ORDINANCE NO. 023, 2022
OF THE COUNCIL OF THE CITY OF FORT COLLINS
AMENDING CHAPTER 5, ARTICLE II, DIVISION 2 OF THE
CODE OF THE CITY OF FORT COLLINS FOR THE PURPOSE OF
REPEALING THE 2018 INTERNATIONAL RESIDENTIAL CODE AND
ADOPTING THE 2021 INTERNATIONAL RESIDENTIAL CODE, WITH AMENDMENTS

WHEREAS, since 1924, the City has reviewed, amended and adopted the latest nationally recognized building standards available for the times; and

WHEREAS, upon recommendation of City staff, the City Council has determined that it is in the best interests of the City to align nine interconnected basic construction codes under one publication year; and

WHEREAS, the nine interconnected basic construction codes are the *International Building Code, International Residential Code, International Mechanical Code, International Fuel Gas Code, International Energy Conservation Code, International Property Maintenance Code, International Swimming Pool and Spa Code, International Existing Building Code,* and the *International Plumbing Code* to the extent adopted by the *Colorado Plumbing Code*; and

WHEREAS, the City Council has determined that the 2021 publication year of the nine interconnected basic construction codes should be adopted and that any counterpart *International* codes previously adopted should be repealed, both to align the publication years of the codes and because the 2021 publications contain improvements in construction code regulation; and

WHEREAS, City staff has conducted a significant public outreach program, working with the regulated construction industry and building professionals; and

WHEREAS, the adoption of the nine interconnected basic construction codes has been presented to community groups and feedback has been received from the Water Commission, Energy Board, Commission on Disability, Natural Resource Advisory Board, Poudre Fire Authority Board, Building Review Commission, Affordable Housing Board, and Air Quality Advisory Board; and

WHEREAS, the City Council has determined that it is in the best interest of the health, safety and welfare of the City and its residents that the *2021 International Residential Code* be adopted, with local amendments as set forth in this Ordinance; and

WHEREAS, pursuant to the City Charter, Article II, Section 7, City Council may enact any ordinance which adopts a code by reference in whole or in part provided that before adoption of such ordinance the Council hold a public hearing thereon and that notice of the hearing shall be published twice in the newspaper of general circulation published in the City, with one of such publications occurring at least eight (8) days preceding the hearing and the other publication occurring at least fifteen (15) days preceding the hearing; and

WHEREAS, in compliance with City Charter, Article II, Section 7, the City Clerk published in the Fort Collins *Coloradoan* such notice of hearing concerning adoption of the 2021 International Codes on January 30, 2022, and February 6, 2022; and

WHEREAS, attached as Exhibit "A" and incorporated herein by reference is the Notice of Public Hearing dated January 24, 2022, that was so published and which the Council hereby finds meets the requirements of Article II, Section 7 of the City Charter.

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

Section 1. That the City Council hereby makes and adopts the determinations and findings contained in the recitals set forth above.

Section 2. The City Council hereby repeals the 2018 *International Residential Code* ("IRC") and hereby adopts the 2021 IRC as amended by this Ordinance.

Section 3. That Section 5-26(d) of the Code of the City of Fort Collins is hereby amended as to read follows:

(d) Pursuant to the power and authority conferred on the City Council by C.R.S. § 31-16-202 and Article II, Section 7 of the Charter, the City Council has adopted the *2021 International Residential Code* published by the International Code Council, as amended by the City, which shall have the same force and effect as though set forth in full herein. The subject matter of the *International Residential Code* adopted herein includes comprehensive provisions and standards for the protection of the public health and safety by prescribing regulations governing the construction, alteration, enlargement, relocation, replacement, repair, equipment, use and occupancy, location, removal and demolition of, and its applicability is hereby limited to, individual nonattached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three (3) stories above grade in height with a separate means of egress, and their accessory structures. As provided in the *2021 International Residential Code*, Appendices are not adopted except as expressly set forth in Section 5-30.

Section 4. That Section 5-30 of the Code of the City of Fort Collins is hereby repealed and reenacted to read as follows:

Sec. 5-30. Amendments and Deletions to the 2021 International Residential Code.

The *2021 International Residential Code* adopted in Section 5-26 is hereby amended to read as follows:

1. **Section R101.1 Title** 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 the City of Fort Collins and shall be cited as such and will be referred to herein as "this code."

2. **Section R102.4 Referenced codes and standards** is hereby amended to read as follows:

R102.4 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Section 101.4 of the adopted *International Building Code*, entitled "Referenced Codes," and shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2.

Exception: Where enforcement of a code provision would violate the conditions of the *listing* of the *equipment* or *appliance*, the conditions of the *listing* and manufacturer's instructions shall apply."

3. **Section R103 DEPARTMENT OF BUILDING SAFETY** is hereby deleted in its entirety and replaced with the following:

SECTION R103 CODE ADMINISTRATION

R103.1 Entity charged with code administration shall be as determined in accordance with Section 103 of the adopted *International Building Code*, entitled "CODE ADMINISTRATION."

4. **Section R105.2 Work exempt from permit, Building** is amended to read as follows; however, the subsections for **Electrical, Gas, Mechanical and Plumbing** are retained in their entirety:

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:

R105.2 Building:

1. Other than *storm shelters*, one-*story* detached *accessory structures* for lawn and garden equipment storage, tool storage and similar uses, including arbors, pergolas, and similar structures, provided that the floor area does not exceed 120 square feet (11.15 m^2) or 8 feet (2.438 m) in height, do not house flammable liquids in quantities exceeding 10 gallons (38 L) per *building*, and the structures are located at least 3 feet (0.914 m) from an adjoining property line.

2. Fences not over 6 feet (1829 mm) high.

3. Retaining walls that are not over 4 feet (1219 mm) in height measured from the low side grade to the top of the wall, unless supporting a surcharge,

provided that the horizontal distance to the next uphill retaining wall is at least equal to the total height of the lower retaining wall.

4. Water tanks supported directly upon *grade* if the capacity does not exceed 5,000 gallons (18 927 L) and the ratio of height to diameter or width does not exceed 2 to 1.

5. Sidewalks and driveways.

6. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

7. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.

8. Swings and other playground equipment, or playhouse/play structures not exceeding 120 square feet (11.15 m^2), including no more than one elevated playhouse or play structure per lot designed, and said equipment or structure is used exclusively for play. Elevated playhouses or play structures shall not exceed 64 square feet (5.9 m^2) of floor area nor 6 feet (1.82 m) in height measured from the floor to the highest point of such *structure*.

9. Window awnings supported by an exterior wall which do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support. Storm window, storm door and rain gutter installation except that, for structures that are fifty years of age or older, historic review pursuant to Chapter 14 of the City Code first must be completed.

10. Decks not exceeding 200 square feet (18.58m^2) in area, that are not more than 30 inches (762 mm) above *grade* at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.

