	Flame Spread Index
Class A	0 to 25
Class B	26 to 75
Class C	76 to 200

FUEL - combustible material.

NONCOMBUSTIBLE - materials that meet the acceptance criteria of Standard test Method for determination of non-combustibility in building materials. (ASTM E 136)

NONCOMBUSTIBLE CONSTRUCTION - a type of construction in which a degree of fire safety is attained by the use of noncombustible materials for structural members and other building, assemblies.

ONE-HOUR FIRE-RESISTIVE CONSTRUCTION - will withstand the standard fire exposure for one hour as determined by a fire test made in conformity with the standard methods of fire tests of building construction and materials.

SLASH - unusual concentrations of downed fuel resulting from such natural events as wind, fire, or snow breakage or such human activities as timber harvesting, road construction, or building construction.

WILDFIRE HAZARD - the relative likelihood that a fire, once started, will become disastrous. Disastrous means the destruction of life and improved property.

WILDFIRE HAZARD AREA - that area in Larimer County prone to wildfires as identified on the Larimer County Wildfire Mitigation Area Map.

WILDFIRE MITIGATION - any action taken to eliminate or reduce the long-term risk to human life and property from wildfire.

Wildfire Mitigation:

R327.5 Fire-Resistive Construction. Fire-resistive construction on all new structures shall be one of the following types:

1. One-hour fire-resistive shell shall provide not less than one-hour fire-resistive construction at all exterior walls, excluding all openings and decks.
2. Exterior siding materials shall have a flame-spread classification of Class C or better. Exterior siding shall be composed entirely of non-combustible materials for a minimum of three (3) feet above finished grade.

EXCEPTIONS:

1. Log structures using solid logs with a minimum tip diameter of 6 inches (152.4 mm) for exterior wall construction and 8 inches (203.2 mm) for roof beams, purlins and supporting columns may be considered as one-hour fire-resistive construction.
2. Non-combustible siding for the lowest three feet is not required if three feet or more of non-combustible landscaping material or natural ground cover is provided in accordance with Section 327.6.

R327.6 Defensible Space. Defensible space in compliance with current Colorado State Forest Service guidelines shall be required on all new construction in the Wildfire Hazard Area. Any landscaping materials or natural ground cover within three (3) feet of the exterior walls of the building shall be non-combustible. For additions equal to or greater than 50% of the total square footage of the original structure or changes in character of the occupancy or use in existing buildings, the defensible space shall be provided around the entire building.

EXCEPTION: Three feet of non-combustible landscaping material or natural ground cover is not required if the lowest three feet of siding is non-combustible in accordance with Section 3603.

R327.7 Evaluation. Evaluation of the defensible space will be based upon:

1. Current Colorado State Forest Service standards and guidelines, and
2. Site specific vegetation and topographical characteristics.
3. The Building Official may allow alternatives to the Colorado State Forest Service Standards and Guidelines based on specific site conditions.

R327.8 Completion. The defensible space must be completed prior to the applicant receiving a certificate of occupancy.

R327.9 Liquid Propane Gas. Liquid propane gas facilities installed in the Wildfire Hazard Area shall comply with the current County requirements for installation of liquid propane gas facilities. Liquid propane gas containers and tanks shall be located within the defensible space in accordance with the International Fire Code.

R327.10 Spark Arresters. Chimneys serving fireplaces, woodstoves, barbecues, incinerators, or decorative heating appliances in which solid fuel or liquid fuel is used, shall be provided with a spark arrestor. Spark arrestors shall be constructed of woven or welded wire screening of 12 USA standard gage wire (0.1046 inch) (2.66 mm) having openings not exceeding ½ inch. The net free area of the spark arrestor shall not be less than four times the net free area of the outlet of the chimney.

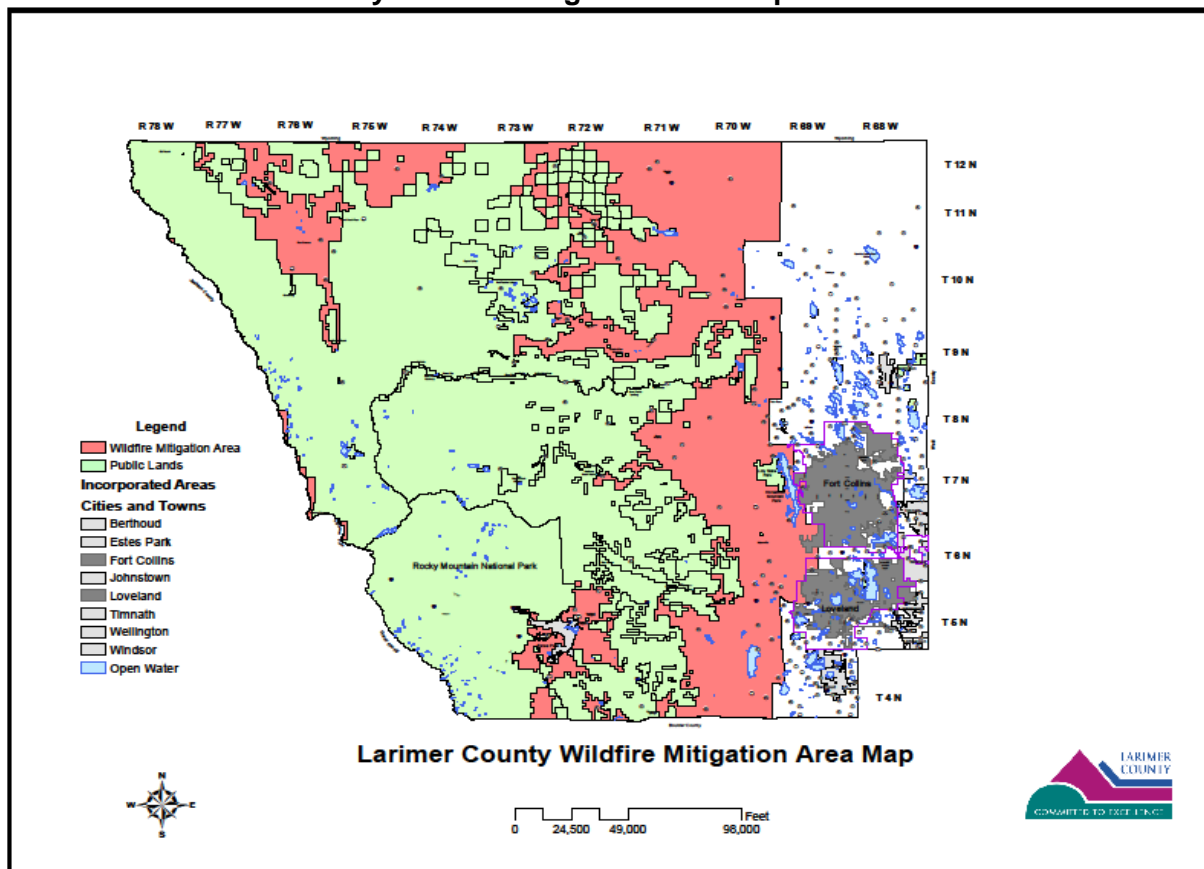
R327.11 Alternate Designs. The building official may approve other alternate designs provided they meet the requirements of Section R 104.11.