11. Roofing repair or replacement work not exceeding one square (100 square feet) of covering per *building*.

12. Replacement of nonstructural siding that is not part of a fire-rated assembly when removal of siding is performed in accordance with State laws regarding asbestos and lead paint except that, for structures fifty years of age or older, historic review pursuant to Chapter 14 of the City Code first must be completed.

13. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems. Hoop houses not for public use that are constructed with a flexible frame such as PVC tubing used for starting plants.

5. **Section R105.3.2 Time limitation of application** is hereby amended to read as follows:

R105.3.2 Time limitation of application An application for a *permit* for any proposed work shall be deemed to have been abandoned 180 days after the date of filing unless such application has been pursued in good faith or a *permit* has been issued; except that the *building official* is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each. The extension shall be requested in writing and justifiable cause demonstrated. Applications which have expired for 30 days or more will be considered void, unless the *building official* determines, in their reasonable discretion, that an extension of no more than 180 days should be allowed due to conditions beyond the applicant's control.

6. **Section R105.5 Expiration** is hereby amended by adding a second paragraph to read as follows:

   R105.5 Expiration. Every *permit* issued shall become invalid unless the work authorized by such *permit* is commenced within 180 days after its issuance or after commencement of work if more than 180 days pass between inspections. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

   Both prior to and subsequent to the effective date of this code, any work authorized by a *permit* regulated by this code or any other building construction code administered by the *building official* that involves the construction or alteration of an exterior building component, assembly or finish material, such as the foundation, wall and roof framing, sheathing, siding, fenestration, and roof covering, shall be fully finished and completed for permanent outdoor exposure within 24 months of date of this issuance of such *permit*.

7. A new **Section R105.10 Premises Identification** is hereby added to read as follows:

   R105.10 Premises Identification During Construction. The approved *permit* number and street address number shall be displayed and plainly visible and legible from the public street or road fronting the property on which any new *building* is being constructed.

8. A new **Section R105.11 Transfer of permits** is hereby added to read as follows:

   R105.11 Transfer of permits. A current valid building *permit* may be transferred from one party to another upon written application to the *building official* with consent of both parties. When any changes are made to the original plans and specifications that substantially differ from the plans submitted with the *permit*, as determined by the *building official*, a new plan review fee shall be paid as calculated in accordance with Section R108. A fee of $50 shall be paid to cover administrative costs for all building *permit* transfers. No change shall be made in the expiration date of the original *permit*.

9. **Section R106.1.4 Information for construction in flood hazard areas** is hereby

deleted its entirety and replaced with the following:

R106.1.4 Information for construction in flood hazard areas. For *buildings* or structures regulated under the scope of this code that are in whole or in part located in flood hazard areas, construction documents shall be submitted in accordance with the City Code, Chapter 10, entitled "Flood Prevention and Protection."

10. A new **Section R106.1.6 Grading performance plans and certificate** is hereby added to read as follows:

R106.1.6 Grading performance plans and certificate. Every building *permit* application for a new *building* regulated by this code shall be accompanied by a site drainage/grading performance plan as prescribed by City standards. Drainage plans shall be submitted to and approved by the City's Stormwater Utility prior to the issuance of a *permit*.

11. **Section R106.3.1 Approval of construction documents** is hereby amended to read as follows:

R106.3.1 Approval of construction documents. Where the *building official* issues a *permit*, the *construction documents* shall be *approved* in writing or by a stamp indicating the approved *permit* number. One set of *construction documents* so reviewed shall be retained by the *building official*. The other set shall be returned to the applicant, shall be kept at the site of work and shall be open to inspection by the *building official* or a duly authorized representative.

12. **SECTION R108 FEES** is hereby deleted in its entirety and replaced with the following:

SECTION R108 FEES

R108.1 Fees. All items relating to fees shall be as specified in Section 109 of the adopted *International Building Code*, entitled "FEES."

13. A new **Section R109.1.7 Site Survey required** is hereby added to read as follows:

R109.1.7 Site Survey required. A survey or improvement location certificate of the site on which a new *building* or *addition* is to be constructed may be required by the *building official* to verify that the *structure* is located in accordance with the approved plans and any other regulations of the City.

14. **Section R110.2 Change in use** is hereby amended to read as follows:

R110.2 Change in use. Changes in the character, use and/or occupancy classification (See Chapter 3 of *International Building Code)* of an existing structure shall not be made except as specified in Sections 506 and 507 of the *International Existing Building*

Code, approved by the *building official* and the *structure* is in conformance with this code and the *Building Code* enacted by the City.

15. **SECTION R112 BOARD OF APPEALS** is hereby deleted in its entirety and replaced with the following:

R112 BOARD OF APPEALS

R112.1 General. Appeals of decisions, determinations and interpretations of this code shall be made pursuant to applicable provisions as set forth in Section 113 of the adopted *International Building Code*, entitled "MEANS OF APPEALS."

16. **Section R113.4 Violation penalties** is hereby amended to read as follows:

R113.4 Violation penalties. Any *person* who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the *approved construction documents* or directive of the *building official*, or of a *permit* or certificate issued under the provisions of this code, commits a civil infraction and is subject to the provisions contained in § 1-15 of the City Code. Each day that a violation continues shall be deemed a separate offense.

17. A new **Section R113.5 Work commencing before permit issuance** is hereby added to read as follows:

R113.5 Work commencing before permit issuance. In addition to penalties set forth in R113.4, any *person* or firm who, before obtaining the necessary *permit(s)*, commences any construction of, or work on, a *building*, *structure*, electrical, gas, mechanical or plumbing system that is not otherwise exempted from obtaining a *permit*, may be subject to a stop work order and a work without a *permit* fee in addition to the required *permit* fee as established by the *building official.*

18. **SECTION R202 DEFINITIONS** is hereby amended to modify, or add, in alphabetical order, the following definitions:

BASEMENT. That portion of a *building* located partly or completely below grade, wherein the underside of the floor system immediately above is 72 inches (1829 mm) or more above the surface of an approved permanent basement floor system.

CITY shall mean the municipal corporation of Fort Collins, Colorado, including its physical location and boundaries.

CRAWLSPACE. That portion of a *building* that is conditioned or non-conditioned space located partly or completely below grade (excluding the under-floor space beneath below-grade structural floor systems), wherein the underside of the adjacent finished floor above is less than 72 inches (1829 mm) above the bottom surface of such

crawlspace.

DOWN DIRECTIONAL LUMINAIRE. Down directional luminaire lighting directs light straight down from the fixture.

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

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

FLOOR AREA. The area included within the surrounding exterior walls of a *building* or portion thereof, exclusive of vent shafts and courts. The floor area of a *building*, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above.

FULLY SHIELDED LUMINAIRE. A light fixture that has a solid barrier (cap) at the top of the fixture in which the lamp (bulb) is located. The fixture is angled so the lamp is not visible below the barrier (no light visible below the horizontal angle).

ROOM, SLEEPING (BEDROOM). A habitable space within a *dwelling* or other housing unit designed primarily for the purpose of sleeping. The presence of a bed, cot, mattress, convertible sofa or other similar furnishing used for sleeping purposes is indicia for determining that such space or room qualifies as a sleeping room. The presence of closets and similar storage facilities is not considered a relevant factor in determining whether or not a room is a sleeping room.

SITE. A parcel of land bounded by a property line or a designated portion of a public right-of-way.

TOWNHOUSE: A single-family *dwelling unit* constructed in a group of two or more attached individual units, each of which is separated from the other from the foundation to the roof and is located entirely on a separately recorded and platted parcel of land (site) bounded by property lines that is deeded exclusively for such single-family *dwelling*.

VISITABILITY: A measure of a residence's ease of access for persons with disabilities.

19. **Section 301.1.3 Engineered Design** is hereby amended to read as follows:

R301.1.3 Engineered design. When a *building* of otherwise conventional light-frame construction contains structural elements not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the *Building Code* enacted by the City, is permitted for all *buildings*, *structures*, and portions thereof, included in the scope of this code.

20. **Table R301.2 Climatic and Geographic Design criteria**, the table is amended to read as follows. The thermal design parameters in Table R301.2 shall be used for mechanical load calculations and designs.

TABLE R301.2
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD[o]	WIND DESIGN				SEISMIC DESIGN CATEGORY[f]	SUBJECT TO DAMAGE FROM			ICE BARRIER UNDERLAYMENT REQUIRED[h]	FLOOD HAZARDS[g]	AIR FREEZING INDEX[i]	MEANANNUAL TEMP[j]
	Speed[d] (mph)	Topographic effects[k]	Special wind region[l]	Windborne debris zone[m]		Weathering[a]	Frost line depth[b]	Termite[c]				
35psf	140	No	Yes	No	B	Severe	30 inches	Slight to moderate	Yes	July 16, 1979	906	48.4
MANUAL J DESIGN CRITERIA[n]												
Elevation		Altitude correction factor[e]		Coincident wet bulb	Indoor winter design dry-bulb temperature	Indoor winter design dry-bulb temperature			Outdoor winter design dry-bulb temperature		Heating temperature difference	
4987		0.83		62	72	72			6		66	
Latitude		Daily range		Indoor summer design relative humidity	Indoor winter design relative humidity	Indoor summer design dry-bulb temperature			Outdoor summer design dry-bulb temperature		Cooling temperature difference	
40.5853		High		50	30	75			91		16	

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

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(1). The grade of masonry units shall be determined from ASTM C34, ASTM C55, ASTM C62, ASTM C73, ASTM C90, ASTM C129, ASTM C145, ASTM C216 or ASTM 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 jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(2). Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

e. The jurisdiction shall fill in this section of the table to establish the design criteria using Table 10A from ACCA Manual J or established criteria determined by the jurisdiction.

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: 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); and the title and date of the currently effective Flood Insurance Study or other flood hazard study.

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." Otherwise, the jurisdiction shall fill in this part of the table with "NO."

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(2), 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 Pg shall 35 psf for the City of Fort Collins per the Colorado Design Snow Loads, published by the Structural Engineers Association of Colorado (dated April 2016). The design roof snow load values shall be determined from Chapter 7, ASCE 7-16, including all applicable factors, and loading and drifting considerations. In no case shall the final design roof snow load be less than a uniformly distributed load of 30 psf.

p. Alternatively, the basic design wind speed, V, in mph, for the determination of wind speed may comply with Colorado Front Range Gust Map – ASCE-7-10 compatible, published by the Structural Engineers Association of Colorado (dated November 18, 2013).

21. **Section R302.2 Townhouses** is hereby amended to read as follows:

R302.2 Townhouses. Townhouses shall be provided with a fire-suppression system in accordance with Section P2904 of this code, NFPA 13D, or other approved equivalent sprinkler system. Walls separating *townhouse units* shall be constructed in accordance with section R302.2.1 or R302.2.2.

22. **Section R302.2.3 Continuity** is hereby amended to read as follows:

R302.2.3 Continuity. The fire-resistance-rated common wall or assembly separating *townhouses units* along property lines shall be continuous from the foundation to the underside of the roof sheathing, deck or slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached and/or enclosed *accessory structures* or spaces. The fire-resistance-rating shall be maintained within concealed spaces of projecting elements such as, roof overhangs, canopies, marquees and similar projections. The fire-resistant rated adjoining walls shall extend to the outer edge of horizontal projecting elements such as balconies that extend more than 24 inches beyond the exterior wall.

23. **Section R302.3 Two-family dwellings** is hereby amended to read as follows:

R302.3 Two-family dwellings. Two-family dwellings shall be provided with a fire-suppression system as per P2904 at a minimum. *Dwelling units* in two-family dwellings shall be separated from each other by wall and/or floor assemblies having not less than a one-hour fire-resistance rating when tested in accordance with ASTM E119 or UL 263 or Section 703.2.2 of the *International Building Code*. Such separation shall be provided regardless of whether a *lot line* exists between the two *dwelling units* or not. 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 Section P2904.
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.

24. **Section R308.4.7 Glazing adjacent to the bottom stair landing** is hereby amended to read as follows (Figure R308.4.7 is retained):

R308.4.7 Glazing adjacent to stair landings. Glazing adjacent to stair landings where the glazing is less than 36 inches (914 mm) above the landing and within a 60-inch (1524 mm) horizontal arc less than 180 degrees (3.14 rad) from the top or bottom tread *nosing* shall be considered a hazardous location. (See Figure R308.4.7.)

Exception: Where the glazing is protected by a *guard* complying with Section R312 and the plane of the glass is more than 18 inches (457 mm) from the *guard.*

25. **Section R310.1 Emergency escape and rescue opening required** is hereby amended to read as follows:

R310.1 Emergency escape and rescue opening required *Basements, habitable attics, habitable* lofts and *mezzanines*, 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 having a minimum width of 36 inches (914 mm) 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. A *yard* shall not be required to open directly into a *public way* where the *yard* opens to an unobstructed path from the *yard* to the *public way*. Such path shall have a width of not less than 36 inches (914 mm).

26. **Section R310.1.1 Operational constraints and opening control devices** is amended to read as follows:

R310.1.1 Operational constraints and opening control devices. *Emergency escape and rescue openings* shall be operational from the inside of the room without the use of keys, tools or special knowledge.

27. **Section R310.2.3 Maximum height from floor** is amended to read as follows:

R310.2.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) above the floor. *Emergency escape and rescue window openings* that are located more than 72 inches (1829 mm) above the finished grade shall have a sill height of not less than 24 inches (609 mm) measured from the finished interior side floor.