R327.12 Wildfire Fees. Fees shall be assessed in accordance to Larimer County wildfire assessment and inspection fee schedule.

R327.13 Appeals. Appeals of interpretations made by the building official relative to the application of this section shall be made to the Board of Appeals.

R327.14 Maintenance. Defensible space areas created as required by this chapter or other referenced documents within the Larimer County Wildfire Mitigation Plan are to be maintained by the property owner. No re-planting or new planting of trees, shrubs or other vegetation that would violate the defensible space requirements of this section shall be permitted.

Table R327 Larimer County Wildfire Mitigation Area Map



The following section is hereby added in its entirety to read as follows:

R328 VACATION HOME AND LARGE VACATION HOME LIFE SAFETY SURVEY

R328.1 General. *Vacation Homes* and *Large Vacation Homes* shall comply with Section R328. **After March 31, 2019, a *Vacation Home* or a *Large Vacation Home* shall not be approved for occupancy unless the applicant has made a full and complete application for a building permit to convert the home to a *Vacation Home* or *Large Vacation Home*.** Prior to occupancy as a *Vacation Home* or a *Large Vacation Home* after March 31, 2021, the dwelling shall have **received a Life Safety Survey from the Building Official in accordance with Section R328.2 and** been issued a Certificate of Occupancy in accordance with R328.3.

R328.2 Life safety survey. At minimum, *Vacation Home* and *Large Vacation Home* life safety surveys shall include the provisions of R328.2.1 through R328.2.20. Subsequent life safety surveys, if provided, shall use the same compliance criteria as the initial survey, unless this code is otherwise amended.

R328.2.1 Address identification. *Vacation Homes* and *Large Vacation Homes* shall have approved address identification, in compliance with the code in effect at the time of the initial survey.

R328.2.2 Unapproved uses. Uses of all rooms/spaces shall comply with approved uses per Building Division records. Change of use permits, inspections and approvals shall be required for all rooms with uses different from Building Division records.

R328.2.3 Unpermitted work. All unpermitted work shall be permitted, compliant and approved.

R328.2.4 Unapproved work. All unapproved work authorized by permits which have expired shall be re-permitted, compliant and approved.

R328.2.5 Structural concerns. Observable structural concerns shall be corrected or mitigated.

R328.2.6 Emergency escape and rescue openings. Compliant emergency escape and rescue openings shall be provided for all spaces used for sleeping purposes. For dwellings constructed on or after January 1, 1972, said openings shall comply with the code in effect at the time the opening was required. For dwellings constructed prior to January 1, 1972, the minimum requirements for said openings shall be at the discretion of the Building Official until determined by amendment based on documentation of existing conditions.

R328.2.7 Window wells. Where required, compliant window wells shall be properly installed at emergency escape and rescue openings. For dwellings constructed on or after January 1, 1972, said window wells shall comply with the code in effect at the time the well was required. For dwellings constructed prior to January 1, 1972, the minimum requirements for said window wells shall be at the discretion of the Building Official until determined by amendment based on documentation of existing conditions.

R328.2.8 Smoke alarms. Approved smoke alarms shall be properly installed at all locations in compliance with the code in effect at the time of the initial survey.

R328.2.9 Carbon monoxide alarms. Approved carbon monoxide alarms shall be properly installed at all locations in compliance with the code in effect at the time of the initial survey.

R328.2.10 Fuel gas appliances.

- Fuel gas appliances shall be in approved locations.
- Fuel gas appliances shall be in dedicated spaces, where applicable.

- c. Fuel gas appliances shall comply with required clearances.
- d. Fuel gas appliances shall be provided with required combustion air.
- e. Fuel gas appliances shall be connected to approved venting systems.
- f. Fuel gas appliances shall have required temperature and pressure relief valves.
- g. Fuel gas appliances shall have proper condensate disposal.
- h. Rooms/spaces containing fuel gas appliances shall be properly fire-blocked.
- i. Other than existing cook tops, no ventless fuel gas appliances are allowed.

R328.2.11 Dwelling/garage separation. Dwellings shall be separated from garages with materials on the garage side in compliance with the code in effect at the time of the initial survey.

R328.2.12 Environmental duct terminations. Dryer ducts and exhaust fans shall terminate at approved locations.

R328.2.13 Handrails. Approved handrails shall be properly installed at locations in compliance with the code in effect at the time of the initial survey.

R328.2.14 Guards. Approved guards shall be properly installed at locations in compliance with the code in effect at the time of the initial survey.

R328.2.15 Cook stove. Anti-tip devices shall be installed for all cook stoves.

R328.2.16 Wildfire hazard. Wildfire defensible spaces shall be maintained as required for new construction, as it relates to vegetation, not to building construction.

R328.2.17 Fire pits. Exterior fire pits shall comply with Fire Department requirements.

R328.2.18 Lighting at exterior stairs. Lighting at exterior stairs shall be properly installed in compliance with the code in effect at the time of the initial survey.

R328.2.19 Ground-Fault Circuit-Interrupter Protection. Ground-fault circuit-interrupter protection for personnel shall be provided in locations in compliance with the code in effect at the time of the initial survey.

R328.2.20 Private Septic Systems. Dwellings with private septic systems require approval from the Larimer County Health Department prior to the addition of any bedroom.

R328.3 Certificate of Occupancy. After a life safety survey has been performed and no violations of the survey are existing, the Building Official shall issue a Certificate of Occupancy for use as a *Vacation Home* or a *Large Vacation Home*. In addition to other requirements for Certificates of Occupancy in this code, Certificates of Occupancy for *Vacation Homes* and *Large Vacation Homes* shall specify the number of rooms approved for sleeping purposes and the maximum approved occupant load for use as a *Vacation Home* or *Large Vacation Home*.

CHAPTER 4 FOUNDATIONS

The first two sentences in the following section are hereby amended to read as follows:

R401.1 Application. The provisions of this chapter shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding as established by Table 301.2(1) shall be designed and constructed in accordance with the provisions contained in Floodplain overlay zone districts established in the Larimer County Land Use Code.

The following section is hereby amended to add Exception #5 to read as follows:

R403.1.4.1 Frost Protection.