28. **Section R311.7.5.1 Risers** is hereby amended to read as follows:

R311.7.5.1 Risers. The *riser* height shall be not more than 7 3/4 inches (196 mm). The minimum *riser* height shall be not less than 4 inches (102 mm). The *riser* height shall be measured vertically between leading edges of the adjacent treads. The greatest *riser* height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the *nosing* of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. At open *risers*, openings located more than 30 inches (762 mm), as measured vertically, to the floor or *grade* below shall not permit the passage of a 4-inch-diameter (102 mm) sphere.

29. **Section R313.2 One- and two-family dwellings automatic sprinkler systems** is amended to read as follows:

R313.2 Two-family dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in two-family *dwellings*.

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

30. **Section R314.2.2 Alterations, repairs and additions** is amended by deleting exception #2.

31. **Section R314.4 Interconnection** is amended to add an exception 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.

Exception: Interconnection of smoke alarms in existing areas shall not be required where install would require the removal of interior wall or ceiling finishes, unless there is an attic, crawl space, or basement available to could provide access for interconnection without the removal if interior finishes.

32. **Section R315.2.2 Alterations, repairs and additions** is hereby amended to read as follows:

R315.2.2 Alterations, repairs and additions. Where *alterations*, *repairs* or *additions* requiring a *permit* occur, or where one or more sleeping rooms are added or created in existing *dwellings*, the individual *dwelling unit* shall be equipped with carbon monoxide alarms located as required for new *dwellings*.

33. **Section R320.1 Scope** is hereby amended to read as follows:

R320.1 Scope. Where there are four or more *dwelling units* or *sleeping units* in a single structure, the applicable provisions of C.R.S. § 9-5-101 *et. seq.*, and the provisions of Chapter 11 of the adopted *International Building Code* for Group R-3 shall apply. Nothing in this Section shall abrogate or otherwise modify an owner's duties or responsibilities under the Americans with Disabilities Act or any other federal law or regulation regarding accessibility.

34. A new **Section R320.3 Visitability** is hereby added to read as follows:

R320.3 Visitability. A new *dwelling unit* with habitable space on the first story shall designate at least one bathroom group or half bath on the first story that must be designed and constructed to meet the *visitability* requirements of this section.

R320.3.1 Bathrooms within dwelling units. A bathroom group or half bath designated for *visitability* must have a minimum clear opening of 30 inches.

R320.3.2 Wall reinforcement. A bathroom group or half bath designated for *visitability* must have reinforced walls that meet the following standards:

1. Lateral two-inch by six-inch or larger nominal wood blocking must be installed flush with stud edges of bathroom walls; and
2. The centerline of the blocking must be 34 inches from and parallel to the interior floor level.

Exception:

Blocking is not required in the portion of the wall located directly behind the lavatory.

R320.3.3 Lighting and environmental controls. Light switches, receptacles and other environmental controls located in a bathroom or a half bath designated for *visitability* must be no higher than 48 inches above the interior floor level. Receptacles shall be a minimum of 15 inches above the interior floor level.

R320.3.4 Visitability routes within the dwelling unit. A bathroom group or half bath designated for *visitability* must be visitable by a route through the living room, dining room, and kitchen that provides a minimum clear width of 32 inches, and any interior doors on the route must have lever handles.

35. **SECTION R322 FLOOD-RESISTANT CONSTRUCTION** is hereby deleted in its entirety and amended to read as follows:

SECTION R322
FLOOD-RESISTANT CONSTRUCTION

R322.1 General. *Buildings* and *structures* constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with the provisions of the City Code, Chapter 10, Flood Prevention and Protection. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall demonstrate that the cumulative effect of the proposed *buildings* and *structures* on design flood elevations, including fill, when combined with all other existing and anticipated development, will not increase the design flood elevation more than one foot at any point within the City.

36. A new **SECTION R331 RESOURCE EFFICIENCY** is hereby added to read as follows:

SECTION R331 RESOURCE EFFICIENCY

R331.1 Construction waste management. For remodels and additions over 2,500 square feet, and for all new *buildings*, a construction waste management plan acceptable to the *building official* is required at the time of application for a building *permit*. The construction waste management plan shall be implemented and conspicuously posted on the construction site. All concrete, asphalt, masonry, wood, metals, and cardboard shall be recycled. All mixed construction and demolition materials (as defined in § 12-16 of the City Code) shall be delivered to any facility identified in and disposed of in accordance with § 12-22(c) of the City Code. Compliance shall be certified by inspection and documentation and signed final construction waste management plans. Substantive changes to the plan shall be subject to prior approval by the *building official*. All roofing *permits* are required to submit a final waste management plan and documentation.

R331.1.1 Building demolitions. *Buildings* or portions of *buildings* that are removed shall be processed in such a way as to safely remove all asbestos and lead paint contaminants. For all demolitions, excluding non-structural demolitions under 1000 square feet a demolition waste management plan acceptable to the *building official* is required at the time of application for a demolition *permit*. All metals, asphalt, concrete, and masonry that are free of asbestos and lead paint shall be recycled, and where possible, all remaining materials, such as doors, windows, cabinets, fixtures, and wood, shall be recycled. All mixed construction and demolition materials (as defined in § 12-16 of the City Code) shall be delivered to any facility identified in and disposed of in accordance with § 12-22(c) of the City Code. Compliance shall be certified by inspection, documentation, and signed final demolition waste management plans. Substantive changes to the plan shall be subject to prior approval by the *building official*.

R331.2 Exterior lighting. All exterior lighting fixtures shall be *down directional* and *fully shielded luminaires* and shall have a nominal correlated color temperature (CCT) of no greater than 3000 Kelvin.

R331.3 Operations and maintenance. In new *buildings*, operation and maintenance

information addressing all installed systems shall be provided to the *building* owner.

R331.4 Electrical Vehicle Ready. All new single family *dwellings* with an attached garage or carport shall be provided one continuous 40-amp, 208/240-Volt dedicated branch circuit for *electric vehicle supply equipment* that is terminated at a receptacle or *electric vehicle supply equipment.*

Exception: In cases where a transformer upgrade is required.

37. **Section R401.1 Application** is 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 shall meet the provisions of Section R322. All foundations shall be designed by a qualified professional licensed in the State of Colorado. Such designs shall be performed in accordance with accepted and approved engineering practices, including considerations for soil load-bearing capacities, surface and subsurface water conditions, adequate foundation and floor drainage, adequate ventilation of enclosed interior foundation spaces, and foundation waterproofing and damp-proofing. Final engineer's reports, indicating their acceptance of the above requirements, shall be submitted to the *building official* prior to the issuance of the Certificate of Occupancy. Wood foundations shall be designed and installed in accordance with AWC PWF.

Exceptions:

1. Foundations for non-habitable detached accessory *buildings*.
2. The provisions of this chapter shall be permitted to be used for wood foundations only in the following situations:
   a. In buildings that have no more than two floors and a roof.
   b. When interior *basement* and foundation walls are constructed at intervals not exceeding 50 feet (15 240 mm).

Wood foundations in Seismic Design Category D_0, D_1 or D_2 shall be designed in accordance with accepted engineering practice.