Exceptions

4. An unheated, one-story accessory building may be placed on a slab-on-grade cast monolithically with a footing placed at least 12 inches (9305 mm) below the undisturbed ground with one No. 5 bar or two No. 4 bars located in the middle of the footing depth. Such accessory building shall have a maximum depth (truss length) of 24 feet (7.31m), a maximum width not exceeding twice the depth, **a maximum area of 600 square feet and shall be equipped with a controlled method of water disposal from roofs in accordance with section R801.3.**

The following section is hereby amended in its entirety to read as follows:

R403.1.8 Foundations on expansive soils. Foundation and floor slabs for buildings located on expansive soils shall be designed in accordance with Section 1808.6 of the International Building Code.

Exception: Slab-on-ground ~~grade~~ and other foundation systems ~~that have performed adequately in soil conditions similar to those encountered at the building site are permitted subject to the approval of the building official~~ **may be used for unheated, one-story accessory buildings in accordance with Section R403.1.4.1 Exception 5.**

The following section is hereby amended to read as follows:

R405.1 Concrete or masonry foundations. Drains consisting of piping conforming with ASTM D2729-11 shall be provided adjacent to the lowest concrete or masonry foundations that retain earth and enclose spaces that are partially or entirely located below grade.

Exception: A drainage system is not required where the foundation is installed on ~~well-drained ground or sand-gravel mixture soils~~ according to the Unified Soil Classification System, Group I soils, as detailed in Table R405.1.

The following section is hereby added to read as follows:

R408.2.1 Ventilated under-floor spaces. Floor systems above ventilated under-floor spaces shall be insulated in accordance with Table N1102.1.2. Floor systems shall be sealed to prevent heat loss and air infiltration.

The following section is hereby added to read as follows:

R408.3.1 Ventilation under below-grade floors. Mechanical ventilation systems for spaces under below-grade floors shall be designed by a professional engineer.

The following section is hereby amended to read as follows:

R408.7 Flood resistance. The design and construction of foundations in areas prone to flooding as established by Table 301.2(1) shall be designed and constructed in accordance with the provisions contained in Floodplain Overlay Zone Districts established in the Larimer County Land Use Code.

CHAPTER 5 FLOOR CONSTRUCTION

The following section is hereby amended to read as follows:

R502.6 Bearing. The ends of each joist, beam or girder shall have not less than 1 1/2 inches (38 mm) of bearing on wood or metal, have not less than 3 inches of bearing (76 mm) on masonry or concrete or be supported by approved joist hangers. ~~Alternatively, the ends of joists shall be supported on a 1-inch by 4-inch (25 mm by 102 mm) ribbon strip and shall be nailed to the adjacent stud.~~ The bearing on masonry or concrete shall be direct, or a sill plate of 2-inch-minimum (51 mm) nominal thickness shall be provided under the joist, beam or girder. The sill plate shall provide a minimum nominal bearing area of 48 square inches (30 865 mm²).

The following section is hereby amended to read as follows:

R507.3.2 Minimum depth. Deck footings shall extend below the frost line specified in Table R301.2(1) in accordance with Section R403.1.4.1.

Exceptions:

1. ~~Free-standing~~ **Attached** decks that meet all of the following criteria:

1.1. The joists bear directly on precast concrete pier blocks at grade without support by beams or posts.

1.2. The area of the deck does not exceed 200 square feet (18.9 m²).

1.3. The walking surface is not more than 20 inches (616 mm) above grade at any point within 36 inches (914 mm) measured horizontally from the edge.

2. Free-standing decks need not be provided with footings that extend below the frost line.

The following section is hereby amended by adding a note under the Table title to read as follows:

Table 507.4 DECK POST HEIGHT

~~This table only applies to sites whose elevation does not exceed 5,500 feet. See Larimer County Residential Deck Design Information for elevations not exceeding 8,000 feet.~~

The following section is hereby amended by adding a note under the Table title to read as follows:

Table 507.5 DECK BEAM SPAN LENGTHS

~~This table only applies to sites whose elevation does not exceed 5,500 feet. See Larimer County Residential Deck Design Information for elevations not exceeding 8,000 feet.~~

The following section is hereby amended by adding a note under the Table title to read as follows:

Table 507.6 DECK JOIST SPANS FOR COMMON LUMBER SPECIES

~~This table only applies to sites whose elevation does not exceed 5,500 feet. See Larimer County Residential Deck Design Information for elevations not exceeding 8,000 feet.~~

The following section is hereby amended by adding a note under the Table title to read as follows:

Table 507.9.1.3 (1) DECK LEDGER CONNECTION TO BAND JOIST

~~This table only applies to sites whose elevation does not exceed 5,500 feet. See Larimer County Residential Deck Design Information for elevations not exceeding 8,000 feet.~~

CHAPTER 6 WALL CONSTRUCTION

The following section is hereby amended by deleting Exception #3 to read as follows:

R602.3.1 Stud size, height and spacing. The size, height and spacing of studs shall be in accordance with Table R602.3(5).

~~3. Exterior load-bearing studs not exceeding 12 feet (3658 mm) in height provided in accordance with Table R602.3(6).~~

The following Table is deleted in its entirety:

~~**Table R602.3 (6) ALTERNATE WOOD BEARING WALL STUD SIZE, HEIGHT AND SPACING**~~

The following section is hereby amended to read as follows:

R602.3.2 Top Plate.

Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and intersections with bearing partitions. End joints in top plates shall be offset not less than 24 inches (610 mm). Joints in the uppermost top plate need not occur over studs. Plates shall be not less than 2-inches (51 mm) nominal thickness and have a width not less than the width of the studs.

The following section is hereby amended to read as follows:

R610.1 General. Structural insulated panel (SIP) walls shall be designed in accordance with the provisions of this section. ~~Where the provisions of this section are used to design Plans for structural insulated panel walls, project drawings, typical details and specifications are not required to shall bear the seal of the architect or engineer responsible for design. unless otherwise required by the state law of the jurisdiction having authority.~~