38. A new **Section R401.5 Placement of Backfill** is hereby added to read as follows:

R401.5 Placement of Backfill. The excavation outside the foundation, including utility trenches and excavation ramp, shall be backfilled with soil that is substantially free of organic material, construction debris and cobbles, boulders, and solid soil masses larger than 6 inches (152 mm) diameter; or of frozen soil. The backfill shall be placed in lifts and compacted as set forth in the engineering documents. The backfill shall be placed in a manner that does not damage the foundation or the waterproofing or damp-proofing material. Excavation ramps shall be backfilled in such a manner that the ramp does not become a conduit for surface water to flow toward the foundation. Where excavations include more than one *structure*, a specially engineered drainage system may be

required by the *building official*.

39. **Section R405.1 Concrete or masonry foundations** is hereby amended to read as follows (Table R405.1 is retained in its entirety):

R405.1 Concrete or masonry foundations. Drains consisting of piping conforming with ASTM Designation D2729- 89 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. Unless perimeter drains are designed to daylight, they shall terminate in sump pits with an electrical power source permanently installed within 36 inches (914 mm) of the sump opening. Piping for sump pumps shall discharge at least 60 inches (1524 mm) away from foundations, or as otherwise approved by the *building official*. Drains shall be installed in bedding materials that are of such size and installed in such manner to allow ground water to seep into the perimeter drain. Filter fabric or other measures to restrict the passage of fines shall be used to further protect the perimeter drain from blockage.

Exception:

A drainage system is not required where it has been determined by the engineer of record that 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.

40. A new **Section R405.3 Landscape irrigation** is added to read as follows:

R405.3 Landscape irrigation. Landscape irrigation systems, other than drip systems, shall be installed such that the ground surface within 60 inches (1524 mm), measured perpendicular from the foundation, is not irrigated.

41. **Section R408.2 Openings for under-floor ventilation** is hereby amended to read as follows:

R408.2 Underfloor ventilation. Underfloor ventilation shall be provided per Section R408.3 except where high groundwater conditions exist that would require a vented under-floor space ("cold crawl"), ventilation openings through foundation or exterior walls surrounding the under-floor space shall be provided in accordance with this section. The minimum net area of ventilation openings shall be not less than 1 square foot (0.0929 m2) for each 150 square feet (14 m2) of under-floor area. One ventilation opening shall be within 3 feet (915 mm) of each external corner of the under-floor space. Ventilation openings shall be covered for their height and width with any of the following materials provided that the least dimension of the covering shall not exceed 1/4 inch (6.4 mm), and operational louvers are permitted:

1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
3. Cast-iron grill or grating.

4. Extruded load-bearing brick vents.
5. Hardware cloth of 0.035 inch (0.89 mm) wire or heavier.
6. Corrosion-resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm) thick.

Exceptions:

1. The total area of ventilation openings shall be permitted to be reduced to 1/1,500 of the under-floor area where the ground surface is covered with an *approved* Class I vapor retarder material.
2. Where the ground surface is covered with an *approved* Class 1 vapor retarder material, ventilation openings are not required to be within 3 feet (915 mm) of each external corner of the underfloor space provided that the openings are placed to provide cross ventilation of the space.

42. A new **Section R408.3.1 Spaces under below-grade floors** is hereby added to read as follows:

R408.3.1 Spaces under below-grade floors. Mechanical ventilation systems for spaces under below-grade floors shall be designed by a professional engineer and installed in accordance with such designs or a mechanical ventilation system for spaces under below-grade floors shall be provided with an active, fan assisted submembrane depressurization system installed per IRC APPENDIX AF, RADON CONTROL METHODS. In addition, the space above the soil-gas-retarder and below the floor shall be provided with continuously operated mechanical exhaust ventilation at a rate equal to 1 cubic foot per minute for each 50 square feet of under floor area and either mechanical supply air at the same rate, or an air pathway (such as a duct or transfer grille) to the common area that is not located in rooms containing open combustion fuel burning appliances.

43. **Section R702.7 Vapor retarders** is hereby amended to read as follows:

R702.7 Vapor retarders. Vapor retarder materials shall be classified in accordance with Table R702.7(1). A vapor retarder may be provided on the interior side of frame walls of the class indicated in Table R702.7(2), including compliance with Table R702.7(3) or R702.7(4) where applicable. Class I vapor retarders are not allowed on basement foundation walls or any concrete or masonry below grade wall. An *approved* design using accepted engineering practice for hygrothermal analysis shall be permitted as an alternative. The climate zone shall be determined in accordance with IECC Section R301.1.

Exceptions:

1. Construction where accumulation, condensationor freezing of moisture will not damage the materials.
2. A vapor retarder shall not be required in Climate Zones 1, 2 and 3.

44. **TABLE R702.7(2) VAPOR RETARDER OPTIONS** is amended to read as follows:

TABLE R702.7(2) VAPOR RETARDER OPTIONS

CLIMATE ZONE	VAPOR RETARDER CLASS		
	CLASS I[a]	CLASS II[a]	CLASS III[a]
Marine 4, 5, 6, 7, 8	Permitted[b]	Permitted[c]	Permitted

a. Vapor retarders with vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B) shall be allowed on the interior side of any frame wall.
b. Use of a Class I interior vapor retarder in frame walls with a Class I vapor retarder on the exterior side shall require an approved design.
c. Where a Class II vapor retarder is used in combination with foam plastic insulating sheathing installed as continuous insulation on the exterior side of frame walls, the continuous insulation shall comply with Table R702.7(4) and the Class II vapor retarder shall have a vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B).

45. A new **Section R703.11.3 Vinyl siding and soffits on new buildings** is hereby added to read as follows:

Section R703.11.3 Vinyl siding and soffits on new buildings. Vinyl siding and soffits on new *buildings* shall be installed over one-hour fire-rated assemblies listed for exterior fire exposure, in both the vertical and horizontal plane.

46. A new **Section R703.13.2 Insulated vinyl siding and soffits on new buildings** is hereby added to read as follows:

Section R703.13.2 Insulated vinyl siding and soffits on new buildings. Insulated vinyl siding and soffits on new *buildings* shall be installed over one-hour fire-rated assemblies listed for exterior fire exposure, in both the vertical and horizontal plane.

47. **Section R703.14.1.1 Installation** is hereby amended to read as follows:

Section R703.14.1.1 Installation. *Polypropylene siding* on new *buildings* shall be installed over one-hour fire-rated assemblies listed for exterior fire exposure, in both the vertical and horizontal plane. *Polypropylene siding* shall be installed over and attached to wood structural panel sheathing with minimum thickness of 7/16 inch (11.1 mm), or other substrate, composed of wood or wood-based material and fasteners having equivalent withdrawal resistance.

48. **Section R902.1 Roofing Covering Materials** is hereby deleted in its entirety and replaced with the following:

R902.1 Roofing covering materials. Except as otherwise allowed, roofs shall be covered with materials listed as Class A and with materials as set forth in Sections R904 and R905. Classes A, B and C roofing required to be listed by this section must 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: Any Class B or Class C roof covering may be applied on any new

construction that is added to an existing *building*, provided the roof extremities of such existing *building* and new construction are located a minimum distance of 5 feet (1.524 m) from the nearest adjacent property line and are a minimum distance of 10 feet (3.048 m) from another *building*.

49. In **Section R905.1.2 Ice barriers** is retained in its entirety, and a new Exception #2 is hereby added to read as follows:

. . .

Exceptions:

1. Detached *accessory structures* not containing conditioned floor area.
2. Re-roofing where the existing roof covering has not been removed.

50. **Section R905.2.1 Sheathing requirements** is hereby amended to read as follows:

R905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to solidly sheathed decks. Gaps in the solid decking shall not exceed 1/8 inch.

51. A new **Section R905.2.4.2 Impact resistance of asphalt shingles** is hereby added to read as follows:

R905.2.4.2 Impact resistance of asphalt shingles. Asphalt shingles shall be Class 4 impact resistant and be tested in accordance with UL 2218 and installed in accordance with the manufacturer's installation instructions.

Exceptions:

1. When existing asphalt shingles are less than class 4 impact resistant, and the owner wishes to replace the existing asphalt shingles with tiles of a similar color or tile, and there are no class 4 impact resistance shingles available that are similar color or style of the existing asphalt shingles, the *building official* may approve alternate materials that are less than class 4 impact resistant; however, the *building official* will impose the highest class of impact resistance that are available that match the color or style of the existing asphalt shingles. If no impact resistant materials are available, the *building official* may approve non-impact resistant materials if the alternate materials meet all other applicable requirements of this code.

2. When the owner is repairing or adding to existing asphalt singles that are less than class 4 impact resistant, the owner may use the same or similar materials as the current existing asphalt shingles, even if that same or similar material is not impact resistant.

52. **Section R908.1 General** is hereby amended to read as follows:

R908.1 General. Materials and methods of application used for recovering or replacing

an existing roof covering shall comply with the requirements of Chapter 9.

Exceptions:

1. *Reroofing* shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section R905 for roofs that provide *positive roof drainage*.
2. For roofs that provide positive drainage, recovering or replacing an existing roof covering shall not require the secondary (emergency overflow) drains or *scuppers* of Section R903.4.1 to be added to an existing roof.
3. Any existing roof covering system 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.

53. **Section R1004.1 General** is hereby amended to read as follows:

R1004.1 General. Factory-built fireplaces shall be *listed* and *labeled* and shall be installed in accordance with the conditions of the *listing*. Factory-built fireplaces shall be tested in accordance with UL 127. Solid fuel fireplaces, fireplace stoves and solid-fuel-type room heaters also shall comply with §5-110 of the City Code and must be installed with a spark arrestor.

54. **Section R1004.4 Unvented Gas log Heaters** is here by deleted in its entirety.

55. **Chapter 11 [RE] ENERGY EFFICIENCY** is hereby deleted in its entirety and all provisions for ENERGY EFFICIENCY shall comply with the currently adopted *International Energy Conservation Code,* IECC--RESIDENTIAL PROVISIONS and its local amendments because the language of this chapter is duplicated within the IECC RESIDENTIAL PROVISIONS.

56. A new **SECTION M1309 TESTING AND VERIFICATION** is hereby added to read as follows:

SECTION M1309 TESTING AND VERIFICATION.

M1309.1 General. Installed heating, cooling and *ventilation* systems shall be performance-tested and adjusted per the Residential New Construction Mechanical Systems Testing Guide as currently adopted by the City of Fort Collins and to operate within design specifications, in accordance with ANSI/ACCA QI 5-2010 *HVAC Quality Installation Specification*. Documentation of results must be submitted to the *building official* prior to the issuance of the certificate of occupancy.

57. **Section M1401.3 Equipment and appliance sizing** is hereby deleted in its entirety and replaced with the following:

M1401.3 Heating and cooling system design. The design of new heating and cooling systems shall meet the requirements of this section. Design documents shall be

submitted to the *building official* at the time of application for a building *permit*.

M1401.3.1 Equipment and appliance sizing. Heating and cooling *equipment* and *appliances* shall be sized in accordance with ACCA Manual S, based on design building loads calculated in accordance with ACCA Manual J, or other equivalent methodology approved by the *building official*, using thermal design parameters in Table R301.2 as amended. The total equipment or *appliance* output capacity shall be between the following limits, as applicable for the equipment type:

1. 95% and 115% of calculated system cooling load, for air conditioners and heat pumps;
2. 95% and 125% of calculated system cooling load, for heat pumps with winter heating dominated requirements;
3. 100% and 140% of calculated system heating load, for warm air systems, unless dictated by the cooling equipment selection; and
4. 100% and 115% of calculated system heating load, for heating boilers.

When there is no equipment available to satisfy these applicable capacity limits, the next largest nominal piece of equipment that is available may be used.

M1401.3.2 Room loads. Room-by-room design heating and cooling loads shall be calculated.

M1401.3.3 Matched components. Air-conditioning, Heating and Refrigeration Institute (AHRI) matched evaporators, condensing units and air handlers shall be required.

58. A new **Section, M1402.4 Total Electric Heating** is hereby added to read as follows:

M1402.4 Total Electric Heating. Primary indoor central heating systems utilizing only electric heat shall utilize a ground source heat pump system(s) or cold climate heat pump system(s) specifically designed to heat in cold climates and at the Winter Outdoor, Design Dry-Bulb temp defined in IECC Section C301.5. The heat pump system shall not be gas or propane fuel fired. Electric resistance strip heat shall only serve as emergency back-up heat or supplemental heat at outdoor temperatures below 15° F as necessary.

59. **Section, M1414.1 General** 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 required by the State of Colorado and Federal Regulation 40 CFR Part 60, Subpart AAA.

60. A new **Section M1501.2 Indoor depressurization** is hereby added to read as follows:

M1501.2 Indoor depressurization. Ducted exhaust systems shall not induce or create a negative pressure sufficient to cause back-drafting of naturally vented, open combustion-chamber or fuel-burning appliances, nor create negative pressure in excess of negative 3 Pa. in the immediate proximity of combustion chambers of such appliances.

61. **Section M1502.4.2 Duct installation** is amended to read as follows:

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. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

62. **Section M1505.4 Whole-house mechanical ventilation system** is hereby deleted in its entirety and replaced with the following:

M1505.4 Whole-dwelling unit mechanical ventilation system. For new *dwellings*, a mechanical exhaust system, supply system, or combination thereof shall be installed for each *dwelling unit* to provide whole-*dwelling unit ventilation*. Such system shall comply with Sections M1505.4.1 through M1505.4.4. System design documents must be submitted to the *building official* at the time of application for a building *permit*.