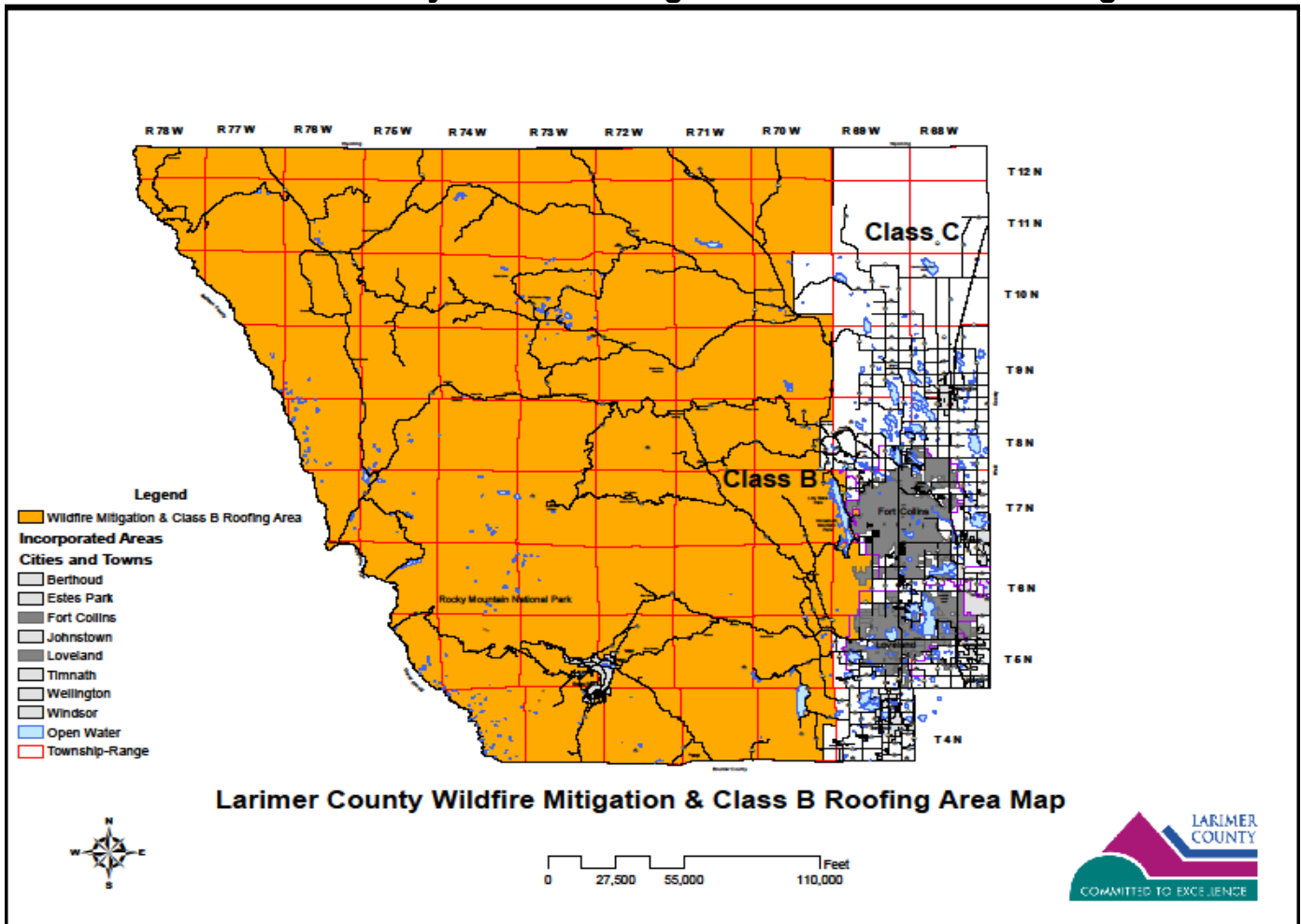
CHAPTER 9 ROOF ASSEMBLIES

The following section is hereby amended to read as follows:

R902.1 Roof covering materials. Roofs shall be covered with materials as set forth in Sections R904 and R905. Class A, B or C roofing shall be installed in areas designated by law as requiring their use or when the edge of the roof is less than 3 feet (914 mm) from a property line. Classes A, B and C roofing required to be listed by this section shall be tested in accordance with UL 790 or ASTM E 108. Roof assemblies with coverings of brick, masonry, slate, clay or concrete roof tile, exposed concrete roof deck, ferrous or copper shingles or sheets, and metal sheets and shingles, shall be considered Class A roof coverings.

Exception: Larimer County's Wildfire Mitigation and Class "B" Roofing Area (Table R902) requires a Class A or Class B roof covering on any new structure west of the dividing line and a Class C or better roof covering east of the dividing line. Starting at the intersection of the Wyoming border line and range 69 west, then South nine miles to S.W. corner of section 31, Township 11, Range 69, then West three miles to N.W. corner of Section 3, Township 10, Range 70, then South five miles to S.W. corner of Section 27, Township 10, Range 70, then East three miles to S.W. corner of Section 30, Township 10, Range 69, then South nine miles to S.W. corner of Section 7, Township 8, Range 69, then West one mile to N.W. corner of Section 13, Township 8, Range 70, then South four miles to S.W. corner of Section 36, Township 8, Range 70, then East two miles to N.W. corner of Section 6, Township 7, Range 69, then South three miles to S.W. corner of Section 17, Township 7, Range 69, then East one mile to S.E. corner of Section 17, Township 7, Range 69, then South four miles to S.W. corner of Section 4, Township 6, Range 69, then East one mile to S.E. corner of Section 4, Township 6, range 69, then South four miles to S.W. corner of Section 27, Township 6, Range 69, then West one mile to S.W. corner of Section 28, Township 6, Range 69, then South three miles to intersection of U.S. Highway 34, then West following U.S. Highway 34 two miles to intersection with Range 69 West, then South seven and three quarter miles to S.W. corner of Section 18, Township 4, Range 69, then West one mile to S.W. corner of Section 13, Township 4, Range 70, then South three miles to where the S.W. corner of Section 36, Township 9, Range 70 meets the Boulder County Line.

TABLE R902 Larimer County's Wildfire Mitigation and Class "B" Roofing Area



The following section is hereby amended to read as follows:

R905.1.2 Ice barriers. In areas where there has been a history of ice forming along the eaves causing a backup of water as designated in Table R301.2(1), an An ice barrier shall be installed for asphalt shingles, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles and wood shakes. The ice barrier shall consist of not fewer than two layers of underlayment cemented together, or a self-adhering polymer-modified bitumen sheet shall be used in place of normal underlayment and extend from the lowest edges of all roof surfaces to a point not less than 24 inches (610 mm) inside the exterior wall line of the building. On roofs with slope equal to or greater than eight units vertical in 12 units horizontal (67 percent slope), the ice barrier shall also be applied not less than 36 inches (914 mm) measured along the roof slope from the eave edge of the building.

The following section is hereby amended to read as follows:

R907.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of this chapter. No portion of an existing nonrated roof covering may be permanently replaced or covered with more than one square of nonrated roof covering.

Exceptions:

1. Reroofing shall not be required to meet the minimum design slope requirement of one-fourth vertical in 12 units horizontal (2-percent slope) in Section R905 for roofs that provide positive roof drainage.
2. Any existing roof covering system located east of the dividing line as shown by the Larimer County Wildfire Hazard Area and Roofing Classification Map (Table R902) may be replaced with a roof covering of the same materials and classification, provided the replacement roof covering has a minimum rating of Class C.
3. The reroofing of 50 percent or more during a one-year period of any existing structure located west of the dividing line as shown by the Larimer County's Wildfire Mitigation and Class "B" Roofing Area (Table R902) requires Class B roof covering.

CHAPTER 10 CHIMNEYS AND FIREPLACES

The following section is hereby added to read as follows:

Section R1001.1.1 Installation

- A. All fireplaces installed on or after January 1, 2002 in the Restricted Area as indicated in Table R1001.1.1 (Larimer County Fireplace Area Map) shall be one of the following:
 - (i). A gas fireplace or fireplace with a gas log installed and functioning at time of final inspection;
 - (ii). An electric device; or
 - (iii). A fireplace that meets the Phase III emissions standards for wood stoves established by the Colorado Air Quality Control Commission or any other clean burning device that is approved by the commission.
- B. All fireplaces installed prior to January 1, 2002 in the Restricted Area as indicated in Table R1001.1.1 shall be allowed to remain in use until such time as the owner voluntarily replaces it. Upon replacement, such fireplace shall be one of the types specified in Subsection (A) (i), (ii), or (iii) above.
- C. Within the Non-restricted Area, fireplaces, including but not limited to masonry and factory-built fireplaces (such as metal and zero clearance fireplaces), shall be allowed and shall not be required to meet the standards in Paragraph (A) above.

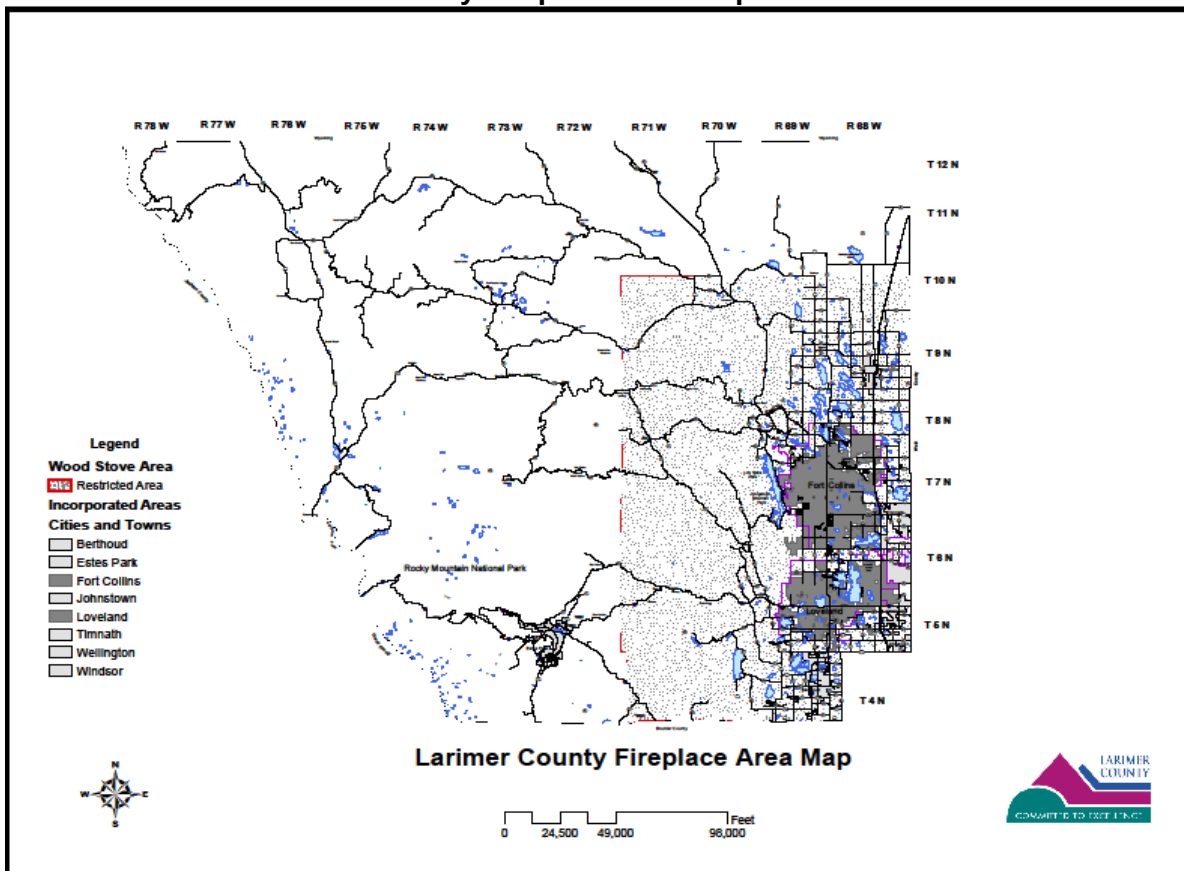
The following section is hereby amended by adding a new sentence to read as follows:

R1004.1 General. All fireplaces shall comply with Section R1001.1.1.

The following section is hereby amended by deleting in its entirety:

R1004.4 Unvented gas log heaters.

Table R1001.1.1 Larimer County Fireplace Area Map



CHAPTER 11 ENERGY EFFICIENCY

The following section is hereby amended by adding the following exceptions to read as follows:

N1101.1 Scope.

Exceptions:

The following buildings and portions thereof are exempted from the provisions of this chapter:

1. Agricultural or detached accessory buildings heated or cooled in their interior for short periods of time and switched with a timer of two hours or less.
2. Agricultural or detached accessory buildings which are neither heated nor cooled by fuel or electrical energy.
3. Agricultural or detached accessory buildings not heated above 50°F.
4. Fully enclosed accessory buildings and attached garages/shops/utility areas not containing habitable space may be conditioned subject to the following thermal and envelope criteria:
 - a) Such spaces meet the criteria for thermal isolation and any HVAC equipment installed therein is sized for a peak design load assuming a maximum Winter Indoor Design Dry-bulb Temperature of 60°F and a minimum Summer Indoor Design Dry-bulb Temperature of 80°F.
 - b) The walls are insulated with insulation having a minimum R-value of R-13.
 - c) The roof/ceiling is insulated with insulation having a minimum R-value of R-30.
 - d) Windows have a maximum U-factor of 0.45 and in total do not exceed 10% of the floor area.
 - e) Doors have a minimum R-value of 3 and are sealed to prevent infiltration to the extent practical as determined by the building official.

The following section is hereby amended by adding the following sentence at the end to read as follows:

N1101.3 (R101.5.1) Compliance materials.

A REScheck compliance certification verifying the home meets or exceeds **2012** International Energy Conservation Code requirements shall be deemed to meet the requirements of this code.