63. **Section M1601.1 Duct design** is hereby amended to read as follows:

M1601.1 Duct design. *Duct systems* serving heating, cooling and *ventilation equipment* in new *buildings*, or new duct systems in *additions*, shall be designed and fabricated in accordance with the provisions of this section and *ACCA Manual D* or other approved methods.

64. In **Section M1601.1.1 Above-ground duct systems**, Items 7 through 7.6 are hereby deleted in their entirety.

65. A new **Section M1601.4.11 Construction debris and contamination** is hereby added to read as follows:

M1601.4.11 Construction debris and contamination. Mechanical air-handling systems and their related ducts shall be protected from the entrance of dirt, debris, and dust during the construction and installation process. Prior to passing final inspection or issuance of a certificate of occupancy, such systems shall be substantially free of construction-related contaminants.

66. **Section M1602.2 Return Air Openings** is hereby amended to read as follows:

M1602.2 Return Air Openings. A return air path shall be provided in all habitable rooms by means of ducts or transfer grills. Return air openings for heating, *ventilation* and air conditioning systems shall comply with all of the following:

1. Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another *appliance* located in the same room or space.
2. The amount of return air taken from any room or space shall be not greater than the flow rate of supply air delivered to such room or space.
3. Return and transfer openings shall be sized in accordance with the *appliance* or *equipment* manufacturer's installation instructions, Manual D or the design of the *registered design professional.*
4. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.

   Exceptions:
   1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3048 mm) from the cooking *appliances.*
   2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.
5. For other than dedicated HVAC systems, return air shall not be taken from indoor swimming pool enclosures and associated deck areas except where the air in such spaces is dehumidified.
6. Taking return air from an unconditioned *crawl space* shall not be accomplished through a direct connection to the return side of a forced-air furnace. Transfer openings in the *crawl space* enclosure shall not be prohibited.
7. Return air from one *dwelling unit* shall not be discharged into another *dwelling unit.*

67. **Section G2404.3 (301.3) Listed and labeled** is hereby amended to read as follows:

G2404.3 (301.3) Listed and labeled. *Appliances* regulated by this code shall be *listed* and *labeled* for the application in which they are used unless otherwise *approved* in accordance with Section R104.11.

68. **Section G2406.2 (303.3) Prohibited locations** is hereby amended by only deleting the exceptions in Items #3 and #4.

69. **Section G2407.11 (304.11) Combustion air ducts** is hereby amended by only adding a new Item #9 to read as follows:

9. All combustion air openings or ducts shall be readily identifiable with an approved label or by other means warning persons that obstruction of such openings or ducts may cause fuel-burning equipment to release combustion products and dangerous levels of carbon monoxide into the *building.*

70. **Section G2415.12 (404.12) Minimum burial depth** 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 below grade.

71. **Section G2415.12.1 (404.12.1) Individual outside appliance** is hereby deleted in its entirety.

72. **Section G2417.4.1 (406.4.1) Test pressure** is hereby deleted in its entirety and replaced with the following:

G2417.4.1 (406.4.1) Test pressure. The test pressure to be used for non-welded pipe shall be 10 psi minimum.

73. **Section G2425.8 (501.8) Appliances not required to be vented** is hereby amended to read as follows:

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

1. Electric ranges.
2. Electric built-in domestic cooking units listed and marked for optional venting.
3. Hot plates and laundry stoves.
4. *Type 1 clothes dryers (Type 1 clothes dryers* shall be exhausted in accordance with the requirements of Section G2439).
5. Refrigerators.
6. Counter appliances.

74. **Section G2427.6.5 (503.6.5) Minimum height** is hereby amended to read as follows:

G2427.6.5 (503.6.6) Minimum height. A Type B or L gas vent shall terminate not less than 5 feet (1524 mm) in vertical height above the highest connected *appliance draft hood* or *flue collar*. A Type B-W gas vent shall terminate at least 12 feet (3658 mm) in vertical height above the bottom of the wall *furnace*. All gas vents shall terminate a minimum of 22 inches (559 mm) above the surface or grade directly below.

75. **SECTION G2445 (621) UNVENTED ROOM HEATERS** is hereby deleted in its entirety.

76. A new **Section G2447.6 (623.8) Gas cooking appliances** is hereby added to read as follows:

G2447.6 Gas cooking appliances. Gas cooking appliances shall be supplied with an exhaust system vented to the outside in accordance with section M1503. Ducts serving gas appliance exhaust systems shall not terminate in an attic or crawl space or areas

inside the *building*, shall not induce or create negative pressure in excess of negative 3 Pa, nor shall they adversely affect gravity-vented appliances.

77. A new **Section G2451.3 (630.3) Combustion and ventilation air** is hereby added to read as follows:

G2451.3 (630.3) Combustion and ventilation air. Where infrared heaters are installed, natural or mechanical means shall provide outdoor ventilation air at a rate of not less than 4 cfm per 1,000 Btu/h (0.38 m3/min/kW) of the aggregate input rating of all such heaters installed in the space. Outdoor exhaust openings for removing flue products shall terminate above the level of the heaters.

78. **Section P2503.5.1 Rough Plumbing** 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, by air, or by a vacuum, without evidence of leakage. The test shall be applied to the drainage system in its entirety or in sections after rough-in piping has been installed, as follows:

1. Water test. Each section shall be filled with water to a point not less than 10 feet (3048 mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.
2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.
3. Vacuum test. The portion under test shall be evacuated of air by a vacuum-type pump to achieve a uniform gauge pressure of -5 pounds per square inch or a negative 10 inches of mercury column (-34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes.

79. **Section P2903.2 Maximum flow and water consumption** is hereby amended toread as follows:

P2903.2 Maximum flow and water consumption. The maximum water consumption flow rates and quantities for all plumbing fixtures and fixture fittings shall be in accordance with Table P2903.2, and shall be Environmental Protection Agency (EPA) WaterSense® labeled fixtures, except for fixture types that are not labeled under the WaterSense® program.

80. **TABLE P2903.2 MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS[b]** is hereby deleted in its entirety and amended to read as follows:

TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS[b]

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Lavatory faucet	1.5 gpm at 60 psi
Shower head[a]	1.8 gpm at 80 psi
Sink faucet	1.8 gpm at 60 psi
Water closet	1.1 gallons per flushing cycle, with minimum MaP threshold of 600 grams. Dual flush gallons per flushing cycle: Average of three flushes (two reduced flushes and one full flush).[c]

For SI: 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.
a. A hand-held shower spray shall be considered to be a shower head.
b. Consumption tolerances shall be determined from referenced standards.
c. In existing *buildings* not increasing the *building* size, a 1.28 gpf maximum water closet is allowed.

81. **APPENDIX AE MANUFACTURED HOUSING USED AS DWELLINGS** is hereby adopted in its entirety.

82. **APPENDIX AF RADON CONTROL METHODS** is hereby adopted in its entirety, with the following amendments:

Section AF101.1 General is hereby amended to read as follows:

AF101.1 General. Radon-resistant construction is required for all new dwellings constructed under this code as prescribed in this Appendix.