The following section is hereby amended by amending Exception #1.2 and adding Exception #3 to read as follows:

N1102.1 (R402.1) General (Prescriptive). The building thermal envelope shall comply with the requirements of Sections N1102.1.1 through N1102.1.5.

Exceptions:

1. The following low-energy buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this section shall be exempt from the building thermal envelope provisions of Section N1102.
 - 1.1. Those with a peak design rate of energy usage less than 3.4 Btu/h • ft² (10.7 W/m²) or 1.0 watt/ft² of floor area for space-conditioning purposes.
 - 1.2. Those that do not contain conditioned **or habitable** space.
2. Log homes designed in accordance with ICC 400.
3. **Greenhouses.**

The following section is hereby amended to read as follows:

Table N1102.1.2 (R402.1.2) Insulation and Fenestration Requirements by Component^a (Climate Zone 5)

Fenestration U-Factor ^b	Skylight ^b U-Factor	Glazed Fenestration SHGC ^{b,e}	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value ^f	Floor R-Value	Basement ^c Wall R-Value	Slab ^d R-Value & Depth	Crawl Space ^c Wall R-Value
.32	.55	NR	R-49	20 OR 13+5 ^h	13/17	30 ^g	R-10 continuous, R-13 cavity	10, 2 ft.	R-10 continuous, R-13 cavity

The following section is hereby amended to read as follows:

N1102.2.9 (R402.2.9) Basement walls. Walls associated with conditioned basements shall be insulated from the top of the basement wall down to 10 feet (3048 mm) below grade or to the basement floor, whichever is less. Walls associated with unconditioned basements shall comply with this requirement except where the floor overhead is insulated in accordance with Sections N1102.1.2 and N1102.2.8. **Rim joists of basements and crawl spaces shall be air-sealed and insulated to R-19 minimum or to R-13 minimum if using spray foam insulation.**

The following section is hereby amended to read as follows:

N1102.4.1.2 (R402.4.1.2) Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding ~~five air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8.~~ Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). ~~Where required by the building official,~~ Testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the building official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

Exceptions: The following buildings are not required to undergo air leakage testing:

1. Cabins.
2. Existing buildings undergoing alterations, additions, or change of use to a single-family dwelling or accessory living area.

The following section is hereby deleted in its entirety:

~~N1102.4.4 Rooms containing fuel-burning appliances.~~

The following section is hereby amended to read as follows:

N1103.7 (R403.7) Equipment sizing and efficiency rating (Mandatory). All heating and cooling equipment shall be sized such that the total sensible capacity of the cooling equipment does not exceed the total sensible load by more than 25% for cooling-only applications, or by more than 40% for heating applications in accordance with ACCA Manual J, 8th Edition, using the Manual J Design Criteria in Table 301.2 (1). All ducted air-distribution heating and cooling systems shall be sized using cooling loads. All heating and cooling equipment shall be tested to ensure such equipment is operating within the manufacturers' recommended parameters and standards according to the applicable protocols established by the building code official and in accordance with the mechanical code adopted by Larimer County. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

The following section is hereby amended to read as follows:

N1104.1 Lighting Equipment (Mandatory). A minimum of 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or a minimum of 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

The following section is hereby amended to read as follows:

N1109.1.1 (R503.1.1) Building envelope. Building envelope assemblies that are part of the alteration shall comply with Section N1102.1.2 or N1102.1.4, Sections N1102.2.1 through N1102.2.13, N1102.3.1, N1102.3.2, N1102.4.3 and N1102.4.5. Exception: The following alterations shall not be required to comply with the requirements for new construction provided that the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Existing ceiling, wall or floor cavities exposed during construction, provided these cavities are filled with insulation. If they are not filled, they shall be filled with insulation to the maximum extent practical without requiring reconstruction or installation of exterior insulation to meet the requirements of Tables N1102.1.2 or N1102.1.4.
3. Construction where the existing roof, wall or floor cavity is not exposed.
4. Roof recover.
5. ~~Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.~~

CHAPTER 13 GENERAL MECHANICAL SYSTEM REQUIREMENTS

The following section is hereby amended to read as follows:

M1307.3 Elevation of ignition source. Electrical devices, equipment and appliances having an ignition source shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the floor in garages. For the purpose of this section, rooms or spaces that are not part of the living space of a dwelling unit and that communicate with a private garage through openings shall be considered to be part of the garage.

CHAPTER 14 HEATING AND COOLING EQUIPMENT

The following section is hereby amended to read as follows:

M1414.1 General. Fireplace stoves shall be listed, labeled and installed in accordance with the terms of the listing. Fireplace stoves shall be tested in accordance with UL 737. Wood burning appliances shall meet the latest emission standards as established by the State of Colorado and Federal Regulation 40 CFR Part 60, Subpart AAA.

CHAPTER 15 EXHAUST SYSTEMS

The following section is hereby amended to read as follows:

Section M1502.4.2 Duct installation. Exhaust ducts shall be supported at intervals not to exceed 12 feet (3658 mm) and shall be secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Exhaust duct joints shall be sealed in accordance with Section M1601.4.1 and shall be mechanically fastened. Ducts shall not be joined with screws or similar fasteners that protrude more than 1/8 inch (3.2 mm) into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

The following section is hereby amended to read as follows:

M1502.4.5 Duct length. The maximum allowable exhaust duct length shall be determined by one of the methods specified in Sections M1502.4.5.1 through M1502.4.5.32.

M1502.4.5.1 Specified length. The maximum length of the exhaust duct shall be 35 feet (10 668 mm) from the connection to the transition duct from the dryer to the outlet terminal. Where fittings are used, the maximum length of the exhaust duct shall be reduced in accordance with Table M1502.4.5.1. The maximum length of the exhaust duct does not include the transition duct.

~~M1502.4.5.2 Manufacturer's instructions. The size and maximum length of the exhaust duct shall be determined by the dryer manufacturer's installation instructions.~~

M1502.4.5.32 Dryer exhaust duct power ventilator. The maximum length of the exhaust duct shall be determined in accordance with the manufacturer's instructions for the dryer exhaust duct power ventilator.

The following section is hereby amended to read as follows:

M1503.6 Makeup air required. Where one or more gas, liquid or solid fuel-burning appliance that is neither direct-vent nor uses a mechanical draft venting system is located within a dwelling unit's air barrier, each exhaust system capable of exhausting in excess of 400 600 cubic feet per minute (0.19 m³/s) shall be mechanically or passively provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with not fewer than one damper complying with Section M1503.6.2.

The following section is hereby added to read as follows:

M1503.7 Indoor depressurization. Ducted exhaust systems shall not induce or create a negative pressure sufficient to cause backdrafting of naturally vented, open combustion-chamber, fuel-burning appliances, or create negative pressure in excess of negative 3 Pa. in the immediate proximity of combustion chambers of such appliances.

The following section is hereby amended to read as follows:

M1505.4.2 System controls. The whole-house mechanical ventilation system shall be provided with controls that enable manual override. **Such controls shall include text or a symbol indicating the system's function.**

CHAPTER 16 DUCT SYSTEMS

Table M1601.1

BELOW TABLE A CONVERSION TABLE SHALL BE ADDED TO CONVERT THICKNESS TO GAUGE

Thickness (inches)	.013	.016	.018	.019	.023	.024	.027	.034
Galvanized Steel (gauge)	32	30	28	28	25	25	24	21
Aluminum (gauge)	28	26	25	24	23	22	21	19

The following section is hereby amended by deleting item #7 and renumbering item #8 as item #7 to read as follows:

M1601.1.1 Above-ground duct systems. Above-ground duct systems shall conform to the following:

~~7. Stud wall cavities and the spaces between solid floor joists to be used as air plenums shall comply with the following conditions:~~

~~7.1. These cavities or spaces shall not be used as a plenum for supply air.~~

~~7.2. These cavities or spaces shall not be part of a required fire-resistance-rated assembly.~~

~~7.3. Stud wall cavities shall not convey air from more than one floor level.~~

~~7.4. Stud wall cavities and joist space plenums shall be isolated from adjacent concealed spaces by tight-fitting fireblocking in accordance with Section R602.8.~~

~~7.5. Stud wall cavities in the outside walls of building envelope assemblies shall not be utilized as air plenums.~~

~~8. 7. Volume dampers, equipment and other means of supply, return and exhaust air adjustment used in system balancing shall be provided with access.~~

The following section is hereby added to read as follows:

M1601.4.11 Duct protection during construction. During construction, all duct systems shall be protected from entrance of **dirt, dust and construction debris**. **Dirt, dust and construction debris** shall be removed from ducts and the furnace filter replaced prior to final inspection.

CHAPTER 24 FUEL GAS

The following section is hereby amended to read as follows:

G2404.11 (307.6) Condensate pumps. Condensate pumps located in uninhabitable spaces, such as attics and crawl spaces, shall be connected to the appliance or equipment served such that, when the pump fails, an audible alarm shall sound in the habitable area. ~~the appliance or equipment will be prevented from operating.~~ Pumps shall be installed in accordance with the manufacturer's instructions.

The following section is hereby amended by deleting exceptions 3 and 4 and renumbering exception 5 and 6 as follows:

G2406.2 (303.3) Prohibited locations.

~~3. A single wall-mounted unvented room heater is installed in a bathroom...~~

~~4. A single wall-mounted unvented room heater is installed in a bedroom...~~

~~5. 3. The appliance is installed in a room or space that opens only into a bedroom or bathroom...~~

~~6. 4. A clothes dryer is installed in a residential bathroom or toilet room having a permanent opening with an area of not less than 100 square inches (0.06 m²) that communicates with a space outside of a sleeping room, bathroom, toilet room or storage closet.~~

The following section is hereby amended to read as follows:

G2415.12 (404.12) Minimum burial depth. Underground piping systems shall be installed a minimum depth of 18 inches (457 mm) below grade, except as provided for in Section G2415.12.1.

The following section is hereby amended to read as follows:

G2415.12.1 (404.12.1) Individual outside appliance. Individual lines to outside lights, grills or other appliances shall be installed a minimum of 18 inches (457 mm) below finished grade.

Exception: Approved materials installed a minimum of 6 inches (152 mm) below finished grade when covered with a concrete slab 4 inches (102 mm) in minimum thickness."

The following section is hereby amended to read as follows:

G2415.15 (404.15) Outlet closures. Gas outlets and fittings which allow for future gas line expansion that do not connect to appliances shall be provided with an approved gas shutoff valve with the end capped gas tight.

The following section is hereby amended to read as follows:

Section G2416.1 (405.1) General. Changes in direction of rigid metallic pipe specified in G2414.4 shall be made only by the use of fittings or factory bends.

The following section is hereby deleted in its entirety:

~~**G2416.2 (405.2) Metallic pipe.**~~

The following section is hereby renumbered as follows:

G2416.32 (405.3) Plastic pipe. Plastic pipe bends shall comply with the following:

The following section is hereby amended to read as follows:

G2417.4.1 (406.4.1) Test pressure. The test pressure to be used shall be not less than one and one-half times the proposed maximum working pressure, but not less than 10 psig (67 kPa gauge) irrespective of design pressure. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.

The last sentence in the following section is hereby amended to read as follows:

~~**G2420.5.1 (409.5.1) Located within same room.** Appliance shutoff valves shall not be located in the firebox of a fireplace shall be installed in accordance with the appliance manufacturer's instructions.~~

The following section is hereby amended to read as follows:

G2420.5.2 (409.5.2) Vented decorative appliances and room heaters. Shutoff valves for vented decorative appliances, room heaters and decorative appliances for installation in vented fireplaces shall be permitted to be installed in an area remote from the appliances where such valves are provided with **ready access**. Such valves shall be permanently identified and shall serve no other appliance. Remote valves shall be operable on the same floor as the appliance served and within 12 feet (3.658 m) of the appliance as measured along the floor line. The piping from the shutoff valve to within 6 feet (1829 mm) of the appliance shall be designed, sized and installed in accordance with Sections **G2412 through G2419**.

The following section is hereby amended to read as follows:

G2421.3 (410.3) Venting of regulators. Pressure regulators that require a vent shall have an independent vent to the outside of the building. The vent shall be designed to prevent the entry of water or foreign objects. Vents shall not terminate within three feet (0.916 m) of openings into the building.

The following section is hereby amended by deleting item 7 to read as follows:

G2425.8 (501.8) Appliances not required to be vented. The following appliances shall not be required to be vented:

~~7. Room heaters listed for unvented use.~~

The following section is hereby amended to read as follows:

Section G2439.7.4 (614.8.4.) Duct length. The maximum allowable exhaust duct length shall be determined by method G2439.7.4.1.

The following section is hereby amended to read as follows:

G2439.7.2 (614.8.2) Duct installation. Exhaust ducts shall be supported at 4-foot (1219 mm) intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude more than 1/8 inch (3.2 mm) into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

The following section is hereby amended to read as follows:

G2439.7.4 (614.8.4) Duct length. The maximum allowable exhaust duct length shall be determined by one of the methods specified in Sections G2439.7.4.1 through G2439.7.4.32.

G2439.7.4.1 (614.8.4.1) Specified length. The maximum length of the exhaust duct shall be 35 feet (10 668 mm)...