Section AF103.1 General is hereby amended is read as follows:

AF103.1 General. The following construction techniques are intended to resist radon entry and prepare the building for post-construction radon mitigation.

Section AF103.2 Subfloor preparation is hereby amended to read as follows:

AF103.2 Subfloor preparation. A layer of gas-permeable material may be placed under all concrete slabs and other floor systems that directly contact the ground and are within the walls of the living spaces of the building, to facilitate future installation of a

subslab depressurization system, if needed. Each radon reduction vent pipe riser shall serve no more than 4,000 square feet of uninterrupted under slab/floor area. The gas-permeable layer shall consist of one of the following:

1. A uniform layer of clean aggregate, not less than 4 inches (102 mm) thick. The aggregate shall consist of material that will pass through a 2-inch (51 mm) sieve and be retained by a 1/4-inch (6.4 mm) sieve.
2. A uniform layer of sand (native or fill), not less than 4 inches (102 mm) thick, overlain by a layer or strips of geotextile drainage matting designed to allow the lateral flow of soil gases.
3. Other materials, systems or floor designs with demonstrated capability to permit depressurization across the entire subfloor area.

Section AF103.3 Soil-gas-retarder is hereby deleted in its entirety and replaced with the following:

AF103.3 Soil-gas-retarder. The soil in crawl spaces shall be covered with a continuous layer of a minimum 6-mil (0.15 mm) polyethylene or 3 mil (0.75 mm) cross-laminated polyethylene soil-gas-retarder. The ground cover shall be lapped not less than 12 inches at joints and sealed or taped. The edges of the ground cover shall extend a minimum of 12 inches (152 mm) up onto all foundation walls enclosing the under-floor space and be sealed to the wall and any footing pads. 6-mil polyethylene also shall be sealed and mechanically fastened to the wall. An interior perimeter drain tile loop shall be connected to a plumbing tee or other approved connection as per AF103.5.3.

Section AF103.5 Passive submembrane depressurization system is hereby amended to read as follows:

AF103.5 Passive submembrane depressurization system. In buildings with crawl space foundations, the following components of a passive submembrane depressurization system shall be installed during construction.

Section AF103.5.1 Ventilation is hereby deleted in its entirety.

A new **Section AF103.13 Provisions for future depressurization fan installation** is hereby added to read as follows:

AF103.13 Provisions for future depressurization fan installation. Permanent provisions shall be made for the future installation of an in-line fan to be connected to every radon vent pipe. Such designated fan locations shall be outside of the conditioned envelope of the *building*, such as in the attic, garage and similar locations, excluding crawl spaces and other interior under-floor spaces. Designated locations shall accommodate an unobstructed permanent cylindrical space with the following minimum dimensions: 12 inches (305 mm) measured radially around the radon vent pipe along a vertical distance of 30 inches (760 mm). Designated fan locations shall be

permanently accessible for servicing and maintenance. An electrical receptacle outlet shall be provided within 4 feet (1.219 m) of and within sight from designated fan locations and installed so as to not be covered by insulation. A light fixture shall be installed in the area of future fan location.

Section AF104.1 Testing is hereby amended by deleting only Item #11 (the Exception is retained):

83. **APPENDIX AH PATIO COVERS** is adopted in its entirety.

84. **APPENDIX AM HOME DAY-CARE R-3 OCCUPANCIES** is adopted in its entirety.

85. **APPENDIX AQ TINY HOUSES** is adopted in its entirety.

Section 5. The City Attorney and the City Clerk are authorized to modify the formatting and to make such other amendments to this Ordinance as necessary to facilitate publication in the Fort Collins Municipal Code; provided, however, that such modifications and amendments shall not change the substance of the Code provisions.

Introduced, considered favorably on first reading, and ordered published this 15th day of February, A.D. 2022, and to be presented for final passage on the 5th day of April, A.D. 2022.

CITY OF FORT COLLINS SEAL COLORADO

Mayor

ATTEST:

City Clerk

Passed and adopted on final reading on this 5th day of April, A.D. 2022.

CITY OF FORT COLLINS SEAL COLORADO

Mayor

ATTEST:

City Clerk

NOTICE OF PUBLIC HEARING

EXHIBIT A

NOTICE is hereby given of a public hearing to be held before the Council of the City of Fort Collins, Colorado, on the 15th day of February, A.D., 2022 at 6:00 p.m., or as soon thereafter as the matter may come on for hearing, in the Council Chambers at the City Hall, 300 LaPorte Avenue, Fort Collins, Colorado for the purpose of considering the adoption of ordinances that adopt by reference the *2021 International Building Code, 2021 International Residential Code, 2021 International Energy Conservation Code, 2021 International Mechanical Code, 2021 International Fuel Gas Code, 2021 International Existing Building Code, 2021 International Swimming Pool and Spa Code, 2021 International Property Maintenance Code and the International Plumbing Code*, each promulgated by the International Code Council, and the *Colorado Plumbing Code*, together with local amendments.

Not less than one (1) copy of said Codes has been, and now is on file in the Office of the City Clerk of the City of Fort Collins and is available for public inspection.

The purpose of adopting the *International Building Code, International Residential Code, International Energy Conservation Code, International Mechanical Code, International Fuel Gas Code, International Existing Building Code, International Swimming Pool and Spa Code*, the *International Property Maintenance Code*, and the Colorado Plumbing Code, with local amendments by said ordinances is to provide for protection of public health, safety and welfare of the City and its residents.

Individuals who wish to address Council via remote public participation can do so through Zoom at **https://zoom.us/j/98241416497.** (The link and instructions are also posted at **www.fcgov.com/councilcomments.**) Individuals participating in the Zoom session should watch the meeting through that site, and not via FCTV, due to the streaming delay and possible audio interference.

The City of Fort Collins will make reasonable accommodations for access to City services, programs and activities, and will make special communication arrangements for persons with disabilities. Please call (970) 221-6515 (V/TDD: Dial 711 for Relay Colorado) for assistance.

This notice is given and published by order of the City of Fort Collins, Colorado.

Dated this 24th day of January, A.D. 2022.

City Clerk

Upon request, the City of Fort Collins will provide language access services for individuals who have limited English proficiency, or auxiliary aids and services for individuals with disabilities, to access City services, programs and activities. Contact (970) 221-6515 (V/TDD: Dial 711 for Relay Colorado) for assistance. Please provide 48 hours advance notice when possible.

A petición, la Ciudad de Fort Collins proporcionará servicios de acceso a idiomas para personas que no dominan el idioma inglés, o ayudas y servicios auxiliares para personas con discapacidad, para que puedan acceder a los servicios, programas y actividades de la Ciudad. Para asistencia, llame al 970.221.6515 (V/TDD: Marque 711 para Relay Colorado). Por favor proporcione 48 horas de aviso previo cuando sea posible.