~~**G2439.7.4.2 (614.8.4.2) Manufacturer's instructions.**~~

G2439.7.4.32 (614.8.4.3) Dryer exhaust duct power ventilator length. The maximum length of the exhaust duct shall be determined by the dryer exhaust duct power ventilator manufacturer's installation instructions.

The following section is hereby deleted in its entirety:

~~**G2445 (621), UNVENTED ROOM HEATERS.**~~

The following section is hereby added to read as follows:

G2447.6 Kitchens with gas cooking appliances. In new construction, kitchens with gas cooking appliances shall be supplied with an exhaust system vented to the outside. Ducts serving kitchen exhaust systems shall not terminate in an attic, crawl space or areas inside the building and shall not induce or create a negative pressure in excess of negative 3 Pa or adversely affect gravity-vented appliances.

CHAPTER 25 PLUMBING ADMINISTRATION

The following section is hereby amended to read as follows:

P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water or, ~~for piping systems other than plastic,~~ by air with no evidence of leakage.

The following section is hereby deleted in its entirety as follows:

P2503.6 Shower liner test.

CHAPTER 26 GENERAL PLUMBING REQUIREMENTS

The following section is hereby amended to read as follows:

P2602.1 General. The water-distribution system of any building or premises where plumbing fixtures are installed shall be connected to a public water supply. Where a public water-supply system is not available, or connection to the supply is not feasible, an individual water supply shall be provided. Individual water supplies shall be constructed and installed in accordance with the applicable state and local laws. ~~Where such laws do not address the requirements set forth in NGWA-01, individual water supplies shall comply with NGWA-01 for those requirements not addressed by state and local laws.~~

Sanitary drainage piping from plumbing fixtures in buildings and sanitary drainage piping systems from premises shall be connected to a public sewer. Where a public sewer is not available, the sanitary drainage piping and systems shall be connected to a private sewage disposal system in compliance with state or local requirements. ~~Where state or local requirements do not exist for private sewage disposal systems, the sanitary drainage piping and systems shall be connected to an approved private sewage disposal system that is in accordance with the International Private Sewage Disposal Code.~~

Exception: Sanitary drainage piping and systems that convey only the discharge from bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to connect to a public sewer or to a private sewage disposal system provided that the piping or systems are connected to a system in accordance with Section P2910 or P2911 **comply with Larimer County Environmental Health Department regulations.**

The last sentence in the following section is hereby amended to read as follows:

P2603.5 Freezing. Water service pipe shall be installed not less than 54 inches below grade.

The following section is hereby amended to read as follows:

P2603.5.1 Sewer Depth. Building sewers that connect to private sewage disposal shall be not less than 12" below finished grade and shall comply with Larimer County Environmental Health Department regulations.

CHAPTER 28 WATER HEATERS

The following section is hereby amended by adding a sentence at the end to read as follows:

P2801.6 Required pan.

A plastic pan beneath a gas-fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723. **Plastic pans must be approved.**

CHAPTER 29 WATER SUPPLY AND DISTRIBUTION

The following section is hereby amended by adding a sentence at the end to read as follows:

Section P2901.1 Potable Water Required. Non-potable water systems shall comply with Larimer County Environmental Health Department regulations.

The following section is hereby amended by adding a sentence to read as follows:

P2903.4 Thermal expansion control. A means for controlling increased pressure caused by thermal expansion shall be installed where required in accordance with Sections P2903.4.1 and P2903.4.2. **Where installed, expansion tanks shall not be supported by piping and shall be in accordance with the manufacturer's instructions.**

The last sentence in the following section is hereby amended to read as follows:

Section P2910.1 Scope. The use and application of non-potable water systems shall comply with Larimer County Environmental Health Department regulations.

The following section is hereby amended by adding a sentence at the end to read as follows:

P2911.1 General. The provisions of this section shall govern the construction, installation, alteration and repair of on-site nonpotable water reuse systems for the collection, storage, treatment and distribution of on-site sources of nonpotable water as permitted by the jurisdiction. **Non-potable water systems shall comply with Larimer County Environmental Health Department regulations.**

The following section is hereby amended to read as follows:

P2912.1 General. The provisions of this section shall govern the construction, installation, alteration, and repair of rainwater collection and conveyance systems for the collection, storage, treatment and distribution of rainwater for nonpotable applications, as permitted by the jurisdiction. **Non-potable water systems shall comply with Larimer County Environmental Health Department regulations.**

The following section is hereby amended to read as follows:

P2913.1 General. The provisions of this section shall govern the construction, installation, alteration and repair of systems supplying nonpotable reclaimed water. **Non-potable water systems shall comply with Larimer County Environmental Health Department regulations.**

CHAPTER 30 SANITARY DRAINAGE

The following section is hereby amended by adding a sentence at the end to read as follows:

P3009.1 Scope. Potable Non-potable water systems shall comply with Larimer County Environmental Health Department regulations.

CHAPTERS 34-43 DELETED

Chapters 34 through 43 from the 2018 International Residential Code are hereby deleted in their entirety and replaced with the latest edition of the National Electrical Code as adopted and enforced by the State of Colorado Electrical Board. Such Electrical code is also hereby adopted by this jurisdiction. All references in this code to any section of Chapters 34-43 inclusive shall instead refer to the latest edition of the National Electrical Code as adopted and enforced by the State of Colorado Electrical Board.

APPENDICES

The following appendix chapters are hereby adopted as part of the 2018 International Residential Code:

Appendix A – Sizing and Capacities of Gas Piping

Appendix B – Sizing of venting systems serving appliances equipped with draft hoods, category I appliances, and appliances listed for use with type B vents.

Appendix C – Exit terminals of mechanical draft and direct venting systems.

Appendix E – Manufactured Housing used as Dwellings.

Appendix F – Radon Mitigation Methods shall be a reference standard when passive radon mitigation systems are required through subdivision or other planning approval processes for new construction.

Appendix H – Patio Covers.

Appendix J – Existing Buildings and Structures.

The following section is hereby added to read as follows:

AJ 102.10 Moved Buildings or structures. Building or structures moved into or within Larimer County shall comply with the provisions of the codes adopted when the building was built or the first building¹ or energy code² adopted by Larimer County if built prior to building or energy codes being adopted. In addition, they shall meet the requirements of wind loads, snow loads, flood hazard areas, wildfire hazard areas, and fireplace-restricted areas of their new location. Manufactured homes meeting 1976 HUD Standards may be moved to sites with elevations not exceeding 6,000 feet and with Ultimate Design Wind Speeds less than 140 miles per hour.

1. The 1971 One- and Two-Family Dwelling Code was the first building code adopted by Larimer County.
2. The 1977 Colorado Energy Conservation Standards was the first energy code adopted by Larimer County.

Appendix N – Venting Methods

Appendix Q – Tiny Houses